PHILLIPS EXETER ACADEMY

2026 Design & Construction Standards and Guidelines

2026 Design & Construction Standards and Guidelines

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Phillips Exeter Academy
2026 Design & Construction Standards

The following document is a set of guidelines and standards to serve as a framework for architects, engineers, contractors, and other professionals involved in the planning, design and construction process for new construction, renovation, and site projects at the Academy.

This is an evolving document. The changes and updates to the 2025 Standards from the 2024 version are noted in a summary listing following this introduction. The intent of these standards is to ensure consistency and level of standard across our campus as best as possible.

The Academy Campus consists of a core campus of nearly 200 acres. The athletic fields and woods total approximately another 850 acres. There are over 140 buildings the comprise of over two million gross square feet of space. Our buildings are categorized as the following: Academic, Administrative, Athletic, Dormitory, Accessory, Residence, Support and Other. The standards indicate the building type or types for which the specific standard is intended. Some standards are specifically for residential structures or faculty apartments in dormitories.

If items included herein are a part of a project, the Academy assumes these items will be specified or processes followed. If there are questions, please discuss them with the facilities management managers or planning team.

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Change Narrative

2026 Design & Construction	Change narrative
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09 68 00 – Broadloom Carpet ~~(Regular, Graphic~~ Loop, Pattern Loop)	2025 - Revised text
09 68 00 - Broadloom Carpet for Stair Runners	2025 - New
09 68 13 – Modular Carpet Tile	2025 - Revised text
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10 14 00 - Phillips Exeter Branding Standards	2025 - New
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2026 Design Construction Standards and Guidelines
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2026 Design & Construction	Change narrative
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22 40 00 – Plumbing Fixtures	
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22 40 00 – Shower Unit – Adjustable Height	2025 - GPM under review
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22 40 00 - Facutly Residence Showerhead	2026 - New
22 40 00 – Electronic Faucets	2025 - GPM under review
22 40 00 – Faculty Single-Handle Bathroom Faucet	2025 - Flow rate is to be 1.5 GPM MAX
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22 40 00 – Residential Shower Enclosure	
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26 56 19 LED Exterior Lighting	2025 - New
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~~26 56 00 – Parking Lot Lighting~~	2025 - Removed from standards.
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Overview of Sustainability at Phillips Exeter Academy

The Academy is committed to being a leader in sustainable design practices and implementation. In 2023 the Academy released its Climate Action Plan ***Building from Strength Toward a Zero Carbon Future*** with **a 2050 goal of achieving zero carbon emissions.** This is a significant step that will shape the sustainable parameters of our current and future projects.

The Academy builds from a commitment to reduce our carbon emissions. Since 2005, the Academy has reduced its scope 1 & 2 carbon emissions by 60%. Select large scale projects have included the modernization of the central heating plant, conversion of burning #6 fuel oil to natural gas with #2 oil back-up, repair and replacement of much of the steam infrastructure, installation of nearly 250 geothermal wells with over 14 more being installed in the summer of 2024, and the installation of a .5MW solar array on the roof of the new field house.

Several campus buildings and faculty homes are LEED Certified (5 at LEED Gold, 1 at LEED Silver). The LEED rating system is used as a benchmark through each phase of design, seeking to achieve a minimum of a LEED Silver rating. LEED certification is pursued on a project-by-project basis.

Since 2014, the Academy has purchased renewable energy certificates (RECs) matching 100% of the on-campus electricity demand. In future projects all light fixtures are to be specified LED and preferably N-Light compatible. Similarly, all plumbing fixtures are specified as low-flow and all appliances purchased are energy star rated. Many measures of sustainable design are found within these standards for products we have selected.

The following Guiding Principles for Sustainable Design and Construction should thus be viewed as being in service of our overarching 2050 zero carbon goal. These will evolve as new technologies emerge.

Guiding Principles for Sustainable Design, Construction and Operations

- ***Vision:*** Design, build, operate, and maintain environmentally responsible and efficient buildings that enhance occupants' health & well-being with a 2050 goal of achieving zero carbon emissions.
- ***Strategies:***
    - The LEED Rating System should be used as a benchmark through each phase of design. New construction should seek to meet requirements to be LEED Silver "certifiable," however measures that move the Academy towards the larger zero carbon goal will take priority over "chasing points."
    - Consider other building certification programs for new construction such as LEED, Passive House, Living Building Challenge, etc. on a project-by-project basis.
    - Incorporate geothermal in new construction and renovations where feasible.
        - Explore using air-source heat pump water heaters where geothermal is not feasible.
    - Optimize energy performance in new construction by maximizing building envelope performance.
    - Retrofit existing buildings and residences with improved building envelopes, energy efficient systems, lighting, plumbing fixtures, and appliances when up for renewal.
    - Pursue opportunities for large-scale on-campus solar installations.
    - Ensure optimal indoor environmental quality.
    - Minimize waste generated from construction, renovation, and demolition of buildings. Require certification of waste mitigation for all construction projects.
    - Minimize the amount of new construction.
    - Where possible reduce buildings tied into the central heating plant.
    - Minimize the amount of Red List materials used in new construction and renovations.
    - Convert steam heat dorms to hydronic heating.

- Pursue building retro-commissioning to improve existing building operations and energy efficiency.
- Pursue rebates for energy efficient products and systems.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	01 General Requirements
Specification Section:	01 11 19 - Purchase Contracts
Description of Material or System:	CAD & BIM DELIVERABLES
Last Updated:	1/24/2024
Updated by:	Curtis Boivin

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

See attached for CAD & BIM Deliverables.

Links to additional product information:

SECTION 01 1119 – CAD & BIM DELIVERABLES

PART 1 - GENERAL

1.1 COMPUTER AIDED DESIGN (CAD) & BUILDING INFORMATION MODELING (BIM) DELIVERABLE STANDARD

A. These guidelines will ensure that work produced for the Owner will integrate into Academy digital asset management files.

B. At the start of the project, a CAD and BIM Deliverable coordination meeting will be held between PEA facilities management and those producing CAD files to review these guidelines and identify any specific concerns. **This includes determination of BIM versus 2D requirements, and equipment asset tagging and inventory.** The expected authorized use of the BIM model and software versions should also be discussed.

C. CAD files (building plans and base maps) are available for use with the following Owner Disclaimer: All CAD files provided by the Owner are the “Best Available” at the time of transfer and are for information only. Field verify data as necessary prior to the commencement of any work to ensure accuracy. The use of the transmitted plans are for use on the project that the plans were provided. Floor plan access is intended only for the use by the individual or entity to which it is provided. Any dissemination, distribution, or copying is strictly prohibited without prior written consent from Phillips Exeter Academy.

1.2 ELECTRONIC DELIVERABLES

A. 2D/3D CAD & BIM MODEL TRANSMISSION: When a large amount of files are to be submitted, an online file sharing platform shall be used.

B. PDF: Deliver all drawing sheets in Portable Document Format (.pdf). Combine multiple sheets into a single PDF file for each discipline. The PDF document size is to be the same as the full size drawing sheet size. PDFs should be produced from the native program of origin wherever possible.

C. EXCEL: A drawing index will be supplied in Microsoft Excel Format (.xls). The Excel document will contain separate columns with document attributes as follows: drawing title, revision date, sheet number and discipline. This document will contain all drawings in the “record” set.

D. MEDIA: Phillips Exeter Dropbox project folder can be used to upload and share files. Files may not be compressed using ZIP format.

1.3 DELIVERABLES FORMAT

A. Deliver conformed set of as-built drawing files in Portable Document Format (.pdf). File titles should conform to AIA Page Naming Standards.

B. 2D CAD DELIVERABLES FORMAT: Deliver conformed set of as built drawing files in Autodesk’s AutoCAD native drawing (.dwg) format. Per national BIM standards, PEA will accept drawings up to two versions older than the current release version of AutoCAD. File

names shall be Building Name, hyphen, discipline, hyphen, floor number, hyphen, other distinguishing information.

C. SUPPORT FILES: Deliver all CAD Support files necessary to recreate output that matches hard copy submittals. Support files include, but are not limited to, the following: External References (XRefs), Plot configurations (.ctb, .pc3), blocks, write blocks, images (logos), shapes (.shx) and fonts. Deliver files to the Owner free of any copyrighted or other material whose distribution is prohibited.

D. EXTERNAL REFERENCE FILES (XRefs): Each XRef file will have an insertion point of 0, 0, 0; Scale factor of 1; Rotation angle of 0; and reside on a separate layer within the dependent file. In addition, XRef files must be included with each submittal and be located in the same directory as the dependent file.

1.4 3D BIM/CAD DELIVERABLES

A. FORMAT: Deliver all drawing files in Autodesk Revit (native. rvt) drawing formats. PEA will accept drawings two versions older than the current release version of Autodesk Revit. This is in accordance with Autodesk's software retirement program. The version of Autodesk Revit, defined by the design team, used from the start of the project must remain a constant throughout the life of the project.

B. Fully coordinated architectural, structural, and MEP 3D models of existing conditions with Design Development deliverables (30% set).

C. Fully coordinated architectural, structural, civil and MEP 3D models in Revit at 100% CD by the Design Team.

D. Fully coordinated architectural, structural, and MEP 3D models showing any architectural or MEP changes that changed from CD bid drawings in Revit at project close-out by design team. Construction manager or contractor to provide 2D PDF of MEP layouts.

E. All equipment schedules must be generated from the parameter embedded in the Revit model objects and tied into Asset Management naming conventions.

F. SUPPORT FILES: Deliver all assets necessary to recreate output that matches hard copy submittals. Support files include, but are not limited to, the following: AutoCAD native drawing files (.dwg), Images (.jpg) and External Links. Deliver files to the Owner free of any copyrighted or other material whose distribution is prohibited.

G. LEVEL OF DEVELOPMENT (LOD): Final model deliverables are to be LOD 400 for Mechanical, Electrical, Plumbing and Fire Alarm plans, per AIA Document G202 (r2021). All other model deliverables are to be LOD 300, per AIA Document G202 (r2021).

1.5 GENERAL FILE STANDARDS

A. COMPONENTS: All models & component families must follow logical grouping and naming conventions.

B. MODEL VIEWS: Model views must be sorted by floor, prefixed with the corresponding floor level and description, as to display and sort in logical order.

C. SHEET VIEWS: All sheet views must be prefixed with the corresponding sheet number, logically ordered in a plot-ready state.

1.6 ROOM TAGS

A. Design team is mandated to work with Phillips Exeter Planning Department to assign room numbers. For projects where there are changes to existing room layouts, design team must consult with Planning Department for any reassignment of room numbers.

B. Submit floor plans (CAD, pdf or hard copy) for numbering no later than the end of design development so the appropriate PEA room numbers can be included on all design and construction documents.

1.7 EQUIPMENT TAGS

A. All equipment tags are to be correlated to most current Phillips Exeter Asset and Equipment Naming Standards:

1. Exhibit A Equipment Naming Format
2. Exhibit B Equipment Naming Guidelines

1.8 GENERAL DRAWING REQUIREMENTS

A. SHEET REQUIREMENTS: Drawing sets will have consistent sheet sizes Standard Sheet Size: Minimum Paper Size: ARCH D (ARCH 4) – 24”x36” Maximum Paper Size (preferred): ARCH E (ARCH 5) – 36”x48”

B. TITLE BLOCK: The title block will include, but not be limited to, the following information:

1. Title – Includes building name, building number, floor and room numbers as applicable
2. Owner’s project name
3. Sheet number
4. Drawing file name
5. Revision history – revision number and date
   Drawing Phase – BID, CONSTRUCTION, AS-BUILT, etc.
6. Architect, engineer, consultant, contractor, and/or sub-consultant

1.9 ACCEPTANCE OF ELECTRONIC DELIVERABLES

A. PEA will review electronic file deliverables for compliance with these guidelines prior to acceptance. Files that do not meet these guidelines will require resubmittal.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION 01 1119

Reference A – Equipment Naming Convention
December 2024

The PEA Facilities department has created a custom equipment naming convention to be used on all new (small and large) construction projects. This naming convention last revised on January 14, 2011, so it has been in use this this format for a long time. Design teams and contractors shall use this naming convention on all MEP, FP, and associated equipment documents, tags and systems including:

- Design drawings
- Design specifications
- Equipment submittals
- Field labels/tagging
- Coordination drawings
- As-built and record drawings (i.e., plans, elevations, sections, risers and schedules)
- Building Management Software system
- Fire Protection Software systems
- Other software and systems

Note: Non-Equipment assets (i.e., tamper switches, duct smoke detectors, exit signs) are not covered by these requirements.

A sample naming convention is provided below for the Heating Station.

XXX - AAA - BBBB – 000*

Facility Code	Floor/Level Code	Equipment Code	Component Number

116 - 01 - EXF - 003

Heating Plant	First Floor	Exhaust Fan	Number 3

116 - R - CT - 001

Heating Plant	Roof	Cooling Tower	Number 1

116 - 03 - FCU - 039

Heating Plant	Level 3	Fan Coil Unit	Number 39

*Note:
XXX and AAA – limited to between 2 and 3 characters
BBB – limited to between 2 and 4 characters

Reference B – Equipment Naming Guidelines

December 2024 -

THESE NAMING GUIDELINES HAVE BEEN IN PLACE SINCE 2012 – AND ARE PART OF OUR STANDARDS – ALL DESIGN TEAMS, CONSULTANTS, CM'S, CONTRACTORS AND SUBS SHOULD USE THESE GUIDELINES.

FLOOR/LEVEL CODES:

1 – 3 characters

Floor Code	Description
All	All Floors
01	Level 1
02	Level 2
03	Level 3
04	Level 4
05	Level 5
06	Level 6
07	Level 7
08	Level 8
B	Basement
G	Ground
PH	Penthouse
R	Roof

Code	Description
T	Underground Tunnel
V	Underground Vault

EQUIPMENT TYPE CODING:

***Notes**

Note 1: Code limited to 2 – 4 characters
Note 2: **NO Buildings** in the equipment descriptions
Note 3: **NO Floors** in the equipment descriptions
Note 4: **NO Trades** in the equipment descriptions (except for PM Codes not associated to Equipment)
Note 5: **NO specifying a room / area / department** in the description
Note 6: When typing Equipment Descriptions the first letter of each work should be capitalized

EQ CODE TYPE LIST

THE FOLLOWING LIST IS NOT MEANT TO BE ALL INCLUSIVE BUT TO BE USED AS AN EXAMPLE.
SUBMIT TO OWNER A LIST OF PROPOSED EQUIPMENT CODES FOR PROJECT.

EQ Code	Description
AC	Air Compressor
AC	Air Compressor, Med Gas
ACCU	Air Cooled Condensing Unit
AD	Air Dryer
AHU	Air Handler Unit
AM	Ammonia System
ATS	Automatic Transfer Switch
BAS	Building Automation System
BAT	Battery
BCU	Blower Coil Unit
BDS	Blow Down Separator
BFP	Backflow Preventer
BHRS	Blow Down Heat Recovery System
BOIL	Boiler
BPR	Fuel Oil Back Pressure Regulator
CFH	Chemical Fume Hood
CFP	Chemical Feed Pump
CGP	Chilled Glycol Pump
CH	Water Chiller
CHP	Chilled Water Pump
CM	Condensate Flow Meter
CP	Condensate Pump
CRS	Condensate Return System
CRT	Condensate Return Tank
CT	Cooling Tower
CUH	Cabinet Unit Heater
CV	Control Valve
CU	Condensing Unit
CWP	Condenser Water Pump
DA	Deaerator
DE	Ductless Evaporator
DHU	De-Humidifier Unit
DHWP	Domestic Hot Water Pump
DRN	Drain
DSP	Dry Sprinkler System
DTWP	Dual Temperature Water Pumps

DWB	Domestic Water Booster Pump
DWH	Domestic Water Heater
DWS	Distilled Water System
DX	Air Conditioning Unit
EJP	Ejector Pump
ELB	Electric Bed
ELEV	Elevator
ELP	Emergency Lighting Panel
ELS	Emergency Life Safety
ELSA	Emergency Life Safety Subpanel
EWS	Eye Wash Station
EXF	Exhaust Fan
EXJ	Pipe Expansion Joint
FACP	Fire Alarm Control Panel
FCU	Fan Coil Unit
FE	Flow Element
FH	Fume Hood
FM	Steam Flow Meter
FOP	Fuel Oil Pump
FP	Fire Pump
FT	Flash Tank
FXT	Fire Extinguisher System
GEN	Emergency Generator
GF	Gas Fired Furnace
GFP	Glycol Feed Pump
GP	Geothermal Pump
GPRV	Natural Gas Pressure Regulator
GV	Gravity Ventilator
HEPA	HEPA Portable Unit
HP	Heat Pump
HRP	Heat Recovery Pump
HUM	Humidifier
HV	Heating and Ventilating Unit
HWP	Hot Water Pump
HX	Heat Exchanger
ICD	Ice Dispenser
ICM	Ice Maker
JP	Jockey Pump
KXF	Exhaust Fan, Kitchen
MCC	Motor Control Center
MDP	Main Distribution Panel

MP	Mechanical Panel
MSB	Main Switchboard
MXF	Mixer Fan
NPWH	Non-Portable Water Heater
OX	Oxygen System
PB	Panel Board
PHN	pH Neutralization System
PP	Electrical Panel
PPD	Power Panel Distribution (Main 208V Panel)
PRV	Pressure Reducing Valve
PSB	Paint Spray Booth
PSV	Pressure Safety Valve
PUH	Propeller Unit Heater
RAF	Return Air Fan
RC	Remote Water Cooler
RH	Radiant Heater
RO	Reverse Osmosis System
RORP	Reverse Osmosis System
RWP	River Water Pump
SC	Sample Cooler
SEN	Sensor
SEP	Oil/Water Separator
SF	Supply Fan
SHP	Standby High Voltage Panel (480V)
SHW	Safety Shower
SLP	Standby Lighting Panel (480V)
SMP	Sump Pump
SP	Sprinkler System
SPF	Stair Pressurization Fan
SPP	Standby Low Voltage Panel (208V)
ST	Surge Tank
STR	Sterilizer
STT	Steam Trap
SUB	Substation
SWG	Switchgear
SXF	Exhaust Fan, Smoke
TG	Transfer Grill
TI	Temperature Indicator
TRAN	Transformer
TXF	Exhaust Fan, Toilet
UH	Unit Heater

UST	Underground Storage Tank
VFD	Variable Frequency Drive
VP	Vaccuum Pump
VP	Vaccuum Pump, Med Gas
WD	Water Dispenser
WF	Water Filter
WIF	Walk in Freezer
WIH	Walk in Heating Unit
WIR	Walk in Refrigerator
WM	Water Meter
WS	Water Softener

ELECTRICAL PANEL ADDITIONS:

EQ Code	Description
ELP	Emergency Lighting Panel
ELS	Emergency Life Safety
ELSA	Emergency Life Safety Subpanel
MCC	Motor Control Center
MDP	Main Distribution Panel
MP	Mechanical Panel
MSB	Main Switchboard
PP	Electrical Panel
PPD	Power Panel Distribution (Main 208V Panel)
SHP	Standby High Voltage Panel (480V)
SLP	Standby Lighting Panel (480V)
SPP	Standby Low Voltage Panel (208V)
SWG	Switchgear

1 - Building Number
2 - Floor location (based on floor level/codes above)
3 - Panel prefix as shown above (DP, PP, LP, etc)
4 - Panel sequence (number of panels in sequence; 1,2,3 etc)
2 – Voltage designation (4=480/277v and 2=208/120v)

Examples:

Facility	Floor	Pnl Prefix	Pnl Seq	Voltage
702	01	PP	1	2

Dwg/Field Tag:

702-01-PP-1-2

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	01 General Requirements
Specification Section:	01 58 13 - Construction Project Signage
Description of Material or System:	Exterior Signage during construction
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☑ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Construction Project Signage is required on projects over 1MM.

There is a .pdf template and .ppt are available through Phillips Exeter FM Planning Team.

Links to additional product information:

Scale to 8’ long x 4’ high

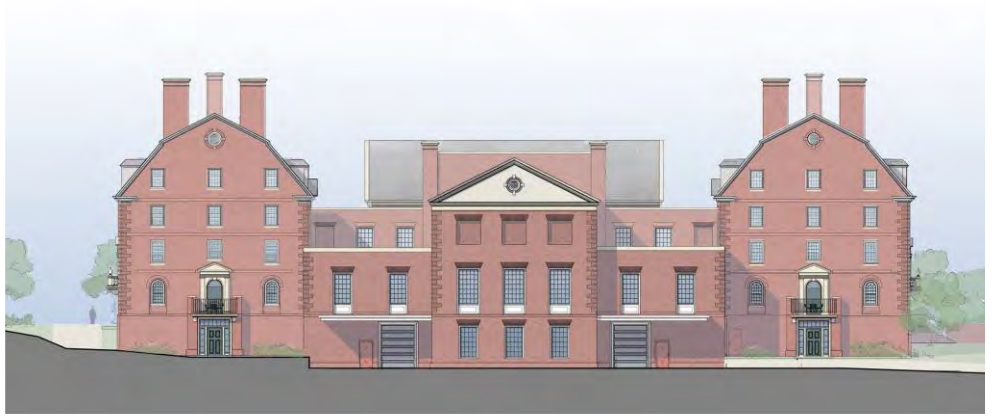
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New Dining Hall & Renovation of Merrill & Langdell Dormitories

Phillips Exeter Academy



West Elevation



East Elevation

Construction Manager	Architect & Interior Design	Structural Engineer/Façade Consultant/Sustainability	MEP/FP Engineer	Civil Engineer	Landscape Architect	Food Service
HARVEY	RAMSA ROBERT A.M. STERN ARCHITECTS	Thornton Tomasetti	RFS engineering	ALTUS ENGINEERING	kzla	ricca design STUDIOS

RFS Logo in file is newer and correct format

Waiting for correct format file from Altus

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	01 General Requirements
Specification Section:	01 77 00 - Closeout Procedures
Description of Material or System:	Closeout Procedures
Last Updated:	3/4/2024
Updated by:	Mark Leighton

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☑ Other
- ☐ Other

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other
- ☐ Other
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Attached is a guide to project closeout deliverables. It outlines quality standards, submittal formats, organization of data, and specific documents and training expected from the Contractor.

Links to additional product information:

SECTION 01 7700

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

A. This Section specifies administrative and procedural requirements during contract closeout, including, but not limited to:

1. Substantial Completion
2. Final Acceptance
3. Record document submittal
4. Operating and maintenance data
5. Warranties and bonds
6. Final cleaning

1.02 RELATED REQUIREMENTS

A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. Section 01 1000, SUMMARY, Owner occupancy
2. Section 01 7823 OPERATION AND MAINTENANCE DATA
3. Respective Sections of Specifications: Closeout Submittals for work of the Section.

B. Refer to the enclosed 2023 Phillips Exeter Academy's "Project Closeout Guidelines" for specific requirements as they relate to Project Closeout, Operations and Maintenance Data, Submittal Requirements, Equipment Labeling, etc.

1.03 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Submit Electronic of record Drawings as follows:

a. Initial Submittal:

1) Architect will review and indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:

1) Incorporate comments from Initial Submittal

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each approved submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit a duplicate PDF electronic file of marked-up Product Data as a component of the digital manual.

D. Miscellaneous Record Submittals: See all Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

E. Reports: Submit PDF electronic files of reports indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

1.04 SUBSTANTIAL COMPLETION

A. Prior to requesting inspection for certification of Substantial Completion, complete the following:

1. On Application for Payment, show 100% completion for portions of work claimed as substantially complete. Submit list of incomplete items, value of incomplete work, and reasons work is not complete.
2. Submission of occupancy permits in PDF electronic format.
3. Submission of warranties in PDF electronic format.
4. Submission of test/adjust/balance records in PDF electronic format.
5. Submission of maintenance instructions in PDF electronic format.
6. Submission of meter readings in PDF electronic format.
7. Final cleaning.
8. Application for reduction of retainage.
9. Notification of shifting insurance coverages.
10. Signed Certification that no Asbestos Containing Materials were installed on this Project.
11. Final progress photographs.

B. Within reasonable time, Architect will inspect to determine status of completion.

C. Should Architect determine Work is not substantially complete, he will promptly notify Contractor in writing, giving reasons therefor.

D. Contractor shall remedy deficiencies, and send a second written notice of Substantial Completion. Architect will reinspect the Work.

E. When Architect determines Work is Substantially Complete, he will prepare AIA Document G704, Certificate of Substantial Completion.

1.05 FINAL ACCEPTANCE

A. Prior to requesting final inspection for certification of Final Acceptance and final payment, complete the following:

1. Submission of final payment request with releases and supporting documentation.
2. Completion of incomplete Work.
3. Assurances that unsettled claims will be settled.
4. Submission of updated final statement, including accounting for final additional changes to the Contract Sum. Show additional Contract Sum, additions and deductions, previous Change Orders, Total Adjusted Contract Sum, previous payments, and Contract Sum due.
5. Submission of evidence of final, continuing insurance coverage complying with

insurance requirements.

6. Transmit final Project Record Documents as PDF or other appropriate formate electronic files to Owner.
7. Prove that taxes, fees, and similar obligations have been paid.
8. Remove temporary facilities and services.
9. Remove surplus materials, rubbish and similar elements.
10. Certify Work has been inspected for compliance with Contract Documents.
11. Certify Work has been completed in accordance with Contract Documents, and deficiencies listed with Certificate of Substantial Completion have been corrected.
12. Certify equipment and systems have been tested in presence of Owner's representative, and are operational.
13. Certify that all equipment traing of Owner’s representatives has been completed
14. Certify Work is complete and ready for final inspection.

B. Architect will inspect to verify status of completion with reasonable promptness.

C. Should Architect consider Work is incomplete or defective, he will promptly notify Contractor in writing, listing incomplete or defective work.

1. Contractor shall take immediate steps to remedy deficiencies and send a second written certification that Work is complete, and Architect will reinspect the work.

2. When Architect finds Work is acceptable, he will consider closeout submittals.

3. Reinspection Fees: Should Architect perform reinspections due to failure of Work to comply with claims made by the Contractor, Owner will compensate Architect for such additional services, and deduct the amount of such compensation from final payment to the Contractor.

D. Application for Final Payment: Submit Application for Final Payment in accordance with procedures and requirements of Section 01290, PAYMENT PROCEDURES.

1. Architect will issue final Change Order, reflecting approved adjustments to the Contract Sum not previously made by Change Orders.

1.06 RECORD DRAWINGS

A. Record Drawings: Maintain one set of marked-up Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Update record documents to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record documents.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record documents to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.

b. Revisions to details shown on Drawings.
c. Depths of foundations below first floor.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets in red. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, RFI's, Change Order numbers, and similar identification, where applicable.

B. CONTINGENT - Record Digital Data Files: (If this scope is included in the contract) \Immediately before inspection for Certificate of Substantial Completion, review marked-up record documents with Architect and Owner. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
3. Refer instances of uncertainty to Architect for resolution.
4. Architect will furnish Contractor digital data files of the Contract Drawings for use in recording information.

a. Architect will provide data file layer information. Record markups in separate layers.

C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Digital Data Files: Organize digital data information into both a single PDF of the entire record set and PDF files for each discipline (eg. A for Architectural, etc).Name each Include identification in each digital data file.
2. Identification: As follows:

a. Project name
b Designation " RECORD DRAWINGS."
d. Date
e. Discipline as applicable
f.. Intials of Construction Manager (submitting)
g. Name of Sub Contractor as applicable

1.07 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. Note related Change Orders, record Product Data, and record Drawings where applicable.

B. Format: Submit record Specifications as annotated PDF electronic file.

1.08 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as annotated PDF electronic file.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

1.09 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. File miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

1. Include only approved, miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.10 OPERATING AND MAINTENANCE DATA

A. General: Prepare and submit Operating and Maintenance Data as specified in Section 01 7823, OPERATION AND MAINTENANCE DATA.

1.11 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of products, equipment and systems.

B. Operating and maintenance manual shall constitute the basis of instruction.

1. Review contents of manual with personnel in full detail to explain all aspects of operation and maintenance.

1.12 WARRANTIES AND BONDS

A. General: Assemble warranties, bonds, and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item including, product or work item, firm name, address, and telephone number.

C. Information Required: Provide the date of beginning of warranty, bond, or service and maintenance contract, and duration of warranty, bond, or service and maintenance contract.

D. Information for Owner's Personnel: Provide information on the proper procedures in case of failure. Indicate instances which might affect the validity of warranty or bond. Indicate Contractor, name of responsible principal, address, and telephone number.

E. Form of Submittal: Submit record Warranties and bonds as PDF electronic files.

1. Include Warranties and bonds directory organized by CSI Division and Specification Section number and title.

F. Time of Submittals: For equipment or component parts of equipment put into service during progress of construction, submit documents within ten days after inspection and acceptance. Otherwise make submittals within ten days after Date of Substantial Completion, and prior to final request for payment.

1. For items of work where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.13 FINAL CLEANING

A. General: General cleaning during construction operations is specified as Work of Section 01 5000, TEMPORARY FACILITIES AND CONTROLS.

B. Employ experienced workers or professional cleaners for Final Cleaning. Clean each surface to the condition expected in a normal building cleaning and maintenance program. Comply with manufacturer's instructions and recommendations.

PART 2 PRODUCTS

2.01 CLEANING MATERIALS

A. General: Provide cleaning materials that will not create hazards to health nor property, and will not damage surfaces or finishes.

B. Use cleaning materials and methods recommended by manufacturer of surface to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.01 FINAL CLEANING

A. Employ skilled workers for final cleaning.

B. Clean and restore adjoining surfaces and other work soiled or damaged during installation; replace work damaged beyond successful restoration. Where performance of subsequent work could result in damage to complete unit or element, provide protective covering and other provisions to minimize potential for damage.

C. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

D. Complete the following cleaning operations prior to requesting inspection for Certification of Substantial Completion:

1. Remove labels that are not permanent.
2. Clean glass and mirrors.
3. Polish glossy surfaces to clear shine.
4. Clean interior and exterior finishes to a clean, dust-free condition. Remove stains, films, and similar foreign substances.
5. Leave concrete floors broom clean.
6. Vacuum carpet surfaces.
7. Vacuum and mop hard floor surfaces.
8. Clean plumbing fixtures to a sanitary condition.
9. Clean site areas of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; rake ground surfaces clean.

E. Heating, Ventilating, and Air Conditioning Systems: Clean permanent filters and replace disposable filters if units are operated during construction. Do not operate heating, ventilating and air conditioning systems without filters specified in Division 23, MECHANICAL.

F. Replace lamps in permanent light fixtures used during construction with lamps specified in Division 26, ELECTRICAL.

G. Before final completion and Owner-occupancy, inspect sight-exposed interior and exterior surfaces and work areas to verify that Work is clean.

PHILLIPS EXETER ACADEMY

PROJECT CLOSEOUT GUIDELINES
2024

OVERVIEW

The following is a guide to Phillip Exeter Academy's project closeout deliverables. It outlines the quality standards, submittal formats, organization of data, and specific documents and training expected from the Contractor.

The required documentation will include, at a minimum:

- Project Record Drawings (As built drawings)
- Record Specifications
- Operation and Maintenance Manuals
- Record Submittals
- Warranty Information
- Materials and Finishes Manual
- Preventative Maintenance Program Information

SUBMITTAL FORMAT REQUIREMENTS

ELECTRONIC FORMAT

A. Project Closeout material shall be provided as PDF electronic files, unless noted otherwise.
B. Electronic files shall be transferred via a SharePoint, Dropbox or a secured file transfer site approved by Owner.
C. Data shall be organized in digital folders using CSI Division and Section titles. File Names to include Section number (if applicable) and clear description of subject matter. e.g. "104400 Portable Fire Extinguisher". (*See Exhibit C - Electronic File Organization*)
D. Provide one single multi-page PDF of the Project Record drawings set. The record PDF set should have bookmarks for each discipline, and under each discipline there should be a book mark for each sheet. Example: Architectural: A-1, A-2, Electrical: E-1, E-2, etc.

LABELING

A. Clearly label all record documents with the **Owner's Project Name** and the phrase "Record Document".
B. Date progressive entries of information as appropriate.
C. Date Record Documents with the final submission date.

PROJECT RECORD DRAWINGS

A. The Construction Manager is responsible to maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and shop drawings for preparing the PDF electronic file of the record drawings.

B. Where shop drawings are used, record a cross-reference at the corresponding location on the Contract Documents.
C. Do not use Record Documents for construction purposes; protect from loss in a secure location. Mark-up the electronic drawings to show clearly and completely the actual installation reflecting all changes made in the Work during construction.
D. Mark whichever drawing is most capable of showing conditions accurately.
E. Record all variations and deviations to the Contract Documents, including changes made to schedules, details, and all architectural changes to structure, exterior enclosure, interior partitions, and ceilings.
F. Record new information that is important to the Owner, but was not shown on the Contract Drawings or shop drawings.
G. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
H. The fire protection, plumbing, mechanical and electrical trades shall be responsible to the Construction Manager to keep the record documents for their portions of the work marked currently to record all changes in the mechanical and electrical work made during construction.
I. Provide electronic copies of all record coordination drawings and shop drawings
J. Deliver all Project Record Documents, shop drawings, product data, and samples to the Architect for the Owner's use, upon completion of the Work and prior to request for Final Acceptance of the Work.
K. In addition at the completion of the work, the Construction Manager is responsible for the preparation and submittal of neat, clean well drafted, and complete PDF electronic record drawings, at no additional costs to the Owner. These reproducible Project Record Documents shall be transmitted to the Architect as a condition precedent to final payment, and include documents prepared by the fire protection, plumbing, mechanical and electrical trades.

RECORD SPECIFICATIONS

A. Submit an annotated PDF electronic file of Project's Specifications, including addenda and contract modifications.

OPERATIONS AND MAINTENANCE MANUALS

A. Provide PDF electronic files of the separate manuals for each of the following groups of equipment prior to request for Final Acceptance.:
   - Fire protection system
   - Utilities and plumbing systems.
   - Heating, ventilation and air conditioning system.
   - Electrical systems.
B. Each manual shall include:
   - Operation and maintenance instructions. Provide schematic diagrams of control systems, circuit directories for each electric panel and charts showing the tagging of all valves.
   - Air and water test and balancing reports.
   - Maintenance and cleaning instructions for finishes
   - Product and manufacturer's Certificates
   - Photocopies of all extended warranties and bonds.

C. For each item of equipment, include description of equipment, component parts and accessories. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts. Additionally provide the following for each item:
D. Panel board circuit directories: Provide electrical service characteristics, controls and communications.
E. Include color coded wiring diagrams as installed.
F. Operating procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down and emergency instructions. Include summer, winter, and any special operating instructions.
G. Maintenance requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and re-assembly instructions; alignment, adjusting, balancing, and checking instructions.
H. Maintenance drawings: Supplement product data to illustrate relation of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
I. Provide servicing and lubrication schedule, and list of lubricants required.
J. Include manufacturer's printed operation and maintenance instructions.
K. Include sequence of operation by controls manufacturer.
L. Provide control diagrams by controls manufacturer as installed.
M. Provide Construction Manager's coordination drawings, with color coded piping diagrams as installed.
N. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
O. Provide original manufacturer's parts (OEM) list, illustrations assembly drawings, and diagrams required for maintenance.
P. Provide list of original manufacturer's spare parts (OEM), current prices, and recommended quantities to be maintained in storage
Q. Include local source of supplies and replacement parts, and any other data pertinent for procurement procedures.
R. Additional requirements: As specified in individual specification Sections.
S. Standards:
    - Measurements: Provide all measurements in U.S. Standard units such as feet and inches, pounds, and cfm; provide additional measurements in the "International System of Units" (SI).
    - Abbreviations: Provide complete nomenclature of all parts of all equipment; include part numbers of all replaceable parts.

CLOSEOUT SUBMITTALS

A. Provide a Closeout Submittal Index/Log listing, at the minimum, the Submittal ID, Subject, Type (shop drawing, product data, sample, etc.) Status (Approved or Approved as Noted), Close Date and the single final filename.
B. Provide only "Approved or Approved as Noted" Submittals.
C. Each Submittal file should contain, at a minimum:
    - Transmittal sheet
    - Submittal number
    - Clearly defined Specification Section reference
    - Review stamps or seals by Architect, Consultants, and General Contractor
    - Dates of progressive entries of information as appropriate

- Final Approved Date
- Clearly labeled attachments of supporting data (e.g. Shop drawings, product data, material data, test reports, etc.)

D. Each Submittal is to be provided in PDF electronic format:
   - Each Submittal shall be one (1) PDF electronic file, whereas the transmittal, review documents and supporting attachments have been combined into one file.
   - Each electronic Submittal file is to be organized in digital folders labeled by CSI Division and Section titles.
   - File Names to include Section number and clear description of subject matter. e.g. "104400 Portable Fire Extinguisher" (*See Exhibit C - Electronic File Organization*)

WARRANTY INFORMATION

A. At project completion provide warranties on products and installations as separate PDF electronic files in a digital file folder named "Warranties".
B. In each electronic file, provide a clear description of the product or installation, the name of the product, the installer's name, address and telephone number, as well as the terms of the warranty or guarantee.

MANUAL FOR MATERIALS AND FINISHES

A. For Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re ordering custom manufactured products.
B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
D. Additional Requirements: As specified in individual Specification Sections.

PREVENTATIVE MAINTENANCE PROGRAM INFORMATION

A. Phillips Exeter Academy (PEA) shall utilize a Computerized Maintenance Management System (CMMS) to schedule, execute and track Preventive Maintenance (PM) for the new facility assets. Both asset technical information (manufacturer, model, and serial numbers) and maintenance information (procedures, intervals, lubricants and parts) are stored in the CMMS. Once the CMMS database is loaded with this information, maintenance work order documents can be automatically generated to notify PEA when PM work needs to be performed.
B. Technical and maintenance information sources include shop drawings and manufacturer O&M manuals. The goal is to have the CMMS program developed prior to project substantial completion.
C. Equipment Maintenance Information
D. Equipment Data and PM information is required to support the Owner's maintenance program as noted above. Sub-contractors providing equipment (i.e. HVAC/mechanical, electrical, plumbing, elevator) shall provide manufacturer's recommended maintenance requirements and other pertinent information to Owners representative **within 90 days of shop drawing approval** by the A/E.
E. Provide a comprehensive list of equipment for the project including, but not limited to mechanical, electrical and plumbing assets in an **electronic format** acceptable to PEA. A sample is provided at the end of this section. *(See Exhibit B – Equipment Naming*

Guidelines) Note that the final submittal is a Microsoft Excel template, which will be provided by PEA.

F. Location: Use building number provided by P.E.A.
G. Item Number: Use P.E.A. equipment naming convention provided at the end of this section. *(See Exhibits A – Equipment Naming Convention)*
H. Equipment Description: (ex., exhaust fan, chilled water pump, generator, water heater, switchboard)
I. Equipment Serial Numbers
J. Equipment Model Number
K. Notes: Provide any general notes.
L. Area Number: Use room number.
M. Area Description: Describe location in Room.
N. Date Placed in Service: Date accepted by owner.
O. Warranty Expiration Date: Expiration date of manufacturer's warranty.
P. Supplier Name: Local supplier.
Q. Manufacturer Name
R. Life Expectancy of Unit: Units of life expectancy (i.e. years, months)
S. Life Expectancy: Standard life expectancy of unit based on industry standards.
T. Submittals:
   - Preventive Maintenance Information Submittal:
   - Submit manufacturers recommended and other required maintenance information listed above to PEA's representative within 90 days of shop drawing approval. The final submittal shall be in an electronic format acceptable to PEA (e.g. Microsoft Excel or PDF electronic file). A standard Microsoft Excel template(s) will be provided by PEA.
   - Comply with O&M Manual requirements in accordance with Contract Specifications.
   - O&M Submittals to be
     a PDF electronic version of individual manufacturer maintenance manuals for equipment type provided. (See Closeout Submittals section)

INSTRUCTION OF OWNER'S PERSONNEL

A. Before final inspection, instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
D. Prepare and insert additional data in Operations and Maintenance manuals specified under Closeout Submittals section when need for additional data becomes apparent during instruction.

END OF SECTION

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	03 Concrete
Specification Section:	03 00 00 - Concrete
Description of Material or System:	Concrete
Last Updated:	12/18/2024
Updated by:	Curtis Boivin

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

See attached.

Links to additional product information:

Concrete mixtures are to be optimized to produce a carbon footprint and to meet the strength and durability specified by the structural engineer, on a project-by-project basis.

1. CONCRETE MATERIALS
    a. Confirm that the cementitious material and mix is meets the ACI standards (ACI 323-24) per the specified finish material that is going to be applied over the cement floor.
    b. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
        i. Portland Cement: ASTM C 150.
            1. Fly Ash: ASTM C 618, Class F or C.
            2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
    c. Normal-Weight Aggregates: ASTM C 33, graded.
    d. Lightweight Aggregate: ASTM C 330.
2. CONCRETE MIXTURES
    a. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
    b. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of Portland cement, which would otherwise be used, by not less than 40 percent.
3. STEEL REINFORCEMENT
    a. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of pre-consumer recycled content is not less than 60 percent.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	06 Wood, Plastics and Composites
Specification Section:	06 16 00 Sheathing - Exterior Residential Wall and Roof
Description of Material or System:	Wall and Roof Sheathing
Last Updated:	12/18/2024
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The PEA basis of design for exterior sheathing products is a zip system. R-Value should be determined on a project by project basis, with the overall carbon reduction goals of the Academy in mind.

The zip system is intended to provide a bailable wood base, used to resist shear, provides a built-in water resistive barrier and a continuous air barrier along with continuous exterior insulation.

The Academy's preferred product is AdvanTech Sheathing by Huber Engineered Woods.

Any alternate proposed products are subject to review and must meet all performance criteria.

Links to additional product information:

https://www.huberwood.com/advantech/sheathing

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	06 Wood, Plastics and Composites
Specification Section:	06 16 00 Sheathing - (underlayment for vinyl and similar flooring)
Description of Material or System:	Plywood Underlayment
Last Updated:	3/20/2024
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the PEA Design Guideline for underlayment for vinyl flooring (VCT, Marmoleum, LVT going OVER existing wood floors). Our preferred product is TRAXX Corp's Matrixx.

- Wood Species: 100% Premium Birch
- Face: Fully Sanded, no open knots or defects. Knots over 1/4" in diameter are plugged, no synthetic patches on face.
- Core: 100% solid. Ultrasonically tested for voids and delamination
- Back: No open knots or open defects larger than 3/4". Larger knots are plugged or filled with a synthetic patch and sanded.
- Glue: Exterior grade phenolic glue. E(1) exposure rating. Passes boil test.
- Dimensional Tolerances: Height variation 1/32" or (.75 mm)
- Squareness Variation: Adjoining sides are square within 1/32" or (.75 mm)
- Thickness will vary on application, but minimum 6 mm
- Manufacturer provides lifetime warranty

Alternate products may be approved if they meet performance criteria above.

Links to additional product information:

https://www.traxxcorp.com/products/matrixx-underlayment/

*Alternate acceptable products are to meet or exceed standard set forth herein. Manufacturer submittal is to be reviewed by PEA.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	06 Wood, Plastics, and Composites
Specification Section:	06 16 26 - Underlayment for Soundproofing flooring
Description of Material or System:	Soundproofing flooring underlayment
Last Updated:	3/20/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [x] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the preferred product for soundproofing underlayment for appropriate flooring products.
Review with FM Team during design.

Acoustical Solutions ISO-STEP.

Links to additional product information:

https://acousticalsolutions.com/product/iso-step-soundproofing-underlayment/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	06 Wood, Plastics and Composites
Specification Section:	06 41 93 Cabinet Hardware
Description of Material or System:	Cabinet Door Knobs and Pulls for Faculty Residences
Last Updated:	3/20/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is a guideline for quality and style of cabinet hardware for kitchens and bathrooms in faculty dormitory apartments and faculty residences:
A.General: Manufacturer's standard units complying with BHMA A156.9, of type, size, style, material, and finish as selected by Architect from manufacturer's full range.

B.Pulls: Surface-mounted decorative pulls, ladder style with flat ends. Finish: brushed stainless

C.Hinges: Concealed European-style, self-closing hinges

D. Drawer Guides: Epoxy-coated-metal, self-closing drawer guides; designed to prevent rebound when drawers are closed; with nylon-tired, ball-bearing rollers; and complying with BHMA A156.9, Type B05011 or Type B05091.

E. Door and Drawer Bumpers: Self-adhering, clear silicone rubber.
1. Doors: Provide one bumper at top and bottom of closing edge of each swinging door.
2. Drawers: Provide one bumper on back side of drawer front at each corner.

Links to additional product information:

https://www.amerock.com/

Manufactures include Amerock.com or standard hardware from approved casework manufacturers: Kraftmaid, Schrock, or approved equivalent.
Other Hardware styles may be required if matching existing that differs from this standard. This is only allowed on a case-by-case basis.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	06 Wood, Plastics, and Composites
Specification Section:	06 46 00 Wood Trim
Description of Material or System:	Wood Trim Standards Performance Criteria
Last Updated:	3/4/2024
Updated by:	Curtis Boivin

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☑ Other Performance Criteria
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following is Phillips Exeter Academy's wood trim performance criteria.

Performance requirements for interior running trim including door and window casings, baseboard, chair rail, crown moldings and similar across campus. Note profiles of trim shall be designed to be appropriate for within the context of a renovation or new construction project.
For Exterior Trim the Academy seeks durable materials with minimal maintenance installations where possible. For Exterior Wood Trim, follow these guidelines. Where possible consider composite trim. See 06 82 00 Composite Trim for requirements.

Links to additional product information:

1. WOOD TRIM, GENERAL
    a. Quality Standard: Unless otherwise indicated, comply with the 'Architectural Woodwork Standards" for grades of wood trim indicated for construction, finishes, installation, and other requirements.
2. INTERIOR STANDING AND RUNNING TRIM FOR TRANSPARENT FINISH
    a. Grade: Premium
    b. Certified Wood: Interior trim for transparent finish shall be certified as "FSC Pure' or 'FSC Mixed Credit according to FSC STD-01 -001, "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification."
    c. Wood Species and Cut: Per project basis, quarter sliced, book matched, vertical grain direction, select (no sapwood).
3. INTERIOR STANDING AND RUNNING TRIM FOR OPAQUE FINISH
    a. Grade: Custom or Premium
    b. Certified Wood: Interior trim for opaque finish: shall be certified as "FSC Pure" or "FSC Mixed Credit". According to FSC STD-01-OO1; "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification."
    c. Wood Species: Any closed-grain hardwood.
4. WOOD MATERIALS
    a. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of wood trim and quality grade specified unless otherwise indicated.
    b. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of wood trim and quality grade specified unless otherwise indicated.
    c. All wood products should be from North America. For flooring products sourced from Pennsylvania North.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	06 Wood, Plastics and Composites
Specification Section:	06 82 00 - Composite Trim
Description of Material or System:	Composite trim
Last Updated:	3/20224
Updated by:	Katie Gregory

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

For Exterior trim, where possible consider composite trim.
Preferred product is Azek or approved equal.

Links to additional product information:

https://azekco.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 31 13 - Asphalt Shingles
Description of Material or System:	Asphalt Roof Shingles
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☑ Other As appropriate
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☑ Support
- ☐ Utility

Overview of system/product/guideline:

The only acceptable products for asphalt shingles are:

Manufacturer: Certainteed
Model: Landmark TL
Color: Moire Black

OR

Manufacturer: Certainteed
Model: Landmark Pro
Color: Charcoal Black

30 Year Warranty.
Algae resistant.

Links to additional product information:

https://www.certainteed.com/residential-roofing/products/landmark-pro/

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 31 26 Slate Shingles
Description of Material or System:	Slate Shingles
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☑ Other Preferred vendor
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Roof slate shall be North Country Black from Glendyne Quarry in Quebec.

Where it is appropriate to use slate this is our preferred vendor.

Links to additional product information:

https://www.glendyne.com/en/roofing-slate/

North Country Slate
8800 Sheppart Avenue East
Scarborough, Ontario (Canada) M1B 5R4
(800) 975-2835 telephone
(416) 281-8842 fax
info@ncslate.com
www.ncslate.com

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 31 33 - Polymeric Slate Tile Roof System
Description of Material or System:	Polymeric Slate Roof Tile
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturers for Polymeric slate roof tiles, in order of preference, is:

1. Eco Star - Majestic Slate, color midnight grey or as appropriate.
1A. - Eco Star - Empire Slate where class A fire rating is required. Color midnight grey or as determined by project team.

2. Weslake - (formerly) Boral Inspire

See attached for specifications.

Eco Star Gold Warranty required.
This includes 50 year material warranty and an extended warranty of 10 years for labor.

Links to additional product information:

https://ecostarllc.com/
https://westlakeroyalroofing.com/

Eco Start Rep: Mike McCans
'mikemccans@leetsalesreps.com'

Majestic Slate

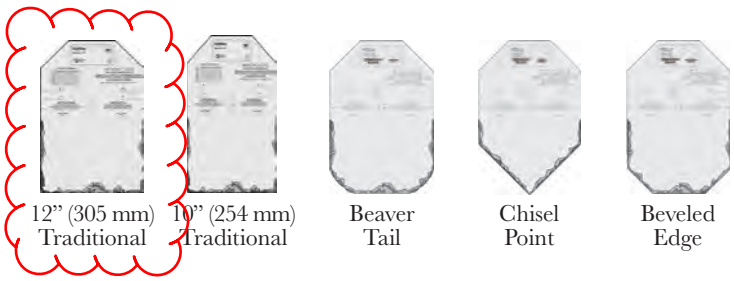
Polymeric Slate Tile Roof System

PRODUCT TECHNICAL DATA

DESCRIPTION

Majestic Slate is a rubber and plastic based Class C roof tile designed to provide the look of natural stone slate. Majestic Slate is manufactured with a state of the art formulation using recycled polyolefin polymers.

Majestic Slate comes in 10" (254 mm) and 12" (305 mm) widths. They are 18" (457 mm) long, ¼" (6 mm) nominal thickness, and are available in eleven (11) colors and five (5) designs.



12" (305 mm) Traditional | 10" (254 mm) Traditional | Beaver Tail | Chisel Point | Beveled Edge

ADVANTAGES

Majestic Slate provides the look of natural slate with these added advantages:

- High impact resistance that provides protection from hail, falling branches, foot traffic, ice and snow damage.
- The color in Majestic Slate has been added during formulation providing for color throughout the product. As with all roofing products, natural weathering will occur.
- EcoStar provides warranties for Majestic Slate for up to 50 years.

INSTALLATION

Temperature – If tiles have been stored in temperatures below 45˚F (7˚C), they must be restored to a temperature above 45˚F (7˚C) before installation. Ambient temperature should be at least 34˚F (1˚C) and rising.

Substrate – Majestic Slate should only be installed on a minimum of ½" (13 mm) plywood, minimum 7/16" (11 mm) OSB or minimum ¾" (19 mm) tongue and groove wood decking. Majestic Slate should not be applied over existing roof materials. Existing roof materials must be removed down to the deck, prior to installation.

Slope – Majestic Slate is not recommended for slopes less than 3/12 (14˚). On roofs less than 6/12 (27˚), Majestic Slate must be installed with a maximum exposure of 6" (152 mm). On slopes of 6/12 (27˚) or greater, Majestic Slate can be installed with a 6" (152 mm), 6½" (165 mm) or 7" (178 mm) exposure. Chisel Point tiles may only be installed with a 6" (152 mm) exposure.

Underlayment – Prior to installation, **Glacier Guard™** underlayment should be applied to all rakes, valleys, ridges, hips, eaves and any protrusions. **Aqua Guard™** is then applied over the remaining deck surface.

Fasteners – Fasteners must be ring shank stainless steel. **EcoStar Fasteners** are available in either hand drive style or pneumatic coil.

Color Variation – All Majestic Slate tiles come with shade variation. EcoStar tiles that have been ordered and supplied to the job site under one EcoStar sales order number are blended at the factory and do not need to be blended onsite before installation. It is always the responsibility of the applicator to make frequent inspections from the ground or other vantage point to ensure that random shading occurs. EcoStar will not be held responsible for correcting the appearance of non-random installations. Roofers must inspect the roof frequently to prevent customer dissatisfaction.

NOTE: If EcoStar tiles have been supplied to the job site under two or more EcoStar sales order numbers, all tiles must be blended together on-site before installation. Specific blending instructions can be found at www.ecostarllc.com on the "Resource Library" page. EcoStar will not be held responsible for correcting the appearance of unblended installations.

Natural weathering will produce further shade variations, even in tiles appearing to be identical in color when new.

Ventilation – The use of ridge venting systems is highly recommended. Mushroom cap style vents may be used, but ridge venting provides better venting and improves the aesthetic appearance of the roof system.

Please refer to the Majestic Slate Installation Guide for specifics of installation.

PRODUCT SPECIFICATIONS

	10" Tiles	12" Tiles
PRODUCT CHARACTERISTICS		
Length	18" (457 mm)	
Width	10" (254 mm)	12" (305 mm)
Nominal Thickness	¼" (6 mm)	
PACKAGING INFORMATION		
Tiles per bundle	25	
Weight per bundle	35 lbs. (15.88 kg)	40 lbs. (18.14 kg)
Bundles per pallet	56	
Weight per pallet	1,960 lbs. (889 kg)	2,240 lbs. (1,016 kg)
Linear feet per bundle	20.75 ft. (6.32 m)	25 ft. (7.62 m)
FORMULATION		
Materials	Thermoplastic Olefin	
PHYSICAL PROPERTIES		
Operating Range	-25˚F to 200˚F (-32˚C to 93˚C)	
Tensile (D-412)	1,500 psi (10,342 kpa)	
Water Absorption (D-570)	0% by wt.	
APPLICABLE STANDARDS		
UL Listed 790 Fire Resistance	Class C	
UL 2218 Impact	Class 4	

WARRANTIES

EcoStar warrants this product to be free of defects in workmanship and materials at the time of shipment from EcoStar's factory. See www.ecostarllc.com for available warranties.

EcoStar LLC | 42 Edgewood Drive | Holland, NY 14080 | Tel: 800.211.7170 | www.ecostarllc.com

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P/N–602701 Majestic Slate Product Data Sheet. This data sheet, effective 09/06/2022 supersedes all previous versions.

Empire Slate

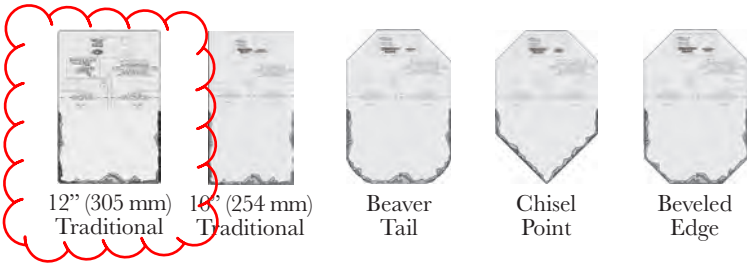
Polymeric Slate Tile Roof System

PRODUCT TECHNICAL DATA

DESCRIPTION

Empire Slate is a polymer based Class A and C roof tile designed to provide the look of natural stone slate. Empire Slate is manufactured with a state of the art formulation using virgin and recycled polyolefin polymers.

Empire Slate comes in 10" (254 mm) and 12" (305 mm) widths. They are 18" (457 mm) long, ¼" (6 mm) nominal thickness, and are available in fourteen (14) colors and five (5) designs.



12" (305 mm) Traditional | 10" (254 mm) Traditional | Beaver Tail | Chisel Point | Beveled Edge

ADVANTAGES

Empire Slate provides the look of natural slate with these added advantages:

- High impact resistance that provides protection from hail, falling branches, foot traffic, ice and snow damage.
- The color in Empire Slate has been added during formulation providing for color throughout the product. As with all roofing products, natural weathering will occur.
- EcoStar provides warranties for Empire Slate for up to 50 years.

INSTALLATION

Temperature – If tiles have been stored in temperatures below 45˚F (7˚C), they must be restored to a temperature above 45˚F (7˚C) before installation. Ambient temperature should be at least 34˚F (1˚C) and rising.

Substrate – Empire Slate should only be installed on a minimum of ½" (13 mm) plywood, minimum 7/16" (11 mm) OSB or minimum ¾" (19 mm) tongue and groove wood decking. Empire Slate should not be applied over existing roof materials. Existing roof materials must be removed down to the deck, prior to installation.

Slope – Empire Slate is not recommended for slopes less than 3/12 (14˚). On roofs less than 4/12 (18˚) and greater than 3/12 (14˚), Empire Slate must be installed with a maximum exposure of 6" (152 mm). On roofs 4/12 (18˚) or greater, Empire Slate tiles may be installed with either a 6" (152 mm) or 7" (178 mm) exposure. On slopes of 6/12 (27˚) or greater, Empire Slate (Traditional tiles only) can be installed at an 8" (203 mm) exposure. Chisel Point tiles may only be installed with a 6" (152 mm) exposure.

Underlayment – Prior to installation, **Glacier Guard™** underlayment should be applied to all rakes, valleys, ridges, hips, eaves and any protrusions. **Aqua Guard™** is then applied over the remaining deck surface. For Class A fire rated assembly, **GAF VersaShield**, or EcoStar-approved alternate, should be used instead of **Aqua Guard™** and should cover the entire roof deck, including the areas covered by **Glacier Guard™**.

Fasteners – Fasteners must be ring shank stainless steel. **EcoStar Fasteners** are available in either hand drive style or pneumatic coil.

Color Variation – All Empire Slate tiles come with shade variation. EcoStar tiles that have been ordered and supplied to the job site under one EcoStar sales order number are blended at the factory and do not need to be blended onsite before installation. It is always the responsibility of the applicator to make frequent inspections from the ground or other vantage point to ensure that random shading occurs. EcoStar will not be held responsible for correcting the appearance of non-random installations. Roofers must inspect the roof frequently to prevent customer dissatisfaction.

NOTE: If EcoStar tiles have been supplied to the job site under two or more EcoStar sales order numbers, all tiles must be blended together on-site before installation. Specific blending instructions can be found at www.ecostarllc.com on the "Resource Library" page. EcoStar will not be held responsible for correcting the appearance of unblended installations.

Natural weathering will produce further shade variations, even in tiles appearing to be identical in color when new.

Ventilation – The use of ridge venting systems is highly recommended. Mushroom cap style vents may be used, but ridge venting provides better venting and improves the aesthetic appearance of the roof system.

Please refer to the Empire Slate Installation Guide for specifics of installation.

PRODUCT SPECIFICATIONS

	10" Tiles	12" Tiles
PRODUCT CHARACTERISTICS		
Length	18" (457 mm)	
Width	10" (254 mm)	12" (305 mm)
Nominal Thickness	¼" (6 mm)	
PACKAGING INFORMATION		
Tiles per bundle	20	
Weight per bundle	33 lbs. (15 kg)	41 lbs. (18.6 kg)
Bundles per pallet	80	70
Weight per pallet	2,640 lbs. (1,197 kg)	2,870 lbs. (1,302 kg)
Linear feet per bundle	16.67 ft. (5.08 m)	20 ft. (6.1 m)
FORMULATION		
Materials	Thermoplastic Olefin	
PHYSICAL PROPERTIES		
Operating Range	-25˚F to 200˚F (-32˚C to 93˚C)	
Tensile (D-412)	1,500 psi (10,342 kpa)	
Water Absorption (D-570)	0% by wt.	
APPLICABLE STANDARDS		
UL Listed 790 Fire Resistance	Class A and C	
UL 2218 Impact	Class 4	
Texas Dept. of Insurance	Listed	
Miami-Dade	Listed	

WARRANTIES

EcoStar warrants this product to be free of defects in workmanship and materials at the time of shipment from EcoStar's factory. See www.ecostarllc.com for available warranties.

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05/22 © Copyright 2022 EcoStar LLC. EcoStar, Empire Slate, Aqua Guard, and Glacier Guard are trademarks of EcoStar LLC. VersaShield is a registered trademark of GAF.

P/N–606001 Empire Slate Product Data Sheet. This data sheet, effective 05/25/2022 supersedes all previous versions.

EcoStar Fasteners™

Stainless Steel Ring Shank Fasteners

PRODUCT TECHNICAL DATA

DESCRIPTION

EcoStar Fasteners are composed of stainless steel and offered in coil ring shank and hand drive ring shank. The standard length size is 1-1/2", though they are also available in other lengths upon request.



INSTALLATION

It is recommended that EcoStar Fasteners be installed by professional roofing applicators to insure quality nail installation.

ADVANTAGES

Stainless steel nails provide many performance advantages in comparison to nails composed of other materials. Corrosion resistance is superior, staining and streaking are minimal, and stainless steel nails are quite strong, with the tensile strength of wire used ranging from 125,000 to 145, 000 lbs. per square inch. Ultimate lateral loads for stainless steel nails are about 20% higher than plain steel fasteners.

LIMITATIONS

Ring shank nail usage is required on any project where an EcoStar warranty is requested.

WARRANTIES

EcoStar warrants this product to be free of defects in workmanship and materials at the time of shipment from EcoStar's factory. EcoStar will at its option either supply new product or refund the purchase price of any product found to be defective hereunder.

PRODUCT SPECIFICATIONS

FORMULATION		
Material	Stainless Steel	
PRODUCT CHARACTERISTIC	Units	Results
Ring Shank Hand Nails:		
Shank Diameter	inches	.135
Head diameter	inches	.375
Length Tolerance	inches	± 1/16
Ring Shank Coil Nails:		
Shank Diameter	inches	.120
Head diameter	inches	.375
Length Tolerance	inches	± 1/16
PACKAGING INFORMATION		
1.5" Ring Shank Hand Nails:		
Length	inches	1.5
Qty/Box	nails	3700
Qty/Pallet	boxes	48
1.75" Ring Shank Hand Nails:		
Length	inches	1.75
Qty/Box	nails	3200
Qty/Pallet	boxes	48
2" & 2.5" Ring Shank Hand Nails:		
Length	inches	2 or 2.5
Qty/Box	nails	500
Qty/Pallet	boxes	48
1.5" & 1.75" Ring Shank Coil Nails:		
Length	inches	1.5 or 1.75
Qty/Box	nails	7200
Qty/Pallet	boxes	40

EcoStar's limited warranties are the only warranties extended by EcoStar with respect to its materials. There are no other warranties, including the implied warranties of merchantability and fitness for a particular purpose. EcoStar specifically disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever.

The dollar value of EcoStar's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the EcoStar material in question.

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P/N–602714 ECO-FASTENERS PTD. This data sheet, effective 04/09/2018, supersedes all previous versions.

MAJESTIC SLATE™

Polymeric Slate Tile Roof System

INSTALLATION GUIDE

This installation guide is written and provided for the use of professional roofing applicators and EcoStar™ Gold Star Authorized Applicators. Contact the technical department for information on warranty availability and the requirements and benefits of the Gold Star program.

SPECIAL NOTE: Majestic Slate™ is manufactured in two different formulas. One formula has been tested and listed by Underwriters Laboratories as a Class C roofing material and the other formula has been tested and listed as a Class A roofing material (UL 790).
NOTE: Majestic Slate Class A is a Special Order Item. Contact EcoStar Customer Service for pricing and availability. Please make sure of the type of material being installed since the method of installation is critical for the listing. Majestic Slate has been tested and listed by Underwriters Laboratories as a Class 4 impact resistance product (UL 2218). To maintain the requirements of these tests and their listings the roof system must be installed exactly as stated in this installation guide.

WARRANTIES*
EcoStar warrants this product to be free of manufactured defects at the time of shipment from EcoStar's factory. EcoStar will at its option either supply new product or pay the reasonable cost of replacement products found to be defective hereunder.

EcoStar's limited warranties are the only warranties extended by EcoStar with respect to its materials. There are no other warranties, including the implied warranties of merchantability and fitness for a particular purpose. EcoStar specifically disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever.

The dollar value of EcoStar's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the EcoStar material in question.

SHADE VARIATION
All Majestic Slate tiles come with shade variation. EcoStar tiles that have been ordered and supplied to the job site under one **EcoStar sales order number are blended at the factory and do not need to be blended onsite before installation. It is always the responsibility of the applicator to make frequent inspections from the ground or other vantage point to ensure that random shading occurs.** EcoStar will not be held responsible for correcting the appearance of non-random installations. Roofers must inspect the roof frequently to prevent customer dissatisfaction.

NOTE: If EcoStar tiles have been supplied to the job site under two or more EcoStar sales order numbers, all tiles must be blended together on-site before installation. Specific blending instructions can be found at www.ecostarllc.com on the "Resource Library" page. EcoStar will not be held responsible for correcting the appearance of unblended installations.

Natural weathering will produce further shade variations, even in tiles appearing to be identical in color when new.

TEMPERATURE
Like all roofing materials, EcoStar tiles are subject to thermal contraction and expansion. To ensure that they are installed at their normal dimensions, materials should be installed at temps of 45˚F (7˚C) or greater. EcoStar considers any installation when ambient temperatures are below 45˚F (7˚C) to be a "low temperature installation". If tiles have been stored in temperatures below 45˚F (7˚C), they must be restored to a temperature above 45˚F (7˚C) before installation. Ambient temperature should be at least 34˚F (1˚C) and rising. For assistance with low temperature installations, please contact the technical department.

SUBSTRATE
The tiles should only be installed on a minimum of 15/32" (12 mm) plywood decking, 7/16" (11 mm) OSB or minimum ¾" (19 mm) tongue and groove decking with end gaps not exceeding ¼" (6 mm). Contact the technical department for approved alternatives. Under all circumstances, existing roof materials must be removed down to the deck, prior to installation.

SLOPE
The tiles are not recommended for slopes less than 3/12 (14˚). If this is desired, contact the technical department for review. On roof slopes less than 6/12 (27˚), the tiles must be installed with a maximum 6" (152 mm) exposure. On roof slopes of 6/12 (27˚) or greater, the tiles may be installed with a 6" (152 mm), 6½" (165 mm) or 7" (178 mm) exposure. Chisel Point tiles may only be installed with a 6" (152 mm) exposure.

UNDERLAYMENT
Glacier Guard™ or equal must be applied to all eaves, rake edges, hips, valleys, ridges and protrusions. If a Class C roof system has been specified, cover the remaining exposed deck with **Aqua Guard™** or equal. If a Class A roof has been specified, **GP Gypsum Corporation DensDeck®** roof board may be used, or **GAF VersaShield®** underlayment. If **VersaShield** is used, it must be applied over the entire roof deck, after the installation of the **Glacier Guard**. **Gold Star Warranty*** requires the use of the above mentioned EcoStar specified products.

FASTENERS
Stainless steel ring shank roofing nails are recommended for application of the tiles. **Gold Star Warranty*** application requires the use of **EcoStar Ring Shank Fasteners**. Hand drive and pneumatic coil nails are available.

FLASHING MATERIAL
EcoStar recommends that flashing be either copper or stainless steel. Flashing metal, however, is not covered by any EcoStar warranty. Like materials should be used when fastening metal flashings.

SEALANTS
If local codes require the use of a shingle sealant, the only material approved for use with EcoStar tiles is Dow Corning 790 silicone sealant.

* See www.ecostarllc.com for available warranties.

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Majestic Slate Installation Guide

PLEASE REMEMBER TO BEND TILES

INSTALLATION STEPS

Majestic Slate tiles are designed and manufactured to duplicate the look of natural slate.

1. Install **Glacier Guard** in all valleys, eaves, rake edges, hips, ridges and protrusions. **Gold Star Warranty*** application requires the use of **Glacier Guard**.

2. Install a minimum of 30 lb (13.6 kg) (ASTM D226 Type II or ASTM D4869 Type IV) felt over the remaining area of the deck surface. If a Class C roof is required, the 30 lb (13.6 kg) felt or equal must be UL listed. **Gold Star Warranty*** application requires the use of **EcoStar Aqua Guard** underlayment for a Class C roof system. If a Class A roof is required, install **GAF VersaShield®** or equivalent over the entire deck including areas already covered by the **Glacier Guard**. **Gold Star Warranty*** application requires the use of **GAF VersaShield** for a Class A roof system.

3. Install metal edging at eaves and rake edges. Any corrosion resistant metal edging is acceptable. Copper and stainless steel are recommended. It should be noted that EcoStar Warranties do NOT cover metal flashing.

Note: When using copper and stainless steel flashing material the appropriate corresponding nails should be used.

4. A critical step is **BENDING**. Every tile that is installed must be bent in a downward arch before applying it to the roof deck. Whatever position the tile is in when fastened to the roof deck, is the position it will maintain. It is recommended that each member of the installation crew be instructed on how to bend the tile to insure that it lies flat when fastened to the roof deck. While grabbing the top of the tile (textured side up) with the right hand and the bottom edge of the tile with the left hand, bend the tile in a downward motion until the tile maintains arch. The tiles must be curved under when installing.

5. Beginning at the eave edge, install a starter row of tiles with two nails per tile (in location shown on tiles). 1½" (38 mm) long stainless steel ring shank roofing nails are recommended. **Gold Star Warranty*** application requires the use of **EcoStar Ring Shank Fasteners**. Maintain a minimum ⅜" (10 mm) gap between starter tiles.

6. When using pneumatic nailing equipment, frequently check both the depth and pressure setting, so nails are not over driven, causing tiles to lift. Lifted tiles will diminish the aesthetic appearance of the finished roof system. The nail should not dent the tile.

7. The initial layer of tiles becomes the starter row. This layer will be completely covered by the next row to be installed. The starter row may be installed either front side up or back side up. When the first course of tile is installed, tiles must be offset half a tile to cover the nails from the previous row. A minimum of ⅜" (10 mm) is required between tiles and between tiles and protrusions.

8. **CAUTION:** Do not install the tiles with an upward curl. Whatever position the tile is in when fastened to the roof deck, it will maintain that position. It is required that each member of the installation crew be instructed on how to bend the tile manually to insure that it lies flat when fastened to the roof deck.

9. As the tiles are installed up the roof, the tile must be cut at rake edges, valleys and projections. The tiles may be cut using a straight edge and a utility or roofing knife. Once the tile has been scored with a knife it can be snapped along the scored line.

10. As the tiles are installed up the roof slope, it is recommended that lines be snapped both horizontally and vertically. The horizontal lines will keep the tiles looking straight and uniform. The vertical lines will keep the space between the tiles in line from row to row. **DO NOT USE RED CHALK. Red chalk will stain the tiles.**

11. **CAUTION:** As the tiles are installed up the slope of the roof, the installation should be constantly checked from the ground to ensure there is no patterning developing and proper blending is occurring. The warranty does NOT cover the aesthetic appearance of the Majestic Slate roof installation. It is the responsibility of the applicator to ensure that color/shading and quality of workmanship meets the aesthetic expectations of the home/building owner.

12. Continue to install the tiles up the roof slope. Be sure to place the nails directly in the position noted on the tiles. Stainless steel ring shank nails are recommended.

For 10" (254 mm) Majestic Slate tiles, there are two ways to install: 1) the entire project is 10" (254 mm) tile and the installation is the same as the current 12" (305 mm) specification or 2) for a 10" (254 mm) and 12" (305 mm) blend, mix the two sizes together for desired random width look. Take caution when installing to ensure enough coverage past nail heads of previous course.

Tiles can be slippery when wet, caution should be exhibited with early morning dew, frost and after rain. EcoStar suggests the use of toe boards, OSHA approved harnesses and safety equipment at all times.

13. When all tiles have been applied to the roof slopes, the pre-formed Majestic Slate Hip & Ridge tiles are applied to all hips and ridges. **Majestic Slate Hip & Ridge tiles are always installed with a 6" (152 mm) exposure** with two 2" (51 mm) or 2½" (64 mm) nails per tile. The use of ridge venting systems is highly recommended. Mushroom cap style vents may be used, but ridge venting provides better venting and improves the aesthetic appearance of the roof system. Ridge venting must be installed before installing the Majestic Slate Hip & Ridge. When installing over ridge vent, Hip & Ridge tiles are installed with 2½" (64 mm) nails.

14. As work progresses up roof slopes care should be taken to minimize traffic over completed areas of the roof. The tiles will show any mud or dirt tracked across them. This will cause aesthetic issues with the completed appearance of the roof. It is the responsibility of applicator or building owner to remove this mud or dirt. A mild detergent should be used in combination with a bucket of water to remove the mud or dirt. Clean water can then be used to finish the cleaning process. Do not use any chemicals or solvents without first checking with the EcoStar technical department. **EcoStar is not responsible for the cleaning of any tiles.**

* See www.ecostarllc.com for available warranties.

PLEASE REMEMBER TO BEND TILES

Majestic Slate Installation Guide

PRODUCT IDENTIFICATION
This area provides identification of the product and a toll free contact telephone number for questions or assistance with the product and installation.

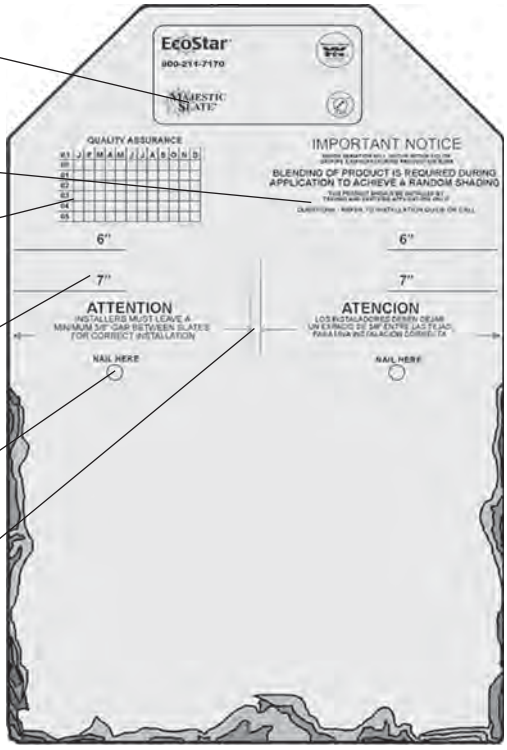
IMPORTANT INFORMATION
This area of the tile provides pertinent information about installation and the need to use a trained applicator to install the product.

QUALITY INFORMATION
This area of the tile is used by the production department to denote the date the part was manufactured. This allows tracking of quality by production time. This information may be found on the front or back of the tile.

INSTALLATION MEASUREMENT
Two marks are molded into every tile. When these marks are placed in alignment with the top edge of the previous row of tiles, proper tile exposure is provided automatically.

TILE FASTENING
Molded into each tile is a fastener locator. This assists during installation for proper positioning of the fastener.

GAP
During installation the tiles must be placed a minimum of ⅜" (10 mm) apart. Tiles must never be installed directly adjacent to each other. This area of the tile states this in both English and Spanish.



Majestic Slate 12" (305 mm)Traditional
12" wide x 18" long
(305 mm x 457 mm)

Designer Slate



Majestic Slate
10" (254 mm) Traditional
10" x 18" long
(254 mm x 457 mm)



Majestic Slate
Chisel Point
12" wide x 18" long
(305 mm x 457 mm)
6" (152 mm) exposure only



Majestic Slate
Beveled Edge
12" wide x 18" long
(305 mm x 457 mm)



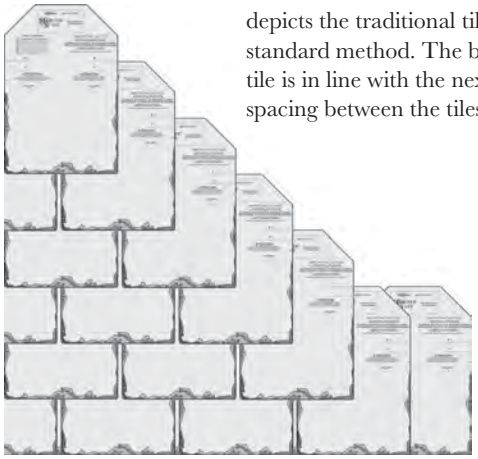
Majestic Slate
Beaver Tail
12" wide x 18" long
(305 mm x 457 mm)

Majestic Slate Installation Guide

PLEASE REMEMBER TO BEND TILES

Majestic Slate Traditional Design

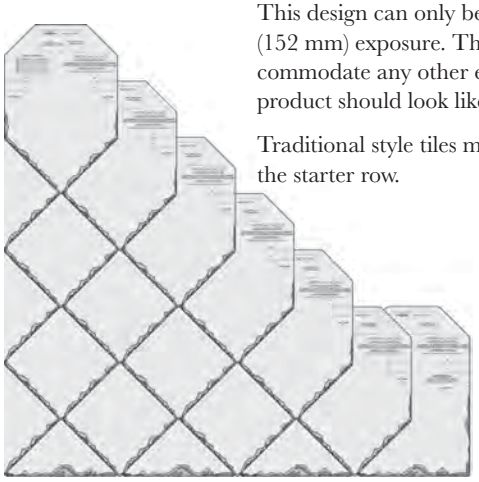
Standard Installation: This drawing depicts the traditional tile installed in the standard method. The bottom edge of each tile is in line with the next and the vertical spacing between the tiles is in line.



Majestic Slate Chisel Point Design

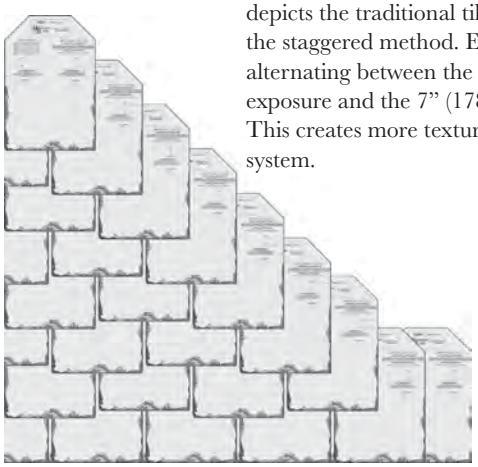
This design can only be put down using a 6" (152 mm) exposure. The design will not accommodate any other exposure. The installed product should look like this drawing.

Traditional style tiles must be used as the starter row.



Majestic Traditional Design

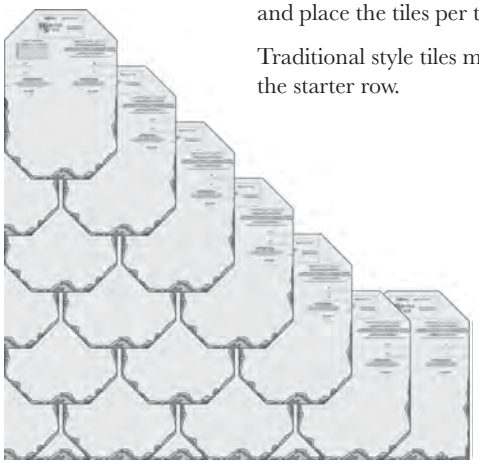
Staggered Installation: This drawing depicts the traditional tile installed using the staggered method. Each tile is installed alternating between the 6" (152 mm) exposure and the 7" (178 mm) exposure. This creates more texture in the roof system.



Majestic Slate Beveled Edge Design

Use the standard installation methods and place the tiles per this drawing.

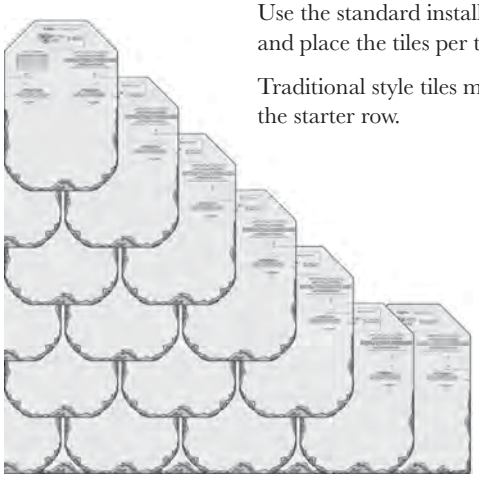
Traditional style tiles must be used as the starter row.



Majestic Slate Beaver Tail Design

Use the standard installation methods and place the tiles per this drawing.

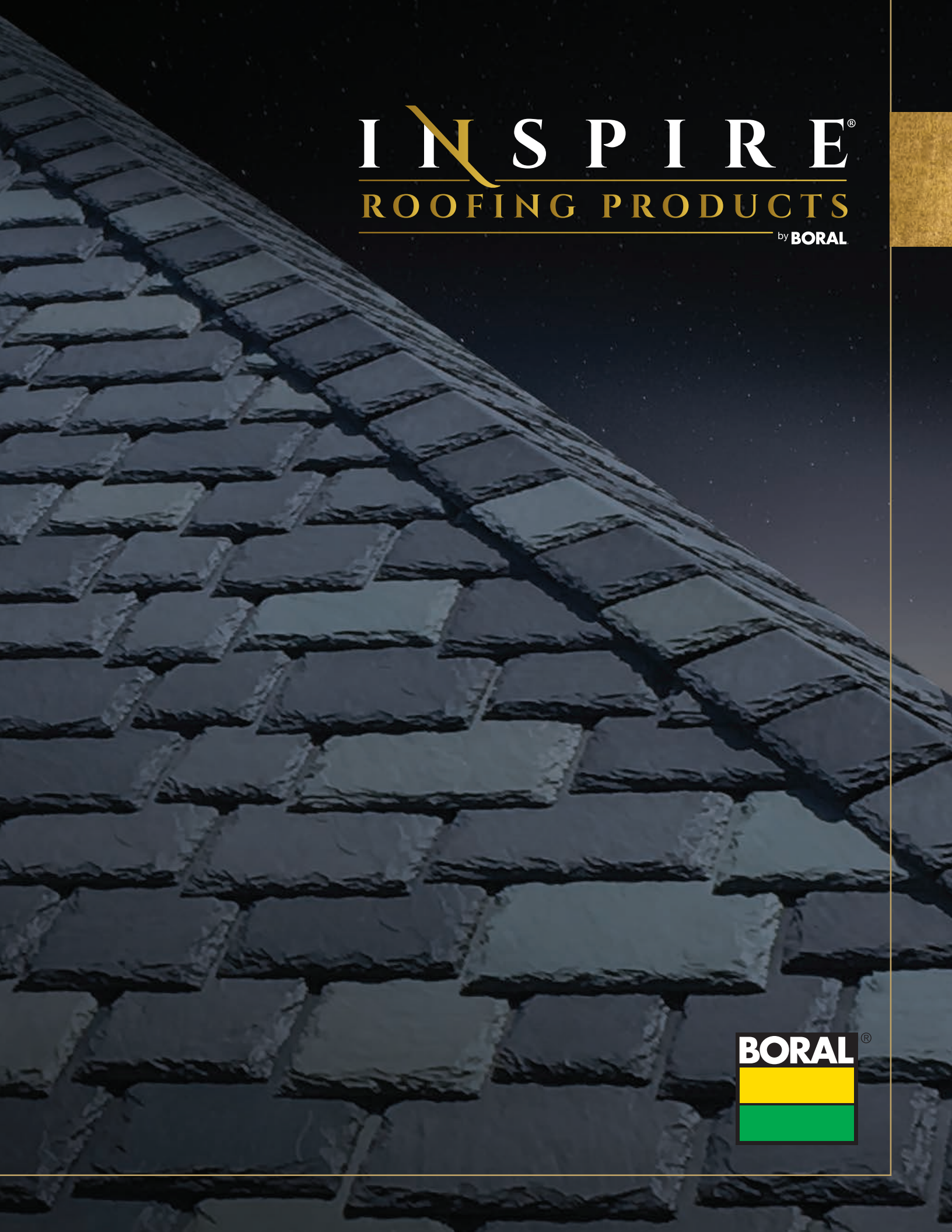
Traditional style tiles must be used as the starter row.



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P/N–602695 Majestic Slate Installation Guide. This installation guide, effective 10/26/2020 supersedes all previous versions.


INSPIRE®
ROOFING PRODUCTS
by BORAL
BORAL®

SET YOUR SIGHTS HIGHER

WITH

INSPIRE® by BORAL

ACHIEVE NEW HEIGHTS IN AUTHENTICITY, BEAUTY, AND QUALITY WITH INSPIRE ROOFING PRODUCTS. TRANSCENDING OTHER BRANDS, INSPIRE® SLATE AND SHAKE PRODUCTS PROVIDE THE INDUSTRY'S FINEST ARTISTRY THROUGH NATURAL TEXTURES AND UNIQUE COLOR PALETTES THAT WILL

Enhance your home.

Authentic textures and hues, crisp edges, and defined detail bring sublime beauty to every Inspire home. Crafted using molds cast from the finest natural materials; Inspire delivers the rich and stunning aesthetics of authentic hand-cut slate or the warmth of genuine hand-split cedar shakes, without the weight or cost.

Inspire® products also help protect your home from the elements with Class 4 Hail Impact Resistance, 110-mph Wind Uplift Performance and Fire Rating's that meet local requirements*. Inspire® roofing products do not require vigorous maintenance and are environmentally sustainable and energy efficient. All Inspire® roofing products are backed by our transferable, 50-Year, Limited Lifetime Warranty.

*See details on page 22.

The Merits of LUXURY

Luxury is defined as a state of great comfort and elegance.

The advantages of true luxury products increase over time. The more time you spend using them, the more you appreciate them. It comes at a price because it delivers both value and pleasure.

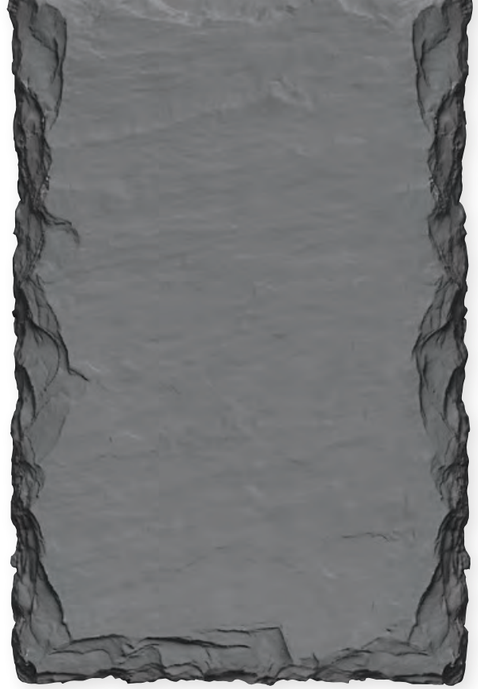
Something of true quality will validate your choice every day that you enjoy it and every time that you look at it. It will bring you peace of mind as well as the pleasure of enjoying its enduring style and performance.

Born of technology, Inspire® perfectly imitates noble materials while providing the distinct advantages of advanced manufacturing processes and product design without compromising aesthetics and performance.

Unsurpassed Beauty and Superior Performance are the quintessential qualities that define Luxury, and precisely why discerning homeowners choose Inspire® Roofing Products for their homes. Choose nothing less than the best for your home.

INSPIRE® ROOFING PRODUCTS by BORAL

ALEDORA™ SLATE | COACHMAN



Aledora™ SLATE

The Natural Beauty of Slate Roofing.

Aledora™ Slate offers the finest aesthetics and craftsmanship available, delivering the beauty of an authentic hand-cut, natural slate at a fraction of the cost and weight. Variable widths and multiple colors and hues integrated artistically into every tile match the unique appearance of natural slate that will enhance the curb appeal and value of any home.

Natural Look · Durable · Lightweight



Classic SLATE

Elegance, Tradition, Performance.

Inspire® Classic Slates' textured surfaces and deckled edges are modeled from authentic natural slates, imparting a controlled uniformity that epitomizes natural slate roofing. Classic Slate delivers the appearance of a natural slate roof while offering lightweight, low-cost, durability and cutting edge, environmentally conscious material technology that goes into every slate.

Natural Look · Durable · Lightweight

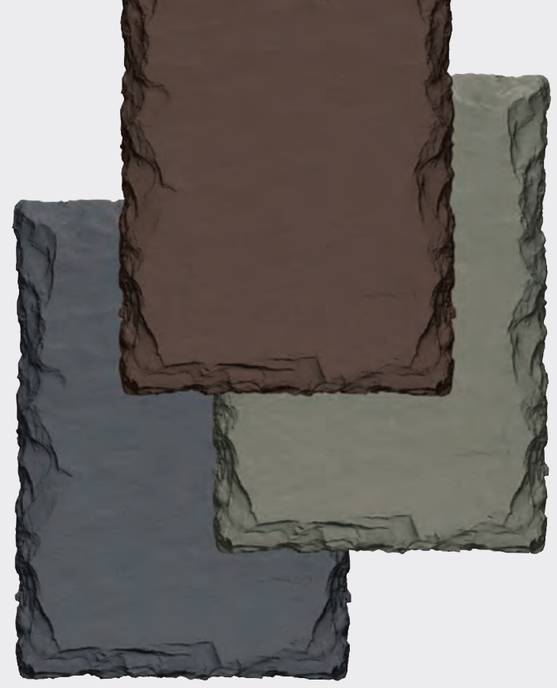


Arcella™ SHAKE

Rustic Aesthetics, Superior Performance.

Arcella™ Shake offers the warm, rustic aesthetics of hand-split cedar shake, without the maintenance and safety concerns of wood. Arcella™ Shake's advance polymer composite technology insures our products will not rot, crack, split, warp, or require the maintenance of wood. Authentic colors and subtle shade variations create an inviting, natural look in every piece of Arcella™ wood shake while helping to mitigate the risks of fire, hail or wind.

Natural Look · Durable · Lightweight



Color Mix PROGRAM

Available for Aledora™ Slate and Classic Slate roofing, our Inspire® Color Mix program allows you to choose as many as six different colors for an Aledora™ Slate mix and up to five colors for a Classic Slate mix to create a roofing color palette that is uniquely yours. With Inspire® mixes, there is never any need to shuffle tiles from multiple bundles prior to installation. Each bundle from Inspire Roofing Products comes factory-sorted and ready for application. Create your own mix that fits your homes style.

Customizable

Aledora™ | Colors

SLATE

The authentic hand-cut, thick slate appearance and varying widths of Aledora™ Slate compliment the unique blended colors and tones that make it the most beautiful slate alternative on the market today.



ASH GREY | CR-731 Cool Roof



CRRC: 1134-0020 / Ref: .35 / Emi: .96 / SRI: 41

SAGE GREEN | 815



MIST GREY | 803



GRAPHITE | CR-733 Cool Roof



CRRC: 1134-0022 / Ref: .28 / Emi: .97 / SRI: 32

OLIVE | 814



STEEL GREY | 804



GRANITE | CR-732 Cool Roof



CRRC: 1134-0021/ Ref: .28 / Emi: .96 / SRI: 32

EVERGREEN | CR-730 Cool Roof



CRRC: 1134-0019 / Ref: .30 / Emi: .96 / SRI: 34

CHARCOAL BLACK | 801



WHEAT | CR-736 Cool Roof



CRRC: 1134-0023 / Ref: .3 / Emi: .89 / SRI: 31

BRANDYWINE | 806



WINTERGREEN | CR-792 Cool Roof



Evergreen (730), Ash Grey (731),
Granite (732), Graphite (733)

RED CEDAR | CR-738 Cool Roof



CRRC: 1134-0024 / Ref: .26 / Emi: .91 / SRI: 27

CONCORD | 789



Steel Grey (804), Brandywine (806),
Olive (814), Sage Green (815)

BRUNSWICK | 791



Mist Grey (803), Steel Grey (804)
Olive (814), Sage Green (815)

RED ROCK | 809



NOTTINGHAM | 788



Charcoal Black (801), Steel Grey (804)
Brandywine (806), Olive (814)

COACHMAN | 790



Charcoal Black (801), Mist Grey (803),
Steel Grey (804)

The printed colors shown in this brochure may vary from actual available colors. Always use actual product samples for color selection.

«Luxury is not a necessity to me, but beautiful and good things are.»

- Anais Nin

Aledora™ Slate

ALEDORA™ SLATE SW | NOTTINGHAM

Aledora™ SLATE | Color Combinations

ROOF BODY ACCENTS

CONCORD



ROOF BODY ACCENTS

WHEAT



ROOF BODY ACCENTS

RED CEDAR



ROOF BODY ACCENTS

STEEL GREY



ROOF BODY ACCENTS

NOTTINGHAM



ROOF BODY ACCENTS

CHARCOAL BLACK



ROOF BODY ACCENTS

SAGE GREEN



The printed colors shown in this brochure may vary from actual available tile colors. Always use actual product samples for color selection.

Classic | Colors

SLATE

Beautiful textured surfaces and edges that impart a controlled uniformity that epitomizes natural slate roofing enhance the natural color pallet of our Classic Slate.



ASH GREY | CR-731 Cool Roof



A* CRRC: 1134-0011/Ref: .34/Emi: .90/SRI: 37
C* CRRC: 1134-0002/Ref: .32/Emi: .91/SRI: 35

SAGE GREEN | 815



MIST GREY | 803



GRANITE | CR-732 Cool Roof



A* CRRC: 1134-0012/Ref: .30/Emi: .92/SRI: 33
C* CRRC: 1134-0003/Ref: .30/Emi: .87/SRI: 31

OLIVE | 814



STEEL GREY | 804 |



GRAPHITE | CR-733 Cool Roof



A* CRRC: 1134-0013/Ref: .30/Emi: .90/SRI: 32
C* CRRC: 1134-0004/Ref: .29/ Emi: .88/SRI: 30

EVERGREEN | CR-730 Cool Roof



A* CRRC: 1134-0010/Ref: .30/Emi: .92/SRI: 33
C* CRRC: 1134-0001/Ref: .29/Emi: .92/SRI: 31

CHARCOAL BLACK | 801



*See details on page 22

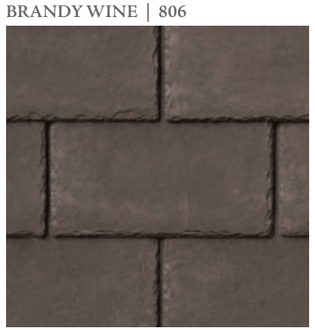
RED ROCK | 809



CONCORD | 789



BRANDY WINE | 806



NOTTINGHAM | 788



WINTERGREEN | CR-792 Cool Roof



Evergreen (730), Ash Grey (731)
Granite (732), Graphite (733)

GREY/BLACK BLEND | 718



COACHMAN | 790



BRUNSWICK | 791



The printed colors shown in this brochure may vary from actual available colors. Always use actual product samples for color selection.

Classic Slate

«Luxury is in each detail.»

– Hubert De Givenchy

CLASSIC SLATE | BRUNSWICK

Classic SLATE | Color Combinations

ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



The printed colors shown in this brochure may vary from actual available tile colors. Always use actual product samples for color selection.

Arcella™ | Colors

SHAKE

The warm, rustic aesthetics of hand-split cedar shakes come to life with Arcella™ Shake's authentic colors and subtle shade variations that create an inviting, natural look in every piece.

RUSTIC CEDAR | 754



WHEAT | CR-736 Cool Roof



CRRC: 1134-0023 / Ref: .3 / Emi: .89 / SRI: 31

ASH GREY | CR-731 Cool Roof



CRRC: 1134-0020 / Ref: .35 / Emi: .96 / SRI: 41

NEW CEDAR | 752



WEATHERED GREY | 750



GRAPHITE | CR-733 Cool Roof



CRRC: 1134-0022 / Ref: .28 / Emi: .97 / SRI: 32

RED CEDAR | CR-738 Cool Roof



CRRC: 1134-0024 / Ref: .26 / Emi: .91 / SRI: 27

CEDAR BROWN | 751



GRANITE | CR-732 Cool Roof



CRRC: 1134-0021/ Ref: .28 / Emi: .96 / SRI: 32

ARCELLA™ SHAKE | WEATHERED GREY

EVERGREEN | CR-730 Cool Roof



CRRC: 1134-0019 / Ref: .30 / Emi: .96 / SRI: 34

AGED CEDAR | 753





The printed colors shown in this brochure may vary from actual available colors. Always use actual product samples for color selection.

Arcella™ Shake

« 3 words to sum it up ;
Class, Elegance and Style.»

ARCELLA™ SHAKE | CEDAR BROWN VW

Arcella™ SHAKE | Color Combinations

ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



ROOF BODY ACCENTS



The printed colors shown in this brochure may vary from actual available tile colors. Always use actual product samples for color selection.



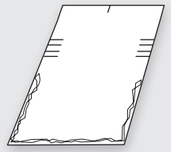
Cool Roof Colors

Sustainability without Compromise.

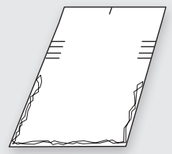
You do not have to compromise the beauty of your home to be sustainable. Inspire® Roofing Products offer a wide pallette of Cool Roof Colors that promote environmentally sustainable living by decreasing your home's carbon footprint and energy consumption by as much as 15%.

Inspire®' s innovative color technology, available on Aledora™ Slate, Classic Slate and Arcella™ Shake profiles, reflects the sun's energy, keeping your home cooler and reducing the need for air conditioning while lowering its carbon footprint and heat island effect.

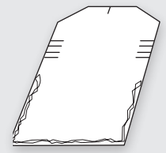
ALEDORA™ SLATE | Single Width

Item #699***	Exposure	Width	Height		Piece	Bundle	Square	Pallet	Truck
	Max: 8" Can be installed at 6" to 8"	12"	18"	weight	1.25 lbs.	30 lbs.	180 lbs.	1,440 lbs.	42,000 lbs.
				pieces	1	24	144	1,152	33,600
				bundles	—	—	6	48	1,344
				squares	—	—	—	8	224
				pallets	—	—	—	—	28

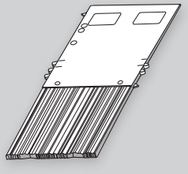
ALEDORA™ SLATE | Varied Width

Item #698***	Exposure	Width	Height		Piece	Bundle	Square	Pallet	Truck
	Max: 8" Can be installed at 6" to 8"	6", 8", 10", 12"	18"	weight	—	28.5 lbs.	171 lbs.	1,368 lbs.	38,304 lbs.
				pieces	—	32	192	1,536	43,008
				bundles	—	—	6	48	1,344
				squares	—	—	—	8	224
				pallets	—	—	—	—	28

CLASSIC SLATE | Single Width

Class A: Item #191*** Class C: Item #192***	Exposure	Width	Height		Piece	Bundle	Square	Pallet	Truck
	Max: 7-1/2" Can be installed at 6" to 7-1/2"	12"	18"	weight	1.5 lbs.	38 lbs.	240 lbs.	2,400 lbs.	42,500 lbs.
				pieces	1	25	160	1,600	28,000
				bundles	—	—	6.4	64	1,120
				squares	—	—	—	10	175
				pallets	—	—	—	—	18

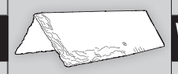
ARCELLA™ SHAKE | Varied Width

Item #599***	Exposure	Width	Height		Piece	Bundle	Square	Pallet	Truck
	Max: 10-1/4" Can be installed at 9-1/4" or 10-1/4"	10", 7-1/2", 5"	24"	weight	—	29 lbs.	210 lbs.	1,375 lbs.	30,250 lbs.
				pieces	—	24	175	1,152	25,344
				bundles	—	—	7.32	48	1,056
				squares	—	—	—	6.55	144
				pallets	—	—	—	—	22

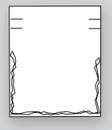
ALEDORA™ SLATE - STARTER

Item #602***	Width	Height	Weight / Piece	Weight / Bundle	Pieces / Bundle
	12"	14"	1.7 lbs	41 lbs.	24
	Pieces / Liner Foot		Liner Feet / Bundle		
	1		24		

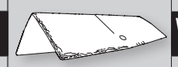
ALEDORA™ SLATE - HIP AND RIDGE

Item #601***	Width	Length	Exposure	Preformed Pitch	
	12"	18"	6"-8"	3/12 - 18/12	
	Weight / Piece	Weight / Bundle	Pieces / Bundle	Pieces / Liner Foot	Liner Feet /Bundle
	1.25 lbs.	30 lbs.	24	1.5	16.67

CLASSIC SLATE - STARTER

Class A - Item #391*** Class C - Item #392***	Width	Height	Weight / Piece	Weight / Bundle	Pieces / Bundle
	12"	13-1/2"	1 lbs.	25 lbs	25
	Pieces / Liner Foot		Liner Feet / Bundle		
	1		25		

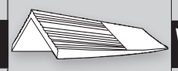
CLASSIC SLATE - HIP AND RIDGE

Class A - Item #293*** Class C - Item #296***	Width	Length	Exposure	Preformed Pitch	
	12"	18"	6"-7.5"	3/12 - 18/12	
	Weight / Piece	Weight / Bundle	Pieces / Bundle	Pieces / Liner Foot	Liner Feet / Bundle
	1.5 lbs.	38 lbs.	25	1.6	15.6

ARCELLA™ SHAKE - STARTER

Item #502***	Width	Height	Weight / Piece	Weight / Bundle	Pieces / Bundle
	12"	14"	1.7 lbs.	41	24
	Pieces / Liner Foot		Liner Feet / Bundle		
	1		24		

ARCELLA™ SHAKE - HIP AND RIDGE

Item #500*** Item #501***	Width	Length	Exposure Requirements	Preformed Pitch
	12"	24"	10.25" for Roof Slope > 5:12 9.25" for Roof Slope 4:12-5:12	4/12 - 8/12 - #500*** 9/12 - 14/12 - #501***
	Weight / Piece	Weight / Bundle	Pieces / Bundle	Liner Feet / Bundle
	1.7 lbs.	17 lbs.	10	8.33

TEST	TESTING PERFORMED	RESULTS FOR
Fire Rating	In accordance with UL790 / ASTM E108	Class A* or Class C Fire Rated System
Hail Rating	In accordance with UL2218	Class 4
Accelerated Ultra Violet Exposure	In accordance with ASTM G154 Xenon Arc Chamber 9,500+ hours	Tile exhibited virtually no fade and with no trace of cracking, spalling or deformation.
Wind Driven Rain / Wind Uplift	In accordance TAS 100-95; UL 580	Up to 110 mph. No water infiltration through sheathing. No tiles blew off, tore or blew upward.
Freeze-Thaw Cycle	In accordance with ASTM C666/C666M	No signs of damage or cracking after 300+ cycles.
Water Absorption	In accordance with ASTM C272	No appreciable weight gain.
Water Permeation	In accordance with ASTM E96/E96M	Tile shown to be impermeable.
Approvals: Florida Building Code Org. FL#7409, FL#16269, FL#16856; ICC ESR-2745; Texas Department of Insurance RC-404; CCRR-0188		

*Contact Inspire Roofing Products for specific application requirements for UL Class A rated systems.

*** Indicates color number.

Cover: Aledora VW

ABOUT BORAL ROOFING

Boral Roofing LLC is a subsidiary of Boral USA and is the country's largest premium provider of complete roofing and re-roofing solutions for architects as well as commercial and residential builders. Boral Roofing operates manufacturing plants throughout the US.

ABOUT BORAL NORTH AMERICA

Headquartered in Roswell, Georgia, Boral North America is a leader in key construction materials and building products markets with operations across the USA, Canada and Mexico. In 2017 Boral acquired Headwaters Incorporated, expanding Boral's product offering and manufacturing and distribution footprint across North America. In construction materials, Boral has a national footprint and industry-leading position in the processing and distribution of fly ash – a by-product of coal combustion – as well as a Texas-based concrete block business, and Denver concrete and quarries operations.

In building products, Boral manufactures and supplies cladding, roof tiles, windows and other light building products for residential and commercial markets nationally. Boral's manufactured stone veneer includes leading brands Cultured Stone® by Boral®, Boral Versetta Stone®, Eldorado Stone, Dutch Quality Stone and StoneCraft. Boral's light building products portfolio includes Boral TruExterior® Siding & Trim – a pioneer of the innovative poly-ash category of exterior building products – as well as shutters, gable vents, mounting blocks and tool systems. In roofing, Boral is a leading manufacturer of clay and concrete roof tiles, and also produces composite polymer and stone-coated metal roof tiles.

Boral also has a 50% share of the Meridian Brick joint venture, a leading clay and concrete brick manufacturer which was formed with Forterra Brick in 2016.

INSPIRE®
ROOFING PRODUCTS
by BORAL

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 53 23 - EPDM Roofing
Description of Material or System:	EPDM Roofing
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☑ Other Warranty requirement
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☑ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The PEA basis of design for flat roof systems is: Carlisle SynTec Systems - Sure-Seal FleeceBACK EPDM Adhered Roofing System.

Minimum Thickness: 145 mils
Exposed Face Color: Black
(All associated system requirements);

Provide manufacturer's 30-year Total System Warranty covering both labor and material with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 72 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.

Warranty Period: 30 years from date of Substantial Completion.

System design and other requirements on a per-project basis.

Links to additional product information:

https://www.carlislesyntec.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 53 23 - 19 - EPDM Roofing
Description of Material or System:	EPDM Roofing Pavers
Last Updated:	12/2025
Updated by:	Katie Gregory

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☑ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The PEA basis of design for flat roof pavers are Carlisle Rubber Pavers, interlocking, lightweight and slip resistant.

Exposed face color: Grey

System design and other requirements on a pre-project basis.

Links to additional product information:

Rubber Pavers



Overview

Carlisle's Rubber Pavers are an interlocking, lightweight and slip resistant option for providing a durable wearing surface to any roof membrane system. Rubber Pavers are 24" x 24" x 2" thick, weigh 6 lbs/ft^2, and made almost entirely out of recycled rubber, making them environmentally friendly. Carlisle's Rubber Pavers help to extend the life of the roof membrane by protecting it against UV degradation, hail, accidental punctures, and foot traffic. When interlocked together, Carlisle's Rubber Pavers are a lightweight alternative to concrete plaza paver systems while also providing a resilient, cushioned and shock absorbent traffic surface.

Features and Benefits

- Compatible with all Carlisle membranes*
- Resilient, shock absorbing and weather resistant
- Built in "feet" provide multi-directional drainage for rainwater
- Can extend the life of the roofing system
- Little to no maintenance
- Lightweight
- Limited lifetime warranty

* TPO, PVC and KEE HP membranes require a slip sheet prior to rubber paver placement.

Installation

1. Note: Before installing Carlisle Rubber Pavers, ensure that the Carlisle roof system has been designed and installed according to Carlisle's requirements and that the roof system has been inspected and certified by a Carlisle Field Service Representative.
2. Carlisle Rubber Pavers are either placed directly over the roof membrane or protection fabric and interlocked together. Rubber Pavers can be installed directly over EPDM roof membranes. For TPO, PVC and KEE HP membranes, 300HV protection fabric must be installed over the roof membrane prior to paver installation.
3. Pavers should be installed tight to parapet walls and curbs and compressed tightly together. They must be cut around penetrations and drains. To cut, use a sharp utility knife or jigsaw using a blade with 10 teeth per inch minimum.
4. After all pavers are installed, an approved adhesive shall be applied in all paver to paver joints using a specialized application tip. Adhesive application helps to prevent possible joint separation that can occur overtime due to natural expansion and contraction. Adhesive and application tips are available for purchase from Carlisle.

Contact Carlisle or review Carlisle's Paver Specification and Details for more installation information.

Precautions

- Carlisle's Rubber Pavers are not recommended in areas that may be exposed to point loading of small, narrow points, with significant weight such as chairs with narrow legs.
- The Plus Series is not recommended for occupied buildings where foot traffic may be present as possible tracking of the rubber surface may occur over time.
- Plus Series pavers are prone to color fade due to UV exposure.
- Natural expansion and contraction can cause the rubber pavers to separate at the seams. To avoid this, Carlisle offers a special adhesive and application tip that can be used in all paver-to-paver joints.

Rubber Pavers

Plus Series

Made of recycled rubber, the Plus Series pavers are an economical solution intended for use in low traffic areas as well as walkways to rooftop mechanical units.



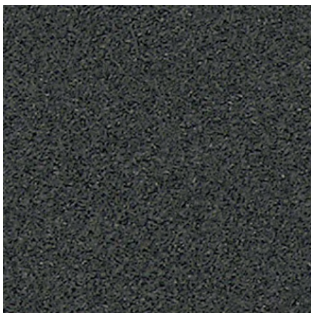
Black



Blue

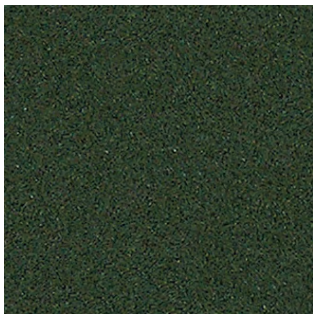


Brown



Gray

provide Grey color



Green



Terra Cotta

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 53 23 - EPDM (ethylene propylene diene terpolymer) Roofing Acc.
Description of Material or System:	EPDM Roof Accessory - Pressure Sensitive Pipe Seal
Last Updated:	11/8/2024
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☑ Other
- ☐ Other

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☑ Other
- ☐ Other
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The PEA basis of design for flat roof system pipe accessory is Carlisle Pressure-Sensitive Pipe seals.

Links to additional product information:

https://www.carlislesyntec.com/

CARLISLE SYNTEC SYSTEMS

Sure-White® EPDM
Pressure-Sensitive Pipe Seals



Overview

Carlisle's Sure-White EPDM Pressure-Sensitive (PS) Pipe Seals are cured, pre-molded EPDM flashing designed for pipes 1" to 6" in diameter.

Features and Benefits

- Fits pipes from 1" - 6" (25 mm - 150 mm) in diameter
- PS Pipe Seals have pre-applied SecurTAPE™ on the bottom of the deck flange which affords easy installation and strong membrane bonding.
- Designed to be used with Carlisle's Sure-White EPDM and Sure-Weld® TPO membranes.

Installation

1. Remove all lead and other flashing material.
2. The entire surface where the PS Pipe Seal will be applied must be clean. The adhesive on the back of the PS Pipe Seal will not adhere to dusted or dirty surfaces. Any residual contamination will be detrimental to the bond strength of the adhesive.
3. Remove all foreign material.
   a. Remove excess mica dust by brooming or wiping with a clean, dry rag or Carlisle HP Splice Wipe.
   b. The use of Weathered Membrane Cleaner may be necessary. This process is essential on membrane that has been exposed for a number of weeks.

      Note: Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) are required for hand protection when cleaners or primers are being used.

   c. Allow the membrane to dry thoroughly before proceeding.
4. Cut the PS Pipe Seal above the raised "ring" that is one size smaller than pipe diameter.
5. Pull PS Pipe Seal over pipe until base flange is in contact with the membrane.
6. Mark pipe around the top of the PS Pipe Seal.
7. Pull PS Pipe Seal upwards on pipe until mark on the pipe is visible.
8. Install Water Cut-Off Mastic below the mark, which indicates the top of the installed PS Pipe Seal.
9. Application of HP-250 Primer, TPO Primer, or Low-VOC Primer
   a. Standard EPDM Membrane - Apply the appropriate primer with a clean HP Splice Wipe (or equivalent). Scrub the membrane area where the PS Pipe Seal is to be applied in a circular motion to achieve a thin, even coating on the membrane. The properly cleaned/primed area will be uniform in color and free of streaks, globs or puddles.
   b. Pre-Kleened™ EPDM or TPO Membrane - Roller-apply the appropriate primer to the membrane with a short nap length paint roller. The coated area will be free of streaks, globs or puddles.

      Note: Using excessive amounts of primer will not enhance adhesion of the PS Pipe Seal to the membrane. Use only the necessary amount to obtain 100% coverage of the area where the PS Pipe Seal will be applied.
10. Allow the primer to properly flash off until it does not transfer to a dry finger touch. Install the PS Pipe Seal as soon as the primer flashes off to minimize potential dust contamination and promote adhesion in colder weather.
11. Pull PS Pipe Seal back down over the pipe and into position.
12. Remove release liner from the tape and, with hand pressure, press tape to the primed area. Roll splice area with a 2" roller.
13. Install a stainless steel universal clamping ring to the top of the PS Pipe Seal to provide constant compression of the Water Cut-Off Mastic.
14. When a field splice intersects a PS Pipe Seal, install a T-Joint Cover.

Review Carlisle specifications and details for complete installation information.

CARLISLE SYNTEC SYSTEMS

Sure-White EPDM
Pressure-Sensitive Pipe Seals

Precautions

- Remove all lead and other flashing.
- Temperature of pipe must not exceed 180ºF (82ºC).
- Deck flanges of the PS Pipe Seal should not be overlapped, cut or applied over any angle change.
- Additional membrane securement is required on mechanically fastened roofing systems, refer to detail MFS-8-A or B.
- When clamping ring is to be used with a 1"-diameter pipe, the following method must be utilized to provide proper clamping.
  - Lift the tightening screw and slip the loose end of the clamping ring under this tightening apparatus. A complete circle will now be formed with the metal band.
  - Pull the loose end of the clamping ring until a circle with a diameter of approximately 1.5" is formed.
  - Insert the loose end of the clamping ring under the tightening screw for a second time so a double layer of the metal bands results.
  - Flip the tightening apparatus into position and turn the tightening screw until the appropriate clamping pressure is achieved against the sealant and pipe penetration.

Typical Properties and Characteristics

Material	Molded EPDM
Color	White
Size	1" to 6" (25 mm - 150 mm) Pipe
Packaging	10/carton
Weight	11 lbs/carton (5 Kg)
Shelf Life	1 year

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	2%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	N/A

800-479-6832 | P.O. Box 7000 | Carlisle, PA 17013 | Fax: 717-245-7053 | **www.carlislesyntec.com**

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REPRINT CODE: 603399 - "Sure-White EPDM Pressure-Senstive Pipe Seals Product Data Sheet"

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LEED is a registered trademark of the U.S. Green Building Council.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 57 46 - Roof walkways - Roof accessories and specialties
Description of Material or System:	EPDM Roofing - Walkway Pads
Last Updated:	11/8/2024
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☑ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Carlisle's Sure-Seal EPDM Pressure-Sensitive (PS) Molded Walkway Pads are to be provided to protect the roof membrane in those areas exposed to repetitive foot traffic.

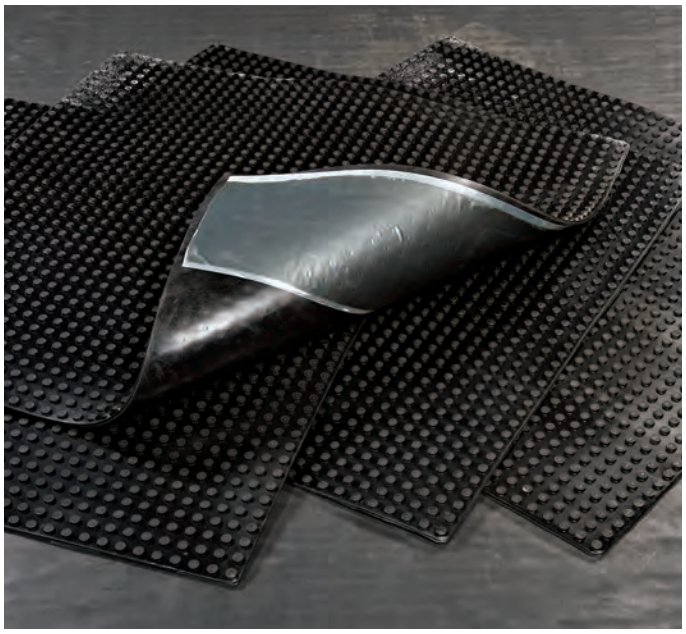
Walkways must be installed at all traffic concentration points (i.e., roof hatches, access doors, rooftop ladders, etc.) regardless of traffic frequency.

Links to additional product information:

https://www.carlislesyntec.com

CARLISLE SYNTEC SYSTEMS

Sure-Seal® EPDM
Pressure-Sensitive Molded Walkway Pads



Overview

Carlisle's Sure-Seal EPDM Pressure-Sensitive (PS) Molded Walkway Pads are designed to protect the membrane in those areas exposed to repetitive foot traffic.

Walkways must be installed at all traffic concentration points (i.e., roof hatches, access doors, rooftop ladders, etc.) regardless of traffic frequency Walkways must also be installed if regular maintenance (once a month or more) is necessary to service rooftop equipment.

Features and Benefits

- Excellent tear and puncture resistance
- UV resistance
- Slip resistance

Installation

1. The entire surface where the PS Molded Walkway Pad will be applied must be clean. The adhesive on the back of the PS Molded Walkway Pad will not adhere to dusted or dirty surfaces. Any residual contamination will be detrimental to the bond strength of the adhesive.
2. Remove all foreign material.
   a. Remove excess mica dust by brooming or wiping with a clean, dry rag or Carlisle HP Splice Wipe.
   b. The use of Weathered Membrane Cleaner may be necessary. This process is essential on membrane that has been exposed for a number of weeks.

      Note: Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) are required for hand protection when cleaners or primers are being used.
   c. Allow the membrane to dry thoroughly before proceeding.
3. Application of HP-250 or Low-VOC EPDM Primer
   a. Standard Membrane - Apply the primer with a clean HP Splice Wipe (or equivalent). Scrub the area of the membrane (where the PS Molded Walkway Pad is to be applied) in a circular motion to achieve a thin, even coating on the membrane. The properly cleaned/primed area will be uniform in color without streaks and free of globs or puddles.
   b. Pre-Kleened™ Membrane - Roller-apply the primer to the membrane with a short nap-length paint roller. The coated area will be free of globs or puddles.

      Note: The use of excessive amounts of primer will not significantly enhance the adhesion of the PS Molded Walkway Pad to the EPDM membrane. Use only the amount necessary to obtain 100% coverage of the area where the PS Molded Walkway Pad will be applied.
4. Allow the primer to properly flash off until it does not transfer to a dry finger touch. Install the PS Molded Walkaway Pads as soon as the primer flashes off to minimize potential dust contamination and promote adhesion in colder weather.
5. Allow a 1"-wide (25 mm) gap between PS Walkway Pads. Discontinue Walkways over field splices allowing a minimum 1" (25 mm) gap.

Review Carlisle specifications and details for complete installation information.

Sure-Seal EPDM
Pressure-Sensitive Molded Walkway Pads

Precautions

- The product is to be used as a walkway only and is not designed as a substitute for ballast.
- PS Molded Walkway Pads cannot be installed within 10' (3 m) of the roof perimeter or on projects that exceed 50' (15 m) in height for Design “B” systems. Concrete pavers may be used in these areas.
- When installing walkways in conjunction with ballast, avoid the entrapment of small ballast below walkways. Also, avoid excessive application of primer on ballasted systems installed over EPS insulation.
- PS Molded Walkway Pads are a maintenance item and are not covered under the Carlisle membrane systems warranty.

Typical Properties and Characteristics

Color	Black or Gray
Total Pad Thickness	0.375" (9 mm) +/- 10%
Tensile Strength, psi ASTM D412 Unaged	500
Tear Resistance, ibf/in ASTM D624 Unaged	250
Size	30" x 30" (750 mm x 750 mm)
Packaging	50 per skid
Weight	10 lbs. each

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	100%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA Greenville, IL
Solar Reflectance Index (SRI)	N/A

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REPRINT CODE: 603144 EPDM-1098 - “Sure-Seal EPDM Pressure-Sensitive Molded Pads Product Data Sheet”

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 70 00 Roof Specialties and Accessories
Description of Material or System:	Stainless Steel Chimney Caps
Last Updated:	8/26/2022
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☑ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

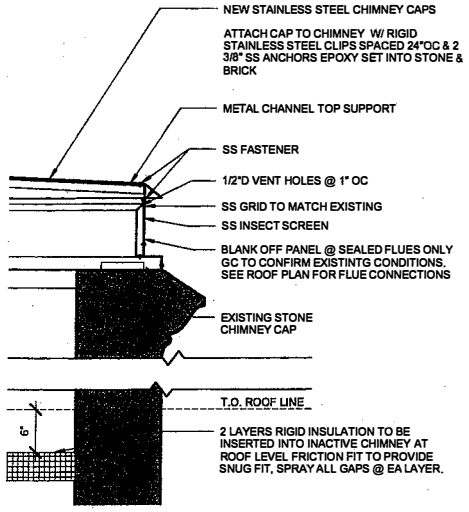
- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

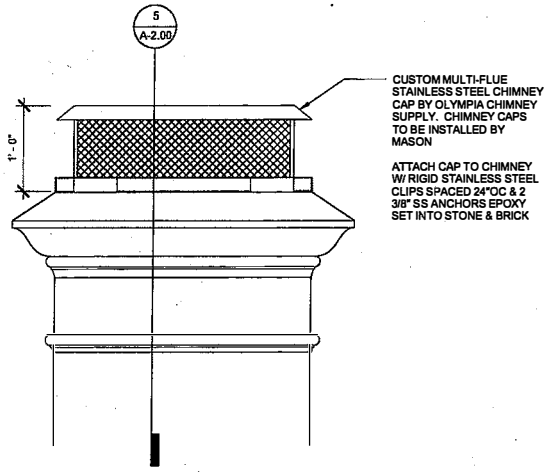
Attached is a sample detail for stainless steel chimney caps.

Most recently these have been supplied by Ceaser Chimney, a local vendor.

Links to additional product information:



(5) CHIMNEY CAP SECTION
1" = 1'-0"



(4) CHIMNEY CAP ELEVATION
1" = 1'-0"

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 71 00 - Roof Specialties
Description of Material or System:	Downspout Boots
Last Updated:	5/9/2022
Updated by:	Jeff Plimpton

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☑ Utility

Overview of system/product/guideline:

The preferred manufacturer for downspout boots is Zurn.

Manufacturer: **Zurn**
Model Number: **Z192-CA**

Accessories:
a. Manufacturer's standard stainless steel fasteners for mounting onto building wall.
b. Flexible rubber adapter as required for connection to drainage pipe.

Links to additional product information:

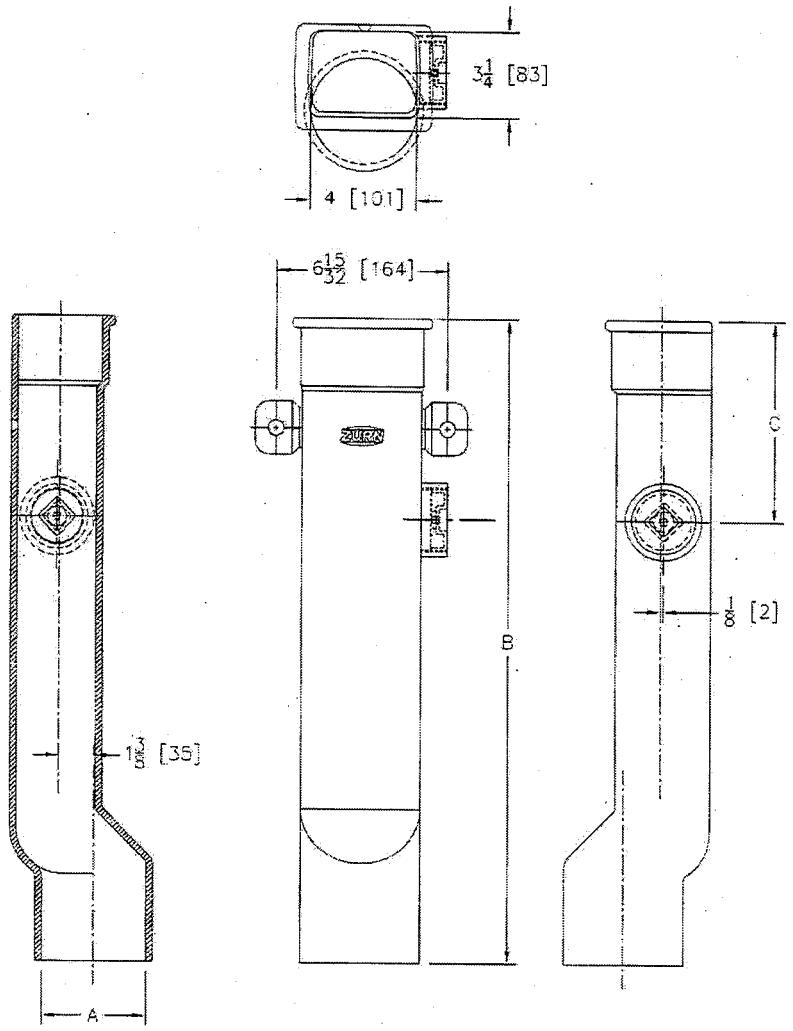
https://www.zurn.com/

Z192-CA
4 X 3 [102 X 76]
DOWNSPOUT BOOT WITH CLEANOUT ACCESS

SPECIFICATION SHEET

TAG_____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Changes Without Notice



Dimensions In Inches			
Size	A Pipe Size	B	C
4 x 3 x 12 [102 x 76 x 305]	4 [102]	12 [305]	4 11/32 [111]
4 x 3 x 18 [102 x 76 x 457]		18 [457]	7 1/2 [191]
4 x 3 x 24 [102 x 76 x 610]		24 [610]	7 1/2 [191]

ENGINEERING SPECIFICATION ZURN Z192-CA Cast iron body and strap with 1/4 [6] dia. cast holes for flat head bolts and 2 [51] NPT cleanout access with plug.

OPTIONS (Check/specify appropriate options)

PIPE SIZE
4 [102]

(Specify size/type) **OUTLET**
___ NH No-Hub

PREFIXES
___ Z D.C.C.I. Body*

SUFFIXES
___ -G Galvanized Cast Iron

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED

REV.	DATE: 9/29/06	C.N. NO. 95672
DWG. NO. 82905	PRODUCT NO. Z192-CA	

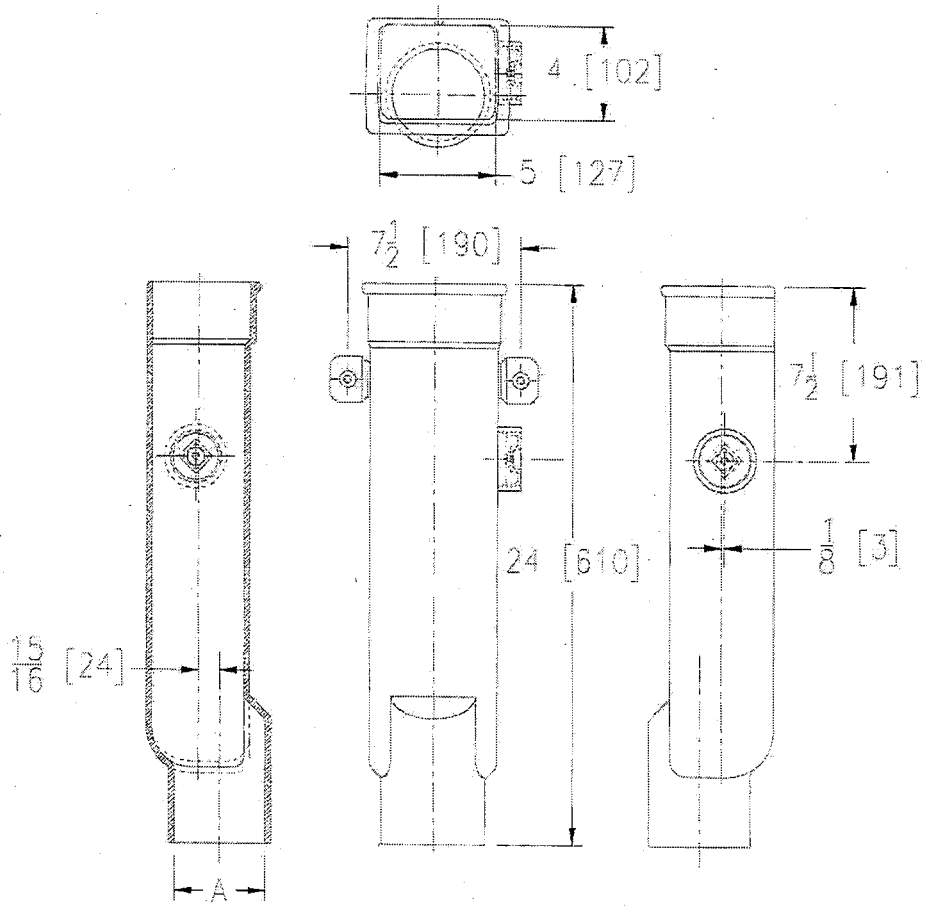
ZURN INDUSTRIES, INC. ♦ SPECIFICATION DRAINAGE OPERATION ♦ 1801 Pittsburgh Ave. ♦ Erie, PA 16514
Phone: 814/455-0921 ♦ Fax: 814/454-7929 ♦ World Wide Web: www.zurn.com
In Canada: ZURN INDUSTRIES LIMITED ♦ 3544 Nashua Drive ♦ Mississauga, Ontario L4V1L2 ♦ Phone: 905/405-8272 Fax: 905/405-1292

Z191-CA
DOWNSPOUT BOOT
W/ CLEANOUT ACCESS WITH PLUG

SPECIFICATION SHEET

TAG _____

Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Changes Without Notice



Product Designation	Size	A Pipe Size	Approx. Wt. Lbs. [kg]
Z191	5 x 4 x 24 [127 x 102 x 610]	4 [102]	30 [14]

ENGINEERING SPECIFICATION: ZURN Z191-CA Downspout Boot, Dura-coated cast iron body and strap with 1/4 [6] dia. cast holes for flat head bolts & 2 [51] N.P.T. cleanout access with plug.

OPTIONS (Check/specify appropriate options)

PIPE SIZE
4 [102]

OUTLET
___ NH No-Hub

PREFIXES
___ Z D.C.C.I. Body*

SUFFIXES
___ -G Galvanized Cast Iron

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED

REV. A DATE: 5/20/10 C.N. NO. 111142

DWG. NO. 67610 PRODUCT NO. Z191-CA

ZURN INDUSTRIES, LLC. ♦ SPECIFICATION DRAINAGE OPERATION ♦ 1801 Pittsburgh Ave. ♦ Erie, PA 16514
Phone: 814/455-0921 ♦ Fax: 814/454-7929 ♦ World Wide Web: www.zurn.com
In Canada: ZURN INDUSTRIES LIMITED ♦ 3544 Nashua Drive ♦ Mississauga, Ontario L4V1L2 ♦ Phone: 905/405-8272 Fax: 905/405-1292

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	07 Thermal and Moisture Protection
Specification Section:	07 72 53 - Snow Guards
Description of Material or System:	Snow Fence Bracket for Three Pipes
Last Updated:	12/13/2023
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

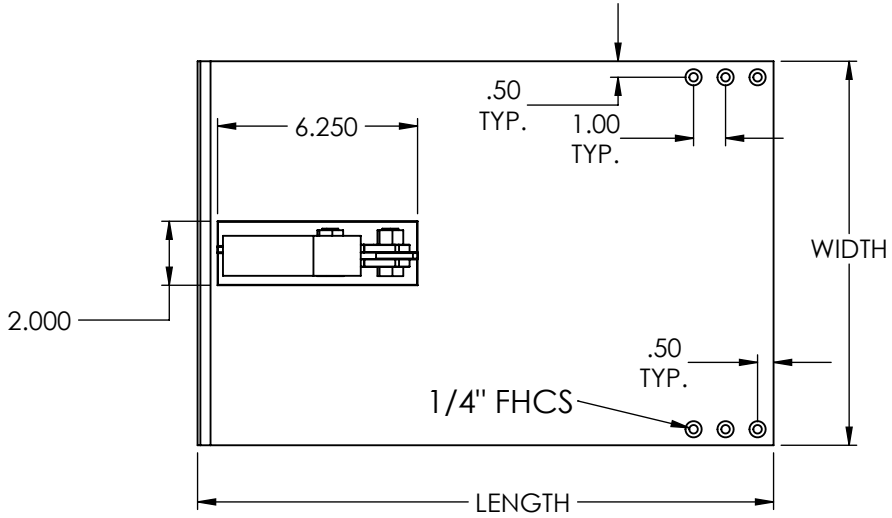
Overview of system/product/guideline:

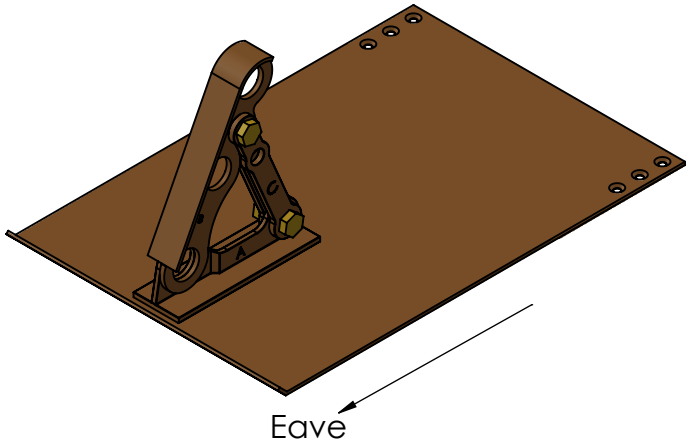
The following is the preferred specification for snow rails.

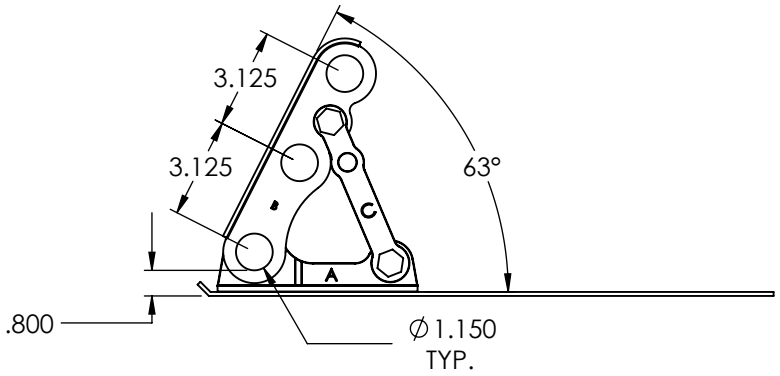
Links to additional product information:

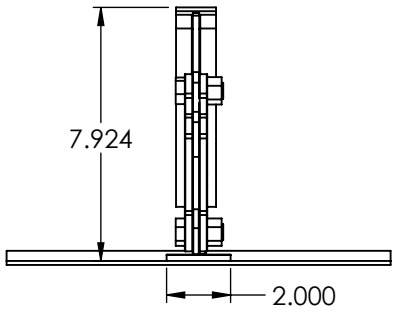
https://bergerbp.com/resource-center/snow-guards/snow-rails-for-slate-and-tile-roofing-copper-bronze/mullane-500-3-pipe-snow-rail-bronze/

Install in accordance with Berger's written specifications and instructions. Contact Berger for detailed layout, spec sheet for detailed material, finishes, and configuration options. Do not scale drawings. Subject to change without notice









Base plate is measured in inches - L x W to match the slate dimension.

Length:_____
Width:_____
Thickness:_____

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Feasterville, PA 19053
wwww.bergerbp.com
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Fax: 215-355-7738

Mullane #500 BronzeGuard Snow Fence Bracket (for 3 Pipes)
500BBA(LXW)

Material: Refer to Spec Sheet

SCALE 1:6 | DWG. NO. | SHEET 1 OF 1

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Mullane #500 Snow Fence Bracket for Three Pipes

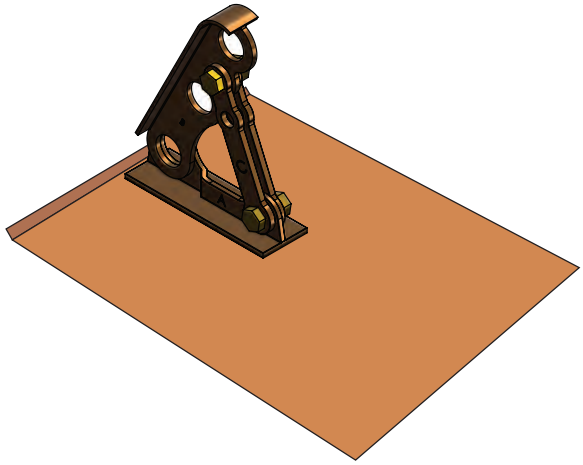
Bronze Guard for Slate Roofs

Installation Instructions:

Mullane #500 - 3 pipe rail products are available in cast bronze with a brass base plate.

The technical information is for informational purposes only and is not intended to replace the manufacturer's recommendations for a particular project. We will provide layout layouts free of charge upon receipt of customer provided roof measurements. Manufacturer is not responsible for improper installation, or installation in insufficient quantities.

Every roof is not the same! Call today for a custom layout.



General Information:

Snow guards are devices that are attached to the roof structure in order to uniformly retain and hold snow in place on the roof area. The snow guards need to be applied in sufficient quantity according to a prescribed pattern in order to be effective. Snow Guards are intended to prevent snow movement and provide for the controlled melt and breakdown of the snow mass into smaller sections.

Snow guard placement will vary from region to region and will be influenced by roof pitch, the lengths of roof runs and roof features. Local installation customs may not be the best guide for placement. Additional information can be found in sheet metal and air conditioning contractors' national association (SMACNA) architectural sheet metal manual.

Berger Building Products, Inc. recommends that a qualified roofing contractor be employed to install these products. Roofing professionals have the proper equipment, knowledge and ability to complete the task in a safe and satisfactory manner. The applicator is responsible for compliance with regulations governing local building ordinances and safety regulations.

Safety Hazards

- Roofing can be hazardous! Serious injury or fatality can result from falls or electrocution from contacting overhead wires. Observe ladder safety rules for load, positioning and security.
- Please make sure all roof surfaces are dry and clean before working. Avoid working in excessive heat, high wind or when there is a threat of lightning. Never work alone.
- Do not allow material to be unsecured on the roof. Falling objects are dangerous.
- Prior to application, Berger Building Products, Inc. requires that the installer evaluate all products in order to determine fitness for use.

Do not use Competing/Dissimilar Metals with each other!

Galvanic corrosion will occur when dissimilar metals are in contact in the presence of an electrolyte. Water in the form of condensation, rain or snow is an electrolyte. Water that flows over copper becomes electronegative and will cause corrosion of aluminum or steel. Copper, brass or stainless steel fasteners or nails must be used with copper or brass applications. Make sure rivets are solid copper; do not use copper plated steel rivets in copper or brass assembly. Do not use aluminum or galvanized nails to secure any copper products. Corrosion will be more rapid in the presence of salts such as ocean coastal areas or chlorinated water, acid rain, and polluted industrial atmospheres. Accelerated corrosion will occur when a larger area of an electronegative (cathode/protected) element contacts a small electropositive (anodic/corroded) element.

Warranty/Disclaimer

Berger Building Products, Inc. (BBPI) warrants that the products it manufactures shall be free from material defects. Should any of the products prove defective, the obligation of BBPI under this warranty shall be limited to replacement of the defective product or at our option the cost of the product originally shipped by Berger. This warranty is expressly in lieu of all other warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose. There are no warranties, which extend beyond the description on the face hereof. BBPI in no event, whether claim is based on warranties, contract negligence or otherwise, is liable for incidental or consequential damages.

Berger Building Products, Inc (BBPI) will not be responsible for misapplication or modification of product, incorrect material or defects that were obvious at time of installation. Any consequential damage, schedule delays, additional labor, and or equipment rental costs will not be BBPI responsibility. Any BBPI product warranty claim is limited solely to Berger Building Products, Inc.

Berger Building Products, Inc. (BBPI) reserves the right to change design and specification of our products without prior notification or alteration of literature. Materials may be revised to improve strength and corrosion properties and incorporated as a running change without obsolescence.

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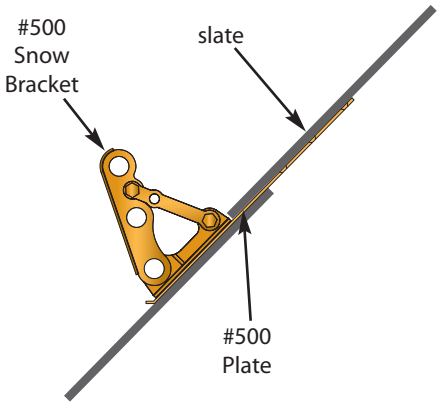
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BERGER®

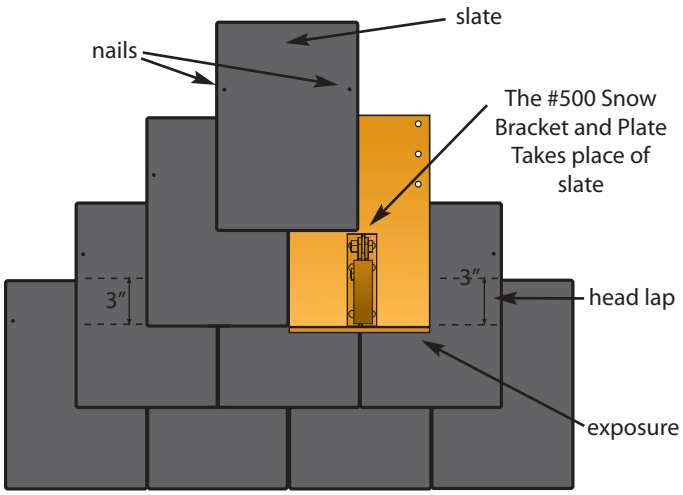
QUALITY BUILDING PRODUCTS SINCE 1874

Installation of Mullane #500 Snow Bracket on Slate or Synthetic Slate:

(side view)



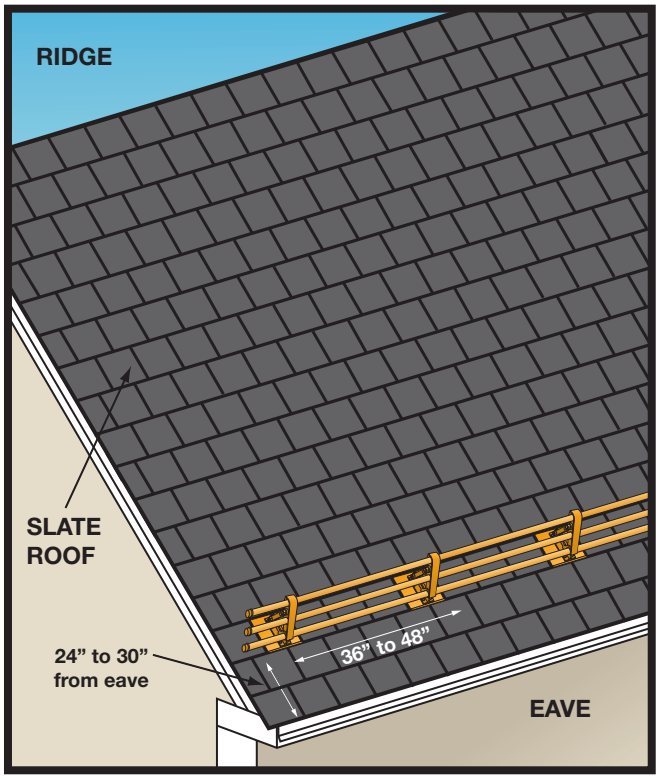
(top view)



#500 Snow Bracket Layout for Slate or Synthetic Slate Roofs:

Every guard will not fit every roofing application. It is important to know the size and thickness of your slate or synthetic slate prior to selecting a snow guard.

1. Install snow fence bracket parallel to the eaves, spacing the brackets from 24" to no more than 48" apart, depending upon the pitch of the roof and the anticipated snow load. Install brackets approximately 24" to 36" from the roof edge.
2. Recommended installation method is to use through Bolts, with a backer plate on the underside of the sheathing. However, this is not always a viable option. Secure fasteners through each pre-drilled holes (6).
3. Tubing: The use of bronze, red brass or stainless steel pipe is recommended. Copper water pipe is not recommended as the force of snow can cause this pipe to bend, which could transfer twisting, lateral forces to the bracket, with the possibility of system failure.
4. The number of rows will be dictated by size of the roof and climate of the location. In high snow load areas, and a rafter of over 25', a second row of fence is recommended. As an alternative or in areas where ice slides may occur, supplement the fence system with an array of Berger #100, PRO#100 or Mullane 100S, 200S, or 300S snow guard.
5. Snow guards should never be placed beyond the bearing wall on an extended roof section. This can result in ice damming and cause structural damage.
6. Every roof is different, call today for your free layout recommendation.



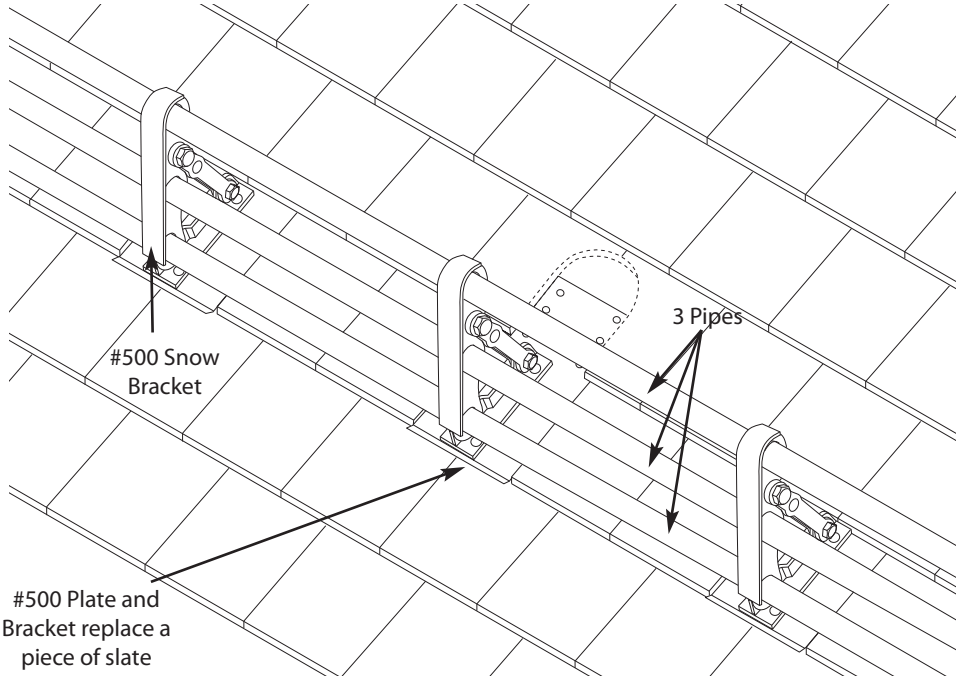
The patterns shown are typical for a rafter run of no more than 25 feet in an area with a ground snow load no more than 30 psf. If your project exceeds this criteria, contact Berger for a free consultation.

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Positioning of the Mullane #500 Snow Bracket Assembly on Slate Roofs:



Typical #500 spacing on 1/4" (.025") thick slate.
For illustration purposes only, drawing not to scale

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TF: 800.523.8852 **T:** 215.355.1200 **F:** 215.355.7738
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Phillips Exeter Academy
Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 11 13 - Hollow Metal Doors and Frames
Description of Material or System:	Bulkhead Door
Last Updated:	12/13/2023
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer and model for a bulkhead door for faculty residences is:

Manufacturer: **Bilco**
Model Number: **Classic Series Basement Door**
Finish: Is to be powdercoated.

Links to additional product information:

https://www.bilco.com/

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 11 69 - Metal Storm Door and Frames
Description of Material or System:	Residential Storm Door
Last Updated:	12/18/2024
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for a Faculty residence storm door is Larson.

Manufacturer: Larson
Model Number: 146 Easy Vent® Midview Storm Door with Low-E Glass
Part#: 14606121
Approved Colors: Black, green or white only
Handle set design: Curved
Handle set finish: Brushed Nickel, Brass, or Aged Bronze only

Links to additional product information:

https://shop.larsondoors.com/collections/all-products/products/146-easy-vent%C2%AE-midview-81-in-storm-door

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 13 13 - Hollow Metal Doors
Description of Material or System:	Hollow Metal Doors & Frames
Last Updated:	12/18/2024
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

For exterior doors, where hollow metal doors are called for - flat or raised panel insulated doors will depend on location.

Designs should be confirmed with PEA's FM team.

The performance spec for the doors shall meet the attached performance requirements (separate spec document); PEA's preferred vendor is De La Fontaine or equal.

Links to additional product information:

https://www.delafontaine.com/wp-content/uploads/2020/06/spec-stainless-steel-doors-frames.pdf

1. GENERAL

1.1. SECTION INCLUDES

A. Comply with the requirements of Division 1.
B. Provide the following products as listed on the door schedule and shown on the drawings, including but not limited to the following:
   1. Stainless steel hollow metal doors
   2. Stainless steel hollow metal frames
   3. Stainless steel side lights, transom frames and borrowed lights
   4. Stainless steel panels
   5. Preparation of stainless steel doors and frames for finish hardware.

1.2. RELATED SECTIONS

A. The following description of work is included for reference only and shall not be presumed complete:
   1. Finish carpentry: 06 20 00
   2. Wood doors: 08 14 00
   3. Stainless steel doors: 08 11 19
   4. Sound control door assemblies: 08 34 73
   5. Door hardware: 08 71 00
   6. Glazing: 08 80 00
   7. Electrical: 26 00 00

1.3. REFERENCES

A. ANSI A250.4-2001: Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings
B. ANSI A250.13-2008: Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies
C. ANSI/UL 1784-2004: Air Leakage Tests of Door Assemblies, 3rd edition
D. ASTM A240/A240M-11b: Standard Specification for Chromium and Chromium Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
E. ASTM E90-09: Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
F. ASTM C518 – 04: Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
G. ASTM E413-04: Classification for Rating Sound Insulation
H. NAAMM-HMMA 831-11: Recommended Hardware Locations for Hollow Metal Doors and Frames
I. NAAMM-HMMA 840-07: Guide Specification for Installation of Hollow Metal Doors and Frames
J. NAAMM-HMMA 850-00: Fire Rated Hollow Metal Doors and Frames
K. NAAMM-HMMA 866-01: Guide Specification for Stainless Steel Hollow Metal Doors and Frames
L. NFPA 80-10: Standard for Fire Door and Other Opening Protectives
M. NFPA 101: Life Safety Code
N. NFPA 105-10: Standard for the Installation of Smoke Door Assemblies
O. NFPA 252-08: Standard Methods of Fire Tests of Door Assemblies
P. NFPA 257-07: Standard on Fire Tests for Window and Glass Block Assemblies

Q. CAN/ULCS770-09: Standard Test Method for Determination of Long-term Thermal Resistance of Closed-Cell Thermal Insulating Foams
R. UL 10C: Standard for Safety Positive Pressure Fire Tests of Door Assemblies

1.4. PRE-INSTALLATION MEETING
A. Plan and manage a pre-installation meeting to explain the proper methods to install hollow metal doors and frames.

1.5. SUBMITTALS
A. Make submittals in accordance with Section 01 33 00.
B. Provide the following items in the submittal package:
1. Door schedule
2. Elevations of each door type
3. Details of doors, including vertical and horizontal edge details and metal thickness
4. Frame details for each frame type, including profiles and metal thickness
5. Locations of reinforcements and preparation for hardware
6. Details of each different wall opening condition
7. Details of anchorage, joints, field splices and connections
8. Details of accessories
9. Details of moldings, removable stops and glazing
10. Details of conduit and preparations for power, signal, and control systems
C. Upon Architect request, provide technical information on selected items.
D. Upon Architect request, provide 254 mm x 254 mm (10 in x 10 in) corner sample on selected items.
1. Doors: Show vertical edge, end channels, core, hinges and other applied hardware reinforcements; glazing if applicable.
2. Frames: Show profile, corner joint at head and jamb, anchors, glazing stop to show intersection between head and jamb; fixed panels if applicable.

E. Provide products meeting the following LEED performance criteria:

1. MRc4: For a product with recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. Provide product with maximum pre-consumer and post-consumer recycled content available, supported by appropriate documentation

F. Test and evaluation reports: Submit the following test and evaluation reports:
1. Steel door and frame assemblies supplied under this section meet acceptance criteria of ANSI A250.4, Level A **[**Level B**]**, **[**Level C**]**
2. Insulated doors supplied in exterior openings meet specified thermal resistance rating.
3. Acoustic door and frame assemblies provide the STC and sound TL values specified within the critical frequency range, as determined and scheduled by the Consultant.
4. Windstorm rated assemblies meet standard ANSI A250.13, Class 1 requirements.
5. Ensure reports include name of testing authority, date of test, location of test facility, descriptions of test specimens, procedures used in testing and indicate compliance with acceptance criteria of the test.

G. Closeout submittals
1. Provide the following information to the Owner:

a. One copy of the as-built door and frame schedule;
b. Name, address and phone number of manufacturer's distributors;
c. One copy of the manufacturer's product warranty;
d. Manufacturer's product maintenance instructions.

1.6. QUALITY ASSURANCE

A. Manufacturers: Execute work in this Section by a manufacturer who is a member of NAAMM. Ensure product quality meets standards set by this association.
B. Ensure product is manufactured by a firm experienced in design and production of standard and custom commercial stainless steel door and frame assemblies, integration of builders' or electronic hardware and glazing assemblies, and other items affecting work.
C. Distributors: Execute work in this Section by a distributor who has a minimum of 5 years' experience in similar projects.
D. Installers: Execute work in this Section by an installer who has a minimum of 5 years' experience in similar projects.
E. Doors and frames from a single source manufacturer.

1.7. DELIVERY, STORAGE AND HANDLING

A. Delivery:
1. Make deliveries in accordance with Section 01 65 00.
2. Identify products with a label indicating manufacturer's name, Architect's opening number, product description and dimensions.
3. Protect doors and frames during shipping.
4. Upon delivery, inspect products for quantity and damage.
5. Repair or replace damaged products before installation.

B. Storage and handling:
1. Store and handle products in accordance with Section 01 66 00.
2. Store products in a clean, dry and secure area.
3. Store and protect materials in accordance with NAAMM-HMMA 840.
4. Remove wrappings or coverings from doors upon delivery at site. Store doors and welded frames in a vertical position with a minimum of 6 mm (1/4 in) space between them. Place material on blocking at least 102 mm (4 in) off the ground to permit air circulation.

1.8. WARRANTY

A. Manufacturer's warranty: One year from substantial completion of the project on both material and workmanship.

2. PRODUCTS

2.1. MANUFACTURERS

A. Acceptable manufacturer:
1. De La Fontaine Inc. : www.delafontaine.com.

Field Code Changed

B. Substitutions:
1. Comply with Section 01 25 00

2. Equal products in design, function and quality will be accepted upon Architect's approval only.

2.2. MATERIALS

A. Steel requirements:

1. Doors and frames: Comply with ASTM A240/A240M, type 304 [type 316]
2. Door and frame components: Comply with ASTM A240/A240M, type 304 [type 316]

2.3. ACCESSORIES

A. Glazing moldings and stops

1. Sandwich overlapping kit
   a. Two components with mitered corners and secured with minimum # 6 stainless steel countersunk sheet metal screws.
   b. Glazing moldings fabricated from 20-gauge, 0.81 mm (0.032 in) minimum.
   c. Fire-rated doors shall be prepared for listed glazing as required in accordance with the door manufacturer's fire rating procedure.
   d. Install screws on non-secure side.
   e. 18-gauge, 1.1 mm (0.042 in) channel reinforcements on glass size equal to or bigger than half-glass.
   f. Glazing to comply with Section 08 80 00.

2. Flush kit
   a. On non-secure side, provide a full flush, non-removable molding.
   b. Glazing moldings fabricated from 20-gauge, 0.81 mm (0.032 in) minimum.
   c. Removable glass stops shall be channel-shaped, 20-gauge, 0.81 mm (0.032 in) minimum thickness, with tight-fitting butt or mitered corners and secured with minimum # 6 stainless steel countersunk sheet metal screws.
   d. Fire-rated doors shall be prepared for listed glazing as required in accordance with the door manufacturer's fire rating procedure.
   e. Install screws on non-secure side.
   f. 18-gauge, 1.1 mm (0.042 in) channel reinforcements on glass size equal to or bigger than half-glass.
   g. Glazing to comply with Section 08 80 00.

B. Frame accessories

1. Provide dust/mortar box at strike location on drywall and masonry frames.
2. Provide mortar guards for hinge reinforcements on masonry frames.
3. Provide temporary spreaders on welded frames. Provide one (1) bar for frames with less than 178 mm (7 in) jamb depth. Provide two (2) bars for frames with 178 mm (7 in) or greater jamb depth.
4. Drill holes for silencers. Single openings: 3 per strike jamb, located at hinge height. Pair openings: 2 per header at approximately 150 mm (6 in) each side of centerline of head stop.

C. Louvers

1. Louvers for non-fire rated doors shall be welded inverted V type, Y type.
2. Inverted V and Y type vanes shall be not less than 18-gauge, 1.1 mm (0.042 in) thickness.
3. Fire-rated doors shall be prepared for listed, automatic closing, fusible link; fire door louvers.
4. Louvers for exterior doors shall be provided with insect and/or bird screens.
5. Provide louvers of same material as door sheet.

2.4. DOOR FABRICATION

A. Door cores:

1. Interior openings: Expanded paper honeycomb, with 25 mm (1 in) cell maximum diameter.
   Steel stiffened core: Continuous vertically formed stainless steel sections, full thickness of the interior space between door faces. Stiffeners shall be 22-gauge, 0.6 mm (0.026 in) minimum thickness, spaced 152 mm (6 in) apart and securely bonded to both face sheets by industrial adhesive. **[**laser weld or spot welded spaced a maximum of 127 mm (5 in) o. c. vertically. Re-polish the door surface to remove marks**]**. Spaces between stiffeners shall be filled with polystyrene core Type 1, fire retardant conforming to ASTM C518 or CAN/ULCS770.

2. Exterior openings: Polystyrene core Type 1, fire retardant conforming to ASTM C578 and a minimum R value of 7.03 (hr x°F x sq.ft)/BTU conforming to ASTM C518 or CAN/ULCS770.
   [Polyisocyarunate core: Rigid, cellular type, board, or foamed-in-place containing no urea formaldehyde resins. A minimum R value of 10.0 (hr x°F x sq.ft)/BTU conforming to ASTM C518 or CAN/ULCS770**]**.

3. Temperature rise: Core composition to limit temperature rise on unexposed side of door to 250 degrees C (450 F) at 30 minutes. Test core as part of complete assembly in accordance with NFPA 252.

B. Stainless steel hollow metal doors in light duty application

1. Physical performance: Level C according to ANSI A250.4.
2. Metal thickness: 20-gauge, 0.81 mm (0.032 in).
3. Edge construction: Full flush, lock seam on edge.
4. Fabricate door to be flush with one continuous face free from joints, tool markings and abrasions, and with provision for glass and/or louvers as indicated on Door Schedule and Drawings.

C. Stainless steel hollow metal doors in moderate duty application

1. Physical performance: Level B according to ANSI A250.4.
2. Metal thickness: 18-gauge, 1.1 mm (0.042 in).
3. Edge construction: Full flush, lock seam on edge **[**full flush, seamless with continuously welded edge seam; flush internal edge reinforcements of 16-gauge, 1.34 mm (0.053 in)**]**.

4. Fabricate door to be flush with one continuous face free from joints, tool markings and abrasions, and with provision for glass and/or louvers as indicated on Door Schedule and Drawings.

D. Stainless steel hollow metal doors in heavy duty application

1. Physical performance: Level A according to ANSI A250.4.
2. Metal thickness: 16-gauge, 1.34 mm (0.053 in).
3. Edge construction: Full flush, lock seam on edge **[**full flush, seamless with continuously welded edge seam; flush internal edge reinforcements of 16-gauge, 1.34 mm (0.053 in)**]**.
4. Fabricate door to be flush with one continuous face free from joints, tool markings and abrasions, and with provision for glass and/or louvers as indicated on Door Schedule and Drawings.

E. Stainless steel hollow metal doors in maximum duty application

1. Physical performance: Level A according to ANSI A250.4.
2. Metal thickness: 14-gauge, 1.70 mm (0.067 in).
3. Edge construction: Full flush, seamless with continuously welded edge seam; flush internal edge reinforcements of 14-gauge, 1.70 mm (0.067 in).
4. Fabricate door to be flush with one continuous face free from joints, tool markings and abrasions, and with provision for glass and/or louvers as indicated on Door Schedule and Drawings.

F. Door models

1. As indicated in the Door and Frame schedule.

    a. Custom embossed panel door
        1. Select from De La Fontaine CED series or **[**submit Designer's customized drawing**]**
        2. Select U type embossing or **[**V type embossing**]**
        3. Select embossed or **[**reverse-embossing**]**

    b. Door with inlays
        1. Select from De La Fontaine INL series or **[**submit Designer's customized drawing**]**
        2. Select inlay material from De La Fontaine standards or **[**submit Designer's choice**]**

    d. Door with combined models
        1. Submit Designer's customized drawing
        2. Select type of embossing, inlay material, from De La Fontaine standards or **[**submit Designer's choice**]**

G. End channels:
    1. Interior door:
        a. Top of door: Close top of door with a continuous stainless steel inverted channel, minimum 18-gauge, 1.1 mm (0.042 in). Channel shall be projection welded or securely bonded using adhesive. **[**Stainless steel flush channel unfilled, projection welded or securely bonded using adhesive.**]**. Re-polish

door surface to remove marks from projection welding. **[**Fully continuously welded seam with flush internal reinforcement of minimum 18-gauge, 1.1 mm (0.042 in)**]**.

b. Bottom of door: Close bottom of door with a continuous stainless steel inverted channel, minimum 18-gauge, 1.1 mm (0.042 in). Channel shall be projection welded or securely bonded using adhesive. **[**Stainless steel flush channel unfilled, projection welded or securely bonded using adhesive**]**. Re-polish door surface to remove marks from projection welding. **[**Fully continuously welded seam with flush internal reinforcement of minimum 18-gauge, 1.1 mm (0.042 in)**]**.

2. Exterior door:
   a. Top of door: Close top of door with a continuous stainless steel flush channel, minimum 18-gauge, 1.1 mm (0.042 in). Channel shall be projection welded or securely bonded using adhesive. Re-polish door surface to remove marks from projection welding [Fully continuously welded seam with flush internal reinforcement of minimum 18-gauge, 1.1 mm (0.042 in)**]**.
   b. Bottom of door: Close bottom of door with a continuous stainless steel inverted channel, minimum 18-gauge, 1.1 mm (0.042 in).Channel shall be projection welded or securely bonded using adhesive. **[**Stainless steel flush channel, projection welded or securely bonded using adhesive**]**. Re-polish door surface to remove marks from projection welding. **[**Fully continuously welded seam with flush internal reinforcement of minimum 18-gauge, 1.1 mm (0.042 in)**]**.
   c. Provide weep-hole openings in bottom of exterior doors to allow moisture to escape.

H. Vertical edges on active doors:

1. Beveled edges on both sides: 3 mm per 50 mm, (1/8 in per 2 in). Square vertical edges are not acceptable.
2. Double acting doors: rounded on 54 mm (2 1/8 in) radius

2.5. FRAME FABRICATION

A. Hollow metal frame in light duty application

1. Frames:
   a. Physical performance: Level C according to ANSI A250.4.
   b. Metal thickness: 18-gauge, 1.1 mm (0.042 in).
   c. Metal thickness for openings over 1219 mm (48 in): 16-gauge, 1.34 mm (0.053 in).
   d. Frame assembly: Face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**, **[**Knockdown**]**.
   e. Grain: vertical on jambs and header.

2. Side light, transom frame, borrowed light:

   a. Metal thickness: 16-gauge, 1.34 mm (0.053 in).
   b. Frame assembly: face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**.

c. Hollow metal panel: Same material, construction and finish as adjacent door assemblies.
d. Grain: vertical on jambs and header
e. Glazing bead: 18-gauge, 1.1 mm (0.042 in), screw applied with countersunk holes, butted corners. Install screws on non-secure side.
f. Glazing to comply with Section 08 80 00.
g. When required due to site access or shipping limitations, fabricate frame product for large openings in sections, with splice joints for field assembly. Provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

B. Hollow metal frames in moderate duty application

1. Frames:
   a. Physical performance: Level B according to ANSI A250.4.
   b. Metal thickness: 16-gauge, 1.34 mm (0.053 in).
   c. Metal thickness for openings over 1219 mm (48 in): 14-gauge, 1.70 mm (0.067 in).
   d. Frame assembly: Face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**, **[**Knockdown**]**.
   e. Grain: vertical on jambs and header

2. Side light, transom frame, borrowed light:

   a. Metal thickness: 16-gauge, 1.34 mm (0.053 in).
   b. Frame assembly: Face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**.
   c. Hollow metal panel: Same material, construction and finish as adjacent door assemblies.
   d. Grain: vertical on jambs and header
   e. Glazing bead: 18-gauge, 1.1 mm (0.042 in), screw applied with countersunk holes, butted corners. Install screws on non-secure side.
   f. Glazing to comply with Section 08 80 00.
   g. When required due to site access or shipping limitations, fabricate frame product for large openings in sections, with splice joints for field assembly. Provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

3. Exterior frame, side light, transom frame, borrowed light:
   a. Provide thermal break frame profile.

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C. Hollow metal frames in heavy duty application

1. Frames:
   a. Physical performance: Level A according to ANSI A250.4.
   b. Metal thickness: 16-gauge, 1.34 mm (0.053 in).
   c. Metal thickness for openings over 1219 mm (48 in): 14-gauge, 1.70 mm (0.067 in).

d. Frame assembly: Face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**, Knockdown frames are not acceptable.
e. Grain: vertical on jambs and header

2. Side light, transom frame, borrowed light:

a. Metal thickness: 16-gauge, 1.34 mm (0.053 in).
b. Frame assembly: Face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**.
c. Hollow metal panel: Same material, construction and finish as adjacent door assemblies.
d. Grain: vertical on jambs and header
e. Glazing bead: 18-gauge, 1.1 mm (0.042 in), screw applied with countersunk holes, butted corners. Install screws on non-secure side.
f. Glazing to comply with Section 08 80 00.
g. When required due to site access or shipping limitations, fabricate frame product for large openings in sections, with splice joints for field assembly. Provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

3. Exterior frame, side light, transom frame, borrowed light:
a. Provide thermal break frame profile.

D. Hollow metal frames in maximum duty application

1. Frames:
a. Physical performance: Level A according to ANSI A250.4.
b. Metal thickness: 14-gauge, 1.70 mm (0.067 in).
c. Metal thickness for openings over 1219 mm (48 in): 12-gauge, 2.36 mm (0.093 in).
d. Frame assembly: Face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**, Knockdown frames are not acceptable.
e. Grain: vertical on jambs and header

2. Side light, transom frame, borrowed light:

a. Metal thickness: 14-gauge, 1.70 mm (0.067 in).
b. Frame assembly: Face welded, dressed smooth with seamless face. **[**Continuously welded through the entire profile, dressed smooth with seamless face**]**.
c. Hollow metal panel: Same material, construction and finish as adjacent door assemblies.
d. Grain: vertical on jambs and header
e. Glazing bead: 16-gauge, 1.34 mm (0.053 in), screw applied with countersunk holes, butted corners. Install screws on non-secure side.
f. Glazing to comply with Section 08 80 00.
g. When required due to site access or shipping limitations, fabricate frame product for large openings in sections, with splice joints for field assembly. Provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

3. Exterior frame, side light, transom frame, borrowed light:
    a. Provide thermal break frame profile.

2.6. SPLIT FRAME

A. Frames:
1. Physical performance: Level A according to ANSI A250.4.
2. Metal thickness: 16-gauge, 1.34 mm (0.053 in).
3. Two inter-lock type face-welded components, dressed smooth with seamless face.
4. Grain: vertical on jambs and header

B. Side light, transom frame, borrowed light: Metal thickness: 16-gauge, 1.34 mm (0.053 in).
1. Two inter-lock type face-welded components, dressed smooth with seamless face.
2. Hollow metal panel: Same material, construction and finish as adjacent door assemblies.
3. Grain: vertical on jambs and header
4. Glazing bead: 18-gauge, 1.1 mm (0.042 in), screw applied with countersunk holes, butted corners. Install screws on non-secure side.
5. Glazing to comply with Section 08 80 00.
6. When required due to site access or shipping limitations, fabricate frame product for large openings in sections, with splice joints for field assembly. Provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

2.7. ANCHORS

A. Suitable for wall conditions
1. Located close to hinge reinforcements and at the same height on strike jamb. Quantity: 2 per jamb up to 1,524 mm (60 in) of door opening height, one additional anchor for each additional 762 mm (30 in) of door height (or fraction thereof).
2. Provide a welded adjustable stainless steel floor anchor at the bottom of each jamb on welded frames; same material thickness as frame and with 2 holes for bolting to floor.
3. Masonry anchors: Provide T-strap stainless steel wall anchors, minimum 16-gauge, 1.34 mm (0.053 in).
4. Existing wall anchors: Minimum 18-gauge, 1.1 mm (0.042 in), stainless steel, spot welded to the frame.
5. Steel/wood stud anchors: Minimum 18-gauge, 1.1 mm (0.042 in). Provide stainless steel snap-in or welded in “Z” type steel stud anchors.
6. Knockdown frame: Stainless steel adjustable compression anchors and stainless steel L brackets spot welded to back of frame.

2.8. SPECIAL PROFILES

A. Terminated stops: Where specified, shall be capped at heights as shown on the approved submittal drawings, and jamb joints below terminated stops shall be welded, filled and ground smooth so that there are no visible seams. Provide terminated stops 152 mm (6 in) above finish floor with a 45 **[**90**]**-degree angle cut. Re-polish frame surface to remove marks.

2.9. SPECIALTY ASSEMBLIES

A. Acoustical assemblies:
1. As indicated on the door and frame schedule, fabricate door and frame to comply with a minimum STC value of **[**XX**]** according to ASTM E90.

B. Windstorm assemblies:
1. As indicated on the door and frame schedule, fabricate door and frame to comply with ASTM A250.13, Class 1.

2.10. CLEARANCES

A. On fire-rated openings: Comply with NFPA 80
B. On non-fire rated openings, the clearance shall be 3 mm (1/8 in) between the door and frame and between meeting edges of a pair of doors. The clearance between the bottom of the door and the bottom of the frame shall be 19 mm (3/4 in) without threshold.

2.11. MANUFACTURING TOLERANCES

A. Frame:
1. Width and height: +1.6 mm (1/16 in), -0.8 mm (-1/32 in)
2. Face, stop and rabbet: +/- 0.8 mm (+/- 1/32 in)
3. Jamb depth: +/- 1.6 mm (+/- 1/16 in),

B. Door:
1. Width and height: +/- 1.2 mm (+/- 3/64 in)
2. Thickness: +/- 1.6 mm (+/- 1/16 in)
3. Edge flatness: 1.6 mm (1/16 in) maximum
4. Surface flatness: 3.1 mm (1/8 in) maximum
5. Door twist: +/- 1.6 mm (+/- 1/16 in)

C. Hardware:
1. Cutouts: Template dimension +0.38 mm (+0.015 in)
2. Location: +/- 0.8 mm (+/- 1/32 in)
3. Between hinge centerlines: +/- 0.4 mm (+/- 1/64)

2.12. FIRE-RATED OPENINGS

A. Manufacture doors and frames as successfully tested in accordance with:
1. NFPA 80
2. NFPA 252
3. NFPA 257
4. UL 10C
5. [British standard BS-476-22]
B. Identify each product with a fire label from one of the following testing agency: Underwriters Laboratories, Warnock Hersey (ITS).

2.13. FRAME HARDWARE PREPARATION

A. Factory to prepare hollow metal frame to receive template mortised hardware; include cut-outs, reinforcement, mortising, drilling, and tapping according to the Door and Hardware Schedule and templates.
B. Surface applied hardware: Factory reinforced only, 12-gauge, 2.36 mm (0.093 in).
C. Hinge and pivot reinforcements: 10-gauge, 3.12 mm (0.123 in) high frequency hinge reinforcements, with a flange **[**7-gauge, 4.24 mm (0.167 in) flat hinge reinforcements**]**.
D. Strike reinforcement: 16-gauge, 1.34 mm (0.053 in) **[**12-gauge, 2.36 mm (0.093 in)**]**.
E. Closer reinforcement: 12-gauge, 2.36 mm (0.093 in).
F. Other reinforcements: 16-gauge, 1.34 mm (0.053 in) **[**12-gauge, 2.36 mm (0.093 in)**]**.

2.14. DOOR HARDWARE PREPARATION

A. Factory to prepare hollow metal door to receive template mortised hardware; include cut-outs, reinforcement, mortising, drilling, and tapping according to the Door and Hardware Schedule and templates.

B. Surface applied hardware: Factory reinforced only, 16-gauge, 1.34 mm (0.053 in), **[**12-gauge; 2.36 mm (0.093 in)**]**.
C. Hinge and pivot reinforcements: 10-gauge, 3.12 mm (0.123 in) high frequency hinge reinforcements, with a flange **[**7-gauge, 4.24 mm (0.167 in) flat hinge reinforcements.
D. Lock front reinforcement: 12-gauge, 2.36 mm (0.093 in).
E. Flush bolt reinforcement: 12-gauge, 2.36 mm (0.093 in).
F. Closer reinforcement: 16-gauge, 1.34 mm (0.053 in) **[**12-gauge, 2.36 mm (0.093 in)**]**.
G. Other reinforcements: 16-gauge, 1.34 mm (0.053 in) **[**12-gauge, 2.36 mm (0.093 in)**]**.

2.15. FINISHING

A. All tool marks and surface imperfections shall be finished to make face sheets, vertical edges and welded joints free from irregularities. Re-polish product surface if necessary. All grained finishes applied to face of doors, frame jambs and frame header shall be vertical.

3. EXECUTION

3.1. EXAMINATION

A. Inspect rough openings to detect problems that would prevent the proper installation of doors and frames.
B. Rough openings shall be square, level and plumb with accurate dimensions.

3.2. INSTALLATION

A. Remove temporary spreaders on welded frames before installation and verify frame dimensions, swing, fire rating and opening number.
B. Install doors and frames in accordance with:
    1. Approved door and hardware schedule
    2. Approved shop drawings
    3. Manufacturer's recommendations
    4. Local building codes
    5. NFPA 80
    6. NFPA 105
    7. ANSI/DHI A115.1G
    8. NAAMM HMMA 840
C. Install STC assemblies per manufacturer's installation instructions.
D. Install Windstorm assemblies per manufacturer's installation instructions.

3.3. ADJUSTING, CLEANING AND PROTECTION

A. Repair or replace damaged products.
B. Correct defects in installation.
C. Clean area in accordance with Section 01 74 00.
D. Protect doors and frames until transfer of the building to the Owner.

3.4. INSPECTION

A. Inspection of fire rated openings
    1. Comply with NFPA 80 requirements.
    2. Fire door assemblies shall be inspected and tested by an individual with knowledge and understanding of the operating components of the type of door. This person must

confirm the door assembly will perform its intended function when exposed to fire conditions.

3. A report shall be written for the AHJ and shall be submitted to the Owner.
4. All deficiencies must be corrected before turning keys to the Owner.

END OF THIS SECTION

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 14 33 Stile and Rail Wood Doors
Description of Material or System:	Interior MDF Raised Panel Door
Last Updated:	8/30/2022
Updated by:	Christine Van Scoy

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Faculty apartment and dormitory interior doors shall be solid MDF raised panel; TS4000 series; 1-3/4" thick. Closers must be thru bolted, not screwed. Trustile is the preferred vendor. Number of panels to be confirmed on a per-project basis, depending on the architecture of the specific building. Interior faculty apartment doors shall be a painted finish.

Links to additional product information:

www.trustile.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 14 00 - Wood Doors
Description of Material or System:	Exterior wood frame doors
Last Updated:	12/18/2024
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

On a project by project basis for our historic buildings, we require exterior style and rail wood doors - these should match the performance specifications for VT Industries Eggers Style & Rail Collection doors.

Details on special exterior wood doors such as these should be reviewed with your FM Team during the design phase of a project.

Links to additional product information:

https://www.vtindustries.com/webres/File/architectural-doors/brochures/VT-Eggers-Stile-Rail-Brochure-Web.pdf

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 31 00 - Access Doors and Panels
Description of Material or System:	Insulated Access Door
Last Updated:	3/24/2022
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for insulated, fire-rated access doors is Babcock Davis.

Links to additional product information:

https://www.babcockdavis.com

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 36 13 - Sectional Doors
Description of Material or System:	Garage Door
Last Updated:	3/29/2022
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer and model for a garage door is Chi, model **2283** Raised Panel**.** Style and finishes to be determined on a per project basis.

Links to additional product information:

https://www.chiohd.com/

See section 08 71 13 for garage door openers.

TIMELESS COLLECTION

RAISED PANEL

2283 / 4283

SHORT PANEL LONG PANEL

Market Square Architects, PLLC
Portsmouth, NH 03801

This review is only for general conformance with the design of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. This review does not authorize any changes, including, without limitation, changes involving additional cost or schedule revision, unless stated in separate letter or change order. Approval of a specific item shall not include approval of an assembly of which the item is a component.

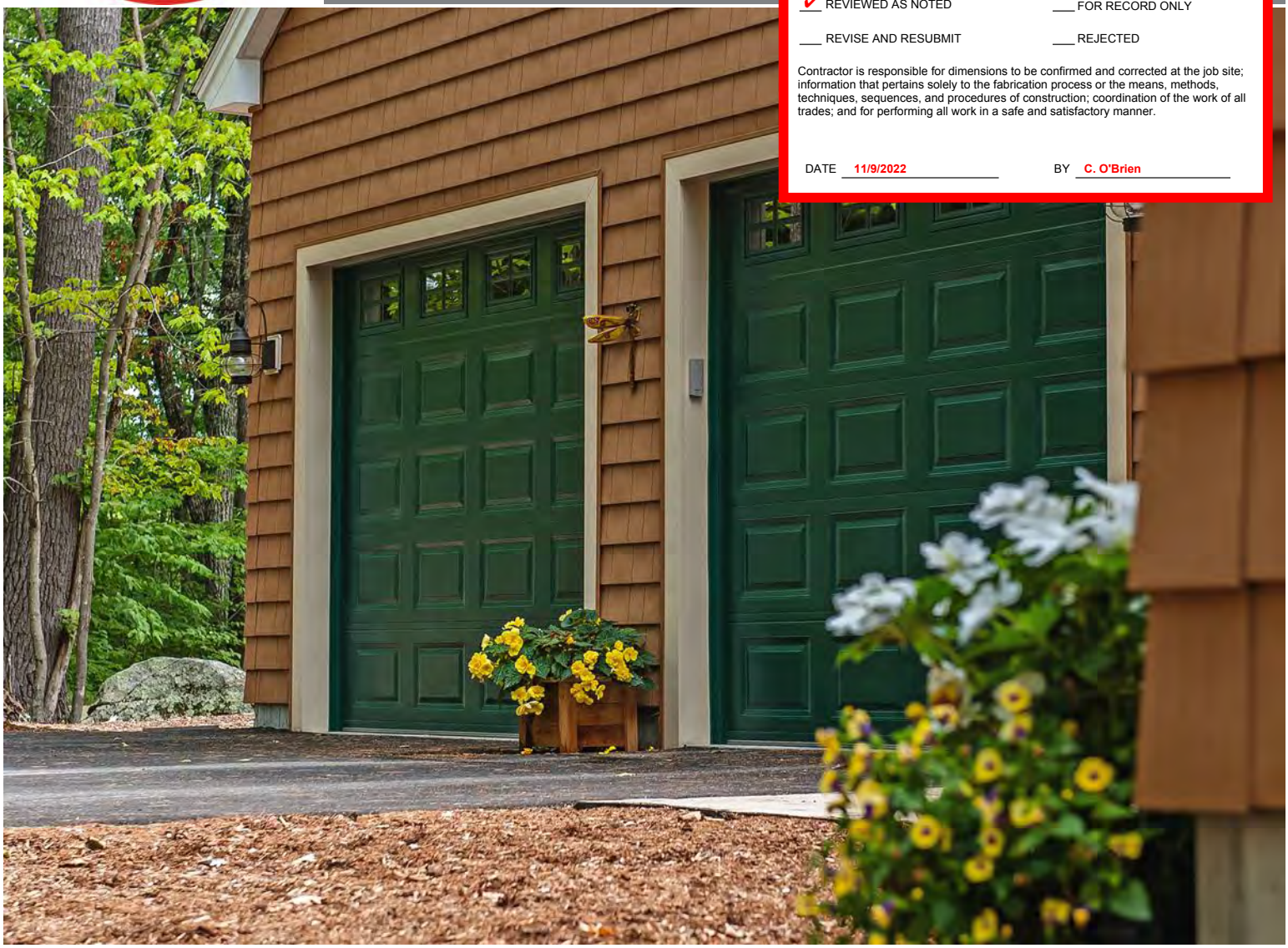
___ REVIEWED, NO EXCEPTIONS TAKEN ___ RESUBMIT SPECIFIED ITEMS

✔ REVIEWED AS NOTED ___ FOR RECORD ONLY

___ REVISE AND RESUBMIT ___ REJECTED

Contractor is responsible for dimensions to be confirmed and corrected at the job site; information that pertains solely to the fabrication process or the means, methods, techniques, sequences, and procedures of construction; coordination of the work of all trades; and for performing all work in a safe and satisfactory manner.

DATE 11/9/2022 BY C. O'Brien



Strong. Stylish.

An attractive, select model engineered for durability and energy efficiency. Designed to complement a wide variety of home styles, this model will provide many years of dependable service.



C.H.I. OVERHEAD DOORS

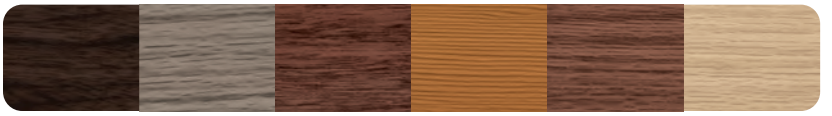
The Quality Garage Door.™

PERSONALIZING OPTIONS

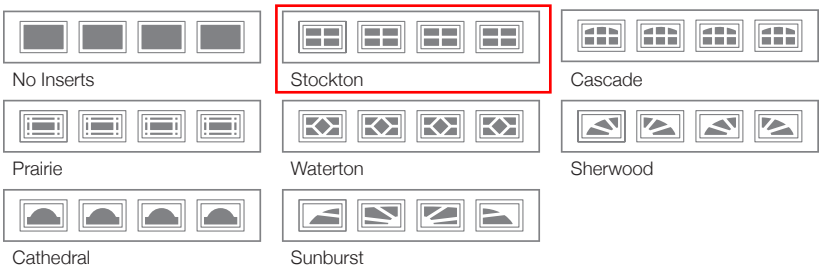
COLORS[1]



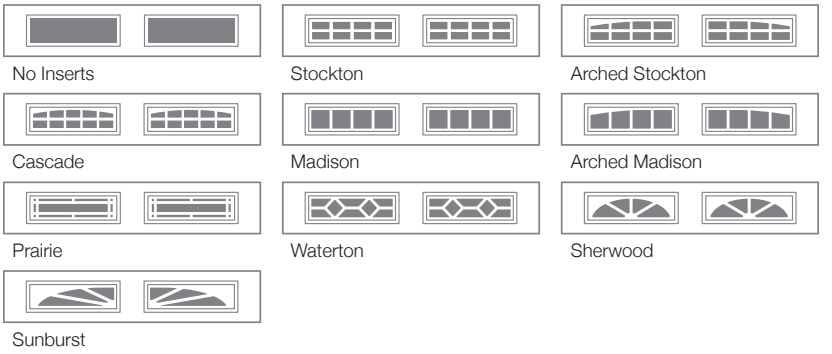
ACCENTS WOODTONES[1]



SHORT - WINDOW INSERTS 19in x 13in



LONG - WINDOW INSERTS 41in x 13in



GLASS *Plain available as single pane Polycarbonate*



WWW | WANT TO SEE MORE?
Visit **chiohd.com/raised-panel**

See your door before you buy it! **doorvisions.chiohd.com**



MODEL SECTION CONSTRUCTION



MODELS: 2283 & 4283
2in. thick - 2-sided steel
Medium Duty / 27[2] Ga. Steel
Polystyrene

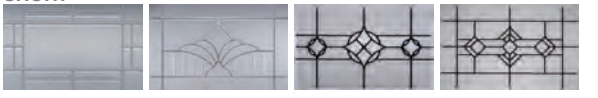
Thermal Rating
9.65
BETTER

WARRANTY	Limited Lifetime on Sections 3 Years on Springs / 6 Years on Hardware

1 Refer to your local C.H.I. Dealer for exact color or woodtone match.
2 Lower steel gauge [ga.] number indicates stronger steel.

DESIGNER GLASS

SHORT



LONG



Hawthorne and Somerset shown in platinum leading; also available in brass leading.

Fimbel Garage Doors

281 Daniel Webster Highway
Merrimack Nh 03054

603.782.9919
sales@fimbel.com

Fimbel Garage Doors
"The Garage Door Experts"

©2020 C.H.I. Overhead Doors

All information presented is based on the specifications and features available at the time of printing and is subject to change without notice.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 50 00 - Windows
Description of Material or System:	New and replacement windows
Last Updated:	3/2024
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Our preferred manufacturer is Marvin; we use the three following lines: Ultimate, Elevate and Infinity.
Depending on the application we require the different lines. Review specific application with the FM Project Team.
For residential buildings outside of the the historic district Paradigm or Simonton are also acceptable manufacturers.

Window limiters are required in dormitories where window sills are within 36" off floor and window is more than 72" above grade outside.

Replacement trim where possible is Azek or equal.

Screens shall be provided for all windows, and any window on the first floor OR where a student could conceivably get out on a roof/gain access, security screens are required.

Warranty Info: Marvin's 20/10 Warranty is the basis of design.

All specifications to require a "Window Audit" as a part of the checklist for installation prior to acceptance. Every window should be verified for smooth operation, level and plumb installation and meeting the requirements for air infiltration.

Links to additional product information:

https://www.marvin.com/products/collections/signature/ultimate

https://www.marvin.com

https://paradigmwindows.com/

https://www.simonton.com/

https://azekexteriors.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 71 00 Door Hardware
Description of Material or System:	Door Hardware
Last Updated:	1/2/2024
Updated by:	Marshal Miller

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

All door hardware sets to be review by Allegion. See contact information.

A. All permanent cylinders and cores will be Schlage Everest 29 T FSIC (Full Size Interchangeable Core) restricted key way.

B. Phillips Exeter will provide all permanent Schlage cores as part of the project cost.

C. The General Contractor or Construction Manager will supply and install Schlage Interchangeable Core housings for all locks.

D. During construction the General Contractor or Construction Manager will provide and install temporary, Schlage cores as needed to secure exterior building doors

E. All Key switches shall have Schlage Interchangeable Core housings.

Links to additional product information:

Allegion Contact:
John Gant AHC, FDAI, CCPR

john.gant@allegion.com
www.allegionne.com
Phone: 802-482-4763
Cell: 781-775-5010

Questions about Phillips Exeter keying and cylinders should be directed to:

Marshall Miller, PEA Locksmith
Phone: 603-777-4439 or 603-777-4444
mmiller@exeter.edu

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 71 13 - Automatic Door Operators
Description of Material or System:	Automatic Garage Door Openers
Last Updated:	3/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the PEA preferred product for faculty home garage door openers.

Model 6170 - Wall Mount Garage Door Opener Battery Backup Included.

PEA requires two remote control openers, for all garage doors.

Links to additional product information:

https://www.geniecompany.com/

GENIE®

PROFESSIONAL LINE

Wall Mount Pro Series

MODEL 6170

Wall Mount Garage Door Opener

Battery Backup Included



Highlights

- **NEW Wall Mount Design**
  - » **Cleaner Look** – Eliminating the rail & opener from the ceiling brings a clean and open look to your garage. Enjoy the view or use the freed-up space for storage or other purpose.
  - » **Compact** – Compact design fits into tight side room spaces between track and wall.
  - » **Headroom** – Ideal for garages with beam obstructions which prevent installation of a traditional opener.
- **Quiet, Powerful Performance** – 24 Volt DC motor provides maximum power to operate doors up to 850 lbs* at a speed of 7.5" per second**.
- **Battery Backup** – Don't get locked outside the garage when the power goes out! Battery backup is included.
- **GenieSense™ Monitoring and Diagnostic Technology** Provides safety by continuously monitoring operation of the door, stopping the operation to alert you when significant changes occur.
- **Soft Start & Stop Control** – DC technology allows your door to begin and end its movement smoothly instead of abruptly whenever you operate it, creating less noise and less wear on the door.
- **Smart Lighting** – Bright LED light fixture with the flexibility to place wherever desired in the garage.
- **Dependability** – The quality built into a Model 6170 is backed by a 15-Year Limited Warranty◊ for the motor.
- **Smart Garage Capabilities**
  Integrated Wi-Fi provides multiple benefits such as:
  - » **Security** – Instantly know if someone is operating your garage door without permission
  - » **Convenience** – Open your door for family members, deliveries, service providers or provide them their own virtual key from anywhere with your smart device!
  - » **Safety** – Have garage door automatically close at a specific time or after an elapsed time period in case it's left open.



THE GENIE STORY: Genie has a rich history in developing garage door openers that feature reliability, strength, safety, security, and convenience. Since 1954, Genie has produced millions of openers that serve millions of satisfied homeowners every day of every year. Shouldn't you have one in your garage? Genie — The Brand You Trust.

* Doors must be well balanced.
** Operating speed may vary based on cable drum selection and application.
◊ Limited non-transferable warranty. See Programming, Operation & Maintenance manual for details.

Wall Mount Pro Series

MODEL 6170

DC MOTOR WITH SOFT START & STOP

Opener mounts to either side of door!



Standard Equipment & Warranty

SAFETY BEAMS	WIRELESS WALL CONSOLE	3-BUTTON REMOTE	LED LIGHT FIXTURE	BATTERY BACKUP	ELECTRIC LOCK	MOTOR◊	PARTS◊	ACCESSORIES◊
						GENIE 15 YEAR LIMITED WARRANTY	GENIE 5 YEAR LIMITED WARRANTY	GENIE 1 YEAR LIMITED WARRANTY

Features & Benefits

POWER & CONTROL

DC Motor Smart Technology – The DC motor provides quiet operation as well as Soft Start & Stop control. This means the door begins & ends its travel smoothly, not abruptly, which lessens noise as well as wear & tear on the garage door.

Wall Mount Design – Eliminates the traditional rail & powerhead design by attaching directly to the garage door's spring tube. This allows for a cleaner garage ceiling, and frees up space for additional storage and headroom. Beneficial for installing in garages with beam obstructions. Powerful yet compact size allows for more placement options, especially in tight spaces next to the garage door.

Speed – Opening speed of 7.5 inches/second* gets you on your way faster.

SAFETY

Safe-T-Beam® Non-Contact Reversing System – Puts an invisible beam across the door opening. The door stops and reverses to open position if anything passes through the beam.

Safe-T-Pulse™ System – Patent-pending system that provides internal tension monitoring of door cables with an electronic pulse during initial door travel. If it detects slack or unspooled cables, the system will stop unsafe operation. Internal slack cable detection cannot be bypassed or improperly aligned like external slack cable detection methods.

SECURITY

IntelliCode® Access Security System – Superior encryption technology (also known as rolling codes) that prevents piracy of the radio signal that opens your garage door by continually seeking a new code from billions of combinations.

Electric Lock – Automatically locks door after closing to safeguard your garage.

CONVENIENCE

Auto-Seek Dual Frequency – The opener automatically uses either 315 or 390 MHz frequency to avoid potential nearby interference, such as military base equipment, to help ensure the opener operates properly.

Pre-Programmed Remote – Ready to use out-of-the-box with simple steps to change the programming if so desired.

HomeLink® & Car2U® Compatibility – Works with ALL HomeLink and Car2U systems regardless of when those systems were made. No additional external repeater box or compatibility bridge needed.

Wireless Wall Console – An attractive wall console that's completely wireless for flexible placement in the garage. Enjoy the optional pulsing back-light as well as delay button that gives ample time (up to 30 seconds) to exit the garage before the door begins moving. The work light button can turn just the opener's light on at any time.



LED Light Fixture – Light fixture provides bright glowing light plus flexibility to place fixture wherever desired in the garage.



Battery Backup – No more unexpectedly getting locked outside the garage when the power goes out!

*Operating speed may vary based on cable drum selection and application.
◊ Limited non-transferable warranty. See Programming, Operation & Maintenance manual for details.

GENIE THE BRAND YOU TRUST

Aladdin Connect®

INTEGRATED WI-FI CONNECTIVITY



Remotely monitor and control your garage door from almost anywhere with your smart device. Time-based features allow you to set door to automatically close and/or notify after a set length of time; as well as schedule a specific hour and minute to close the door and/or notify when it does. Also allows for multiple individual user accounts so you can provide virtual key access for your garage door to a friend, relative, or service person for a certain time, a range of time, or permanently.

Use the Aladdin Connect app to control any combination of 20 different Genie Wi-Fi integrated garage door openers or standalone Aladdin Connect Door Control Modules.

Compatible with:

Convenience Options

Wireless Keypad

Easy-to-program keypad mounts outside your door to give you convenient code access to your garage, which is great when you are outside without the remote control. Back-lit keypad lets you easily see the numbers & control up to 3 openers. Uses Auto-Seek Dual Frequency (315/390 MHz).





White Gray Tan Almond

Choose a color for the flip-up cover that best complements your home. White is standard, other colors sold separately.

1-Button Remote

Simple yet versatile one-button remote features auto-seek dual frequency. Can be used on a keychain or as a traditional visor style remote. Backward compatible with all Intellicode® equipped Genie garage door openers.



CALIFORNIA RESIDENTS – This opener includes battery backup as required by SB-969, all newly installed openers must have battery backup as of 7/1/19. If needed, visit www.geniecompany.com or ask your Genie dealer for details.

YOUR GENIE PROFESSIONAL DEALER:

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The Genie Company • One Door Drive, Mt. Hope, Ohio 44660
1.800.35.GENIE (354-3643) • www.geniecompany.com
Item G001.6170 5/20

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 83 00 Mirrors
Description of Material or System:	Bathroom Mirrors
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [x] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Student mirrors-Series framed mirror, OR plate glass mirror:
Nominal 6.00mm (0.23") thick, conforming to ASTM C 1036. Type I, Class 1, Quality q2 and with silvering, electro-plated copper coating and protective organic coating.

*Where used as a single piece of mirror across a wall. Design and project dependent. Review with PEA FM team.

Links to additional product information:

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	08 Openings
Specification Section:	08 83 00 - Mirrors
Description of Material or System:	Glass Mirror with Stainless Steel Angle Frame
Last Updated:	1/24/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [x] Academic Buildings
- [x] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for the glass mirror with stainless steel angle frame is Bobrick.

Product: B-290

Note: Non angle unit is to be used in only in single user baths.

Typical size is 24"x36".
Sizes should be confirmed on a project by project basis.

In dorm, multi-fixture bathrooms also provide a full length mirror 24" x 60" by Bobrick.

Links to additional product information:

https://www.bobrick.com/products/washroom-accessories/restroom-accessories-catalog/mirrors/product/b-290-series/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 64 00 - Wood Flooring
Description of Material or System:	Engineered Wood Flooring
Last Updated:	12/2024
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for engineered wood flooring is Bois BSL.
This is typical flooring for faculty apartments in dormitories and residences (houses) unless otherwise noted. (There are some locations that are LVT vs. Engineered wood flooring. The later is the PEA preference, but the other is acceptable in some multi-family high-turnover apartments or as time/budget permit.

The flooring is to be 5/8" white oak with clear semi-gloss finish and a 4mm minimum solid wood top sheet. Typical width to be 3-1/2". *

*Color/stain may vary depending on project and application. Review with FM Team prior to final color selection."

Wood to be sourced from Pennsylvania or further north.
Alternative products are to meet or exceed PEA Standard, upon approval.

Links to additional product information:

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 64 29 - Wood Flooring
Description of Material or System:	Wood Flooring - Hardwood Flooring
Last Updated:	12/18/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☑ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The standard for classrooms where possible is hardwood flooring with a carpet under the Harkness table.
Solid Hardwood Flooring: Solid wood flooring shall be tongued-and-grooved and end matched; back face of each strip shall be back channeled. Strips shall be standard random lengths, complying with grading rules. Wood shall be kiln-dried and moisture content of wood at time of installation shall not exceed 8%.
Species and cut per finish schedule.

For product detail information see the attached spec for the Academy Building on Wood floors - the focus of this section is on Hardwood flooring.

Future projects using hardwood shall match the performance criteria of this spec. In terms of color and species, it is project dependent. Review with the FM Design Team.

Links to additional product information:

Solid wood floors are to be American or Canadian made, no imported materials. Red or white oak, or maple. Materials are to be sourced within 500 Miles of PEA.

SECTION 096429 - WOOD FLOORING

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the wood flooring, as shown on the drawings and/or specified herein, including, but not limited to, the following:

1. Prefinished, engineered wood flooring.
2. Hardwood flooring.
3. Accessories, including self-leveling underlayment.
4. Allowance: Where reusing wood subfloors allow for 20% replacement of existing T & G wood subflooing. Replace in full units to next nearest sleeper.

B. Related Sections: Following description of work is included for reference only and shall not be presumed to be complete:

1. Provision of waste management: Section 017419, Construction Waste Management Plan.
2. Provision of general LEED requirements and forms: 018113 Sustainable Design Requirements."

1.3 RELATED SECTIONS

A. Cast-in-Place Concrete - Section 033000.

B. Carpentry - Section 062000.

C. Architectural Woodwork - Section 064023.

1.4 SUBMITTALS

A. LEED Equivalency Submittals

1. Gather manufacturers' product documentation for each product having an Environmental Product Declaration (EPD).
    a. Documentation should confirm EPD conforms with ISO 14205 EN 15804 or ISO 21930
    b. EPD shall have at least Cradle to Gate scope,

2. Gather manufacturers' product documentation for each product having a publically available material inventory down to at least 0.1% or 1000 ppm.

    a. Documentation should be in the form of one of the following:
        1). A publically available inventory of all ingredients identified by name and Chemical Abstract Service Registration Number (CASRN)
        2). A published, complete Health Product Declaration in compliance with the Health Product Declaration open Standard.
        3). Material Health Certificate or Cradle to Cradle Certification under standard version 3 or later with a Material Health Achievement level at the Bronze level or higher.
        4). A Declare product label indicating that all ingredients have been evaluated and disclosed down to 1000 ppm.
        5). Cradle to Cradle Material Health Certificate at the Bronze Level or higher

3. Gather manufacturers' product documentation that includes recycled content claims for the products contributing towards compliance. Claims must conform to the definition in ISO 14021-1999, Environmental Labels and Declarations, Self-Declared Environmental Claims.

4. Confirm there is FSC Certification for all wood products that contribute to credit achievement by gathering the following:

    a. Itemized vendor invoices for FSC-certified products.
    b. Chain-of-Custody (COC) certificates. Every entity that processes or trades FSC-certified material before it is shipped to the project site must have FSC CoC certification. On-site installers of FSC-certified products must have CoC certification only if they modify the products off the project site.

5. Gather manufacturers' or third-party certification of testing to and compliance with the California Department of Public Health (CDPH) Standard method v1.2-2017 that includes the following information:

    a. The exposure scenario used to determine compliance.
    b. The range of total VOCs after 14 days, measured as specified in the CDPH Standard Method v1.2:
        1). 0.5 mg/m^3 or less;
        2). Between 0.5 and 5.0 mg/m^3; or
        3). 5.0 mg/m^3 or more
    c. Laboratory accreditation under ISO/IEC 17025.
    d. Claims of compliance for wet-applied products must state the amount applied in mass per surface area

    *Products that are inherently non-emitting sources of VOCs (stone, ceramic, powder-coated metals, plated or anodized metal, glass, concrete, clay brick, and unfinished or untreated solid wood flooring) are considered fully compliant without any VOC emissions testing if they do not include integral organic-based surface coatings, binders, or sealants.

6. Gather manufacturers' product data confirming that the composite wood products in the building have low formaldehyde emissions that meet the California Air Resources Board

ATCM for formaldehyde requirements for ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins.

B. Product Data: Submit manufacturer's detailed technical product data and installation instructions for each type of wood flooring. Include instructions for handling, storage, installation, finishing, protection and maintenance.

C. Samples: Submit 12-inch long sets of range samples for wood flooring; include finish.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Specialized wood flooring firm with not less than three (3) years of successful experience in installation of types specified, and acceptable to manufacturer of wood flooring; qualified manufacturer certified for chain-of-custody by an FSC-accredited certification body.

B. General Standard: Comply with recommendations of National Oak Flooring Manufacturer's Association (NOFMA).

C. Source Quality Control: Obtain flooring of each type from single manufacturer or source, to ensure match of quality, color, pattern and texture.

D. Field-Constructed Mock-Up: Prior to installing wood flooring and trim, construct mock-ups for each form of construction and finish required to verify selections made under Sample submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mock-ups to comply with the following requirements, using materials indicated for completed work.

1. Build mock-ups of wood flooring and each type of trim, in the form, dimensions, and location designated by the Architect.

2. Notify Architect one week in advance of the dates and times when mock-ups will be erected.

3. Demonstrate the proposed range of aesthetic effects and workmanship.

4. Modify or reinstall mock-ups as required to obtain Architect's acceptance. Simulate finished lighting conditions for reviewing mock-ups.

5. Obtain Architect's acceptance of mock-ups before start of final unit of work.

6. Retain and maintain mock-ups during construction in undisturbed condition as a standard for judging completed unit of work. When directed, demolish and remove mock-ups from project site, except that accepted in place mock-ups in undisturbed condition at the time of Substantial Completion may become part of completed unit of work.

E. The Contractor shall furnish a letter from the adhesive manufacturer stating that the concrete substrate has been tested for moisture vapor transmission and that the moisture vapor transmission levels do not exceed the manufacturers’ recommendations.

1.6 DELIVERY, STORAGE AND HANDLING

A. Protect wood flooring from excessive moisture in shipment, storage and handling. Deliver in unopened cartons or bundles and store in a dry place, with adequate air circulation. Do not deliver material to building until "wet work" such as concrete and plaster have been completed and cured to a condition of equilibrium.

1.7 PROJECT CONDITIONS

A. Conditioning: Do not proceed with installation of wood flooring until spaces have been enclosed and are at approximate humidity condition planned for occupancy. Condition wood for five (5) days prior to start of installation by placing in spaces to receive flooring and maintaining ambient temperature between 65 degrees F. and 70 degrees F. before, during and after installation. Open packages of wood flooring which are sealed to permit natural adjustment of moisture content.

B. Install factory-finished wood flooring after other finishing operations, including painting, have been completed.

1.8 SPECIAL PROJECT WARRANTY

A. Submit three (3) year warranty signed by Manufacturer and Contractor agreeing to repair or replace wood flooring which shrinks, warps, cracks, or otherwise deteriorates excessively, or which breaks its anchorage or bond with substrate or otherwise fails to perform as required, due to failures of materials and/or workmanship and not due to unusual exposure to moisture or other abusive forces or elements not anticipated for application from date of substantial completion.

PART 2 PRODUCTS

2.1 WOOD MATERIALS

A. LEED Equivalency Requirements:

1. Provide products with Third Party Environmental Product Declaration (EPD) whenever available.

2. Wood products that are not reused, salvaged, or recycled must be certified to the standards of the Forest Stewardship Council.

3. Provide products manufactured and extracted within 100 miles of the project site whenever possible.

4. Flooring products must be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method v1.2-2017, using the applicable exposure scenario. The default scenario if the private office scenario.

5. Composite wood, as defined by the California Air Resources Board, Airborne Toxic Measure to Reduce Formaldehyde Emissions from Composite Wood Products Regulation, must be documented to have low formaldehyde emissions that meet the California Air

Resources Board ATCM for formaldehyde requirements for ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins.

B. Wood Flooring: Per legend on A9.00.

1. Factory-Finished, Engineered Wood Flooring: HPVA EF, except bonding agent contains no urea-formaldehyde; Certified wood/ FSC. Provide products of Pioneer Millworks, LV Domestic, BSL or approved equal acceptable to the Architect.

2. Solid Hardwood Flooring: Solid wood flooring shall be tongued-and-grooved and end-matched; back face of each strip shall be back channeled. Strips shall be standard random lengths, complying with grading rules. Wood shall be kiln-dried and moisture content of wood at time of installation shall not exceed 8%. Species and cut per finish schedule.

C. Wood Trim: Provide wood stripping, nosings, saddles and thresholds, as indicated in or adjacent to wood flooring, of same species, grade and cut as wood flooring. Finish to match wood floor manufacturer product.

D. Wood flooring shall be in compliance with FloorScore program criteria.

E. Wood flooring shall be manufactured using ultra-low emitting formaldehyde (ULEF) or no-added formaldehyde (NAF) adhesives.

2.2 ACCESSORIES

A. Attachment:

1. Glue: As recommended by flooring manufacturer.

2. Nails: Spot nailing may be used when there is a local variation in the floor which cannot resolved by flashpatching and the sub is concerned the glue will be put in tension. Provide screw type flooring nails as recommended by NOFMA in "Installation Manual."

B. Self-Leveling Underlayment: As recommended by flooring manufacturer.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where wood flooring is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 PREPARATION

A. Concrete Slabs: Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

1. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than two tests in each installation area and with test areas evenly spaced in installation areas.

a. Perform anhydrous calcium chloride test per ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb. of water/1000 sq. ft. in 24 hours.

B. Relative Humidity Testing: Perform relative humidity testing using in situ probes according to ASTM F 2170. Proceed with installation only after substrate have a maximum 75% relative humidity level.

C. Wherever direct application of wood flooring to concrete substrate is indicated, test for dryness before proceeding with installation. If tests show dampness, do not proceed until slab is dry.

D. Grind high spots and fill low spots on concrete substrates to produce a maximum 1/8-inch deviation in any direction when checked with a 10-foot straight edge. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.

E. Remove coatings, including adhesives, residud of existing flooring, curing compounds, and other substances on substrates that are incompatible with installation adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

F. Vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

A. General: Comply with flooring manufacturer's instructions and recommendations, but not less than recommended by NOFMA in "Hardwood Flooring Installation Manual."

B. Pattern: Comply with pattern or direction of pattern for laying wood flooring, as directed by Architect.

C. Expansion Space: Provide expansion space at walls and other obstructions and terminations of flooring, not less than 1/2". Fill expansion space with flush cork expansion strip. Nail shoe molding or other trim to baseboard, rather than to flooring.

D. Lay wood flooring directly over substrate in accordance with manufacturer's written instructions.

E. Install flooring in accordance with manufacturer’s instructions.

F. Glue-Down Installation

1. Direct-Glue Down System: Spread glue approximately the width of two units using a square-notched trowel. Spread adhesive 2-1/2 feet to 3 feet across length of room. Do not spread more adhesive than can be covered in 30 to 45 minutes.

2. Do not use rubber mallet or hammer directly to engage tongue and groove wood flooring.

3. Allow adhesive to cure for approximately 24 hours before foot traffic.

4. Remove tape 24 to 36 hours after installation is completed.

5. Use longest lengths practicable, minimizing number of end joints.

6. Visually inspect each piece prior to installation and discard pieces having any visible defect.

7. Anchor each piece firmly into position, drawn snugly against the preceding piece, with tight mating edges.

8. Do not split the wood; remove and discard split wood.

G. Wood Trim: Nail baseboard to wall and nail shoe molding or other trim to baseboard; do not nail to flooring.

3.4 PROTECTION, CLEANING AND REPAIRS

A. Clean floors by vacuuming and dry sweeping. Limit use of wet or damp mopping of floors. Examine all floors for damage and make necessary repairs. If damage is irreparable, remove and replace affected strips at no additional cost to the Owner. Do not use plastic sheet or film that might cause condensation.

B. Protect completed wood flooring during remainder of construction period with heavy Kraft paper or other suitable covering, so that flooring and finish will be without damage or deterioration at time of acceptance. Do not move heavy or sharp objects directly over Kraft paper covered wood flooring. Protect flooring with plywood or hardboard panels to prevent damage from storing or moving objects over flooring.

END OF SECTION

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	9 Finishes
Specification Section:	09 65 00 - Resilient Flooring
Description of Material or System:	Resilient Modular Flooring
Last Updated:	3/31/2022
Updated by:	Curtis Boivin

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

For residential bathrooms and kitchens, the preferred manufacturer and product type for modular linoleum tile is Forbo Marmoleum.

Links to additional product information:

https://www.forbo.com/flooring/en-us/products/marmoleum/cfctp7

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 65 19 - Resilient Tile Flooring
Description of Material or System:	Luxury Vinyl Tile
Last Updated:	12/19/2025
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The application for this is Dormitory Student Rooms, Approved Multi-family faculty residences and as a project by project basis for other spaces.

The spec info should include the following. Installations should be fully glued product on an appropriate sub-base reviewed by the FM Operations team.

The product is as follows: Luxury Vinyl Tile (LVT): Provide luxury vinyl plank tile conforming to ASTM F
1700, Class III, Type B, printed film vinyl tile, embossed surface, equal to "Event - Classic Plank ECK ASH 3308" made by Tarkett, or approved equal.
Provide tile units
with uniformly distributed color and pattern throughout the thickness of tile. Variations in shades and off-pattern matches between containers are not acceptable.
1. Size: 36" long x 0.120" thick x width indicated.
2. Flammability shall be Class 1 per ASTM E648.

Links to additional product information:

For quick turn summer faculty housing moves LVP/LVT is to be, Earthwerks Chassis or NRF Generations Lineage.

Cementitious patching compound- Proma Pro Patch Supreme. Adhesive-Mapei Eco 373 trowel application only

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 67 00 Fluid-Applied Flooring
Description of Material or System:	Guidelines for floors of student shower areas wet locations; Student bathrooms, showers, locker rooms and laundry rooms
Last Updated:	8/26/2022
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [x] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Floors in wet areas such as student showers in locker rooms shall be finished with a material that has a seamless application and an integral base.

Materials should be able to be cleaned and mopped without long term damage and shall be flexible to allow for building settlement.

Floors shall be treated in such a way that they are pitched to a drain that will allow for proper drainage after shower use or cleaning operations.

Student bathrooms in dormitories, and custodial areas with floor sinks, shall be finished with a similar product.

Preferred manufacturer: Stonhard

Links to additional product information:

https://www.stonhard.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 68 00 Carpet
Description of Material or System:	Broadloom Carpet Pattern Loop
Last Updated:	12/18/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

For use in direct glue installations and classroom loose lay area rug installations. Substitute style and manufacturer will be acceptable if substitute meets or exceeds this specification.

Nylon material 28 oz. minimum.

Review all products with PEA FM team during design.

Style and Manufacturers maybe substituted if the products meet the meets or exceeds this specification.

Links to additional product information:

https://www.shawcontract.com/en-us

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 68 00 Carpet
Description of Material or System:	Broadloom Carpet for Stair Runners
Last Updated:	3/2024
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

For use in faculty resident locations. For staircase runners and wall to wall installations over padding. A substitute style and manufacturer will be acceptable if substitute meets or exceeds this specification.

Shaw Carpet
Style: Emphatic II (30 oz)
Color: TBD

Links to additional product information:

https://shawpropertysolutions.com/pdp/carpets/emphatic-ii-30/timeless/54255-56110

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 68 13 - Carpet Tile
Description of Material or System:	Modular Carpet Tile
Last Updated:	12/18/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☑ Academic Buildings
- ☑ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

For dormitory corridors and public spaces, including dining halls, as appropriate the preferred manufacturer and product for modular carpet tile is the following:

Preferred for other public spaces:
Manufacturer: Forbo
Model: Flotex.

An acceptable alternate is:

Preferred for dormitory corridors:
Manufacturer: J&J Flooring
Model: Kinetex

Troweled pressure sensitive adhesives, **required.** No wet set allowed.

Links to additional product information:

https://www.forbo.com/flooring/en-us/products/flotex/cecpcj

https://www.jjflooringgroup.com/product-category/kinetex/

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 91 00 - Painting
Description of Material or System:	Paint for horizontal millwork
Last Updated:	1/4/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Design intent is for the paint product to be used on horizontal millwork.

Manufacturer: Sherwin Williams
Product: Urethane trim enamel interior-exterior waterbased semi-gloss.

This product has a harder finish and should be used for all horizontal surfaces on wood millwork. Review with the FM Team.

Links to additional product information:

https://www.sherwin-williams.com/painting-contractors/products/emerald-urethane-trim-enamel

Emerald®

Urethane Trim Enamel Interior-Exterior Waterbased Semi-Gloss

(US) K38-2750/1750/1760 Series, (Canada) K38Q-8950/8850/8860 Series

CHARACTERISTICS

Emerald Urethane Trim Enamel is a waterbased "Best-In-Class" quality interior-exterior enamel formulated with a urethane modified alkyd resin system for premium quality and performance. It delivers the look, feel and durability of an oil based enamel with the convenience of a waterbased formula. Excellent flow and leveling, gloss and color retention when applied to interior-exterior surfaces such as properly prepared drywall, wood, masonry and metal.

Color: Many Colors
To optimize hide and color development, always use the recommended P-Shade primer.

Coverage: 8.58-9.81 sq. meters per litre
350-400 sq. ft. per gallon
@ 4 mils wet, 1.3 mils dry

Drying Time, @ 77°F (20°C), 50% RH:
Touch: 1 Hour
Recoat: 4 Hours
Drying and recoat times are temperature, humidity, and film thickness dependent.

Finish: 45-65 units @ 60°

Tinting with CCE:

Base:	oz. per gallon:	Strength:
Ultrawhite	0-7	SherColor
High Hide White	0-6	SherColor
Deep Base	4-14	SherColor
Ultradeep Base	10-14	SherColor
Black	Do Not Tint	

Ultrawhite K38W01750
(may vary by color)

V.O.C.(less exempt solvents):
less than 50 grams per litre; 0.42 lbs. per gallon
As per 40 CFR 59.406

Volume Solids: 33 ±2%
Weight Solids: 49 ±2%
Weight per Gallon: 10.73 lbs (4.86 kg)
Flash Point: N.A.
Vehicle Type: Urethane modified alkyd
Shelf Life: 36 months, unopened

COMPLIANCE

As of 09/26/2022, Complies with :

OTC	Yes
OTC Phase II	Yes
S.C.A.Q.M.D.	Yes
CARB	Yes
CARB SCM 2007	Yes
CARB SCM 2020	Yes
Canada	Yes
LEED® v4 & v4.1 Emissions	No
LEED® v4 & v4.1 V.O.C.	Yes
EPD-NSF® Certified	No
MIR-Manufacturer Inventory	No
MPI®	Yes

APPLICATION

Apply at temperatures above 50°F (10°C).
No reduction needed.

Brush:
Use a nylon-polyester brush.

Roller:
Use a 1/4 to 1/2 inch nap synthetic cover.

For specific brushes and rollers, please refer to our Brush and Roller Guide.

Spray - Airless:
Pressure 2000 p.s.i.
Tip .013-.017 inch

HVLP System: Graco® HVLP 9.5, number 3 or 4 needle and cap, two-thirds air pressure, number 5 material setting. Single turbine, no reduction. Or equivalent.

APPLICATION TIPS

Make sure product is completely agitated (mechanically or manually) before use.

Using the same method of application and batch to touch up with as that originally used will help improve touch up.

When original application was by spray, preconditioning of touch up paint by running it through the spray tip will help touch up appearance.

SPECIFICATIONS

Interior

Drywall:
1 coat ProMar 200 Zero V.O.C Primer
2 coats Emerald Urethane Trim Enamel

Plaster:
1 coat Loxon Concrete & Masonry Primer
2 coats Emerald Urethane Trim Enamel

Wood:
1 coat Premium Wall & Wood Primer
2 coats Emerald Urethane Trim Enamel

Interior and Exterior

Aluminum, Galvanized & Steel:
1 coat All Surface Enamel Latex Primer
2 coats Emerald Urethane Trim Enamel

Block:
1 coat Loxon Acrylic Block Surfacer
2 coats Emerald Urethane Trim Enamel

Masonry, Cement, Stucco:
1 coat Loxon Concrete & Masonry Primer
2 coats Emerald Urethane Trim Enamel

Exterior

Wood:
1 coat Exterior Oil-Based Wood Primer
or
1 coat Exterior Latex Wood Primer
2 coats Emerald Urethane Trim Enamel

Other primers may be appropriate.

When repainting involves a drastic color change, a coat of primer will improve the hiding performance of the topcoat color.

continued on back

Emerald®

Urethane Trim Enamel Interior-Exterior Waterbased Semi-Gloss

SURFACE PREPARATION

WARNING! If you scrape, sand or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting: US - National Lead Information Hotline at 1-800-424-LEAD or log on to www.epa.gov/lead; Canada - your local health authority.

Remove all surface contamination by washing with a appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull. Stains from water, smoke, ink, pencil, grease, etc. should be sealed with the appropriate primer-sealer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

Aluminum and Galvanized Steel:
Wash to remove any oil, grease, or other surface contamination. All corrosion must be removed with sandpaper, wire brush, or other abrading method.

Caulking:
Gaps between walls, ceiling, crown moldings, and other interior trim can be filled with the appropriate caulk after priming the surface.

Drywall:
Fill cracks and holes with patching paste-spackle and sand smooth. Joint compounds must be cured and sanded smooth. Remove all sanding dust.

Masonry, Concrete, Cement, Block:
All new surfaces must be cured according to the supplier's recommandations – usually about 30 days. Remove all form release and curing agents. Rough surfaces can be filled to provide a smooth surface. If painting can not wait 30 days, allow the surface to cure 7 days and prime the surface with Loxon Concrete & Masonry Primer.

Steel:
Rust and mill scale must be removed using sandpaper, wire brush, or other abrading method. Bare steel must be primed the same day as cleaned.

SURFACE PREPARATION

Mildew:
Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised.
Mildew may be removed before painting by washing with a solution of 1 part liquid bleach and 3 parts clean water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach-water solution.

Stucco:
Remove any loose stucco, efflorescence, or laitance. Allow new stucco to cure at least 30 days before painting. If painting cannot wait 30 days, allow the surface to dry 7 days and prime with Loxon Concrete & Masonry Primer. Repair cracks, voids, and other holes with an elastomeric patch or sealant.

Plaster:
Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of clean water. Repeat until the surface is hard, rinse with clear water and allow to dry.

Wood, Plywood, Composition Board:
Clean the surface thoroughly then sand any exposed wood to a fresh surface. Patch all holes and imperfections with a wood filler or putty and sand smooth. All patched areas must be primed. Knots and some woods, such as redwood and cedar, contain a high amount of tannin, a colored wood extract. If applied to these bare woods, it may show some staining.

Exterior: If staining persists, spot prime severe areas with 1 coat of Exterior Oil-Based Wood Primer prior to using.

Interior: If staining persists, spot prime severe areas with 1 coat of Multi-Purpose Oil-Based Primer.

CAUTIONS

Protect from freezing.
Non-Photochemically reactive.

For exterior use on doors, trim, and other small areas of wood or metal. Do not use on the main body of exterior structures.

Before using, carefully read **CAUTIONS on label**.

Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (**NIOSH** approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage. **FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately. **WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.**

HOTW 09/26/2022 K38W01753 03 32 **FRC,SP**

CLEANUP INFORMATION

Clean spills, spatters, hands and tools immediately after use with soap and warm clean water. After cleaning, flush spray equipment with compliant cleanup solvent to prevent rusting of the equipment. Follow manufacturer's safety recommendations when using solvents.

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative or visit www.paintdocs.com to obtain the most current version of the PDS and/or an SDS

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 91 13 - Exterior Paints
Description of Material or System:	Exterior Paints - Doors and Trim
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for campus paints is Sherwin Williams. With the typical paint product being Super paint or Duration.
Review with Facilities Management for specific product on a project by project basis.

No exceptions unless specifically submitted and approved by Owner.

Typical Exterior Colors:

White Trim: SW7006 - Extra White (usually a gloss finish, confirm with Owner)

Door & Shutters: Based on Benjamin Moore's **HC-188, Essex Green**. It is acceptable to use a **Sherwin Williams Duration or Super Paint with a color match.**

Links to additional product information:

https://www.sherwin-williams.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 91 23 - Interior Paints
Description of Material or System:	Interior Paints
Last Updated:	12/18/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☑ Other As specified below
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for campus paints is Sherwin Williams. No exceptions unless specifically submitted and approved by Owner.

The following are approved colors for use on Campus in the specific areas noted. Note on the preparation of surfaces the appropriate type of primer shall be used - on new construction drywall surfaces, latex based primer, but on all existing plaster walls and ceilings to be repainted, an oil based primer must be used.

Faculty Housing Interior Paint Colors:
Alpaca - SW 7022
Ancient Marble - SW 6162
Hinting Blue - SW 6519
Biscuit - SW 6112
Dover White - SW 6385
Full Moon - SW 6679
North Star Grey - SW 6246
Pure White - SW 7005 (for trim)

Campus Office Interior Paint Colors:
Alpaca - SW 7022
Ancient Marble - SW 6162
Nonchalant White- SW 6161
Biscuit - SW 6112
Dover White - SW 6385
Napery – SW 6386
Pacer White - SW 6098
Kilim Beige - SW 6106
North Star Grey - SW 6246

Links to additional product information:

https://www.sherwin-williams.com/homeowners/products/emerald-interior-acrylic-latex-paint

It is acceptable to use a Sherwin Williams Duration

finish on paint - all walls are an eggshell finish, millwork is semi-gloss and ceilings are flat.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	09 Finishes
Specification Section:	09 97 23 - Concrete and Masonry Coatings
Description of Material or System:	Concrete Paint - Potassium Silicate Coating and Stain
Last Updated:	12/19/2025
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☑ Other Chimneys
- ☑ Other Exterior concrete painted surfaces
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for exterior concrete painted surfaces, and all chimneys on campus is Cathedral Stone Potassium Silicate Coating - Masonry Mineral Paints & Stains.

No exceptions unless specifically submitted and approved by Owner.

Proposed color to be submitted and approved by PEA FM teams.

Links to additional product information:

https://www.cathedralstone.com/IMS/Shop/Products/potassium-silicate-coating

Cathedral Stone Products, Inc.

GUIDELINE FOR WRITING SPECIFICATIONS

POTASSIUM SILICATE COATING & STAIN
(Division 09900 – Paints and Coatings)

1. GENERAL

1.1. SUMMARY OF WORK

A. For coating masonry, stucco and plaster surfaces.

1.2. SUBMITTAL

A. Submit the following items in time to prevent delay of the work and to allow adequate time for review and resubmittals, if needed; do not order materials or start work before receiving the written approval: Cathedral Stone Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076.

B. Samples shall be submitted for color matching to the same address.

C. Samples of all specified materials and Safety Data Sheets (SDS) as appropriate.

D. Apply coating samples on the masonry to be coated. Do not apply samples to plywood or other non-masonry surfaces.

E. Written verification from the Contractor that all specified items will be used. Provide purchase orders, shipping tickets, receipts, etc. to prove that the specified materials were ordered and received.

1.3. QUALITY ASSURANCE/TEST REQUIREMENTS

A. Installer Qualifications: Company specializing in commercial painting and finishing with three years documented experience and approved by the coating manufacturer.

B. Coating Samples: Prepare a sample of each type of repair listed below. Prepare, install, and finish each sample according to the specifications. **All samples must be applied to masonry**. Prepare samples in an area where they will be exposed to the same conditions as will be present on the building during curing. **Allow samples to cure at least three days (or longer, if possible) before obtaining Owner's approval for color match. Samples should be viewed from a minimum distance of 18-22 feet.**

1.4. DELIVERY, STORAGE, AND HANDLING

A. Materials are to be delivered, stored, and handled to protect them from damage, extreme temperature, and moisture in accordance with Manufacturer's written instructions.

B. Deliver and store material in Manufacturer's original, unopened containers with the production date shown on the container or packaging.

C. Comply with the Manufacturer's written specifications and recommendations for mixing, application, and curing coatings.

1.5. PROTECTION/SITE CONDITIONS

A. Mock-ups: Cold Weather Requirements: Do not work in temperatures below 45° F, when the substrate is colder than 45° F, or when the temperature is expected to fall below 45° F for 48 hours after installation of the coating. Building an enclosure and heating areas to maintain this temperature

temperature may only be done with the written approval of the Specifier.

B. Hot Weather Requirements: Protect coating from direct sunlight and wind. Do not use or prepare coating when ambient air temperature is above 90° F.

C. Foul weather requirements: Do not work when precipitation is expected within 48 hours of installation. The coating needs adequate time to bond to the substrate. Moisture disrupts the curing process.

D. Ambient Conditions/Dew point: Do not install CSP Potassium Silicate Coatings when the temperature is expected to reach the dew point within 24 hours. The air temperature, relative humidity, dew point temperature and surface temperature of the substrate should be monitored to determine feasibility of application. For more information on calculating the dew point, resource Using Coatings Inspection Instruments by William D. Corbett © 2002 available at www.kta.com.

2. PRODUCTS

2.1. COATING MANUFACTURER

A.Manufactured by Cathedral Stone® Products, Inc., 7266 Park Circle Drive, Hanover, MD 27016; tel. (410) 782-9150; fax. (410) 782-9155; website: www.cathedralstone.com email: info@cathedralstone.com. Cathedral Stone Coatings are distributed in a two-component system. Mix component A (colored paint) with component B (Cathedral Stone Fixative) in the desired proportions before installation.

B. Substitutions: If proposed equal is submitted, lab test to establish equivalent performance levels. Use an independent testing laboratory, as determined by the Specifier, and paid for by the submitting party.

3. EXECUTION

3.1. WORKMANSHIP

A. Do not use any additives in the coating system.

3.2. PREPARATION FOR REPAIRS

A. Do not start work until surfaces to be coated are in proper condition to produce finished surfaces of uniform, satisfactory appearance.

B. Mildew, algae and fungus should be removed by methods recommended by the coating manufacturer.

C. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.

D. Protect all non-masonry surfaces such as: glass, wood, metal, etc. (CSP Potassium Silicate Coatings will permanently bond to glass if allowed to dry.)

E. Cracks and spalls must be repaired and cured prior to coating application.

F. To ensure even penetration of the coating, make sure any masonry repairs have been made with repair materials that are compatible to the substrate.

G. Remove any previous or existing coatings before application of new mineral coating.

H. CSP Potassium Silicate Coating & Stain is designed for vertical surfaces only. Horizontal surfaces, especially where water can pool, are not suitable for application.

I. Note**: Substrate must be completely dry before coating. Do not work when precipitation is expected within 48 hours of installation. The coating needs adequate time to bond to the substrate. Moisture disrupts the curing process.

J. Note**. Verify ambient conditions are conducive to application of coating (see section 1.5 Protection/Site Conditions).

3.3. MIXING COATING SYSTEM

A. It is recommended that proper eye protection be worn during mixing in case of accidental splashing. Mix component A (colored paint) with component B (Cathedral Stone Fixative) in the desired proportions before installation.

3.4. APPLICATION OF CSP POTASSIUM SILICATE COATING

A. Apply each coat of CSP Coating by brush, roller or spray making sure to work the material into the pores of the masonry. The coating is designed to be absorbed into the masonry so it should not be applied in thick layers. Brush application increases the absorption of the coating into the masonry. This feature results in a longer lasting, more durable coating.

B. Maintain a wet edge! “Cutting in” is not recommended, as the colors of the paint vary if a wet edge is not maintained. Be sure to work wet into wet and corner-to-corner.

C. "Box-mix" paint. "Boxing" is pouring the contents of one paint can into a large bucket and then pouring the contents of another paint can into the same bucket. This way, the paint is blended even though you may buy different "batches". Boxing is especially recommended for mixed colors.

D. Allow manufacturer’s specified drying time, and ensure correct coating adhesion, for each coat before applying the next coat.

E. Do not apply succeeding coat until Architect has approved previous coat; only Architect-approved coats will be considered in determining number of coats applied.

F. Where coating application abuts other materials or other coating color, terminate coating, making clean sharp termination line without coating overlap.

G. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.

3.5. CLEAN UP

A. Place tools immediately in clean water when pausing work (15-30 minutes or more). Clean tools with clean water immediately after finishing work. Dried CSP Potassium Silicate Coatings are insoluble in water. CSP Coatings can be removed from non-porous surfaces with clean water while still wet.

END OF SECTION
03/2025

Cathedral Stone® Products, Inc.
7266 Park Circle Drive, Hanover, Maryland 21076

(800) 684-0901
FAX: (410) 782-9155
cathedralstone.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 14 00 - Signage
Description of Material or System:	Signage Standards - Interior Code Required
Last Updated:	12/18/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Design Teams should not include signage in their scope of work, PEA does the drawings, bidding & procurement of the code-required signage to match the included standards. PEA does ask the Design teams to provide back grounds for evacuation plans for dormitory projects and for all projects to review the draft signage documents prior to bidding, for scope.

Contact FM Planning for most recent signage standards.

Links to additional product information:

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 14 00 - Signage
Description of Material or System:	Phillips Exeter Branding Standards
Last Updated:	12/20/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA has developed Branding Guidelines from our Communications Department.

All planning, design and construction projects should bear these in mind through the design & construction standard.

The current Branding Standards are available by contacting the Communications Department directly.

Links to additional product information:

Communications
communications@exeter.edu

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 14 00 - Signage
Description of Material or System:	Signage Standards - Exterior Signage
Last Updated:	1218/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA provides the planning, design & procurement of the basic building exterior signs, however project to project this may vary for exterior signage requirements and/or engravings that would be a part of the design.

Contact PEA FM Planning Department for most recent exterior signage standards.

Links to additional product information:

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 14 00 - Signage
Description of Material or System:	Signage Standards - Donor Signage
Last Updated:	1218/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA has a set of standards for donor signage. Requirements to be reviewed on a project by project basis.

Contact PEA FM Planning Department for most recent donor signage standards.

Links to additional product information:

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 21 13 Toilet Compartments and Shower Dressing Compartments
Description of Material or System:	Toilet Compartments and Shower Dressing Partitions
Last Updated:	12/2025
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Basis of design is Hiny Hider

Preferred Manufacturer: Scranton Products,
801 E. Corey St.; Scranton, PA 18505;
ASD Toll Free Tel: 800-445-5148;
Fax: 855-376-6161;
Email:request info (info@scrantonproducts.com);

HDPE toilet compartment color is to be determined by the Owner PEA. Only colors that meet the flame spread requirements are acceptable

HDPE shower and dressing compartments color is to be determined by Owner PEA.

All shoes, floor fastening brackets and hardware are to be stainless steel. If hardware is available in stainless steel. Otherwise aluminum is also acceptable.

Links to additional product information:

Web:https://www.scrantonproducts.com

Bathroom Partitions are to include:
HDPE-Orange Peel Finish
with continuous strikes,
pilaster connections,
stainless shoe,
pilaster floor brackets, fasteners for areas where system is consistently exposed to water.

Aluminum hinges, pilaster connections are acceptable in "dry" areas.

Stainless shoes, floor brackets, fasteners should be used in all applications.

SECTION 10 21 00
TOILET COMPARTMENTS and SHOWER & DRESSING COMPARTMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Solid plastic toilet compartments including the following: (Hiny Hiders BY Scranton Products
   1. Floor mounted overhead-braced toilet compartments.
   2. Shower and dressing compartments.

1.2 RELATED SECTIONS

A. Section 05 50 00 - Metal Fabrications.

B. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

A. ASTM A666 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

D. National Fire Protection Association (NFPA) 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

E. United States EPA (Environmental Protection Agency) Registration - Bactericidal Surfaces Registered with the U.S. EPA to Legally Make Claims that these Materials Kill Infectious Bacteria.

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Provide layout drawings and installation details with location and type of hardware required.

D. Verification Samples: For each finish product specified, two samples representing actual product, color, and patterns.

E. Sustainable Design Submittals:
   1. Recycled Content: Certify percentages of post-consumer and pre-consumer recycled content.
   2. Regional Materials: Certify distance between manufacturer and Project.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A company regularly engaged in manufacture of products specified in this section, and whose products have been in satisfactory use under similar service conditions for not less than 5 years.

B. Installer Qualifications: A company regularly engaged in installation of products specified in this Section, with a minimum of 5 years experience.

C. Materials: Doors, panels and pilasters, constructed from high density polyethylene (HDPE) resins. Partitions to be fabricated from polymer resins compounded under high pressure, forming a single component which is waterproof, nonabsorbent and has a self-lubricating surface that resists marks from pens, pencils, markers and other writing instruments. Cover all plastic components with a protective plastic masking.

D. Performance Requirements:
   1. Fire Resistance: Partition materials shall comply with the following requirements, when tested in accordance with ASTM E 84, Class B:
      a. Tested to Meet ASTM E84, Class B flame spread/smoke developed rating.
   2. Material Fire Ratings:
      a. National Fire Protection Association (NFPA) 286: Pass.
      b. International Code Council (ICC): Class B.
   3. Antimicrobial Touch Surfaces: Hardware touch surfaces shall be manufactured from substrates that are registered with the U.S. EPA to kill specific bacteria tested according to U.S. EPA protocols.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

A. Manufacturer guarantees its plastic against breakage, corrosion, and delamination under normal conditions for 25 years from the date of receipt by the customer. If materials are found to be defective during that period for reasons listed above, the materials will be replaced free of charge. Labor not included in warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Preferred Manufacturer: Scranton Products, which is located at: 801 E. Corey St.; Scranton, PA 18505; ASD Toll Free Tel: 800-445-5148; Fax: 855-376-6161; Email:request info (info@scrantonproducts.com); Web:https://www.scrantonproducts.com

Hiny Hider

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements and only if they meet the performance criteria of this product.

2.2 MATERIAL

A. Plastic Panels: High density polyethylene (HDPE) suitable for exposed applications, waterproof, non-absorbent, and graffiti-resistant textured surface.
   1. Recycled Content; Post Industrial: 25 percent.

B. Zinc Aluminum Magnesium and Copper Alloy (Zamac): ASTM B 86.

C. Stainless Steel Castings: ASTM A167, Type 304.

D. Aluminum: ASTM 6463-T5 alloy.

2.3 SOLID PLASTIC TOILET COMPARTMENTS

A. Basis of Design: Hiny Hiders Toilet Partitions as manufactured by and supplied by Scranton Products.
   1. Style: Floor mounted overhead-braced toilet compartments
   2. .

B. Doors, Panels, and Pilasters: 1 inch (25 mm) thick with all edges rounded to a radius. Mount doors and dividing panels based on height of specified system.
   1. Door and Panel Height: 66 inches (1676 mm).***acceptable only with low ceilings*
   2. Door and Panel Height: 72 inches (1829 mm) **** preference*
   3. Aluminum heat sink fastened to bottom edges.
   4. Door Design: Flush
   5. Panel Edge: Standard.
   6. Pilasters: 82 inches (2083 mm) high and fastened to floor.

C. Panel Color: Acceptable colors – testing in accordance with NFPA 286

D. Pilaster Shoes: 3 inches (76 mm), 20 gauge stainless steel. Secured to pilasters with a stainless steel tamper resistant Torx head sex bolt.

E. Headrail: Heavy-duty extruded 6463-T5 alloy aluminum with anti-grip design. Finish to be clear anodized. Fastened to headrail brackets with stainless steel tamper resistant Torx head sex bolt, and fastened at the top of the pilaster with stainless steel tamper resistant Torx head screws.
   1. Headrail Brackets: 20 gauge stainless steel with satin finish. Secured to the wall with stainless steel tamper resistant Torx head screws.

F. Wall Brackets:
   1. Aluminum Brackets: Heavy-duty aluminum 6463-T5 alloy.
   2. PVC Brackets: Extruded PVC plastic.
   3. Stainless Steel Brackets: Stainless steel type 201.
   4. Brackets are fastened to pilasters with stainless steel tamper resistant Torx head screws and fastened to the panels with stainless steel tamper resistant Torx head sex bolts.
   5. Bracket Type: Continuous 71 inches (1804 mm) stainless steel.

G. Door Hardware:
   1. Continuous Stainless Steel Helix Hinge: tbd
      a. Length: 71 inches (1803 mm).
   2. Continuous Stainless Steel Spring Loaded Hinge:tbd
      a. Hinges: 71 inches (1372 mm).
   3. Door Strike/Keeper: Heavy-duty extruded aluminum 6436-T5 alloy with a clear anodized finish. Secured to pilasters with stainless steel tamper resistant Torx head hex bolts. Bumper shall be made of extruded black vinyl.
      a. Style: 65 inches (1651 mm) aluminum.
   4. Latch Mechanism: Stainless Steel Slide Bolt Latch and Housing: Heavy-duty

stainless steel type 304. The latch and housing to have a bright finish. The slide bolt and button to have a black anodized finish.

5. Latch Mechanism: Occupancy Indicator Latch and Housing:
   a. Material: Satin stainless steel.
   b. Occupancy indicators: Green for occupied and red not occupied.
   c. Slide bolt and button.

6. Doors supplied with one coat hook/bumper and door pull, clear anodized aluminum or stainless steel.

7. Equip outswing handicapped doors with second door pull and door stop.

2.4 SOLID PLASTIC SHOWER AND DRESSING COMPARTMENTS

A. Plastic privacy screens in shower room applications as indicated or scheduled.

B. Panels and Pilasters: 1 inch (25 mm) thick with edges rounded to a radius. Mount screens at 14 inches (356 mm) above the finished floor. Color as selected by Architect from manufacturer's full line of current colors.
   1. Recycled content: Minimum 25 percent.

C. Type: Floor mounted pilaster supported screen.
   1. Panel Screens: 76 inches (1930 mm) high.
   2. Pilaster Screens: 82 inches (2083 mm) high.
   3. Headrail: Heavy-duty extruded 6463-T5 alloy aluminum with anti-grip design and integrated curtain track. Clear anodized finish. Fastened to the headrail bracket with a stainless steel tamper resistant Torx head sex bolt, and fastened at the top of the pilaster with stainless steel tamper resistant Torx head screws.
   4. Headrail Brackets: 20 gauge stainless steel with a satin finish. Secured to the wall with stainless steel tamper resistant Torx head screws.
   5. Pilaster Sleeves: 20 gauge stainless steel. 3 inches (76 mm) high. Secured to pilaster with stainless steel tamper resistant Torx head sex bolt.
   6. Wall Brackets: Continuous, heavy-duty 6463-T5 alloy aluminum. Clear anodized finish. Fastened to panel/pilaster with stainless steel tamper resistant Torx head sex bolts.
   7. Shower Curtains (WxH): 42 x 72 inches (1067 x 1829 mm), white non PVC, hung with aluminum curtain hooks with self-lubricating Delrin slides.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Examine areas to receive toilet partitions, screens, and shower compartments for correct height and spacing of anchorage/blocking and plumbing fixtures that affect installation of

partitions. Report discrepancies to the architect.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install partitions rigid, straight, plumb, and level manor, with plastic laid out as shown on shop drawings.

C. Clearance at vertical edges of doors shall be uniform top to bottom and shall not exceed 3/8 inch (9.5 mm).

D. No evidence of cutting, drilling, and/or patching shall be visible on the finished work.

E. Finished surfaces shall be cleaned after installation and be left free of imperfections.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 00 - Toilet & Bath Accessories
Description of Material or System:	Medicine Cabinet
Last Updated:	3/2024
Updated by:	Curtis Boivin

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer and model for a medicine cabinet in faculty residences and dormitory apartments is:

Kohler - model number: K-CB-CLC2026FS in polished chrome.

Recessed installation is preferred.

Links to additional product information:

https://www.kohler.com/en/products/mirrors-and-medicine-cabinets/shop-mirrors-and-medicine-cabinets/20-w-x-26-h-aluminum-single-door-medicine-cabinet-with-mirrored-door-beveled-edges-cb-clc2026fs

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 00 - Toilet & Bath Accessories
Description of Material or System:	Toilet accessories for faculty residential bathrooms
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Preferred suite of products for faculty residence and dormitory apartments includes:

Toilet Paper Holder:
Kohler - Kumin, model number: K-24546-CP, in polished chrome.

Towel Ring:
Kohler - Kumin, model number: K-97898-CP, in polished chrome.

Robe Hook:
Kohler - Kumin, model number K-97897, in polished chrome.

Towel Bars: (sizes vary 18" - 36" lengths)
Kohler - Kumin, model number K-97882, in polished chrome.

The quantity and arrangement depend on the arrangement of the bathroom.

*In a half bath - minimum toilet paper holder, one hook and two towel bars

*In a full bath - minimum toilet paper holder, one hook and two towel bars, towel ring if appropriate and limited bar space.

Links to additional product information:

https://www.us.kohler.com/us/

Kumin®
Toilet paper holder
K-24546

Features
- Coordinates with other products in the Kumin® collection.
- Pivoting holder makes changing toilet paper quick and simple.

Material
- Premium metal construction for durability and reliability.
- KOHLER finishes resist corrosion and tarnishing.

Installation
- Mounting hardware and installation template included.

Recommended Products/Accessories
K-23723 Faucet cleaner



Codes/Standards
None Applicable

KOHLER® Faucet Lifetime Limited Warranty
See website for detailed warranty information.

Available Colors/Finishes
Color tiles intended for reference only.

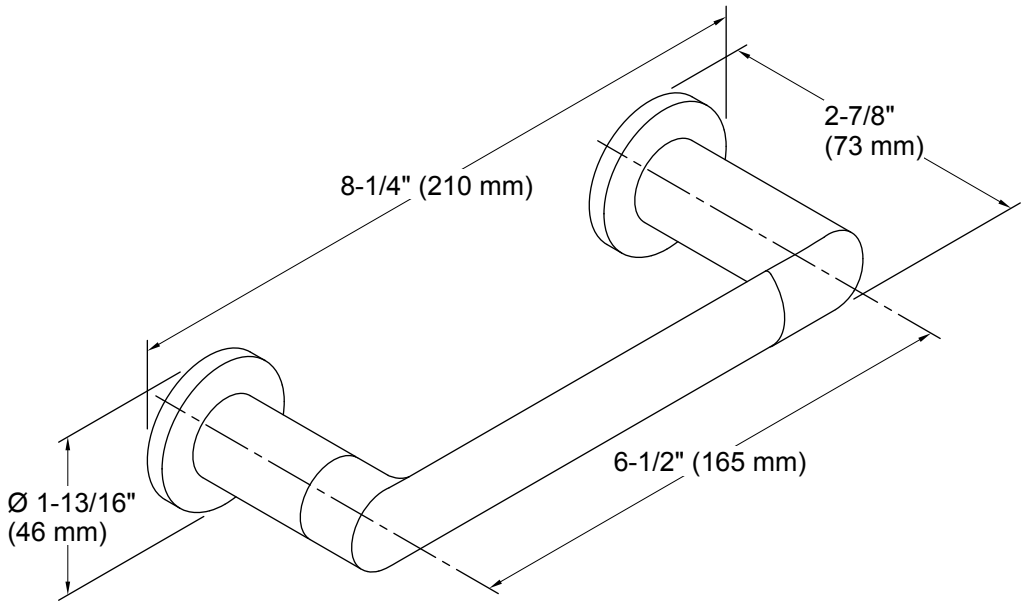
Color	Code	Description
	CP	Polished Chrome
	BN	Vibrant® Brushed Nickel
	BL	Matte Black

KOHLER®

Kumin®

Toilet paper holder

K-24546



Technical Information

All product dimensions are nominal.

Material: Zinc

Notes

Install this product according to the installation instructions.

CAUTION: Risk of personal injury. Do not install these products in any area where they are likely to be used inadvertently as a grab bar or support bar. These products are not designed or intended for use as a grab bar or support bar.

KOHLER®

Kumin®
towel ring
K-97898

Features
- Coordinates with other products in the Kumin® collection.

Material
- Premium metal construction for durability and reliability.
- KOHLER finishes resist corrosion and tarnishing.

Installation
- Mounting hardware included.

Recommended Products/Accessories
K-23723 Faucet cleaner



Codes/Standards
None Applicable

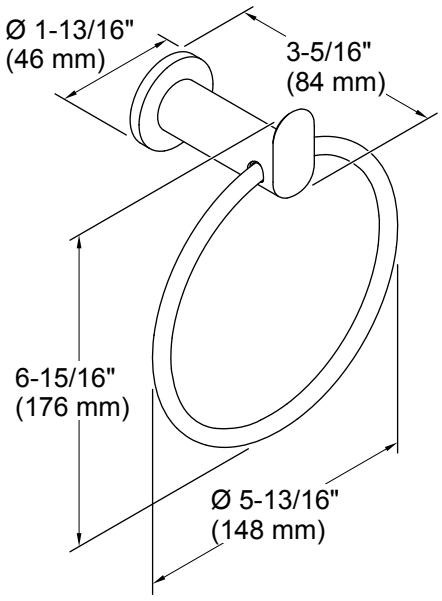
KOHLER® Faucet Lifetime Limited Warranty
See website for detailed warranty information.

Available Colors/Finishes
Color tiles intended for reference only.

Color	Code	Description
	CP	Polished Chrome
	BN	Vibrant® Brushed Nickel
	BL	Matte Black

KOHLER®

Kumin®
towel ring
K-97898



Technical Information

All product dimensions are nominal.

Installation Type:	Wall-mount
Material:	Zinc

Notes

Install this product according to the installation instructions.

WARNING: Risk of personal injury. The wall plates on the grab bar must be mounted to a brace between the wall studs. This will ensure that the weight of the user is adequately supported.

KOHLER®

Kumin™
robe hook
K-97897

Features
- Coordinates with other products in the Kumin® collection

Material
- Premium metal construction for durability and reliability
- KOHLER® finishes resist corrosion and tarnishing

Installation
- Mounting hardware included

Recommended Products/Accessories
K-23723 Faucet cleaner



Codes/Standards
None Applicable

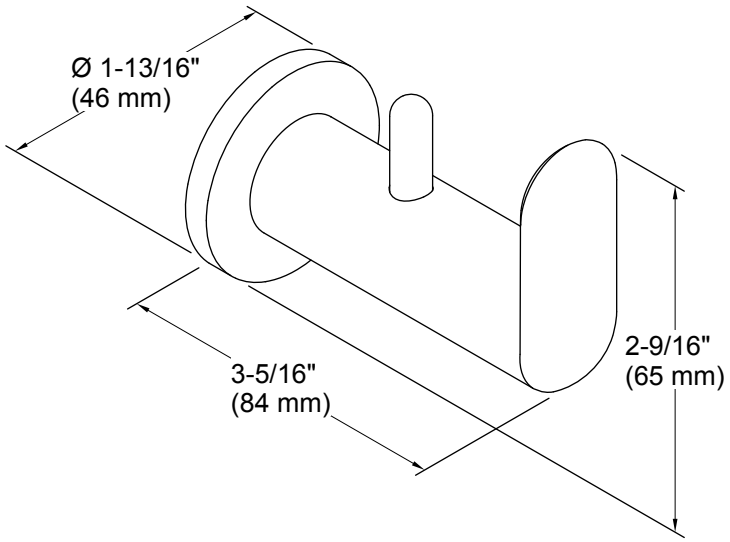
KOHLER® Faucet Lifetime Limited Warranty
See website for detailed warranty information.

Available Colors/Finishes
Color tiles intended for reference only.

Color	Code	Description
	CP	Polished Chrome
	BN	Vibrant® Brushed Nickel
	BL	Matte Black

KOHLER®

Kumin™
robe hook
K-97897



Technical Information
All product dimensions are nominal.

Material:	Zinc

Notes
Install this product according to the installation instructions.

CAUTION: Risk of personal injury. Do not install these products in any area where they are likely to be used inadvertently as a grab bar or support bar. These products are not designed or intended for use as a grab bar or support bar.

Kumin™
24" towel bar
K-97882

Features
- Coordinates with other products in the Kumin® collection

Material
- Premium metal construction for durability and reliability
- KOHLER® finishes resist corrosion and tarnishing

Installation
- Mounting hardware and installation template included

Recommended Products/Accessories
K-23729 Stainless steel cleaner



Codes/Standards
None Applicable

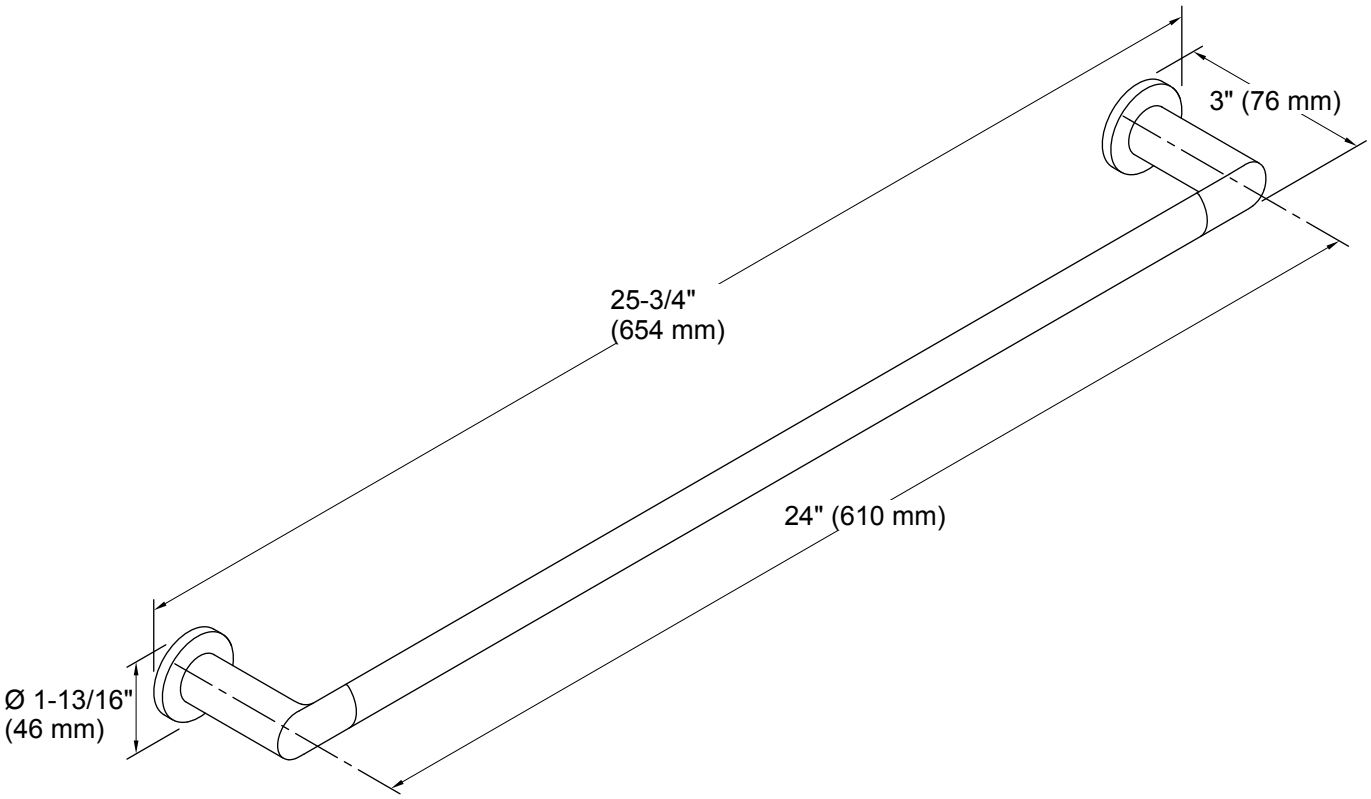
KOHLER® Faucet Lifetime Limited Warranty
See website for detailed warranty information.

Available Colors/Finishes
Color tiles intended for reference only.

Color	Code	Description
	CP	Polished Chrome
	BN	Vibrant® Brushed Nickel
	BL	Matte Black

KOHLER®

Kumin™
24" towel bar
K-97882



Technical Information
All product dimensions are nominal.

Material:	Zinc, Stainless Steel

Notes
Install this product according to the installation instructions.

CAUTION: Risk of personal injury. Do not install these products in any area where they are likely to be used inadvertently as a grab bar or support bar. These products are not designed or intended for use as a grab bar or support bar.

KOHLER®

Kumin™
18" towel bar
K-97878

Features
- Coordinates with other products in the Kumin® collection

Material
- Premium metal construction for durability and reliability
- KOHLER® finishes resist corrosion and tarnishing

Installation
- Mounting hardware and installation template included

Recommended Products/Accessories
K-23729 Stainless steel cleaner



Codes/Standards
None Applicable

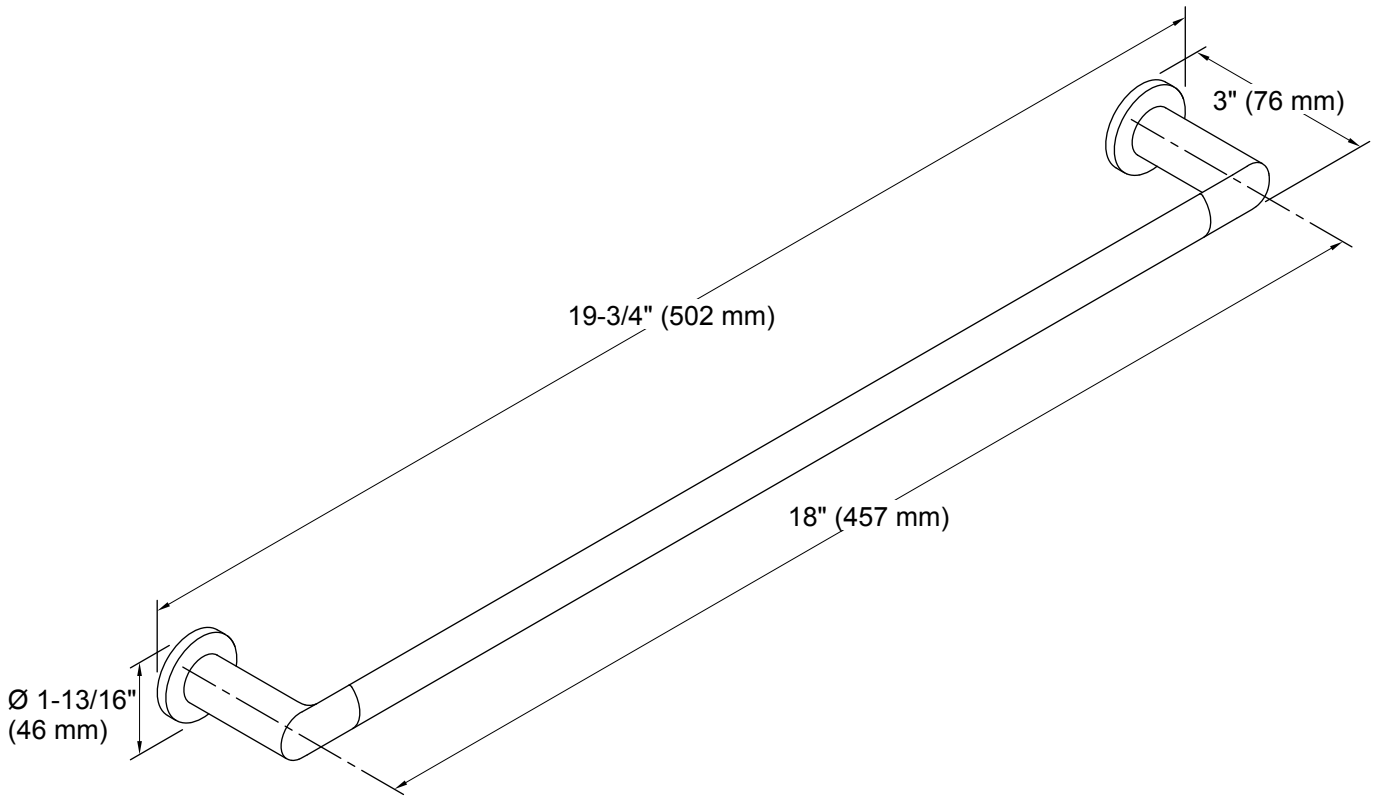
KOHLER® Faucet Lifetime Limited Warranty
See website for detailed warranty information.

Available Colors/Finishes
Color tiles intended for reference only.

Color	Code	Description
	CP	Polished Chrome
	BN	Vibrant® Brushed Nickel
	BL	Matte Black

KOHLER®

Kumin™
18" towel bar
K-97878



Technical Information
All product dimensions are nominal.

Material:	Zinc, Stainless Steel

Notes
Install this product according to the installation instructions.

WARNING: Risk of personal injury. The wall plates on the grab bar must be mounted to a brace between the wall studs. This will ensure that the weight of the user is adequately supported.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 11 Electric Hand Dryers
Description of Material or System:	Electric Hand Dryers
Last Updated:	3/2024
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the preferred specification for a Dyson restroom hand dryer.

These are installed only on a case by case basis - The campus standard is roll paper towels.

Review design intent with the PEA FM Team.

Links to additional product information:

https://www.dyson.com/en

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 16 - Bath Accessories
Description of Material or System:	Reversible Solid Phenolic Folding Shower Seat
Last Updated:	1/4/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for the folding shower seat is Bobrick.

Product: B-5181

*These are for ADA showers.

*Seats may also be provided with molded shower unit.

*Note to Designers, ensure that there is access to the backside of these units so these can be repaired if they brake.
Design is to be reviewed with FM Planning.

Links to additional product information:

https://www.bobrick.com/specialty-accessories-catalog/shower-tub-accessories/product/b-5181/

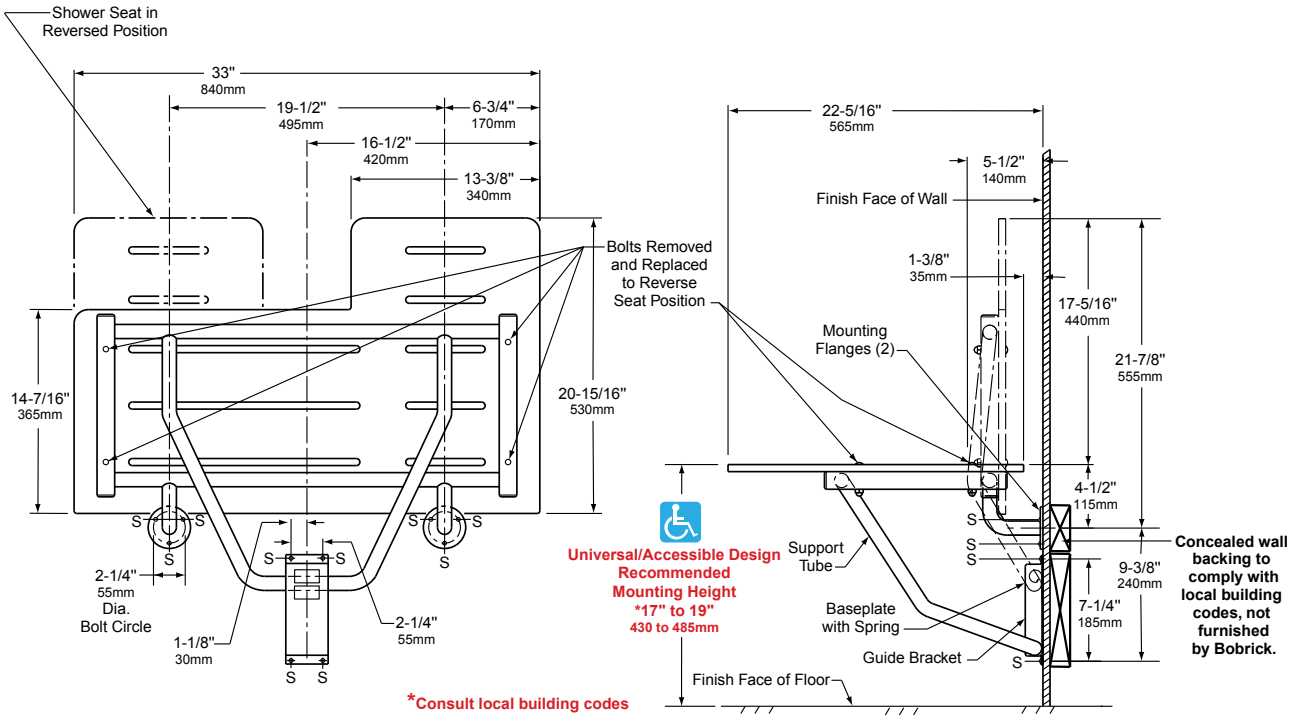
BOBRICK

Technical Data

REVERSIBLE SOLID PHENOLIC FOLDING SHOWER SEAT

B-5181





Left-Hand Seat Shown

MATERIALS:

Seat — One-piece, 1/2" (13mm) thick, solid phenolic with matte-finish, antique white-colored, melamine surfaces and black phenolic-resin core — cannot delaminate. Integral slots for water drainage. Secured to frame with stainless steel carriage bolts and acorn nuts. Reversible for left- or right-hand installation in the field.

Frame — 18-8, Type-304, stainless steel with satin finish. 16-gauge (1.6mm), 1-1/4" (30mm) square tubing and 18-gauge (1.2mm), 1" (25mm) diameter seamless tubing.

Mounting Flanges (2) — 18-8, Type-304, 3/16" (5mm) thick stainless steel with satin finish. 3" (75mm) diameter with three mounting screw holes.

Baseplate — 18-8, Type-304, heavy-gauge stainless steel.

Spring — 17-7, Type-301, 24-gauge (0.6mm) stainless steel. Spot-welded to baseplate.

Guide Bracket — 18-8, Type-304, 16-gauge (1.6mm) stainless steel with satin finish.

continued . . .

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

r1/8/18 Series E Printed in U.S.A.

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OPERATION:

Shower seat folds up against wall when not in use. The spring at the top of the baseplate holds seat in upright position until released by pulling the top of the seat away from the wall. Bobrick Folding Shower Seats are not spring-loaded. The seats do not return automatically to the upright position after use. Mounting flanges and guide bracket allow for varying mounting heights and leave the floor clear for easy cleaning. Nonporous solid phenolic seat has slots to permit water to drain, does not splinter or require oiling, and will not support growth of bacteria. Slotless round-head carriage bolts and acorn nuts provide additional safety to user. Bobrick shower seats, when properly installed, have sufficient strength to support 360 lbs., (163 kg) complying with accessible design guidelines (including ADAAG in the U.S.A.).

INSTALLATION:

Installation to Wall. Secure unit to wall at points indicated by an *S*, with the two mounting flanges located at top and the baseplate and guide bracket below. The bottom of the support tube must be positioned within the baseplate and guide bracket before they are secured to wall. Mounting height of shower seat must comply with local building codes.

For stud walls, provide concealed backing to comply with local building codes and secure with #14 x 2-1/2" (6.3 x 65mm) stainless steel sheet-metal screws furnished by manufacturer.

For prefabricated shower stalls, provided adequate backing by the shower stall manufacturer. Secure with #14 x 2-1/2" (6.3 x 65mm) stainless steel mounting screws furnished by manufacturer. Bobrick offers a mounting kit for installing shower seats. For additional mounting kits please order 252-30. One mounting kit is required for each flange.

For masonry walls, provide fiber plugs or expansion shields for use with furnished screws, or provide 1/4" (6mm) toggle bolts or expansion bolts.

INSTALL SAFETY PLATE TO WALL:

Safety Plate is to be mounted on wall near Shower Seat in order to properly advise users of the Seat's weight restrictions. Correct installation of the Safety Plate will ensure that the Shower Seat meets A.N.S.I. Standards.

Permanently affix Safety Plate to wall on either side of the Shower Seat at a minimum height of 30" (760mm). If mounted above Seat, the Plate must be high enough so that it is not covered when Seat is on the up position. Mounting screws (4) are recommended, but double-sided tape on rear of Plate may be used for very smooth, non-porous surfaces.

SAFETY WARNING: Shower seats are no stronger than the anchors and walls to which they are attached and must be firmly secured in order to support the loads for which they are intended. Consult and comply with local building codes. To avoid potential injury, the building owner or maintenance personnel should remove the shower seat from service if the shower seat is not adequately secured to the wall. Unit shall support static loads of up to 360 lbs (163 kg) when properly installed and used. To avoid potential seat malfunction, DO NOT use seat if weight exceeds 360 lbs (163 kg).

How to Reverse Shower Seat. The solid phenolic shower seat surface may be positioned on the stainless steel frame with the longer 20-15/16" (530mm) side on the left or right. The repositioning of the shower seat surface may be done on the frame before installation on the wall, or after the unit has been installed.

If repositioning the seat surface before installation of the unit on the wall; place entire unit on a horizontal surface; remove carriage bolts and acorn nuts (4); turn seat over reversing position of long and short ends; reinstall carriage bolts and acorn nuts.

If repositioning the seat surface after the unit has been installed on the wall; lower folding seat to horizontal position; remove carriage bolts and acorn nuts (4); turn seat over reversing position of long and short ends; reinstall carriage bolts and acorn nuts.

Important Notes: Support square frame tubes when loosening and removing carriage bolts and acorn nuts; the square frame tubes may separate from the round tubes that support the solid phenolic shower seat. If square and round frame tubes come apart when solid phenolic shower seat is removed, reassemble by placing round frame tube ends in the round holes on the sides of the square frame tubes.

SPECIFICATION:

Reversible folding shower seat shall have a frame constructed of Type-304, satin-finish stainless steel that consists of 16-gauge (1.6mm), 1-1/4" (30mm) square tubing and 18-gauge (1.2mm), 1" (25mm) diameter seamless tubing. Seat shall be one-piece, 1/2" (13mm) thick, solid phenolic with matte-finish, antique white-colored, melamine surfaces, and black phenolic-resin core; secured to frame with stainless steel carriage bolts and acorn nuts. Seat shall be reversible for left- or right-hand installation in the field. Shower seat shall be equipped with two 3" (75mm) diameter mounting flanges constructed of Type-304, 3/16" (5mm) thick, satin-finish stainless steel; a guide bracket constructed of Type-304, 16-gauge (1.6mm), satin-finish stainless steel; and a spring constructed of Type-301, 24-gauge (0.6mm) stainless steel that is spot-welded to a baseplate of Type-304, heavy-gauge stainless steel. Seat shall remain in upright position when not in use. Shower seat shall comply with accessible design guidelines (including ADAAG in the U.S.A.).

Reversible Folding Shower Seat shall be Model B-5181 of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

B-5181 S/E r1/8/18 Printed in U.S.A.
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Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 16 - Bath Accessories
Description of Material or System:	Stainless Steel Grab Bars
Last Updated:	1/4/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for the stainless steel grab bars is Bobrick.

Product: B-5806 Series
1 1/4" (32mm) Diameter Stainless Steel Grab Bars With Snap Flange

Include vertical grab bar as required by building code.

Coordinate length of the bar with intended location(s): 18", 36", 42".

Grab bars are to be a satin finish.

Links to additional product information:

https://www.bobrick.com/products/washroom-accessories/washroom-accessories-catalog/product/b-5806-series/

BOBRICK

Technical Data

1¼" (32mm) DIAMETER STAINLESS STEEL GRAB BARS WITH SNAP FLANGE

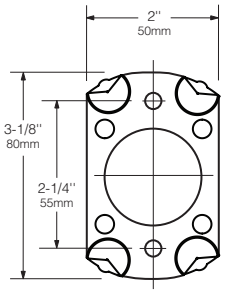
B-5806 SERIES

Specify Finish Required:

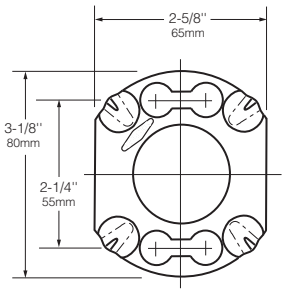
- ❑ Satin-finish, slip-resistant surface.
- ❑ Peened surface; add suffix .99 to model number

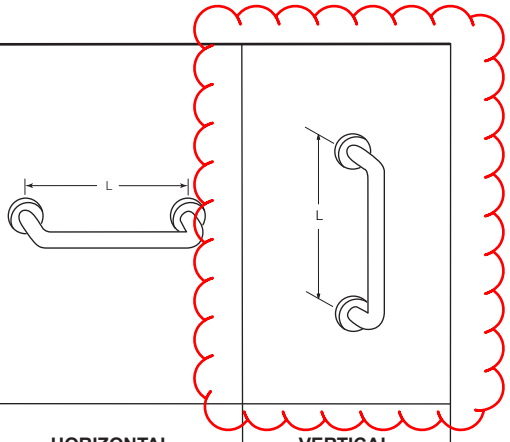


End Mounting Flange



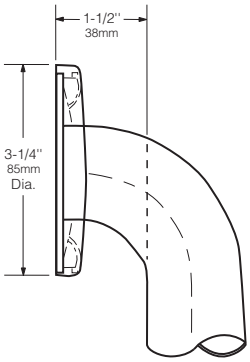
Intermediate Flange

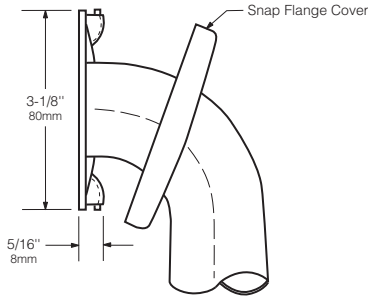


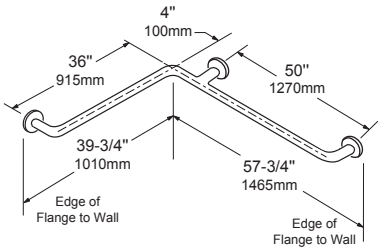


HORIZONTAL | VERTICAL

B-5806 x 18, 24, 30, 36, 42, 48

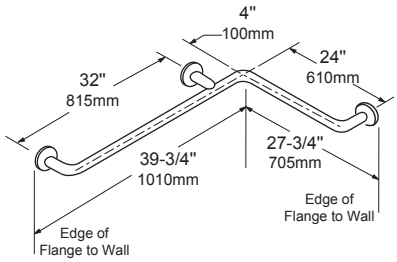






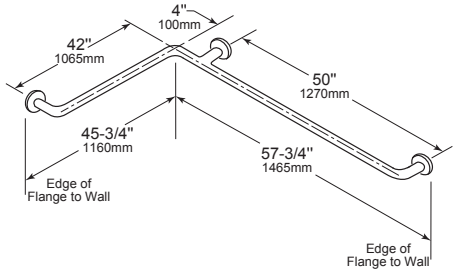
TWO-WALL TUB / SHOWER COMPARTMENT BAR

B-5837



HORIZONTAL TUB / SHOWER COMPARTMENT BAR 24 x 36

B-58616



TWO-WALL TOILET COMPARTMENT BAR 42 x 54

B-5897

continued . . .

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

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MATERIALS:

Grab Bar — 18-8, Type-304, 18-gauge (1.2mm) stainless steel tubing with a satin-finish, slip-resistant surface. 1-1/4" (32mm) outside diameter. Ends are heliarc welded to concealed mounting flanges. Clearance between the grab bar and wall is 1-1/2" (38mm).

Concealed Mounting Flanges — 18-8, Type-304, 11-gauge (3.2mm) thick, stainless steel plate; end flanges 2" x 3-1/8" (50 x 80mm) with holes for attachment to wall. Intermediate flanges 2-5/8" x 3-1/8" (65 x 80mm) wide x 3-1/8" (80mm) diameter.

Snap Flange Covers — 18-8, Type-304, 22-gauge (0.8mm) drawn stainless steel with satin-finish. 3-1/4" (85mm) diameter x 5/8" (16mm) deep. Each cover snaps over mounting flange to conceal mounting screws.

STRENGTH:

Bobrick grab bars that provide 1-1/2" (38mm) clearance from wall can support loads in excess of 900 pounds (408kg) if properly installed. Other grab bar configurations can support loads in excess of 250 pounds (113kg) if properly installed, complying with accessible design (including ADAAG in the U.S.A.) for structural strength.

Safety Warning: Grab bars are no stronger than the anchors and walls to which they are attached and, therefore, must be firmly secured in order to support the loads for which they are intended. To avoid potential injury, the building owner or maintenance personnel should remove the grab bar from service if the grab bar is not adequately secured to wall or if there is any observed damage to the welds.

INSTALLATION:

Provide concealed anchor device or backing as specified or required in accordance with local building codes before wall is finished. Fasten concealed mounting flanges to anchor device or backing with at least two screws opposing each other in each flange. Snap flange covers over each mounting flange to conceal mounting screws. Concealed anchor devices and mounting screws are not included with Bobrick grab bars and must be specified as an accessory.

For Grab Bars with an Intermediate Flange(s), Pull Snap-Flange Covers away from mounting flanges. Place grab bar in desired mounting location. Use intermediate flange as a template to mark location of mounting screws at intermediate flange only. Mark screw locations at the center of the slot in the middle of the double-keyhole shaped mounting holes (2) in the intermediate flange. Remove grab bar from wall. Drive the intermediate flange mounting screws into wall at marked locations. **Note:** Make sure to leave a space of just over 1/8" (3.17mm) between the underside of the screw head and the wall. Install grab bar on the wall by placing the round ends of the intermediate flange double-keyhole shaped mounting holes over the mounting screws (2) are located in the middle of the flange slots. Install the mounting screws into the wall at the end flanges and secure tightly. Tighten the mounting screws at the intermediate flange. Press all snap-flange covers into place to conceal mounting flanges.

Note: Recommend use of 1/4" or #14 sheet metal or wood screws to install Intermediate Flange. #12 screws may also be used.

Important Notes:

1. **Mounting Kits —** Bobrick offers a mounting kit for installing grab bars; **one Bobrick mounting kit is required for each flange.**

Mounting Kit No.	Description
252-30	Consists of (3) #14 x 2½" Type-304 stainless steel, Phillips round-head, sheet-metal screws.

2. **Grab Bar Fastener —** Bobrick offers a grab bar fastening system that secures all Bobrick grab bar series; **one Bobrick fastener is required for each flange.** Install grab bar without backing in wall requires minimum 5/8" (16mm) thick painted or tiled drywall.

WingIt™ Fastener No.	Description
251-4	Consists of 10–32 x 5/16" round-head, Phillips 18/8 stainless steel screws. (1) WingIt grab bar fastener.

3. **Optional Anchor Device —** Bobrick grab bar anchor device includes stainless steel machine screws to be used for attaching grab bars to anchors. **one Bobrick concealed anchor device is required for each flange.**

Optional Anchor No.	Description
2583	Anchor for 3/4" to 1" (19-25mm) panel 1 anchor required for each flang .
2586	Anchor for 1/2" to 1" (13mm) panel 1 anchor required for each flang .

SPECIFICATION:

Grab bar shall be Type-304 stainless steel with a satin-finish, slip-resistant surface. Grab bar shall have 18-gauge (1.2mm) wall thickness and 1-1/4" (32mm) outside diameter. Clearance between the grab bar and wall shall be 1-1/2" (38mm). Concealed mounting flanges shall be 11-gauge (3.2 mm) thick stainless steel plate, 2" x 3-1/8" (50 x 80mm), and equipped with at least two screw holes for attachment to wall. Flange covers shall be 22-gauge (0.8mm) stainless steel, 3-1/4" (85mm) diameter, and shall snap over mounting flanges to conceal mounting screws and/or WingIt fasteners. Ends of grab bar shall pass through concealed mounting flanges and be heliarc welded to form one structural unit. Grab bar shall comply with accessible design (including ADAAG in the U.S.A.) for structural strength.

Grab Bar shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; and Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 16 - Bath Accessories
Description of Material or System:	Heavy-Duty Shower Curtain Rod with Concealed Mounting
Last Updated:	1/4/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for the shower curtain rod is Bobrick.

Product: B-207 x _____
Verify length with intended installation location.

Rounded bar were space allows in faculty residences.

Links to additional product information:

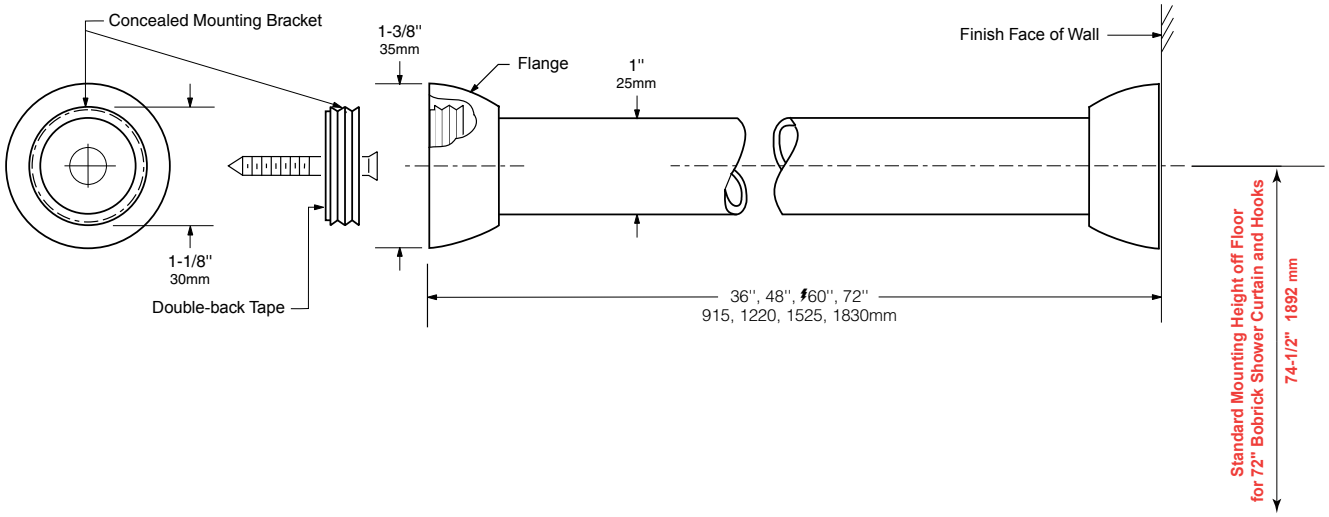
BOBRICK

Technical Data

HEAVY-DUTY SHOWER CURTAIN ROD WITH CONCEALED MOUNTING

B-207





MATERIALS:

Curtain Rod — 18-8, Type-304, 20-gauge (1.0mm) stainless steel tubing with satin finish. 1" (25mm) outside diameter. Available in lengths from 36" (915mm) up to 72" (1830mm).

Flanges (2) — 1-3/8" (35mm) diameter. Chrome-plated plastic. Bright polished finish.

Concealed Mounting Brackets (2) — Aluminum.

INSTALLATION:

Remove protective backing from tape attached to concealed mounting brackets. Position mounting brackets on opposite shower walls and secure with screws furnished by manufacturer. For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure brackets with screws furnished. For other wall surfaces, provide fiber plugs or expansion shields for use with screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts. Slide flanges onto opposite ends of curtain rod. Position curtain rod, then screw threaded flanges onto mounting brackets.

SPECIFICATION:

Shower curtain rod shall be Type-304, 20-gauge (1.0mm) stainless steel with satin finish. It shall have an outside diameter of 1" (25mm). Flanges shall be 1-3/8" (35mm) diameter chrome-plated plastic with bright polished finish. Unit shall be equipped with concealed mounting brackets.

Shower Curtain Rod shall be Model B-207 x _____ (insert length) of Bobrick Washroom Equipment Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 16 - Bath Accessories
Description of Material or System:	Extra-Heavy Duty Shower Curtain Rod
Last Updated:	1/4/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for the extra-heavy duty shower curtain rod is Bobrick.

Product: B-6047
Intended application:
Verify length with intended installation location.

Links to additional product information:

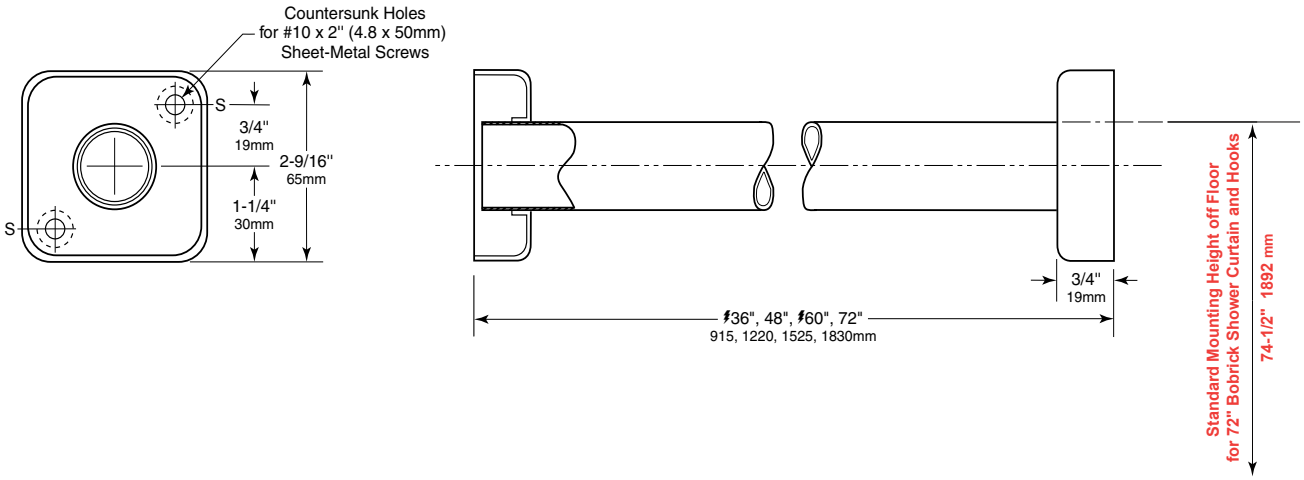
BOBRICK

Technical Data

ClassicSeries® EXTRA-HEAVY-DUTY SHOWER CURTAIN ROD

B-6047





MATERIALS:

Curtain Rod — 18-8, Type-304, 18-gauge (1.2mm) stainless steel tubing with satin finish. 1-1/4" (32mm) outside diameter. Available in lengths from 36" (915mm) up to 72" (1830mm).

Flanges — 18-8, Type-304, 20-gauge (1.0mm) stainless steel with satin finish. One-piece, die-formed.

INSTALLATION:

Slide flanges onto curtain rod. Position flanges against wall and secure with #10 x 2" (M4.8 x 50mm) Phillips oval-head, stainless steel, sheet-metal screws, furnished by manufacturer, at points indicated by an *S*. For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure flanges with sheet-metal screws furnished. For other wall surfaces, provide fiber plugs or expansion shields for use with sheet-metal screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts.

SPECIFICATION:

Shower curtain rod shall be Type-304, 18-gauge (1.2mm) stainless steel with satin finish and have outside diameter of 1-1/4" (30mm). One-piece, die-formed flanges shall be Type-304, 20-gauge (1.0mm) stainless steel with satin finish.

Shower Curtain Rod shall be Model B-6047 x _____ (insert length) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 16 - Bath Accessories
Description of Material or System:	Surface-Mounted Double Robe Hook
Last Updated:	1/4/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for the double robe hook is Bobrick.

Product: B-7672__
Verify intended finish with PEA Project Manager.

Links to additional product information:

BOBRICK

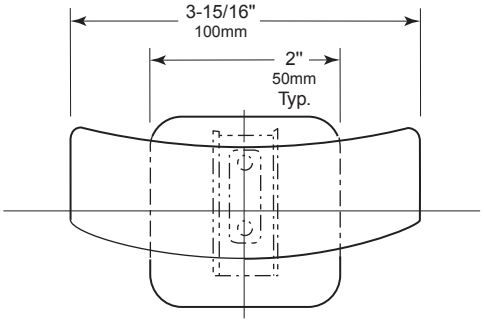
Technical Data

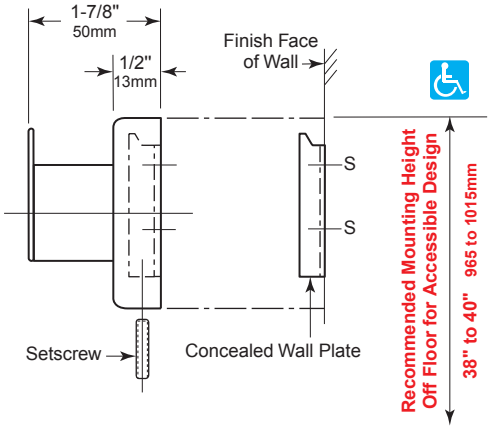
SURFACE-MOUNTED DOUBLE ROBE HOOK

B-7672
B-76727

Specify Model Required: ☐ Model B-7672 Bright polished stainless steel
☐ Model B-76727 Satin-finish stainless steel







MATERIALS:

Flange & Support Arm — 18-8, type-304, 22-gauge (0.8mm) stainless steel. Concealed, 18-gauge (1.2mm) stainless steel mounting bracket. All-welded construction. Secured to wall plate with a stainless steel setscrew.

Concealed Wall Plate — 18-8, type-304, 19-gauge (1.0mm) stainless steel.

Cap — 18-8, type-304, 14-gauge (2.0mm) stainless steel. Welded to the support arm.

INSTALLATION:

To remove concealed wall plate from back of flange and mounting bracket, loosen setscrew. Mount wall plate so prongs are at top; secure with two sheet-metal screws, furnished by manufacturer, at points indicated by an *S*. Engage mounting bracket onto prongs of wall plate, then secure unit into position by tightening setscrew at bottom of flange.

For plaster or dry wall construction, provide concealed backing to comply with local building codes, then secure unit with sheet-metal screws furnished. For other wall surfaces, provide fiber plugs or expansion shields for use with screws furnished, or provide 1/8" (3mm) toggle bolts or expansion bolts.

For partitions with particle-board or other solid core, secure with sheet-metal screws furnished, or provide through-bolts, nuts, and washers. For hollow-core metal partitions, provide solid backing into which the furnished sheet-metal screws can be secured.

SPECIFICATION:

Surface-mounted double robe hook shall be type-304 stainless steel with _____ (insert one: bright polished or satin) finish. Flange and support arm shall be 22 gauge (0.8mm) and equipped with a concealed, 18-gauge (1.2mm) mounting bracket that is secured to a concealed, 19-gauge (1.0mm) wall plate with a stainless steel setscrew. Cap shall be 14 gauge (2.0mm), welded to the support arm.

Surface-Mounted Double Robe Hook shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 28 23 Laundry Specialties
Description of Material or System:	Louvered Dryer Vent Cap
Last Updated:	8/26/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☑ Utility

Overview of system/product/guideline:

The preferred manufacturer for louvered dryer vent caps is:

Manufacturer: **Seiho**
Models: **SFZ or SFZC series**

Links to additional product information:

https://www.hvacquick.com/products.php

https://seiho.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 41 16 Emergency Key Cabinet
Description of Material or System:	Emergency Key Cabinet
Last Updated:	4/17/2023
Updated by:	Brian Downing

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☑ Other required for renovation/construction sites
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

In all renovation projects, if a Knox box has not previously been updated, the scope should include updating to this specified product. Design teams should coordinate with PEA Facilities Management, Campus Safety, and the authority having jurisdiction on the location.

Manufacturer:	**The Knox Company**
Name:	**Knoxbox 3200**
Model #:	**3270**
Color:	**Black**
Mount Type:	**per project**
Tamper Switch Type:	**None**

Links to additional product information:

https://www.knoxbox.com/products/commercial-knoxboxes/knoxbox-3200/c-24/c-80/p-7043

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 44 13 Fire Extinguisher Cabinet
Description of Material or System:	Fire Extinguisher Cabinets
Last Updated:	3/2024
Updated by:	Katie Gregory

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred vendor for steel fire extinguisher cabinets is JL Industries.
Ambassador Series - Steel Fire Extinguisher Cabinet with full handle.

Prefer to have recessed cabinets; if not possible semi recessed; last resort is surface mounted.

Confirm final product selection and installation with PEA FM and Campus Safety Departments.

Links to additional product information:

https://www.activarcpg.com/product/fire-protection/architectural-fire-extinguisher-cabinets/ambassador-series-steel/

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 56 00 Shelving
Description of Material or System:	Pantry Shelf
Last Updated:	3/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred option is to have built in solid painted wood shelving with solid edge, but if pre-manufactured is all that is possible this is our standard.

Manufacturer: Everbilt
8 in. x 11.25 in. x 1.05 in. Heavy Duty Brushed Nickel Shelf Bracket
*White is an approved alternative color.

MDO Shelf with applied face edge nose banding 1/8” popular
Edge detail to follow
Paint spec for the self to be provided by PEA; Epoxy, urethane or pre-coat

Links to additional product information:

https://www.homedepot.com/p/Everbilt-8-in-x-11-25-in-x-1-05-in-Heavy-Duty-White-Shelf-Bracket-EH-WSTHDUS-354/300263055#overlay

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 56 00 Shelving and Closet Hardware
Description of Material or System:	Closet Shelf and Rod
Last Updated:	3/21/2023
Updated by:	Curtis Boivin

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for closet hardware is:

Manufacturer: **Knape & Vogt Mfg. Co.**

*All rods are to be steel tube, scratch resistant finish, tbd by project. Typically chrome.
No wood rods allowed.

Links to additional product information:

Closet Hardware

Retail Sell Sheet





Closet-Pro™ products from Knape & Vogt® feature an array of economical products for everyday closet projects. Steel closet poles, adjustable closet rods, tension rods, shelf & rod brackets, and all the accessories are available in various sizes and finishes. Closet-Pro™ will meet the customer's functional and aesthetic needs, whether big or small.

- Cut-to-Length closet poles can be cut to accommodate any custom closet need
- Adjustable closet rods with attached plastic flanges make wall installations quick and easy, and can be used for wall mounting or shelf and rod bracket installations
- End Caps are available for bracket installations. Closet Pole Sockets are available for wall and/or cabinet installations
- Fixed (non-adjustable) brackets are available in several Shelf & Rod support styles as well as Shelf Only styles that can hold up to 500 lbs.
- Adjustable brackets are available in Shelf & Rod support styles as well as Shelf-only styles



0018

Cut-to-Length Closet Poles

- 1-1/4" diameter steel tube (22 gauge thick walls)
- Durable, scratch-resistant powder coat finish
- Three cut-to-fit sizes: 4', 6' and 8'

Chrome White

Platinum



RP0021

Adjustable Closet Rods

- 1" and 1-1/4" diameter
- Sizes: 18"-30", 30"-48", 48"-72", 72"-120"
- Hardware included

Platinum

White



CD-0002, CD-0003, CD-0004

Tension Rods

- Heavy-duty with locking pin
- Chrome plated steel
- Non-marring rubber ends
- For permanent or temporary use

Chrome



0044



0045



0052



0496

Fixed Shelf & Rod Brackets

- Available in adjustable or fixed construction
- Slide-Thru™ feature available

Chrome White

Platinum











0040

Adjustable Shelf Brackets

- For 10-1/2" to 14" deep shelves
- Installs with or without wall cleat

White



0046
0046-15



0048

Fixed Shelf Brackets

- 14-gauge steel construction
- Sizes: 11", 15" and 19"
- Holdes up to 500 lbs. per pair

Chrome White

Platinum



0039

Closet Pole Sockets

- For 1-1/4" diameter closet poles
- Mounting hardware included

Bright Brass White

Chrome

Platinum

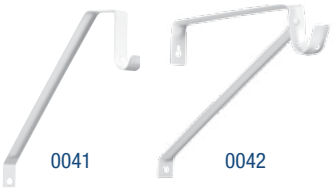


0019

Closet Pole End Caps

- Packed in pairs
- For 1-1/4" diameter poles

Platinum White



0041 0042



0043

Adjustable Shelf & Rod Brackets

- 2-1/2" hook depth
- Holds up to 300 lbs. per pair
- Use with up to 1-3/8" closet rods

White



WS46-12
WS46-16



WS46-CPS

Fixed Shelf Brackets (for wood or wire shelves)

- Sizes: 12" and 16"
- Holds up to 500 lbs. per pair
- Optional attachment of WS46-CPS rod hook

White



0023

Closet Pole Accessories

- Elbows, connectors and fasteners

Bright Zinc White

Item	Description	Finish	Unit Dimensions L	W	D	Unit Pack Qty.	Unit Wt. (lbs.)	Master Carton Dimensions L	W	D	Master Pack Qty.	Master Carton Wt. (lbs.)	UPC Code	SCM Code
CLOSET-PRO™														
Steel Closet Rods, 1-1/4" Diameter, 1 Rod														
0018-4	4' Steel Closet Rod	WT	48.00	1.250	1.250	1	1.40	49.50	6.50	3.00	8	11.50	077355001846	10077355001843
0018-6	6' Steel Closet Rod	WT	72.00	1.250	1.250	1	2.20	73.00	6.50	3.00	8	17.60	077355001860	10077355001867
0018-8	8' Steel Closet Rod	WT	96.00	1.250	1.250	1	2.90	97.00	6.50	3.00	8	23.50	077355001884	10077355001881
0018-4BZ	4' Steel Closet Rod	CH	48.00	1.250	1.250	1	1.40	49.50	6.50	3.00	8	11.50	077355001839	10077355001836
0018-6BZ	6' Steel Closet Rod	CH	72.00	1.250	1.250	1	2.20	73.00	6.50	3.00	8	17.60	077355001853	10077355001850
0018-8BZ	8' Steel Closet Rod	CH	96.00	1.250	1.250	1	2.90	97.00	6.50	3.00	8	23.50	077355001877	10077355001874
0018-4PM	4' Steel Closet Rod	PM	48.00	1.250	1.250	1	1.40	49.50	6.50	3.00	8	11.50	077355080315	10077355080312
0018-6PM	6' Steel Closet Rod	PM	72.00	1.250	1.250	1	2.20	73.00	6.50	3.00	8	17.60	077355080322	10077355080329
0018-8PM	8' Steel Closet Rod	PM	96.00	1.250	1.250	1	2.90	97.00	6.50	3.00	8	23.50	077355080339	10077355080336
Adjustable Closet Rods with Screws, 1-1/4" Diameter, RETAIL PACK														
RP0021-18/30PM	18" - 30" Adjustable Rod	PM	18.00	2.375	1.250	1	1.00	19.00	10.00	3.87	10	10.30	077355002065	10077355002062
RP0021-30/48PM	30" - 48" Adjustable Rod	PM	29.00	2.375	1.250	1	1.40	29.50	10.50	3.87	10	13.90	077355002072	10077355002079
RP0021-48/72PM	48" - 72" Adjustable Rod	PM	41.00	2.375	1.250	1	2.10	42.00	10.50	3.87	10	20.90	077355002089	10077355002086
RP0021-72-120PM	72" - 120" Adjustable Rod	PM	66.00	2.375	1.250	1	3.40	66.50	10.50	3.87	10	33.80	077355002096	10077355002093
RP0021-18/30	18" - 30" Adjustable Rod	WT	18.00	2.375	1.250	1	1.00	19.00	10.00	3.87	10	10.30	077355002133	10077355002130
RP0021-30/48	30" - 48" Adjustable Rod	WT	29.00	2.375	1.250	1	1.40	29.50	10.50	3.87	10	13.90	077355002102	10077355002109
RP0021-48/72	48" - 72" Adjustable Rod	WT	41.00	2.375	1.250	1	2.10	42.00	10.50	3.87	10	20.90	077355002119	10077355002116
RP0021-72120	72" - 120" Adjustable Rod	WT	66.00	2.375	1.250	1	3.40	66.50	10.50	3.87	10	33.80	077355002126	10077355002123
Adjustable Closet Rods with Screws, 1" Diameter, POLY BAGGED														
PB0022-18/30	18" - 30" Adjustable Rod	PM	18.00	1.00	1.00	1	0.80	19.00	10.50	3.87	10	7.70	077355018301	10077355018308
PB0022-30/48	30" - 48" Adjustable Rod	PM	28.00	1.00	1.00	1	1.20	29.00	10.50	3.87	10	11.90	077355030488	10077355030485
PB0022-48/72	48" - 72" Adjustable Rod	PM	41.00	1.00	1.00	1	1.70	42.00	10.50	3.87	10	17.40	077355048728	10077355048725
PB0022-72/96	72" - 96" Adjustable Rod	PM	54.00	1.00	1.00	1	2.20	55.50	10.50	3.87	10	21.60	077355072969	10077355072966
PB0022-72120	72" - 120" Adjustable Rod	PM	66.00	1.00	1.00	1	2.60	66.50	10.50	3.87	10	25.60	077355072129	10077355072126
PB0022-96150	96" - 150" Adjustable Rod	PM	79.00	1.00	1.00	1	3.20	80.00	10.50	3.87	10	31.70	077355096156	10077355096153
PB22-18/30WT	18" - 30" Adjustable Rod	WT	18.00	1.00	1.00	1	0.80	19.00	10.50	3.87	10	7.70	077355022049	10077355022046
PB22-30/48WT	30" - 48" Adjustable Rod	WT	28.00	1.00	1.00	1	1.20	29.00	10.50	3.87	10	11.90	077355022056	10077355022053
PB22-48/72WT	48" - 72" Adjustable Rod	WT	41.00	1.00	1.00	1	1.70	42.00	10.50	3.87	10	17.40	077355022063	10077355022060
PB22-72/96WT	72" - 96" Adjustable Rod	WT	54.00	1.00	1.00	1	2.20	55.00	10.50	3.87	10	21.60	077355022070	10077355022077
PB22-72120WT	72" - 120" Adjustable Rod	WT	66.00	1.00	1.00	1	2.60	66.50	10.50	3.87	10	25.60	077355022087	10077355022084
PB22-9615WT	96" - 150" Adjustable Rod	WT	79.00	1.00	1.00	1	3.20	80.00	10.50	3.87	10	31.70	077355022193	10077355022190
Adjustable Closet Rods with Screws, 1" Diameter, RETAIL PACK														
RP0022-18/30	18" - 30" Adjustable Rod	PM	18.00	1.00	1.00	1	0.80	19.00	10.50	3.87	10	7.70	077355218305	10077355218302
RP0022-30/48	30" - 48" Adjustable Rod	PM	28.00	1.00	1.00	1	1.30	29.50	10.50	3.87	10	13.00	077355230482	10077355230489
RP0022-48/72	48" - 72" Adjustable Rod	PM	41.00	1.00	1.00	1	1.60	42.00	10.50	3.87	10	16.30	077355248722	10077355248729
RP0022-72/96	72" - 96" Adjustable Rod	PM	54.00	1.00	1.00	1	2.20	55.50	10.50	3.87	10	21.60	077355272963	10077355272960
RP0022-72120	72" - 120" Adjustable Rod	PM	66.00	1.00	1.00	1	2.80	66.50	10.50	3.87	10	27.80	077355272123	10077355272120
Adjustable Shelf and Rod Brackets, for 11" - 14" Deep Shelves and Rods up to 1-3/8" Diameter														
0041-B	No top with screws	WT	5.00	14.25	1.00	1	0.70	13.75	11.00	10.75	40	28.00	077355004113	10077355004110
RP-0042-BWT	Retail pack bend adjustment	WT	8.00	13.25	1.00	1	0.70	0.00	0.00	0.00	20	14.00	077355004267	10077355004264
0043-B	Slide adjustment	WT	9.767	12.40	1.00	1	1.00	13.75	11.00	10.75	20	20.00	077355004311	10077355004318
RP-0043-WT	Retail pack, slide adjustment	WT	9.767	12.40	1.00	1	1.00	14.37	11.18	11.12	20	20.00	077355143065	10077355143062
Fixed Shelf and Rod Brackets, for 11" - 18" Deep Shelves and Rods up to 1-3/8" Diameter														
0044-B	W/screws, 2-1/2" hook	PW	9.375	1.00	13.00	1	0.70	13.75	11.00	10.75	20	13.00	077355004403	10077355004400
0044-BLS	Less screws, 2-1/2" hook	PW	9.375	1.00	13.00	1	0.70	13.75	11.00	0.00	20	13.00	077355004496	10077355004493
0044-BLSUPC	Less screws, w/UPC, 2-1/2" hook	PW	9.375	1.00	13.00	1	0.70	13.75	11.00	10.75	20	13.00	077355004427	10077355004424
0044-BWTS	Powder coat finish w/screws	WT	9.375	1.00	13.00	1	0.70	13.75	11.00	10.75	20	13.00	077355100440	10077355100447
RP-0044-B	Retail pack w/label	PW	9.375	1.00	13.00	1	0.60	14.50	11.62	11.30	20	12.20	077355200447	10077355200444
RP-0044-BWT	Retail pack w/label, powder coat finish	WT	9.375	1.00	13.00	1	0.70	15.50	10.75	10.50	20	13.00	077355004465	10077355004462
0045	HD, 3" hook	PW	9.375	1.00	13.00	1	0.80	13.75	11.00	10.75	20	16.60	077355004502	10077355004509
0045-B	HD, 2½" hook	PW	9.375	1.00	13.00	1	0.80	13.75	11.00	10.75	20	16.60	077355004519	10077355004516
0045-BLSUPC	HD, 2-1/2" hook, less screws, w/UPC	PW	9.375	1.00	13.00	1	0.80	13.75	11.00	10.75	20	16.60	077355004571	10077355004578
0045-WTS	HD, 3" hook, powder coat finish w/screws	WT	9.375	1.00	13.00	1	1.00	13.75	11.00	10.75	20	19.40	077355104516	10077355104513
RP-0045-CH	HD, retail pack w/label	CH	9.375	1.00	13.00	1	1.00	10.75	11.00	15.50	20	19.40	077355045048	10077355045045
RP-0045-PM	HD, retail pack w/label	PM	9.375	1.00	13.00	1	0.70	5.88	10.50	15.50	10	7.30	077355080278	10077355080275
RP-0045-WT	HD, retail pack w/label	WT	9.375	1.00	13.00	1	0.70	14.50	11.62	11.30	20	14.60	077355400458	10077355400455
RP-0052-WT	Slide-Thru™, retail pack w/label	WT	8.625	1.00	12.50	1	1.10	14.44	11.68	11.67	20	22.00	077355005202	10077355005209
RP-0496-WT	14" HD, retail pack w/label	WT	9.50	1.00	14.0625	1	1.30	5.25	9.75	14.25	5	6.40	077355000283	10077355000280

Item	Description	Finish	Unit Dimensions L	W	D	Unit Pack Qty.	Unit Wt. (lbs.)	Master Carton Dimensions L	W	D	Master Pack Qty.	Master Carton Wt. (lbs.)	UPC Code	SCM Code
CLOSET-PRO™ (continued)														
Shelf Brackets, Holds up to 500 lbs. per Pair (excludes 0040)														
0040	Economy - Slide Adjustable	PW	9.767	1.00	11.00	1	0.00	13.75	11.00	10.75	20	0.00	077355004007	10077355004004
0040-WTS	Same as above w/screws	PW	9.767	1.00	11.00	1	0.70	13.75	11.00	10.75	20	13.40	077355004021	10077355004028
0046-WTS	11" with screws	WT	8.75	1.00	10.375	1	0.70	13.75	11.00	10.75	20	14.90	077355004649	10077355004646
0046-15WT	15", retail pack w/label	WT	12.625	1.00	14.50	1	1.30	17.00	13.25	10.75	20	26.00	077355004687	10077355004684
RP-0046-CH	11", retail pack w/label	CH	9.00	1.00	10.25	1	0.70	9.50	11.00	11.00	20	13.80	077355080308	10077355080305
RP-0046-PM	11", retail pack w/label, powder coat finish	PM	9.00	1.00	10.25	1	0.70	9.50	11.00	11.00	20	13.80	077355080292	10077355080299
RP-0046-WT	11", retail pack w/label, powder coat finish	WT	9.00	1.00	10.25	1	0.70	14.50	11.62	11.30	20	13.80	077355300468	10077355300465
RP-0048-19WT	19" retail pack w/label, powder coat finish	WT	18.20	1.12	13.75	1	2.20	3.75	16.43	18.31	6	13.00	077355004809	10077355004806
Shelf Brackets for Wood or Wire Shelves, Powder Coat Finish														
WS46-12WT	12" Shelf Bracket	WT	10.625	12.25	1.00	1	1.10	14.44	11.35	11.12	20	21.00	077355004601	10077355004608
WS46-16WT	16" Shelf Bracket	WT	10.75	16.00	1.00	1	1.40	17.12	11.62	4.37	6	8.40	077355004694	10077355004691
Pole Sockets, 1 pair with Mounting Hardware, Blister Card														
BC-0037	1-3/8" Diameter, Plastic	WT	6.00	3.75	1.188	1	0.00	9.00	4.00	5.50	10	0.40	077355003734	20077355003738
BC-0038-HD	1-3/8" Diameter, Wood	WD	7.75	3.75	1.188	1	0.20	8.00	4.00	9.00	10	1.80	077355003826	10077355003823
BC-0039-3	1-3/8" Diameter, Steel	BB	6.00	3.75	1.188	1	0.10	8.50	5.50	4.00	10	1.10	077355000399	20077355000393
BC-0039-WT	1-3/8" Diameter, Steel	WT	6.00	3.75	1.188	1	0.10	8.50	5.50	4.00	10	1.10	077355003970	20077355003974
Pole Sockets, 1 pair with Mounting Hardware, Poly Bag														
RP-0034-25	1-5/8" Diameter, Plastic	WT	5.25	4.25	0.50	1	0.10	13.75	6.00	3.50	25	1.50	077355003451	10077355003458
RP-0037-25	1-3/8" Diameter, Plastic	WT	5.00	4.125	0.50	1	0.00	13.38	6.00	3.50	25	1.10	077355003758	10077355003755
RP-0037-100	1-3/8" Diameter, Plastic	WT	5.25	4.1875	0.875	1	0.00	16.00	8.50	12.00	100	4.40	077355003758	20077355003752
RP-0037-PM	1-3/8" Diameter, Plastic	PM	5.25	4.1875	0.875	1	0.00	9.50	6.50	2.50	25	1.00	077355080407	10077355080404
RP-0038-HD25	1-3/8" Diameter, Wood	WD	1.00	3.50	7.8125	1	0.20	13.37	6.00	3.50	25	4.40	077355003819	10077355003816
RP-0039-PM	1-3/8" Diameter, Steel	PM	5.375	4.00	0.50	1	0.10	6.13	3.13	4.25	10	0.90	077355003994	10077355003991
RP-0039-325	1-3/8" Diameter, Steel	BB	5.375	4.00	0.50	1	0.10	13.37	6.00	3.50	25	2.20	077355003949	10077355003946
RP-0039-CH25	1-3/8" Diameter, Steel	CH	5.50	4.00	0.50	1	0.10	13.38	6.00	3.50	25	2.20	077355039009	10077355039006
RP-0039-WT25	1-3/8" Diameter, Steel	WT	5.50	4.00	0.50	1	0.00	13.38	6.00	3.50	25	0.00	077355003987	10077355003984
End Caps and Accessories, for use with 1-1/4" Diameter Pole (except 0023 uses 1" dia. pole)														
0016-WT	Shelf & Pole Mounting Kit	WT	3.50	14.1875	1.25	1	2.50	15.12	8.37	3.50	6	15.10	077355001600	10077355001607
0018-ELBOW	Closet Pole Corner Elbow	WT	12.75	11.50	1.25	1	0.90	13.75	11.00	10.75	8	7.40	077355001822	10077355001829
CD-0019	Plastic End Cap	WT	5.875	3.8125	6.00	1	0.10	8.50	5.00	4.00	10	0.90	077355001907	10077355001904
CD-0019-PM	Plastic End Cap	PM	5.875	3.8125	6.00	1	0.10	6.25	8.88	4.38	6	0.50	077355001914	10077355001911
CD-0020	Pole Connector, Plastic	WT	5.00	4.00	1.125	1	0.10	6.00	4.00	4.00	10	0.60	077355002010	10077355002017
PB-0023-UPC	Center Support, Steel	BZC	4.25	4.00	0.50	1	0.10	8.75	5.38	4.50	20	2.00	077355002317	10077355002314
RP-0017-CH25	Steel End Cap	CH	4.25	4.00	1.125	1	0.00	13.37	6.00	3.50	10	0.40	077355001709	10077355001706
WS46-CPS	Rod Support for WS46 Brackets	WT	7.50	3.75	0.50	1	0.30	15.68	4.25	6.00	20	6.80	077355104608	10077355104605
Tension Rods, Heavy-Duty with Locking Pin, Chrome Plated Steel, Non-Marring Rubber Ends														
CD-0002	Extends from 23" to 40"	CH	23.50	0.875	0.875	1	1.00	25.25	5.00	1.75	3	3.10	077355000023	10077355000020
CD-0003	Extends from 34" to 63"	CH	35.00	0.875	0.875	1	1.50	36.50	8.75	1.75	6	9.10	077355000030	10077355000037
CD-0004	Extends from 58" to 83"	CH	59.00	0.875	0.875	1	2.20	60.00	8.75	1.75	6	13.00	077355000047	10077355000044

Applications

- Homes
- Offices
- Businesses
- Studies
- Living Areas

Package Features

- Trilingual
  - Reach expanding and international markets.
- Compelling Graphics
  - Information is easy to locate
  - Large visuals highlight product features
- Instructions Included
  - Easy to read with graphic visuals
  - Included with all bagged and carded products
- Hardware Included*
  - All hardware and screws are included with bagged and carded products
  - Easier to shop with fewer items to purchase
- Easy to Merchandise
  - Planograms can be customized to fit your needs



KNAPE & VOGT
2700 Oak Industrial Dr. NE
Grand Rapids, MI 49505-6026 USA
1.800.253.1561 | 616.459.3311
Fax: 877.636.3290
www.kv.com

This and other KV literature is available for download at www.kv.com > Resource Library

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H8 in. x D12.4 in. x W1.05 in. Chrome Heavy Duty 300 lbs. Shelf and Rod Bracket



Chrome Heavy Duty Shelf and Rod Bracket is perfect for heavy-duty storage and work surface applications. Brackets can be used anywhere for home storage, industrial and commercial needs. Features a durable chrome coat finish.

- For heavy-duty storage applications
- Most heavy-duty shelf bracket available
- Features a durable chrome coat finish
- Made for supporting large shelves
- compatible with hardwood

96 in. Chrome Heavy Duty Closet Pole





- Solid steel construction resists sagging and warping
- Thick walls and a large diameter combine to offer strength and durability
- Tubular steel design provides exceptional hanger movement
- Simply cut to fit with a saw

1-5/16 in. Heavy-Duty Chrome Closet Pole End Caps (2-Pack)





Decorative Closet Pole End Caps (2-Pack) are a simple and durable solution for the exposed ends of your closet pole. Constructed from solid cast zinc, the caps are coated with a chrome plated finish that complements your closet design. The included hidden set screws secure the end caps in place on the pole, helping you prevent hangers from sliding off the pole ends.

- Cover up the unsightly ends of open closet poles with a decorative design
- Help prevent hangers from sliding off the end of a pole
- Durable chrome finish
- Hardware included

Chrome Shelf Bracket Mounting Screws (8-Pack)



- Kit contains four 1-1/2 in. screws for mounting brackets to wall, and four 5/8 in. screws for mounting a wood shelf on top of brackets
- Steel construction
- Chrome plated finish
- Installation into wall studs recommended

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	10 Specialties
Specification Section:	10 71 00 - Exterior Protection
Description of Material or System:	Exterior Shutters
Last Updated:	3/31/2022
Updated by:	Jeff Plimpton

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

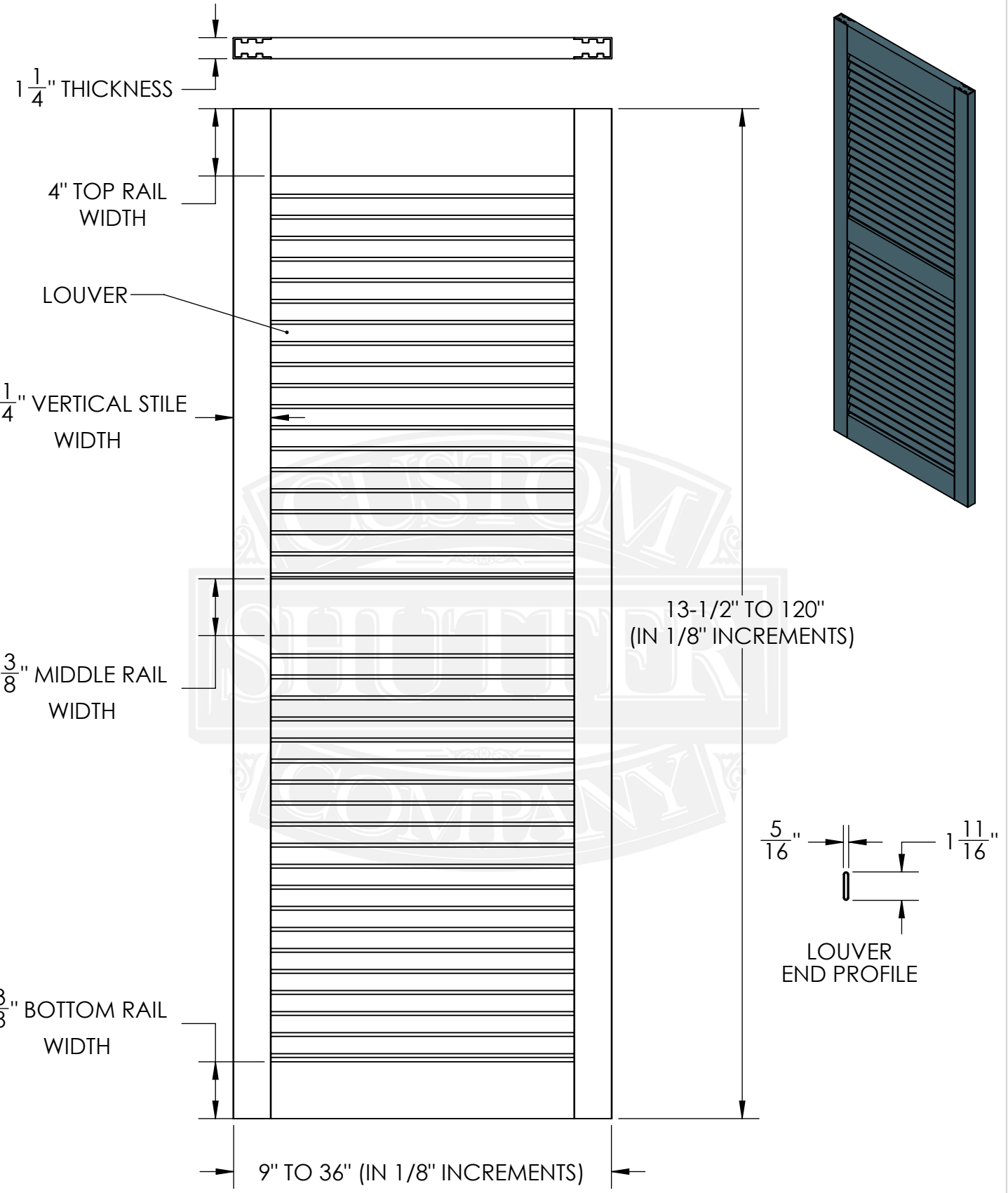
Overview of system/product/guideline:

The preferred manufacturer for exterior shutters is Custom Shutter Company.

Standard Color: Evergreen 638
Alternate colors only permitted with approval by owner.

Links to additional product information:

https://www.customshuttercompany.com/



PROPRIETARY AND CONFIDENTIAL

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NEXT ASSY	USED ON
APPLICATION	

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±1/32
ANGULAR: MACH ±1° BEND ±1°
TWO PLACE DECIMAL ±.010
THREE PLACE DECIMAL ±.005

MATERIAL FIBERGLASS

FINISH VARIES

DO NOT SCALE DRAWING

	NAME	DATE
DRAWN	BSEGREST	10-10-17
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

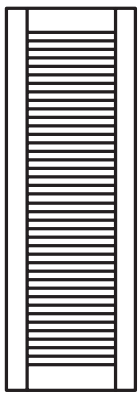
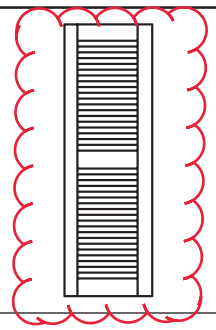
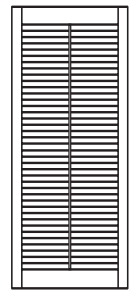
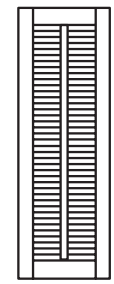
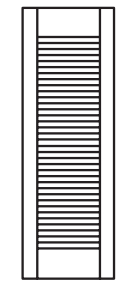
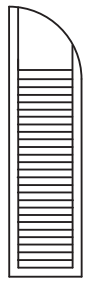
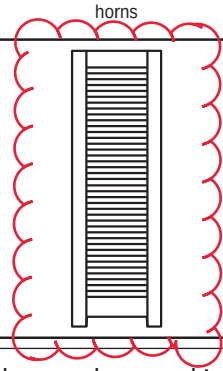
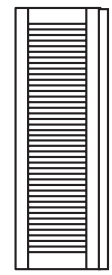
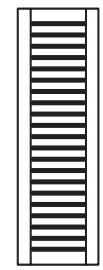
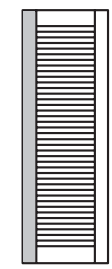
CUSTOM SHUTTER COMPANY

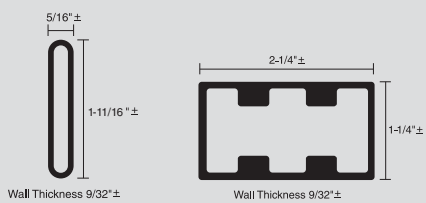
LOUVERED COLONIAL (FIBERGLASS)

SIZE	DWG. NO.	REV.
A	100906	7

SCALE:1:8 WEIGHT: SHEET 1 OF 1

Louvered Colonial

Standard	Options Overall shutter height to include mid rail and 1" bottom horns			
	additional rails 	vertical mullion 	faux tilt rod 	custom top or bottom rail 
solid arch top 	horns 	rabbeted edge 	bahama louver spacing 	butt hinge 

Rails	Structural PVC with smooth outer skin.
Panels	—
Louvers	Pultruded Structural Fiberglass
Stiles	Pultruded Structural Fiberglass
Paint Finish	Two-part Urethane Color: Evergreen
Thickness	1 1/4"
Width	9"-36" (in 1/8" increments) Rail widths, if specified, may vary slightly due to louver/slat positioning. Vertical mullion required for every 30"
Height	13 1/2"-120" (in 1/8" increments)
Vertical Stile	2 1/4"
Top Rail	4"
Middle Rail	3 3/8"
Bottom Rail	4" (may vary)
Diagrams	

Colors

Colors are representative only and vary from the actual product.
For accurate color selection please see a paint color chart.


Black 632


Midnight Sky 639


Roycraft Copper Red 668


Roycraft Pewter 663


Charleston Green 653


Deep Sea Blue 637


Board & Batten Red 650


Pewter 646


Rookwood Shutter Green 654


Tempest Blue 666


Federal Brown 635


Roycraft Mist Gray 664


Roycraft Bottle Green 655


Hamilton Blue 667


Polished Mahogany 657


Chelsea Gray 662


Evergreen 638


Harbor 645


Rookwood Med. Brown 658


Hammered Silver 661


Rookwood Dark Green 656


Cascade 647


Walnut 641


Sand 642


Forest Green 633


Plum Creek 643


Craftsman Brown 659


Weathered Shingle 660


Pine 644


Bordeaux 640


White 631

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	11 Equipment
Specification Section:	11 12 00 Parking Control Equipment
Description of Material or System:	Parking and Campus Gates
Last Updated:	8/4/2022
Updated by:	Annie Pleatsikas

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☑ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

See attached guidelines and specs for campus gates.

Links to additional product information:

https://www.doorking.com/

(/)

1601 Parking Gate







HIGH USAGE SINGLE LANE TRAFFIC CONTROL

The Model 1601 is for high usage single-lane vehicular traffic control. Typical applications include commercial, industrial, gated communities and apartment complexes. A quick 2.5 second rotation opening time, along with rugged construction and multiple optional features make this 1601 a versatile answer to many parking control problems. The 1601 is available in white or gun metal gray finish.

These operators are designed so that they can be mounted on either the left or right hand side of the roadway. A battery powered Convenience Open option is available, which provides a method to open the gate if AC power is lost.

Find A Dealer (/dealer-locator)



Gate Tracker™
Provides Operator data to companion access controller (DKS 1833, 1835, 1837, 1838).



Left or Right Hand Mount
Operators are designed so they can be mounted on either the left or right hand side of the roadway.



Breakaway Arm Option
Reduces maintenance costs (round aluminum only).



Perimeter Access Management System
Automatic sequencing inputs for use with Slide and Swing Gate Operators.



DKS Pedestrian Protection System
It's aware – even when they're not.

Self-Storage, Gated Communities, Parking, Condominium/ Resident Hall, Mixed Use & Commercial


Apartment Complexes and Colleges (/consumers/apartment-complexes-and-colleges)


Gated Communities and Apartment Complexes (/consumers/gated-communities)


Business / Commercial / Industrial (/consumers/business-commercial-industrial)


Mixed Use Facilities (/consumers/mix-use)


Self-Storage (/consumers/self-storage)


Parking Control (/consumers/parking)

Overview | **Specs** | **Accessories** | **Downloads** | **Technical Downloads** | **Video**

The 1601 operator is designed for single lane (14 ft. max) vehicular traffic control in high traffic commercial and industrial applications. The 1601 operator is designed so that it can be mounted on either the left or right-hand side of the roadway and is available in white or gunmetal gray finish. The operator can be equipped with a DC convenience open package (optional) that will automatically raise the arm in the event of a power outage.

View All Arm Options (/traffic-control/arm-options-1601-barrier-gate)

Arm Options

Arm Type	Max. Arm Length (Ft.)	Style	Folding Option[1]	Break-A-Way Option	Lighted Option
Plastic	12	2.5 in. Square	Yes	No	No
Wood	14	3/4 in. x 3 1/2 in. Rectangular	Yes	No	No
Aluminum	14	Octagonal	Yes[3]	Yes	Yes[2]
Aluminium	14	3 in. Round	Yes	Yes	No

Please select the style etc you want - also what is the post/controller - assume One Source would supply swipe/but want controller talks to the gate? Please provide info for standards - thank you

1. Maximum arm length when using the folding option is 12 Ft.
2. Light option includes reversing edge. LEDs are red when the arm is down and switch to green when the arm is up.
3. Minimum ceiling height with this arm kit is 10 feet.

DoorKing

Read More >

(https://doorking.com/madeinusa)

(https://www.facebook.com/DoorKing) (https://twitter.com/DKSDoorking) (http://www.youtube.com/dksdoorking) (http://www.linkedin.com/company/doorking-inc-)

Find A Dealer (/dealer-locator)

Telephone (/telephone) Access Control (/access-control) Gate Operators (/gate-operators) Traffic Control (/traffic-control) Maximum Security (/maximum-security)

Contact (/contact) Privacy Policy (/privacy-policy) Safety (/safety) Terms of Use (/terms-of-use) Connection Services Terms (/connection-services-terms)

Software Support Agreement (/software-support-agreement)

DOORKING

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Website Design (https://dogsofdesign.com) by Dogs of Design Studios

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	11 Equipment
Specification Section:	11 31 13 Residential Appliances
Description of Material or System:	Residential Appliances
Last Updated:	3/2/2023
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

PEA has to the greatest extent possible standardized the appliances we provide in faculty dorm apartments, multi-family units and houses. Most often PEA will furnish these units for contractors to install (OFCI). The following is shared for reference and information only.

Stoves: Electric coil range, 30", white
Options: - General Electric model #JB256DMWW
- GE electrical cord ordered separately
- Frigidaire model FFEF3016VW

Range hoods: Typically vented (unless not feasible)
Color: white
Options: - Zephyr model #AK1100W (hood can be vented or non-vented)
- Recirculation kit: Zephyr #AOAK1121001 for non-vented
- Broan model # BCSEK130WW

Dishwashers: 24" white
Dishwashers must have a stainless steel interior
Options: - Maytag (Energy Star) #MDB4949SHW
- Frigidaire Energy Star) #FFBD2420UW

Links to additional product information:

Stoves:
https://www.geappliances.com/appliance/GE-30-Free-Standing-Electric-Range-JB256DMWW

https://www.lowes.com/pd/Frigidaire-30-in-4-Elements-5-3-cu-ft-Self-Cleaning-Freestanding-Electric-Range-White/5001230941

Range Hoods:
https://zephyronline.com/product/breeze-i-under-cabinet-range-hood/

Dishwashers:
https://www.maytag.com/kitchen/dishwashers-and-compactors/dishwashers

https://www.frigidaire.com/Kitchen-Appliances/Dishwashers/Dishwasher/FFBD2420UW

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	11 Equipment
Specification Section:	11 30 13 Residential Appliances
Description of Material or System:	Residential Appliances (Continued)
Last Updated:	3/2/2023
Updated by:	Heather Taylor

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Refrigerators: PEA only supplies for student Dorm kitchens where possible, sizes opening to fit 36" unit. No ice makers in student dorms. For faculty apartments, PEA will provide a water line for an ice maker. (Refrigerators are provided by faculty.)

Options: - Whirlpool 18 CFT (Energy Star #WRT138FZDW, white
- Whirlpool 14 CFT (Energy Star) #WRT134TFDW, white
- Frigidaire 18.3 CFT #FFTR1814WW, white

Washer/Dryers: PEA contracts with ENR for washer & dryers in dorms. Typically we do not provide washers and dryers for faculty, except in small apartments where stackable units are the only unit that fits. No standard listed for stackable. Project dependent.

Dryer: - Electrolux #EFDE317TIW, white

Washer: - Electrolux #EFLW317TIW, white

Links to additional product information:

https://www.electrolux.com/en/Washers-Dryers/Washing-Machines/Dryers/EFDE317TIW

https://www.electrolux.com/en/Washers-Dryers/Washing-Machines/Washing-

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 21 00 Blinds
Description of Material or System:	Aluminum Mini Blinds
Last Updated:	11/8/2024
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [x] Academic Buildings
- [x] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer and model for aluminum mini blinds is:

Manufacturer: Hunter Douglas

Model Name: Precious Metals Mini Blinds

Size: 1" - one inch

Features: Cordless with wand controls

Colors: 268 Crème de la Crème,
125 Bright White
Picket Fence

These window treatments are typically used in academic and administrative buildings for offices, interior windows, etc.
Review applications with FM Planning.

Links to additional product information:

https://www.hunterdouglas.com/window-treatments/blinds/metal-blinds/modern-precious-metals

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 21 00 Blinds
Description of Material or System:	Aluminum Mini Blinds
Last Updated:	8/2/2022
Updated by:	Jeff Plimpton

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☑ Academic Buildings
- ☑ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☑ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer and model for aluminum mini blinds is:

Manufacturer: **Hunter Douglas**
Model Name: **Celebrity**
Size: **1"**
Features: **Cordlock and wand controls**
Colors: **268 Crème de la Crème,**
125 Bright White

These are typically used in academic and administrate buildings for offices, interior windows etc.
Review applications with FM Planning.

Links to additional product information:

https://www.hunterdouglas.com/window-treatments/blinds/metal-blinds/modern-precious-metals

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 23 00 - Interior Shutters
Description of Material or System:	Interior Wood Shutters
Last Updated:	12/18/2024
Updated by:	Heather Taylor

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☑ Other Faculty Dorm Apartments
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

This is a premium solution for faculty living spaces only and will only be provided as budgets allow and in spaces with extreme public locations on the first floor level. Install Interior wood shutters on a case by case bases for the lower sash of windows directly facing public streets, or deemed highly visible. Review product criteria with FM Design Team.

Links to additional product information:

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 24 13 Roller Window Shades
Description of Material or System:	Roller Shades for Faculty Residences & Faculty Dorm Apartments
Last Updated:	3/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the preferred vendor and model for roller window shades:

Vendor: Ralph Friedland and Bros. Shades
Model: Skyline Clutch Roller Shades
Fabric: Mesa Blackout Fabric (for bedrooms only)
Color: White
Other: 3000 Net Solar Screen Privacy
Light Filtering: 3000 Net 3% Openness

***Bedrooms** - Black out shades are to be Texstyle Mesa; Dove white

***Toilet Rms -** Privacy shades are to be Texstyle 3000 Net, solar screen fabric; white on white

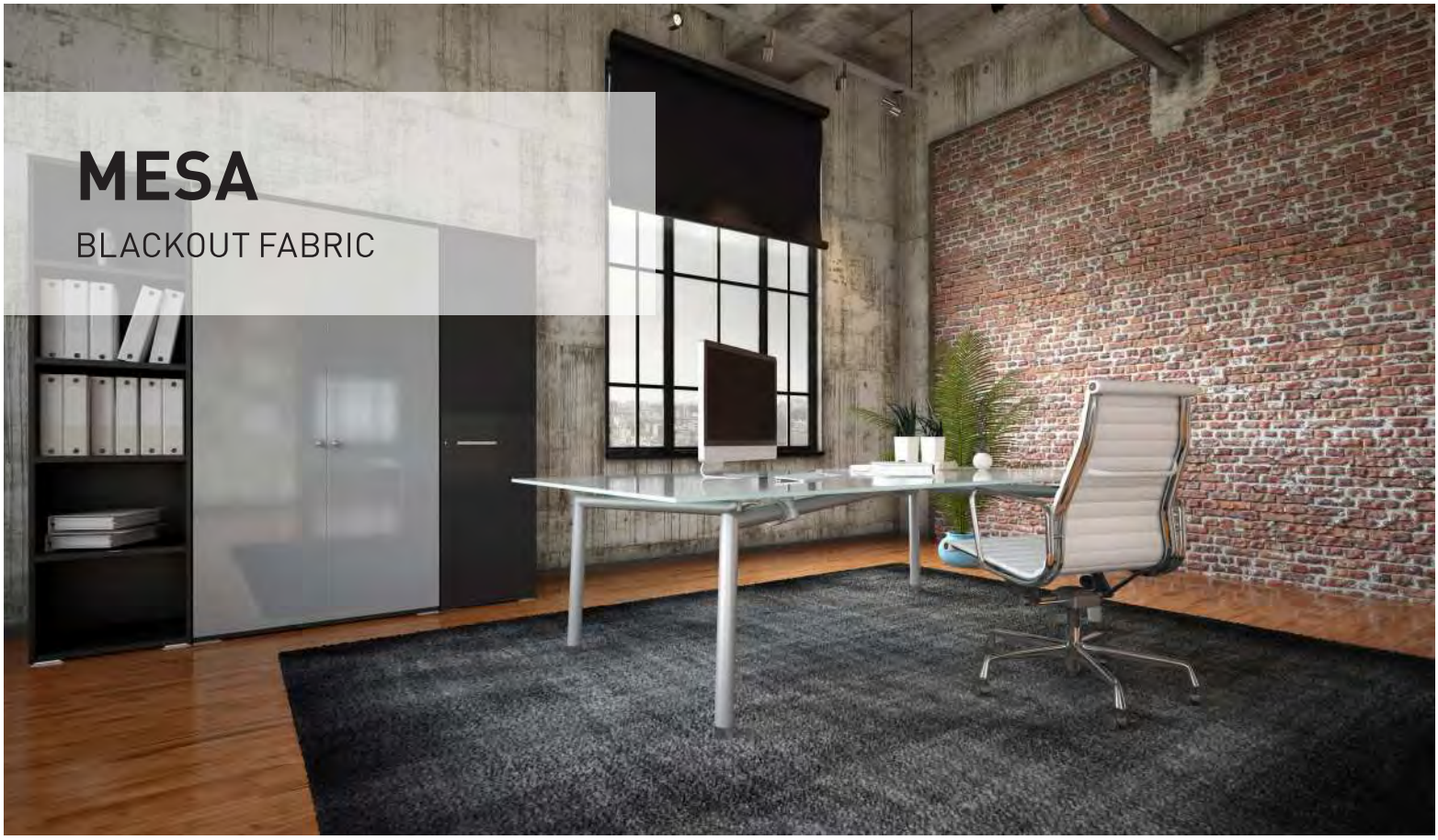
***All other windows** - Light filtering are to be Texstyle 3000 Net - 3% openness, solar screen fabric; white on white

Room darkening shades for bedrooms only. 3% open for all other spaces. Each product to be reviewed with PEA Facilities Management staff during planning and design. Provide valence as needed.

Links to additional product information:

https://www.friedlandshades.com/

https://www.rolleaseacmeda.com/us



MESA

BLACKOUT FABRIC

Mesa - Exclusively from Rollease Acmeda

Mesa blackout fabric is ideal for a variety of applications that require total light blockage and privacy. Made from 100% polyester with an acrylic foam backing, Mesa is PVC-free, offering a high-quality, soft appearance that will add beauty to a room while reducing glare and solar heat gain.

Mesa is available in 8 modern colors to complement any décor and can be used for an array of window coverings including Roller Shades, Roman Shades, or Panel Track systems. Mesa features a white backing to create a uniform appearance from the exterior.

FEATURES

- Attractive textile apperance
- Available in 8 appealing colors
- White backing
- Acrylic foam coating
- Available in two roll widths
- Flame Retardant
- PVC-free

ralph friedland & bros., inc.
17 Industrial Drive
Cliffwood Beach, NJ
732-290-9800
www.friedlandshades.com

A durable and modern blackout, Mesa will enhance the look of any room while providing privacy.

COLORS

DOVE WHITE

WHITE

PEARL


LATTE


SEAL


COCOA


SLATE


BLACK

SPECIFICATIONS

Composition	100% Polyester with Acrylic Backing
Weight	9.43 oz/yd2 (320 g/m2)
Thickness	0.021 in (.55mm)
Width	98.4" (2.5m), 118" (3m)
Average roll length	27 yd (25m)
Fire Classification	NFPA 701, CA Title 19, UCL-S109

*For complete technical information, current test results, performance specifications, and samples, please contact our marketing department.



ralph friedland & bros., inc.
17 Industrial Drive
Cliffwood Beach, NJ
732-290-9800
www.friedlandshades.com

Skyline Clutches

QUICK REFERENCE SHEET



Features & Benefits:

- **Sleek, rounded design for a more polished look**
- **Fiberglass-filled nylon construction for long lasting durability**
- **Patented Velvetrol[tm] internal spring arrangement provides smoother feel lifting or lowering shade**
- **Universal brackets available in standard, ribbed, narrow and dual with multiple projections**
- **Spring-loaded pin end design for greater flexibility in installation**
- **Springs are custom made for every clutch for best fit and function**
- **Limited Lifetime Warranty**
- **Made in the USA**

Clutch	*Compatible Tubes*	*Tube Diameter*	*Compatible Brackets*	*Compatible Pin Ends*	*Compatible Adapters*	*Max Weight*	*Compatible Chain/Cord*
SL5H01	RTEA2T(6, 12 & 16) RTEA3T(6, 12 & 16) RTEA4T(6, 12 & 16)	1 1/8 in (28.6mm) 1 1/4 in (31.8mm) 1 1/2 in (38mm)	SLB660, SLB680R, SLB690R, SLNB650, SLNB660,SLNB680, SLNB690, SLB660DBH, SLB660DBV, SLDB32, SLDB38, SLDB48, SLFBKT3, SLFBKT4, CRUSLB, CRUSLB660, CRUSLB680, RE0020202	SLPEV01, SLPEV03, SLPEV653, SLPEV53, SLPEHD53	SLA03, SLA53, SLA40	5.0 lbs (2.27 kg)	D30 Cord, Metal Bead, Plastic Bead
SL5H02	RTEA1T(6 & 12)	1 in (25.4mm)	SLB660, SLB680R, SLB690R, SLNB650SLNB660,SLNB680, SLNB690, SLB660DBH, SLB660DBV, SLDB32, SLDB38, SLDB48, SLFBKT3, SLFBKT4, CRUSLB, CRUSLB660, CRUSLB680, RE0020202	SLPEV02	N/A	5.2 lbs (2.36 kg)	D30 Cord, Metal Bead, Plastic Bead
SL10H01	RTEA2T(6, 12 & 16) RTEA3T(6, 12 & 16) RTEA4T(6, 12 & 16)	1 1/8 in (28.6mm) 1 1/4 in (31.8mm) 1 1/2 in (38mm)	SLB660, SLB680R, SLB690R, SLNB650, SLNB660,SLNB680, SLNB690, SLB660DBH, SLB660DBV, SLDB32, SLDB38, SLDB48, SLFBKT3, SLFBKT4, CRUSLB, CRUSLB660, CRUSLB680, RE0020202	SLPEV01, SLPEV03, SLPEV653, SLPEV53, SLPEHD53	SLA03, SLA53, SLA40	11.0 lbs (4.99 kg)	D30 Cord, C30 Cord, Metal Bead, Plastic Bead

RollEase Headquarters
200 Harvard Avenue
Stamford, CT 06902
Phone: 203-964-1573, 800-552-5100
Order Fax: 203-358-5865

RollEase West
7310 West Roosevelt Street, Ste. 26
Phoenix, AZ 85043
Phone: 623-936-5818
Order Fax: 623-936-5294

www.rollease.com

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Skyline Clutches

QUICK REFERENCE SHEET

Clutch	Compatible Tubes	Tube Diameter	Compatible Brackets	Compatible Pin Ends	Compatible Adapters	Max Weight	Compatible Chain/Cord
SL10H02	RTEA1T(6 & 12)	1 in (25.4mm)	SLB660, SLB680R, SLB690R, SLNB650, SLNB660,SLNB680, SLNB690, SLB660DBH, SLB660DBV, SLDB32, SLDB38, SLDB48, SLFBKT3, SLFBKT4, CRUSLB, CRUSLB660, CRUSLB680, RE0020202	SLPEV02	N/A	13.0 lbs (5.9 kg)	D30 Cord, C30 Cord, Metal Bead, Plastic Bead
SL15H01	RTEA2T(6, 12 & 16) RTEA3T(6, 12 & 16) RTEA4T(6, 12 & 16)	1 1/8 in (28.6mm) 1 1/4 in (31.8mm) 1 1/2 in (38mm)	SLB660, SLB680R, SLB690R, SLNB660,SLNB680, SLNB690, SLB660DBH, SLB660DBV, SLDB32, SLDB38, SLDB48, SLFBKT3, SLFBKT4, CRUSLB, CRUSLB660, CRUSLB680, RE0020202	SLPEV01, SLPEV03, SLPEV653, SLPEV53, SLPEHD53	SLA03, SLA53, SLA40	16.7 lbs (7.57 kg)	D30 Cord, C30 Cord, Metal Bead, Plastic Bead
SL15H02	RTEA1T(6 & 12)	1 in (25.4mm)	SLB660, SLB680R, SLB690R, SLNB660,SLNB680, SLNB690, SLB660DBH, SLB660DBV, SLDB32, SLDB38, SLDB48, SLFBKT3, SLFBKT4, CRUSLB, CRUSLB660, CRUSLB680, RE0020202	SLPEV02	N/A	18.75 lbs (8.50 kg)	D30 Cord, C30 Cord, Metal Bead, Plastic Bead
SL20H53	RTEA4T(6, 12 & 16) RTEA5T(14 & 16) RTEA5U14 RTEA6T16 RTEA6U16 RTEA7T16	1 1/2 in (38mm) 2 in (50.8mm) 2 1/2 in (63.5mm) 3 1/4 in (82.5mm)	SLB680R, SLB690R, SLNB680, SLNB690, SLFBKT3, SLFBKT4, CRUSLB660, CRUSLB680, RE0020202	SLPEV653, SLPEV53, SLPEHD53	RA2, RA25	20.0 lbs (9.07 kg)	Metal Bead, Plastic Bead
SL30H53	RTEA4T(6, 12 & 16) RTEA5T(14 & 16) RTEA5U14 RTEA6T16 RTEA6U16 RTEA7T16	1 1/2 in (38mm) 2 in (50.8mm) 2 1/2 in (63.5mm) 3 1/4 in (82.5mm)	SLB680R, SLB690R, SLNB680, SLNB690, SLFBKT4, CRUSLB660, CRUSLB680, RE0020202	SLPEV653, SLPEV53, SLPEHD53	RA2, RA25	30.0 lbs (13.6 kg)	Metal Bead, Plastic Bead
RGALH	RTEA4T(6, 12 & 16) RTEA5T(14 & 16) RTEA5U14 RTEA6T16 RTEA6U16 RTEA7T16	1 1/2 in (38mm) 2 in (50.8mm) 2 1/2 in (63.5mm) 3 1/4 in (82.5mm)	SLB680R, SLB690R, SLNB680, SLNB690, SLFBKT4, CRUSLB660, CRUSLB680, RE0020202	SLPEV653, SLPEV53, SLPEHD53	RA2, RA25	24.0 lbs (10.88 kg)	D40 Cord, C30 Cord, Metal Bead, Plastic Bead
RGAL400H	RTEA5T(14 & 16) RTEA5U14 RTEA6T16 RTEA6U16 RTEA7T16	2 in (50.8mm) 2 1/2 in (63.5mm) 3 1/4 in (82.5mm)	SLB680R, SLB690R, SLNB680, SLNB690, SLFBKT4, CRUSLB660, CRUSLB680, RE0020202	SLPEV653, SLPEV53, SLPEHD53	RA2, RA25	53.0 lbs. (24.04 kg)	Metal Bead, Plastic Bead

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www.rollease.com

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 32 00 Manufactured Wood Casework
Description of Material or System:	Residential Kitchen Cabinets
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [x] Faculty Residences
- [ ] Support
- [x] Utility

Overview of system/product/guideline:

All cabinet boxes to be constructed of solid plywood. NO PARTICLE BOARD. Cabinet doors to be Shaker style. Preferred color is white for faculty apartments and residences. Cabinet boxes and drawers
to have dovetailed joints, full extension drawers with drawer slides, soft close hinges. Style and color to be confirmed with Owner on a per project basis. Provide pulls at all cabinet doors and drawers.
Include rubber mat for sink bases to protect cabinet.

Links to additional product information:

https://www.kraftmaid.com/
https://www.schrock.com/

All interior cabinets shall have blind door cabinets with one shelf and a minimum of a 15" cabinet for access. Where there is a sink on an interior wall, the cabinets above the sink should be a minimum of 24" above the counter height vs 18" for traditional wall cabinets. This is at the sink location only. The preference is for sinks to be at exterior windows if possible. All upper cabinets shall have under cabinet dim-able LED strip lighting that is invisible from the front of the cabinet frame facing the wall vs out. Transformers shall be hidden.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 36 00 - Solid Surfaces
Description of Material or System:	Solid Surface Counter tops
Last Updated:	11/2024
Updated by:	Jeff Plimpton

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for solid surfaces is Corian.

For vanity tops campus wide, with multi-fixture bathrooms Corian top with integral bowls.

For residential use (houses & dormitories) as vanity tops, with integral bowls.
Integral bowl is to be model 810P.

Approved colors:
*Glacier Ice - preferred
Cameo White

For kitchen counter tops in Faculty Apartments and Residences:
Color: Nimbus Prima

Links to additional product information:

https://www.corian.com/

CORIAN® DESIGN

810P LAVATORY

Accessible Collection

Enjoy the simple, timeless style of this proven performer

- Standard Integral Front Overflow
- Options: No overflow, Side Overflow, Offset Overflow
- Made from an acrylic-polyester solid surface
- Nonporous surface, that with proper cleaning, resists mold, mildew and stains
- Suitable for multi-bowl installations in both residential and commercial settings
- ADA compliant when installed according to guidelines

INSIDE SINK DIMENSIONS

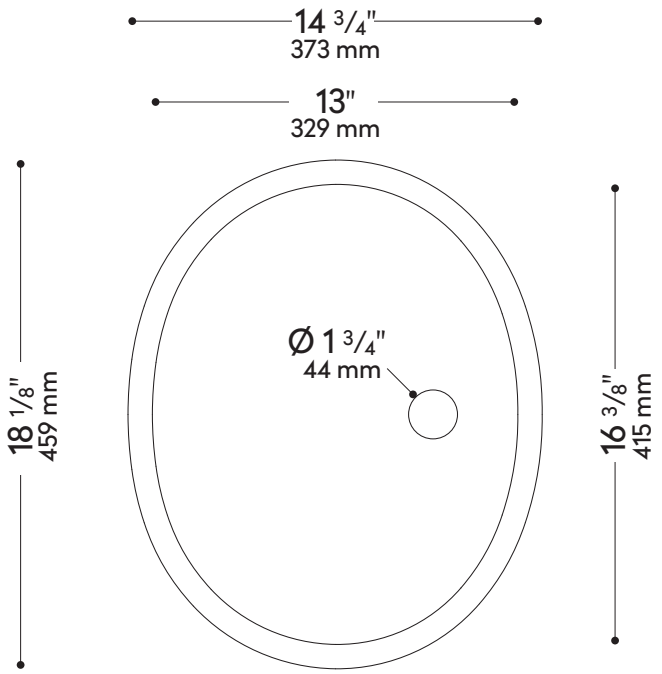
Length	Width	Depth	Area
16 3/8 in.	13 in.	5 in.	172.64 in.^{2}
415 mm	329 mm	127 mm	1114 cm^2

Measurements rounded to nearest 1/8" or mm

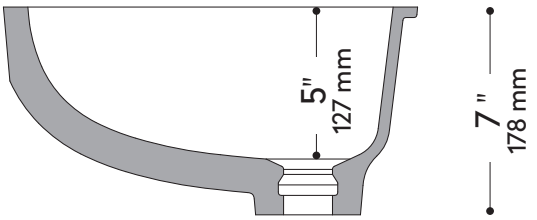
810P Front Overflow and No Overflow models have slightly different dimensions post 6/2021 (in this bulletin). For details please see technical drawings.



TOP VIEW



SIDE CROSS SECTION



DRAIN

All drain holes in sinks are nominally 1 ¾" in diameter and accept all standard drain hardware.

810P
LAVATORY

COLOR SELECTIONS



Colors are color and translucency-matched. They can be seamed to sheet colors with the same color name for a continuous appearance. Exact color match is not guaranteed as the products are made by different processes and some variation might occur within the allowed specification limits.

White Frost is color-coordinated. It is more opaque and is not a match to an existing sheet color. It should be seamed to a contrasting sheet color.

Images shown may vary from actual color, we recommend ordering a material sample to ensure color and aesthetic accuracy.

CERTIFICATIONS

Complies with the requirements in CSA B45.5/IAPMO Z124 standard for plastic plumbing fixtures and the requirements in the HUD Use of Materials Bulletin No. 73a.

Corian® Solid Surface plumbing products are listed by Home Innovation Research Labs and UL as meeting the requirements of the Uniform Plumbing Code, the International Plumbing Code, and are listed by ULC as meeting the requirements of the National Plumbing Code of Canada. Corian® Solid Surface is GREENGUARD Gold Certified for low VOC emissions.

GUIDELINES FOR DESIGN AND CONSTRUCTION OF HOSPITALS, THE FACILITIES GUIDELINES INSTITUTE, 2018

The lavatory or sink design is only part of meeting the guidelines provided in *Guidelines for Design and Construction of Hospitals.* Applicable sections are cited below. Specifiers should ensure that installation and other components such as faucets and hand controls are compliant as well.

2.1-8.4.3.2 Hand-washing station sinks

(2) This lavatory meets the nominal size (opening area) requirement of 144 sq. in. (929.08 cm^2) and minimum width and length of 9 in. (22.86 cm).

(3) This lavatory meets the composition requirement of solid surface material.

A2.1-8.4.3.2 ADA

This lavatory can be installed such that it is compliant for ADA clearances.

WARRANTY

DuPont offers limited commercial and residential warranties.

ADDITIONAL INFORMATION

For additional information or support please contact your local distributor, visit corian.com or call 1-800-4-CORIAN (1-800-426-7426).

PLEASE VISIT OUR WEB SITE: WWW.CORIAN.COM OR CONTACT YOUR CORIAN® REPRESENTATIVE FOR MORE INFORMATION ABOUT CORIAN® DESIGN

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 44 16 - Shower Curtains
Description of Material or System:	Vinyl Shower Curtains
Last Updated:	1/4/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for the vinyl shower curtains is Bobrick.

Links to additional product information:

https://www.bobrick.com/products/washroom-accessories/washroom-accessories-catalog/product/204-2/

BOBRICK

Technical Data

VINYL SHOWER CURTAINS

204-2 204-3

Specify Part Required:

- ❑ 204-2 42" wide x 72" high (1065 x 1830mm)
- ❑ 204-3 70" wide x 72" high (1780 x 1830mm)



MATERIALS:

Opaque, matte white vinyl 0.008" (0.2mm) thick, containing antibacterial and flame-retardant agents. White HDPE grommets along top, one every 6" (150mm). Bottom and sides are hemmed.

OPERATION:

Hooks available as optional accessory: order Bobrick Part No. 204-1. 204-2 shower curtain, 42" wide x 72" high (1065 x 1830mm), requires 7 hooks. 204-3 shower curtain, 70" wide x 72" high (1780 x 1830mm), requires 12 hooks.

INSTALLATION:

Recommended for use with Bobrick stainless steel shower curtain hooks on Bobrick stainless steel shower curtain rods: Models B-207, B-4207, B-6047 and B-6107.

SPECIFICATION:

Shower curtains shall be opaque, matte white vinyl 0.008" (0.2mm) thick, containing antibacterial and flame-retardant agents (Formulated to meet CFSM Title 19.13115), and shall have white HDPE grommets along top. Bottom and sides shall be hemmed.
NFPA-701 certified.

Vinyl Shower Curtains shall be Model _____ (insert model number) of Bobrick Washroom Equipment, Inc., Clifton Park, New York; Jackson, Tennessee; Los Angeles, California; Bobrick Washroom Equipment Company, Scarborough, Ontario; Bobrick Washroom Equipment Pty. Ltd., Australia; and Bobrick Washroom Equipment Limited, United Kingdom.

The illustrations and descriptions herein are applicable to production as of the date of this Technical Data Sheet.
The manufacturer reserves the right to, and does from time to time, make changes and improvements in designs and dimensions.

Revised 2/16/21 Printed in U.S.A.
© 2021 by Bobrick Washroom Equipment, Inc.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 48 00 - Rugs and Mats
Description of Material or System:	Area Rug
Last Updated:	3/2024
Updated by:	Curtis Boivin

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [x] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [x] Other To be placed under Harkness Tables
- [ ] Other in classrooms
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer and product for area rugs under Harkness tables is:

Manufacturer: Philadelphia Commercial
Model: Franchise II 28

A double bound polyester edge is required.

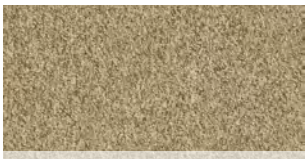
Colors are to be reviewed with the design team and FM Planning.

Links to additional product information:

https://philadelphiacommercial.com/

FRANCHISE II 28

MAINSTREET®
BY PHILADELPHIA


240 Woodland


306 Cavern


410 Torrent


420 Bridle Path


500 Granite

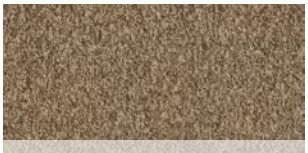

501 Black Diamond


505 Brazed Steel


520 Meteor Stone



770 Fruitwood


710 Bedrock


720 Riverrock


750 Burlwood


800 Salsa


875 Henna Spice

For reference purposes only if printed or downloaded.

FRANCHISE II 28

MAINSTREET®
BY PHILADELPHIA

Style Name	FRANCHISE II 28
Style Number	54744
Product Type	Broadloom
Construction	Textured Loop
Fiber	Eco Solution Q® Nylon
Dye Method	100% Solution Dyed
Primary Backing	Synthetic
Secondary Backing	Stalok
Traffic Rating	Severe
Protective Treatments	SSP® Shaw Soil Protection

	U.S.	Metric
Product Size	12 ft	3.66 m
Gauge	1/8 in	31.5 per 10 cm
Stitches	8 per in	31 per 10 cm
Finished Pile Thickness	0.134 in	3.4 mm
Average Density	7522 oz/yd³	
Total Thickness	0.301 in	7.65 mm
Tufted Weight	28 oz/yd²	949.4 g/m²
Pattern Repeat	0.04 ft W X 0.04 ft L	1.27 cm W X 1.27 cm L



Recommended Installation Methods

Direct Glue

Performance Testing

Pill Test	Pass
Radiant Panel	Class I
NBS Smoke	Less than 450
Electrostatic Propensity	Less than 3.5 kv
CRI Greenlabel Plus	GLP8472
ADA Compliance	>0.6, meets the recommended static coefficient of friction for ADA walking surfaces and accessible routes

Test Reports may be included or listed by the manufacturing/inventory style number as opposed to the noted selling style number.

Warranties

Broadloom Lifetime Commercial Limited Warranty with Stain and Color

Environmental

Recycled Content	Pre-consumer - <1%, Post-consumer - 0%

Specifications are subject to nominal manufacturing variance.
Material supply and/or manufacturing processes may necessitate changes without notice.

For reference purposes only if printed or downloaded.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 48 53.13 Runners
Description of Material or System:	Walk off mat
Last Updated:	8/9/2022
Updated by:	Connie Simmons

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☑ Utility

Overview of system/product/guideline:

The preferred vendor for walk off mats is **Waterhog**; purchased by PEA, paid for by project.

Color: **156 Medium Gray**

PEA provides **surface laid walk off mats** and does NOT use recessed walk-off grates.

,

Links to additional product information:

https://afm.waterhogfloormats.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 56 43 - Dormitory Furniture
Description of Material or System:	Dormitory Chair
Last Updated:	3/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred specifications for dormitory student desk chairs are:

Vendor: W. B Mason
Model: CrossRoads Wood Chair, Armless

Size.: 18" Seat
Finish: Castle Oak

Links to additional product information:

https://www.wbmason.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	12 Furnishings
Specification Section:	12 56 43 - Dormitory Furniture
Description of Material or System:	Dormitory Furniture
Last Updated:	8/29/2022
Updated by:	Heather Taylor

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following is the preferred specifications for Dorm Furniture:

Manufacturer: **Moduform**
Model: **Roommate series**
Finish: **Light Oak**

Beds:
Style: **Hook Lock Low Loft Twin**
Model No.: **959HL-L-A3680-SP-O-LO**
Size: **37.75"D x 84.75"W x 36"H**

3 Drawer Dresser*:
Model No.: **RM4A-18-O-LO**
Size: **18"D x 30"W x 30"H**
*5 drawers for special circumstances only: Model No.: RM4C-18-2-O-LO

Bookcase - 3 Openings:
Model No.: **RM2B-2-O-LO**
Size: **12"D x 36"W x 48"H**

Pedestal Desk:
Model No.: **RM3B-2-O-LO**
Size: **24"D x 48"W x 30"H**

Wardrobe (for special circumstances only):
Model No.: **RM6B-1DR-7152-O-LOP**
Size: **24"D x 24"W x 75"H**

Links to additional product information:

https://moduform.com/bedroom-furniture/roommate-bedroom-furniture/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	21 Fire Suppression
Specification Section:	21 05 23 - Valves
Description of Material or System:	Hydronic Control Valves
Last Updated:	3/10/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Hydronic control valves to be Belimo with unions and isolation valves on both sides.

Links to additional product information:

http://www.belimo.us/americas/

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 05 19 - Meters and Gauges for Plumbing Piping
Description of Material or System:	Steam Condensate Meter
Last Updated:	3/10/2022
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the PEA Design specification for faculty homes and apartment steam condesate meters.

Links to additional product information:

www.niagarameters.com

Pressure Drop Curves

Sizes 3/4" to 10" for MTX Models 413, 421 and WPX Model 222

		MTX Models				WPX Models					
GPM		3/4"	1"	1.5"	2"	2"	3"	4"	6"	8"	10"
2		<.1									
3		0.11									
3.5		0.2				* PSI Drops estimated from a logarithmic curve.					
4.4		0.29	<.1								
6.6		0.58	0.2								
8.8		1	0.31	<.1							
13.2		2.5	0.725	0.28	<.1						
14.4		3.5	1	0.34	0.145						
17.6		4.35	1.45	0.435	0.21						
19.5		4.8	1.7	0.58	0.26						
22		7.1	2.3	0.725	0.29						
33			4.35	1.45	0.58						
44			7.5	2.9	1.2	<.1					
55			13	4.35	2	0.12					
66				5.8	2.9	0.145					
77				8.5	3.4	0.29					
88				12.5	4.35	0.33					
110					7.25	0.59	<.1	<.1	<.01		
132					10	0.725	0.16	0.12	0.0145		
154						1.1	0.22	0.2	0.02		
176						1.45	0.29	0.25	0.029		
198						1.85	0.435	0.36	0.04		
220						2.6	0.5	0.435	0.0435	<.01	
330						5.8	1.3	1.1	0.0725	0.02	
440						7.4	1.8	1.45	0.145	0.0435	<.01
660							2.9	2.7	0.29	0.072	0.02
880							7.25	6	0.6	0.145	0.043
1100								12	0.75	0.23	0.06
1320									1.3	0.3	0.08
1760									1.45	0.435	0.11
2200										0.85	0.27
3300										1.45	0.44
4400											0.8
		.75"	1.0"	1.5"	2"	2"	3"	4"	6"	8"	10"

Table 3

Flow Ranges - WPX Model 222

Water flow rates at standard conditions 60°F
Minimum and maximum flow rates to achieve accuracy

			with Optional Outputs		
	Flow Rates GPM		Reed Switch Model 840	Infra -Red Transmitter Model 573	
Meter Size	min	max	gallons/contact	full scale frequency	pulses/gallon
2"	4.40	396.00	10/100	66.00	10.00
3"	3.50	880.00	100/1000	14.70	1.00
4"	7.90	1321.00	100/1000	22.00	1.00
6"	17.60	1514.00	100/1000	25.70	1.00
8"	26.40	2862.00	100/1000	47.70	1.00
10"	88.00	5284.00	1000/10000	8.80	0.1

Table 4

Dimensions - WPX Model 222

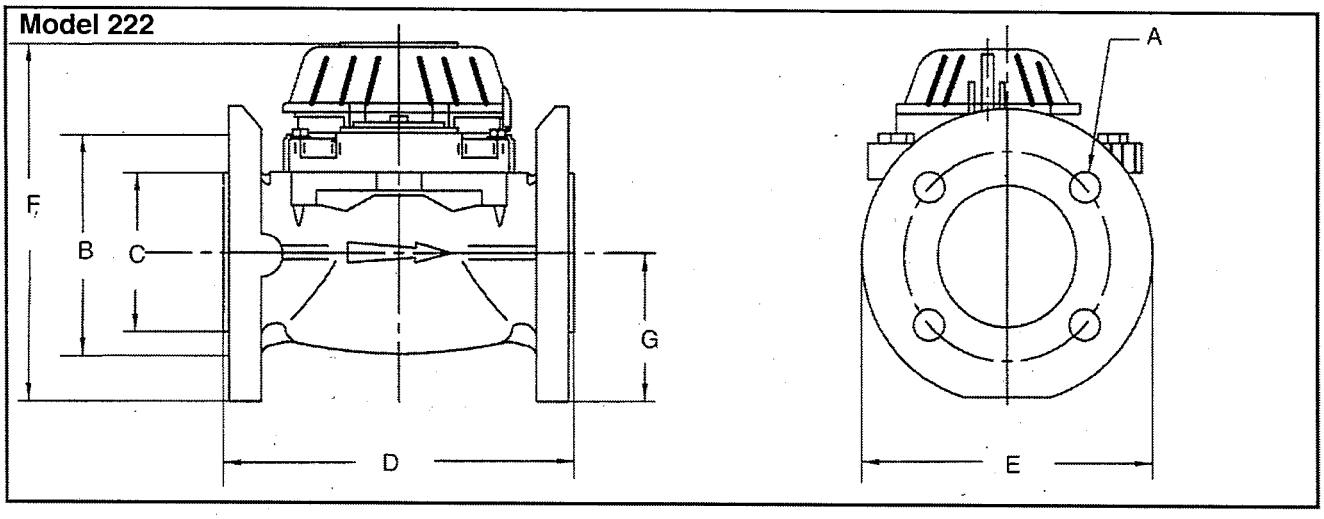


Figure 6

Size		2"	3"	4"
Flange		6.50 (165.10)	7.87 (199.99)	8.66 (219.96)
Bolt holes #		4	4	8
Bolt hole diameter	A	.75 (19.05)	.75 (19.05)	.75 (19.05)
Bore circle diameter	B	4.75 (120.65)	6.00 (152.40)	7.50 (190.50)
Bore diameter	C	2" Nominal	3" Nominal	4" Nominal
Length	D	7.87 (200)	8.86 (225)	9.84 (250)
Width	E	6.10 (165)	7.87 (200)	8.66 (220)
Height	F	7.80 (198)	9.57 (243)	10.20 (259)
Center to base line	G	2.95 (75)	3.50 (89)	4.13 (105)
Weight lbs. (kg)		22.49 (10.2)	28.66 (13)	35.27 (16)

Size		6"	8"	10"
Flange		11.22 (284.99)	13.40 (340.00)	16.00 (406.40)
Bolt holes #		8	8	12
Bolt hole diameter	A	.88 (22.23)	.88 (22.23)	1.0 (25.40)
Bore circle diameter	B	9.50 (241.30)	11.75 (295)	14.25 (361.95)
Bore diameter	C	6" Nominal	8" Nominal	10" Nominal
Length	D	11.81 (300)	13.78 (350)	17.72 (450)
Width	E	11.22 (285)	13.39 (340)	15.94 (405)
Height	F	14.96 (380)	16.06 (408)	17.13 (435)
Center to base line	G	5.31 (135)	6.42 (163)	7.60 (193)
Weight lbs. (kg)		85.98 (39)	103.62 (47)	165.35 (75)

inches (mm)

Table 6

Flow Ranges - WPX Model 210

Water Flow Rates at Standard Conditions 60° F. Minimum and maximum flow rates to achieve accuracy.

Table 5

Meter Size	Flow rates (GPM)		Option Outputs		
			Reed Switch Model 840	Pulse Transmitter Model 860	
inch	min	max	gallons/contact	full scale frequency	pulses/gallon
2"	8.0	305.00	10/100	50.83	10.00
3"	20.00	660.00	100/1000	22.00	2.00
4"	30.00	1100.00	100/1000	36.67	2.00
6"	45.00	1870.00	100/1000	31.17	1.00
8"	60.00	2860.00	100/1000	47.67	1.00
10"	80.00	4400.00	1000/10000	14.67	0.20

Dimensions - WPX Model 210

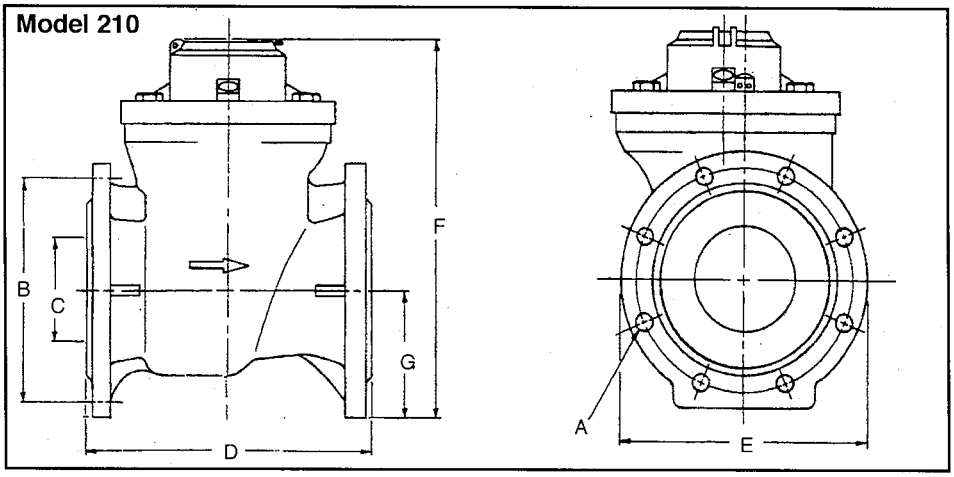


Figure 7

Size		2"	3"	4"	6"	8"	10"
Flange		6.50 (165.10)	7.87 (199.99)	8.66 (219.96)	11.22 (284.99)	13.40 (340)	16.00 (406.40)
Bolt holes #		4	4	8	8	8	12
Bolt hole diameter	A	0.63 (15.88)	0.63 (15.88)	0.63 (15.88)	0.75 (19.05)	0.75 (19.05)	0.88 (22.23)
Bore circle diameter	B	4.75 (120.65)	6.00 (152.40)	7.50 (190.50)	9.50 (241.30)	11.75 (295)	14.25 (361.95)
Bore diameter	C	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal
Length	D	7.87 (200)	8.90 (226.06)	9.80 (248.92)	11.80 (299.72)	13.78 (350)	17.70 (499.50)
Width	E	6.50 (165.10)	7.87 (199.99)	8.66 (219.96)	1.22 (284.99)	13.40 (340)	16.00 (406.40)
Height	F	10.80 (274.32)	11.50 (233.68)	12.20 (309.88)	14.25 (361.95)	15.30 (388.62)	17.44 (442.98)
Center to base line	G	2.95 (74.93)	3.70 (93.98)	4.17 (105.92)	5.30 (149.86)	6.40 (162.56)	8.00 (203.20)
Weight lbs. (kg)		22.50 (10.20)	31.00 (14.06)	42.80 (19.41)	71.65 (32.50)	99.00 (44.90)	238.00 (107.96)

Table 7

inches (mm)

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 05 23 - Valves
Description of Material or System:	Thermostatic Valves
Last Updated:	3/10/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Thermostatic Control Valves to be Honeywell Braukmann. Honeywell Braukmann is what is utilized currently on campus.

Links to additional product information:

https://customer.honeywell.com/en-US/Pages/Department.aspx?cat=HonECCCatalog&category=Valve+Linkages&catpath=1.1.4.2

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 10 00 - Plumbing Piping
Description of Material or System:	Pex Tubing
Last Updated:	3/23/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

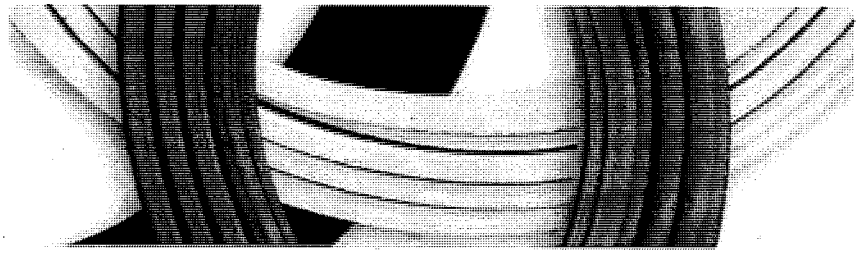
The following is the PEA Design Guideline to be used campus wide, for domestic hot and cold water piping:

Viega Pex Tubing

Links to additional product information:

https://www.viega.us/en/homepage.html

Viega PEX Tubing Systems



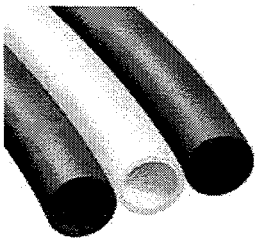
Viega offers three main PEX tubing products: ViegaPEX, ViegaPEX Ultra and FostaPEX tubing. Unlike copper, all PEX tubing products from Viega offer proven resistance to aggressive water conditions and temperature aging for longer life expectancy.

Our PEX tubing meets and exceeds strict standards within the plumbing industry for potable water. ViegaPEX is also one of the few brands that has obtained the PEX5006 (CL5) chlorine resistance ratings, allowing ViegaPEX to be used in continuously recirculating hot water systems.

back

ViegaPEX tubing

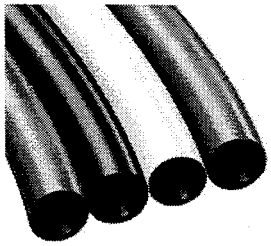
ViegaPEX is a durable product made of cross-linked polyethylene. The cross-linked polyethylene, or PEX, is stable for higher temperature applications such as plumbing and radiant heating. ViegaPEX offers a superior chlorine resistance and protection against corrosion and is resistant to ultra violet (UV) light for up to 60 days.



back

ViegaPEX Ultra tubing

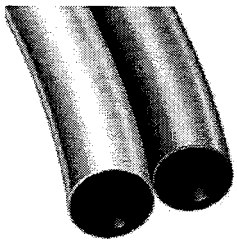
ViegaPEX Ultra provides exceptional protection against UV radiation from the sun for applications where tubing could be exposed to the outdoors for up to 6 months. ViegaPEX Ultra is also available in sizes from 3/8" to 2" for larger applications.



back

Viega FostaPEX

Fosta stands for Form-Stable PEX, so the piping will keep its shape after it is bent. A distinctively versatile product, FostaPEX balances stability with flexibility to create a unique tubing system that not only bends with ease but also holds its shape. Outer layers of aluminum and PE make this feature possible, while simultaneously extending UV protection. FostaPEX is a lead-free oxygen barrier pipe, which makes it compatible not only with potable water systems but also in hydronic applications. FostaPEX also has a low coefficient of expansion compared to standard PEX products and, since one fitting



system connects to all types of ViegaPEX tubing including FostaPEX, distributors need only one inventory and contractors need only one tool set.

Viega began production of FostaPEX in November 2009 at the Viega Manufacturing and Distribution Facility in McPherson, KS. Viega's FostaPEX production line in McPherson is currently the only multilayer production line in North America that produces pipe for both plumbing and heating applications. Viega FostaPEX is the only product on the market with a fully dimensional PEX tubing wall, allowing it to be used with the standard Viega PEX Press fitting system. Other PEX-AL-PEX tubing products require special fittings

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 30 00 - Plumbing Fixtures and Equipment
Description of Material or System:	Ecolotrol Ceramic Disc Wall Hydrant
Last Updated:	3/10/2022
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the preferred specification for a Zurn frost free wall hydrant:

Links to additional product information:

www.zurn.com

Z1320-EZ

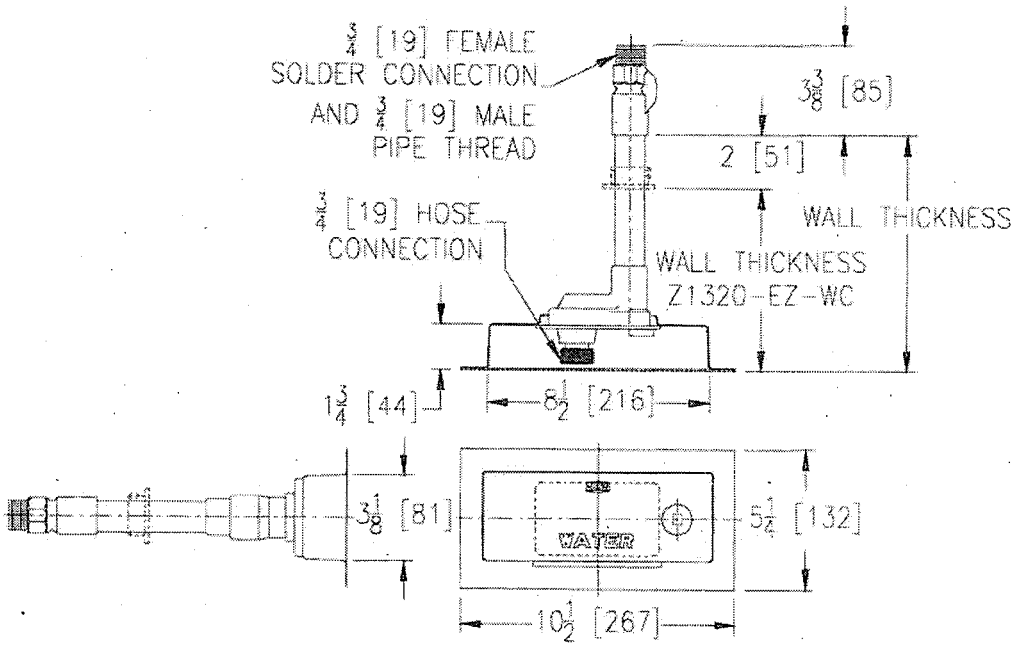
ECOLOTROL CERAMIC DISC WALL HYDRANT

Encased, Non-Freeze, Anti-Siphon, Automatic Draining

SPECIFICATION SHEET

TAG _____

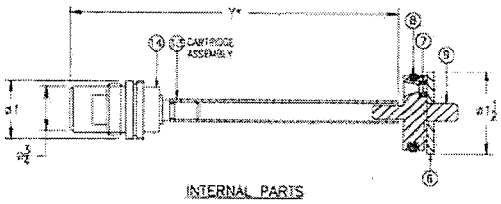
Dimensional Data (inches and [mm]) are Subject to Manufacturing Tolerances and Change Without Notice



Wall Thickness Inches	Approx. Wt. Lbs. [kg]
6-8 [152-203]	5 [2]
10-12-14 [254-305-356]	6 [3]
16-18 [406-457]	7 [3]
20-22-24 [508-559-610]	8 [4]
26 [660]	10[5]

ENGINEERING SPECIFICATION: ZURN Z1320-EZ Encased Ecolotrol "anti-siphon" automatic draining wall hydrant for flush installation. Complete with integral backflow preventer, copper casing, all bronze interior parts with 1/2 turn ceramic disc cartridge and combination 3/4 [19] female solder and 3/4 [19] male pipe thread inlet. Stainless steel box and hinged cover with operating key lock and "WATER" stamped on cover. (All solder connections are lead free). Recommended wall opening 3-3/16 [81] X 8-1/2 [216]. Hydrant box fits in one standard modular masonry course.

Note: During normal operation, the hydrant may take as long as one minute to complete the self-draining process. This drainage feature should not be mistaken for an unsealed shut-off of the hydrant, and over-tightening of the operating coupling is not necessary.



INTERNAL PARTS

OPTIONS (Check/specify appropriate options)

SUFFIXES

____	-CL	Cylinder Lock
____	-RK	Hydrant Parts Repair Kit
____	-RT12	Ceramic Cartridge Removal Tool (Up to 12 [305] Wall)
____	-RT24	Ceramic Cartridge Removal Tool (Up to 24 [610] Wall)
____	-RT36	Ceramic Cartridge Removal Tool (Up to 36 [915] Wall)
____	-WC	Wall Clamp
____	-34EL	3/4 [19] IP 90° Solder Inlet Elbow
____	-34FIP	3/4 [19] IP Straight Female Inlet Adapter

PARTS LIST

Item	Name	Quan.
14	Cartridge	1
13	Operating Tube	1
9	Operating Coupling	1
8	'O' Ring	1
7	'O' Ring	2
6	Retaining Washer	1

*WHEN ORDERING REPLACEMENT CARTRIDGE ASSEMBLY SPECIFY Y DIM

REV. C DATE: 10/22/10 C.N. NO. 111935

DWG. NO. 82548 PRODUCT NO. Z1320-EZ

ZURN INDUSTRIES, LLC. ♦ SPECIFICATION DRAINAGE OPERATION ♦ 1801 Pittsburgh Ave. ♦ Erie, PA 16514
Phone: 814/455-0921 ♦ Fax: 814/454-7929 ♦ World Wide Web: www.zurn.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 30 00 - Plumbing Equipment
Description of Material or System:	Water Heater for Dormitories
Last Updated:	3/10/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Dormitory water heaters to be Leslie skidded concept. Skidded concept comes as a package with strainers, traps, and all the necessary components for the unit on one skid. Preferred standard is a temperature sensor on the hot water outlet of the unit, which is to be connected to the BASix Continuum program, in order to monitor the unit and create trends for troubleshooting and maintenance.

Links to additional product information:

https://lesliecontrols.com/products/heaters/heaters.htm

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System:	4" Centerset Faucet with Pop-up Drain
Last Updated:	3/29/2022
Updated by:	Kris Smith

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

For dormitories, the preferred manufacturer for 4" centerset faucets with a pop-up drain is Zurn. Finish is to be polished chrome.
Model number: **Z81101-XL-P**

Flow rate is to be 1.5 GPM MAX

Links to additional product information:

https://www.zurn.com/

Z81101-XL

4” Centerset Faucet

TAG _____

Architectural/Engineering Specification

Polished chrome-plated cast brass faucet body with integral shanks, quarter turn ceramic disc cartridges and a 4” long integral cast spout. Unit is furnished with a standard 2.2 GPM aerator, a vandal-resistant color-coded handle, mounting hardware and 1/2” NPSM coupling nuts for standard lavatory risers.

Zurn Lead Free products (-XL) is the line of durable, high quality brass faucets and fixtures that are designed and manufactured to comply with Section 1417 of the Safe Drinking Water Act (SDWA) which mandates the weighted average lead content of no more than 0.25% of the wetted surface.

Product Features:

- Heavy-duty Quarter Turn Ceramic Disc Cartridge
- Chrome-plated Cast Brass Body With Integral Shank
- 2-1/2” Vandal-resistant Color-Coded Metal Handles

Compliance and Certification

- Complies with ASME A112.18.1 / CSA B125.1
- Lead Free Compliant
- ADA Compliant

*This device is WaterSense labeled when used with the appropriate flow rate and certified for residential and private restrooms.



Aerator Options:

	Flow rate GPM [LpM]	Vandal Resistant	Pressure Compression	Water Sense Labeled*	Outlet Type
☐ **-2M**	2.2[8.3]	✓	✓		Aerator
☐ **-3M**	0.5[1.9]	✓	✓		Spray
☐ **-4M**	2.2[8.3]	✓	✓		Laminar
☐ **-7M**	1.0[3.8]		✓	✓	Spray
☐ **-16M**	1.0[3.8]	✓	✓		Spray
☐ **-17M**	1.5[5.7]	✓	✓	✓	Aerator
☐ **-18M**	1.5[5.7]	✓	✓	✓	Laminar
☐ **-22M**	1.0[3.8]	✓			Laminar
☐ **-25M**	0.35[1.3]	✓	✓		Spray

Suffix Option

☐ -G 1-1/4” [32mm] Grid Strainer Drain
☐ -P 1-1/4” [32mm] Pop-up Drain

Architectural/Engineering Approval

The information contained in this document is subject to change without notice.
Please contact Zurn for most up to date information.

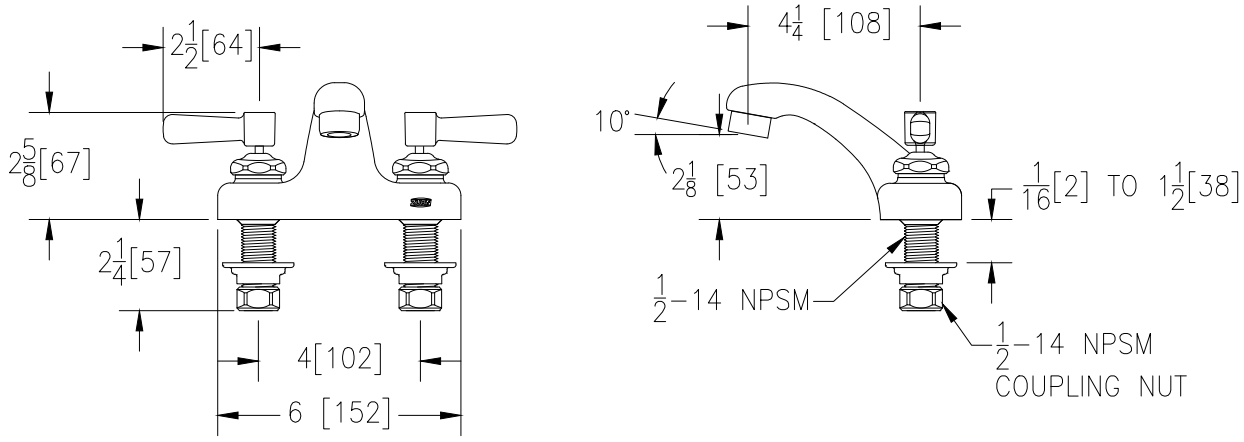
Rev. C | Date: 12/06/22 | C.N. No. 144877 | Prod./Dwg. No. SS Z81101-XL

Z81101-XL

4” Centerset Faucet

TAG _____

Rough-in dimensions/Overview dimensions



Patent zurn.com/patents

US 1.855.ONE.ZURN **CANADA** 1.877.892.5216
ZURN.COM

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System:	Bathtub
Last Updated:	1/4/2024
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for faculty bathtubs is Symmons.

Links to additional product information:

www.symmons.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System:	Residential Shower Faucet
Last Updated:	12/22/2025
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

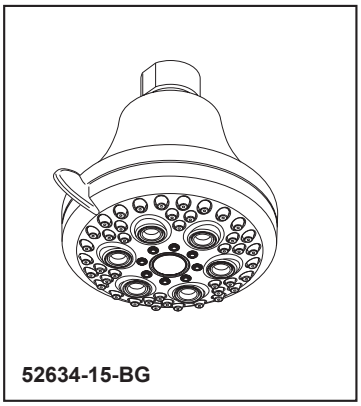
Preferred shower head for faculty residents is Delta 52634-15BG.

Faucets are to have a metal/steel threaded collar.

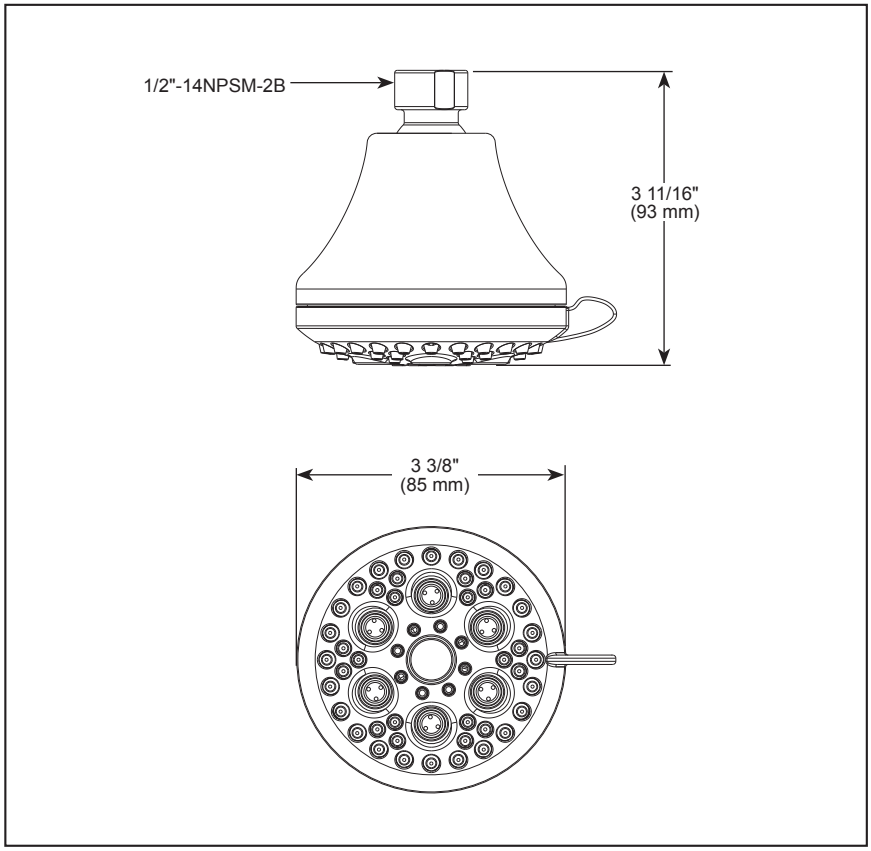
PEA requires 1.5 GPM flow rate.

Product cut sheet attached.

Links to additional product information:



52634-15-BG



▲ Designate proper finish suffix

see what Delta can do℠

SHOWER HEAD

■ 5-Spray Setting Shower Head

FEATURES:

- Touch-Clean® Spray Holes

STANDARD SPECIFICATIONS:

- Max flow rate 1.5 gpm @ 80 psi, 5.7 L/min @ 550 kPa
- Standard 1/2" pipe fitting
- Shower head with five spray settings - pause is a non-positive shut-off
- Easy turn dial changes sprays
- 5 Spray settings include: Full Body spray, Fast Massage spray, Full Spray with Massage, High Efficiency Spray and Pause

WARRANTY:

- Parts and Finish – Lifetime limited warranty; or for commercial purchasers, 10 years for multi-family residential (apartments and condominiums) and 5 years for all other commercial uses, in each case from the date the product is received by the original purchaser or their authorized representative (installation contractor, etc.).
- Please go to www.deltafaucet.com for the complete details of our limited warranty.

WaterSense Meets EPA Criteria
Certified by CSA Group
SHOWER HEAD(S)
POMME(S) DE DOUCHE
CABEZA(S) DE REGADERA

COMPLIES WITH:

- ASME A112.18.1 / CSA B125.1
- EPA WaterSense®

Delta Faucet Company reserves the right (1) to make changes in specifications and materials, and (2) to change or discontinue models, both without notice or obligation. Dimensions are for reference only. See current full-line price book or www.deltafaucet.com for finish options and product availabilit .

DSP-B-52634-15-BG Rev. D

Delta Faucet Company
55 E. 111th Street, Carmel, IN 46280
350 South Edgeware Road, St. Thomas, ON N5P 4L1
© 2025 Delta Faucet Company

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures
Description of Material or System:	Electronic Faucets
Last Updated:	3/29/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☑ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred vendors for Electronic faucets are Kohler and American Standard.

Links to additional product information:

www.kohler.com
www.americanstard.com

Design intent for electronic faucets is being reviewed for 2025. Please contact PEA PM or Planning.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System:	Faculty Residence Single-Handle Bathroom Sink Faucet
Last Updated:	3/21/2022
Updated by:	Curtis Boivin

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

For faculty bathrooms, single-handle faucets are the preferred style.

Note: For all new <u>renovations</u> single-handle faucets are to be installed. For faucet replacement only, if existing faucet is a two-handle centerset, then replacement is to be a two-handle centerset faucet. (See Faculty Residence Two-Handle Centerset Faucet standards.)

Manufacturer: **Kohler**
Model Name: **Kumin**
Model Number: **K-98827-4-CP**
Finish: **Polished Chrome**

Flow rate is to be 1.5 GPM MAX

Links to additional product information:

https://www.us.kohler.com/us/

KOHLER. Faucets

Kumin®
Single-Handle Bathroom Sink Faucet
K-98827-4

Features
- Single lever handle allows for simultaneous on/off activation and temperature setting.
- KOHLER ceramic disc valves exceed industry longevity standards for a lifetime of durable performance.
- Leak-free ceramic disc valve allows both volume and temperature control.
- High-temperature limit setting for added safety.
- Includes metal pop-up drain with 1-1/4" metal tailpiece.
- 1.2 gpm (4.5 lpm) maximum flow rate at 60 psi (4.14 bar).
- Red/blue indexing on handle.

Material
- Premium metal construction for durability and reliability.
- KOHLER finishes resist corrosion and tarnishing.

Installation
- Single hole.
- Flexible supplies for simplified installation.

Recommended Products/Accessories
K-23726 Drain treatment
K-23723 Faucet cleaner

Optional Products/Accessories
K-14531 Escutcheon Plate
1394616 Single hole escutcheon kit



ADA | CSA B651 | OBC

Codes/Standards
ASME A112.18.1/CSA B125.1
NSF/ANSI 61
NSF/ANSI 372
All applicable US Federal and State material regulations
DOE - Energy Policy Act 1992
EPA WaterSense®
California Energy Commission (CEC)
ADA
ICC/ANSI A117.1
CSA B651
OBC

KOHLER® Faucet Lifetime Limited Warranty
See website for detailed warranty information.

Available Colors/Finishes
Color tiles intended for reference only.

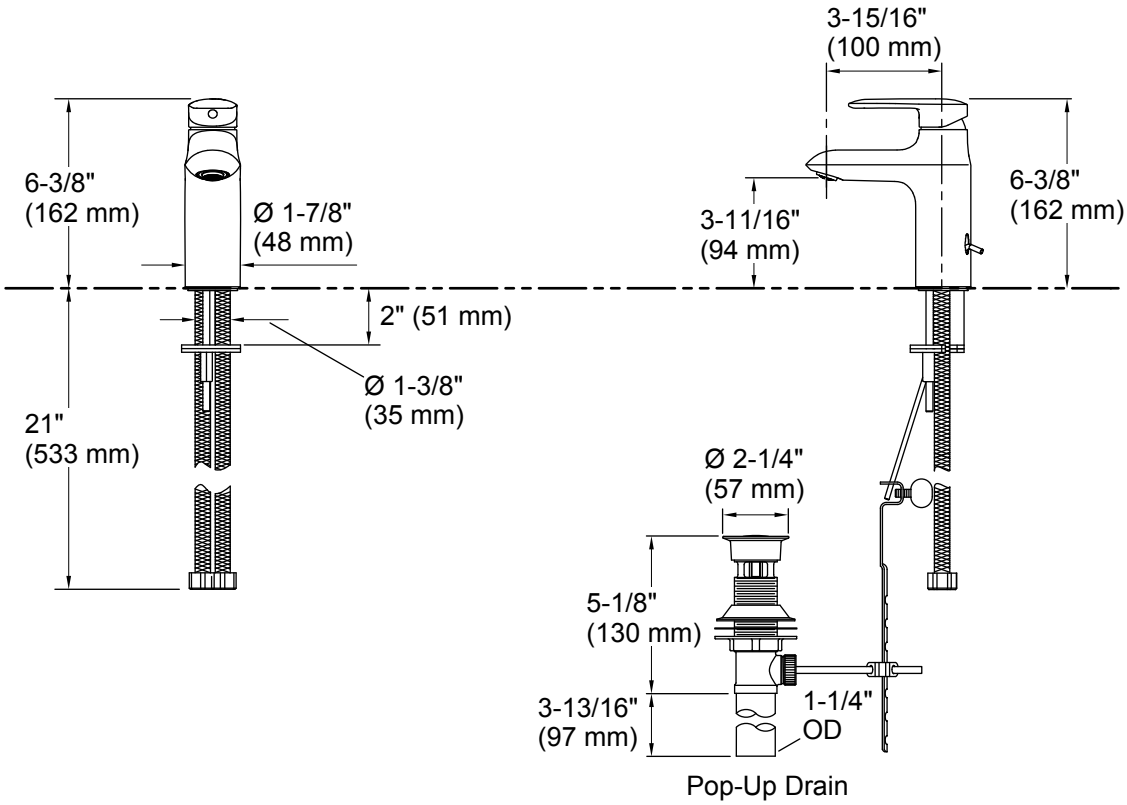
Color	Code	Description
	CP	Polished Chrome

KOHLER. Faucets

Kumin®

Single-Handle Bathroom Sink Faucet

K-98827-4



Pop-Up Drain

Technical Information

All product dimensions are nominal.

Faucet:

Flow rate:	1.2 gal/min (4.5 l/min)
Pressure:	60 psi (4.1 bar)
Drain included:	Yes
Drain with overflow:	Yes

Spout:

Spout reach:	3-15/16" (100 mm)

Notes

Install this product according to the installation instructions.

ADA compliant for handles only.

ADA, OBC, CSA B651 compliant when installed to the specific requirements of these regulations.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System:	Faculty Residence Two Handle Centerset Bathroom Sink Faucet
Last Updated:	3/21/2022
Updated by:	Curtis Boivin

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for faculty two handle centerset faucets is Kohler. The Kohler Coralais 4" centerset faucet in polished chrome is the preferred style and finish.

Note: For all new renovations single-handle faucets are to be installed. (See Faculty Residence Single-handle Faucet standard.)
For faucet replacement only, if existing faucet is a two-handle centerset, then replacement is to be a two-handle centerset faucet.

Manufacturer: **Kohler**
Model Name: **Coralais**
Model Number: **K-15241-4RA-CP**
Finish: **Polished Chrome**

Flow rate is to be 1.5 GPM MAX

Links to additional product information:

https://www.us.kohler.com/us/

KOHLER. Faucets

Coralais®

Centerset Bathroom Sink Faucet

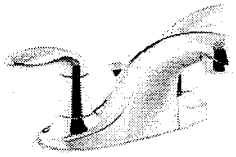
K-15241-4RA

Features

- Metal construction.
- For 4" (102 mm) centers.
- 4-7/16" (112 mm) spout reach.
- Metal pop-up drain with lift rod and tailpiece.
- Stationary spout.
- ADA compliant lever handles.
- Red/blue indexing.
- Complements the Coralais Suite.
- 1.2 gal/min (4.5 l/min) maximum flow rate [max at 60 psi (4.14 bar)].

Optional Accessories

1160594 Large Spray Aerator 0.35 gpm (1.3 l/min)



ADA

Codes/Standards

ASME A112.18.1/CSA B125.1
NSF 61
NSF 372
All applicable US Federal and State material regulations
DOE - Energy Policy Act 1992
EPA WaterSense®
ADA
ICC/ANSI A117.1

KOHLER® Faucet Lifetime Limited Warranty

See website for detailed warranty information.

Available Color/Finishes

Color tiles intended for reference only.

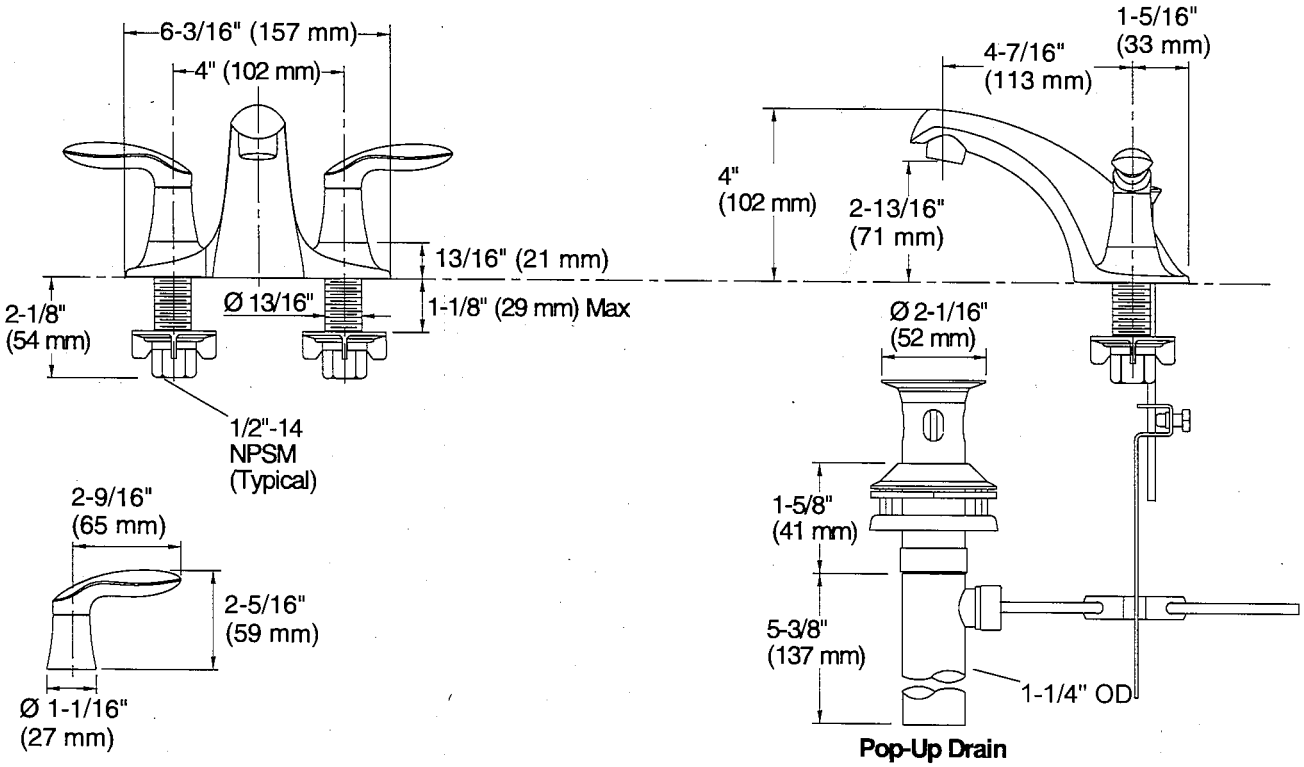
Color	Code	Description
	CP	Polished Chrome
	G	Brushed Chrome

KOHLER. Faucets

Coralais®

Centerset Bathroom Sink Faucet

K-15241-4RA



Technical Information

All product dimensions are nominal.

Valve body:	Machined Brass
Drain with overflow:	YES
Drain tailpiece included:	YES

Spout:

Spout reach:	4-7/16" (112 mm)
Handle clearance:	2-9/16" (65 mm)

Faucet:

Flow rate:	1.2 gal/min (4.5 l/min)
Pressure:	60 psi (4.1 bar)

Notes

Install this product according to the installation guide.

ADA compliant when installed to the specific requirements of these regulations.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures
Description of Material or System:	Elongated 1.28 GPF Flushometer Toilet
Last Updated:	3/29/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☑ Academic Buildings
- ☐ Administrative
- ☑ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred vendors for Elongated Flushometer toilets are Kohler or American Standard.

Links to additional product information:

www.americanstandard.com
www.Kohler.com

Flow rate is to be 1.8 GPF is in review 2025.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures
Description of Material or System:	Plumbing Fixtures
Last Updated:	3/29/2022
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [x] Support
- [x] Utility

Overview of system/product/guideline:

Preferred plumbing fixture manufacturer is Symmons.

- **Water Closets:**
  - o Fixtures - Kohler
  - o Flush Valves - Sloan
- **Wall Hung Lavatories:**
  - o Fixtures - Kohler, American Standard
  - o Faucets - Kohler
- **Under mount Lavatories:**
  - o Fixtures - Kohler, American Standard
  - o Faucets - Kohler
- **Urinals:**
  - o Fixtures - Kohler
  - o Flush Valves - Sloan
- **Mop Sinks:**
  - o Fixtures - Swanstone
  - o Faucets - Chicago Faucet
- **Showers:**
  - o Fixtures - Oasis
  - o Faucets - Symmons
  - o Mixing Valves - Symmons

Links to additional product information:

www.symmons.com <-- Preferred
www.kohler.com
www.americanstard.com
www.moen.com
www.elkay.com
www.oasisbath.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System:	Shower Unit - Adjustable Height
Last Updated:	1/4/2024
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

For dormitories, the preferred manufacturer for adjustable height shower units is Symmons. Finish to be polished chrome.
Model number: To be determined.

Links to additional product information:

www.symmons.com

Flow rate is to be 1.5 GPM is in review 2025.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System:	Shower Unit - Fixed Height
Last Updated:	1/4/2024
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

For dormitories, the preferred manufacturer for fixed height shower units is Symmons. Finish to be polished chrome.
Model number: TBD

Links to additional product information:

www.symmons.com

Flow rate is to be 1.5 GPM is in review 2025.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 41 00 Residential Plumbing Fixtures
Description of Material or System:	Residential Shower Enclosure
Last Updated:	8/24/2022
Updated by:	Curtis Boivin

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred vendor for residential tub and shower enclosures is Oasis. Aquatic Bath is an alternate. A one-piece is preferred, but is dependent on the space. ADA compliant shall be roll-in ready.

Links to additional product information:

https://oasisbath.com/tubs-showers/

https://aquaticbath.com/showers/all-products

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Plumbing
Specification Section:	22 41 16 - Residential Lavatories and Sinks
Description of Material or System:	Corian Lavatory
Last Updated:	4/1/2022
Updated by:	Jeff Plimpton

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred lavatory for faculty residences:

Manufacturer: **Corian**
Model Name: **Elements**
Model Number: **810P**
Color: **Cameo White* or Glacier Ice**

*Lavatory color to be Cameo white when the Corian countertop is Cameo White.

Color is to be Glacier White when countertop is any other color.

Links to additional product information:

https://www.corian.com/?src=globalna

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 41 39 - Residential Faucets, Supplies, and Trim
Description of Material or System:	Residential Kitchen Faucet
Last Updated:	3/22/2022
Updated by:	Curtis Boivin

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for residential kitchen faucets is Kohler in a polished chrome finish.

Preferred models:
K-597-CP (Simplice Pull-down kitchen sink faucet in polished chrome)
K-22972-CP (Crue Pull-down kitchen sink faucet in polished chrome)

Flow rate is to be 1.5 GPM @ 60 psi.

Links to additional product information:

https://www.us.kohler.com/us/

KOHLER. Faucets

Simplice®

Pull-down kitchen sink faucet

K-597

Features

- Three-function pull-down sprayhead with touch-control allows you to switch between stream, Sweep® spray and Boost technology.
- Boost technology increases the flow rate by 30% with the press of a button.
- DockNetik® magnetic docking system securely locks the sprayhead into place when not in use.
- KOHLER ceramic disc valves exceed industry longevity standards for a lifetime of durable performance.
- ProMotion® technology's light, quiet braided hose and swiveling ball joint make the pull-down sprayhead easier and more comfortable to use.
- MasterClean™ sprayface features an easy-to-clean surface that withstands mineral buildup.
- High-arch spout offers superior clearance for filling pots and cleaning.
- Single handle is simple to use and makes adjusting water temperature easy.
- Temperature memory allows faucet to be turned on and off at the temperature set during prior usage.
- 1.5 gpm (5.7 lpm) maximum flow rate at 60 psi (4.14 bar).
- High-arch gooseneck spout and 360° spout rotation offer superior clearance for filling pots and cleaning.
- Sweep® spray features specially angled nozzles that form a wide, powerful blade of water to sweep your dishes and sink clean.
- ProMotion® technology's light, quiet braided hose and swiveling ball joint make the pull-down sprayhead easier and more comfortable to use.

Material

- Premium metal construction for durability and reliability.
- KOHLER finishes resist corrosion and tarnishing.

Installation

- For single-hole or three-hole installation (escutcheon plate included)
- Flexible supply lines and installation ring simplify installation.
- Single-hole or three-hole installation (includes escutcheon plate).

Recommended Products/Accessories

K-77685 Single-Cartridge Water Filtration System
K-77686 Double-Cartridge Water Filtration System
K-77687 single replacement filter cartridge
K-77688 Replacement Filter Cartridges, Two-Pack
K-23723 Faucet cleaner

Optional Products/Accessories

1012715 Kitchen Faucet Deep Rough-In Kit



ADA | **CSA B651**

Codes/Standards

ASME A112.18.1/CSA B125.1
NSF/ANSI 61
NSF/ANSI 372
All applicable US Federal and State material regulations
DOE - Energy Policy Act 1992
California Energy Commission (CEC)
ADA
ICC/ANSI A117.1
CSA B651

KOHLER® Faucet Lifetime Limited Warranty

See website for detailed warranty information.

Available Colors/Finishes

Color tiles intended for reference only.

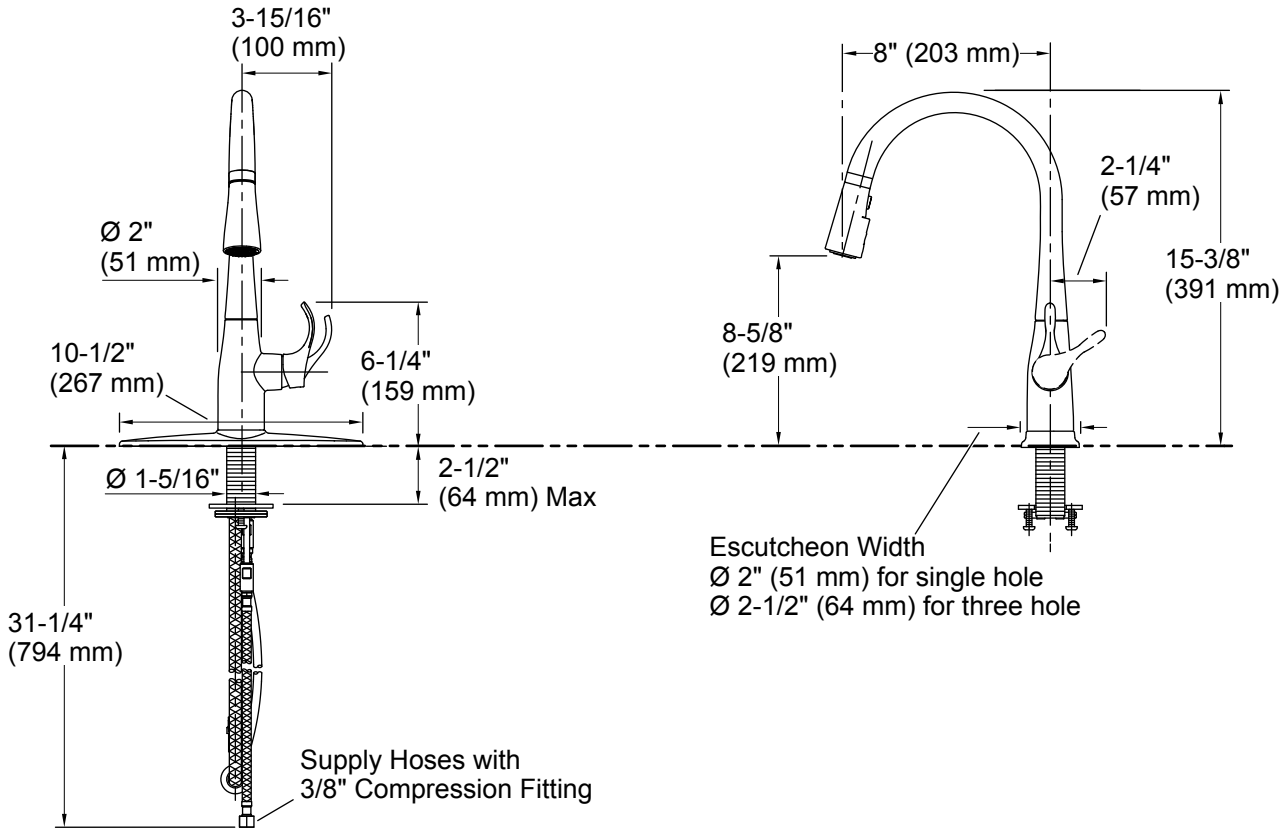
Color	Code	Description
	CP	Polished Chrome
	VS	Vibrant® Stainless
	BL	Matte Black
	2MB	Vibrant® Brushed Moderne Brass

KOHLER. Faucets

Simplice®

Pull-down kitchen sink faucet

K-597



Technical Information

All product dimensions are nominal.

Notes

Install this product according to the installation guide.

ADA compliant for faucet handles only.

ADA, CSA B651 compliant when installed to the specific requirements of these regulations.

KOHLER. Faucets

Crue®

Pull-down single-handle kitchen sink faucet

K-22972

Features

- Three-function pull-down sprayhead with touch control allows you to switch between aerated stream, ring spray and Boost technology.
- Boost technology increases the flow rate by 30% with the press of a button. Use Boost with stream for faster filling or with ring spray for more powerful cleaning.
- DockNetik® magnetic docking system securely locks the sprayhead into place when not in use.
- ProMotion® technology's light, quiet braided hose and swiveling ball joint make the pull-down sprayhead easier and more comfortable to use.
- MasterClean™ sprayface features an easy-to-clean surface that withstands mineral buildup.
- High-arch spout offers vertical clearance for tall cookware and pitchers.
- Single lever handle makes adjusting water temperature easy.
- 1.5 gpm (5.7 lpm) maximum flow rate at 60 psi (4.14 bar).
- Temperature memory allows faucet to be turned on and off at the temperature set during prior usage.
- KOHLER ceramic disc valves exceed industry longevity standards for a lifetime of durable performance.

Material

- Premium metal construction for durability and reliability.
- KOHLER finishes resist corrosion and tarnishing.

Installation

- Single-hole or three-hole installation (escutcheon plate included).
- Flexible supply lines simplify installation.

Recommended Products/Accessories

K-77685 Single-Cartridge Water Filtration System
K-77686 Double-Cartridge Water Filtration System
K-77687 single replacement filter cartridge
K-77688 Replacement Filter Cartridges, Two-Pack

Optional Products/Accessories

1012715 Kitchen Faucet Deep Rough-In Kit



ADA | **CSA B651**

Codes/Standards

ASME A112.18.1/CSA B125.1
NSF/ANSI 61
NSF/ANSI 372
All applicable US Federal and State material regulations
DOE - Energy Policy Act 1992
California Energy Commission (CEC)
ADA
ICC/ANSI A117.1
CSA B651

KOHLER® Faucet Lifetime Limited Warranty

See website for detailed warranty information.

Available Colors/Finishes

Color tiles intended for reference only.

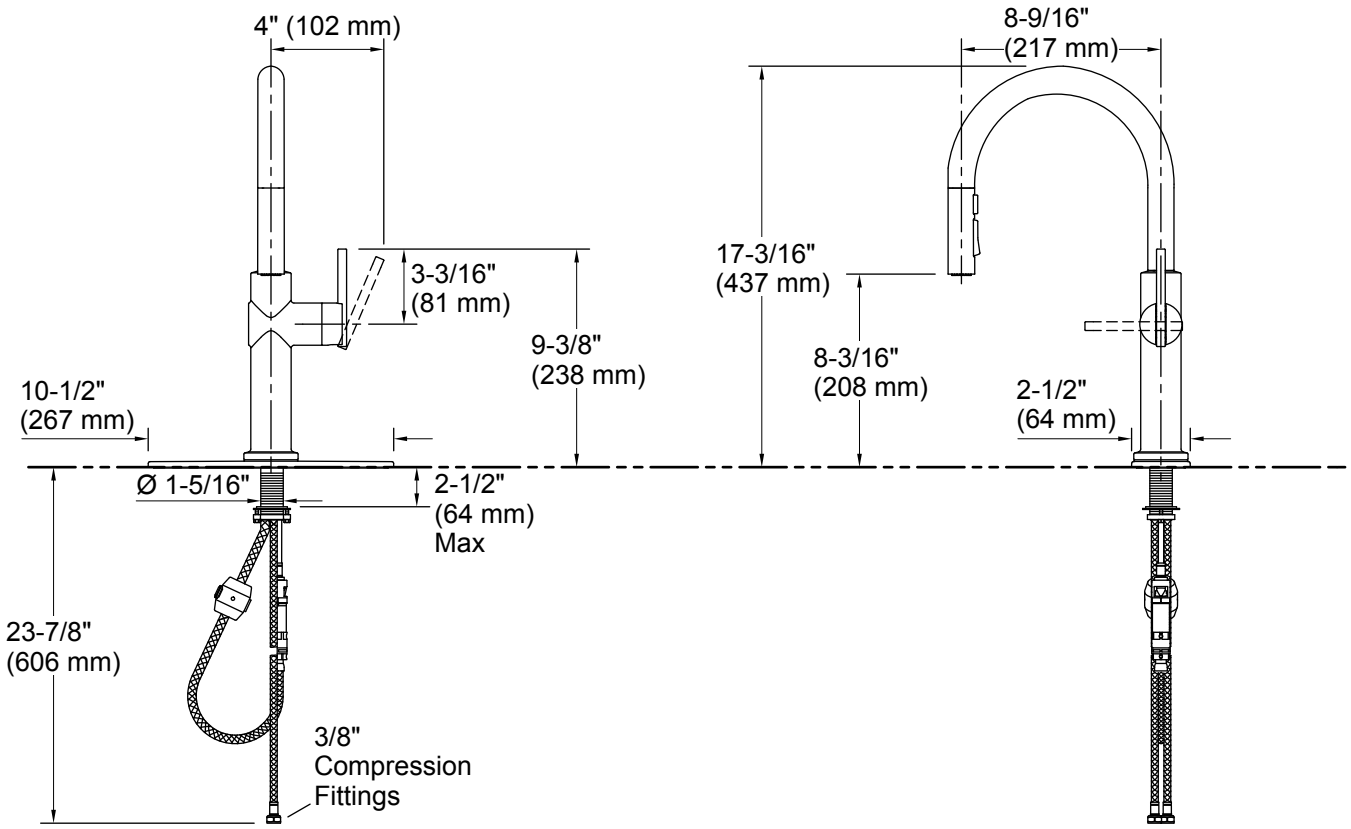
Color	Code	Description
	CP	Polished Chrome
	VS	Vibrant® Stainless
	BL	Matte Black
	2MB	Vibrant® Brushed Moderne Brass

KOHLER. Faucets

Crue®

Pull-down single-handle kitchen sink faucet

K-22972



Technical Information

All product dimensions are nominal.

Valve body:	Plastic
Drain included:	No

Spout:

Spout reach:	8-9/16" (217 mm)

Pressure/fixture Supply Requirements

Fixture pressure max (static):	125 psi (861.8 kPa)
Fixture pressure min (static):	20 psi (137.9 kPa)

Notes

Install this product according to the installation instructions.

ADA complaint for faucet handles only.

ADA, CSA B651 compliant when installed to the specific requirements of these regulations.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 42 00 - Commercial Plumbing Fixtures
Description of Material or System:	Exposed Flush Valves
Last Updated:	1/4/2024
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [x] Academic Buildings
- [x] Administrative
- [x] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [x] Support
- [x] Utility

Overview of system/product/guideline:

The preferred manufacturer for exposed flush valves is Sloan.

Links to additional product information:

https://www.sloan.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	22 Plumbing
Specification Section:	22 47 00 - Drinking Fountains and Water Coolers
Description of Material or System:	Wall Mounted Water Coolers
Last Updated:	3/22/2022
Updated by:	Kris Smith

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturers for wall mounted water coolers are Halsey Taylor and Elkay. The units should have their own internal chiller.

Preferred Halsey Talylor models:
HTHB-HAC8BLPV-NF (Bi-Level ADA Cooler, Non-Filtered Refrigerated Platinum Vinyl)
HTHB-HAC8SS-NF (Single ADA Cooler, Non-Filtered Refrigeratred Stainless Steel)

Links to additional product information:

https://www.halseytaylor.com/us/en/coolers-and-fountains.html

https://www.elkay.com/us/en.html

Halsey Taylor

SPECIFICATIONS

Halsey Taylor HydroBoost Bottle Filling Station & Bi-Level ADA Cooler Non-Filtered Refrigerated Platinum Vinyl

Model HTHB-HAC8BLPV-NF

PRODUCT SPECIFICATIONS

Halsey Taylor HydroBoost® Bottle Filling Station & Bi-Level ADA Cooler Non-Filtered Refrigerated Platinum Vinyl. Chilling Capacity of 8.0 GPH (gallons per hour) of 50° F drinking water, based on 80° F inlet water and 90° F ambient, per ASHRAE 18 testing. Features shall include Antimicrobial, Green Counter™, Laminar Flow, Mechanically Activated, Real Drain, Sanitary Sensor Activated. Furnished with Double Bubbler ™. Electronic Bottle Filler Sensor with Mechanical Front and Side Bubbler Pushbar activation. Product shall be Wall Mount (On Wall), for Indoor applications, serving 2 station(s). Unit shall be certified to UL 399 and CAN/CSA C22.2 No. 120. Unit shall be lead-free design which is certified to NSF/ANSI 61 & 372 (lead free) and meets Federal and State low-lead requirements.

Special Features:	Antimicrobial, Green Counter™, Laminar Flow, Mechanically Activated, Real Drain, Sanitary Sensor Activated
Finish:	Platinum Vinyl
Power:	115V/60Hz
Bubbler Style:	Double Bubbler ™
Activation by:	Electronic Bottle Filler Sensor with Mechanical Front and Side Bubbler Pushbar
Mounting Type:	Wall Mount (On Wall)
Chilling Capacity*:	8.0 GPH
Full Load Amps	6
Rated Watts:	370
Dimensions (L x W x H):	36-1/4" x 18-5/8" x 46-1/4"
Approx. Shipping Weight:	89 lbs.
Installation Location:	Indoor
No. of Stations Served:	2
*Based on 80° F inlet water & 90° F ambient air temp for 50° F chilled drinking water.	

- Mechanically-Activated bubbler continues to supply water in event of service disruptions.
- Touchless, sensor-activation, designed for easy use.
- Green Counter: Informs user of number of 20 oz. plastic water bottles saved from waste.
- Laminar flow provides clean fill with minimal splash.
- Silver Ion Antimicrobial protection on key plastic components to inhibit the growth of mold and mildew.
- Real Drain System eliminates standing water.
- Exclusive Double Bubbler which projects two separate streams that converge to form a fuller, more satisfying drink.

COOLING SYSTEM

- Compressor: Hermetically-sealed, reciprocating type, single phase. Sealed-in lifetime lubrication.

PART:_____QTY: _____

PROJECT:_____

CONTACT:_____

DATE:_____

NOTES:_____

APPROVAL:_____



Included with Product: **Water Cooler (8740082041-HTHB), Bottle Filler (HTHB-HAC-NF)**

▼ Ships in multiple boxes.

AMERICAN PRIDE. A LIFETIME TRADITION.
Like your family, the Elkay family has values and traditions that endure. For almost a century, Elkay has been a family-owned and operated company, providing thousands of jobs that support our families and communities.

BUILT IN USA OF DOMESTIC AND FOREIGN PARTS

PRODUCT COMPLIANCE

ADA & ICC A117.1

ASME A112.19.3/CSA B45.4

Buy American Act

CAN/CSA C22.2 No. 120

GreenSpec®

NSF/ANSI 61 & 372 (lead free)

UL 399

Complies with ADA & ICC A117.1 accessibility requirements when installed according to the requirements outlined in these standards. Installation may require additional components and/or construction features to be fully compliant. Consult the local Authority Having Jurisdiction if necessary.

Installation Instructions (PDF)

5 Year Limited Warranty on the refrigeration system of the unit. Electrical components and water system are warranted for 12 months from date of installation. **Warranty pertains to drinking water applications only. Non-drinking water applications are not covered under warranty.**

Warranty (PDF)

In keeping with our policy of continuing product improvement, Halsey Taylor reserves the right to change product specifications without notice. Please visit Halseytaylor.com for the most current version of Halsey Taylor product specification sheets. This specification describes a Halsey Taylor product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

- Condenser: Fan cooled, copper tube with aluminum fins. Fan motor is permanently lubricated.
- Cooling Unit: Combination tube-tank type. Continuous copper tubing with is fully insulated with EPS foam that meets UL requirements for self-extinguishing material.
- Refrigerant Control: Refrigerant R-134a is controlled by accurately calibrated capillary tube.

- Temperature Control: Easily accessible enclosed adjustable thermostat is factory preset. Requires no adjustment other than for altitude requirements.

Optional Accessories		
HWF3000	Halsey Taylor WaterSentry Plus Filter Kit (Bottle Fillers) Spec Sheet (PDF)	
MLP200	In-wall Carrier for Bi-level On-wall Bottle Fillers, Coolers & Fountains Spec Sheet (PDF)	
98312C	Halsey Taylor Cane Apron for HAC (Platinum Vinyl) Spec Sheet (PDF)	
36292C	Accessory - Power Block for Multistation Bottle Filling Stations Spec Sheet (PDF)	

In keeping with our policy of continuing product improvement, Halsey Taylor reserves the right to change product specifications without notice. Please visit Halseytaylor.com for the most current version of Halsey Taylor product specification sheets. This specification describes a Halsey Taylor product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

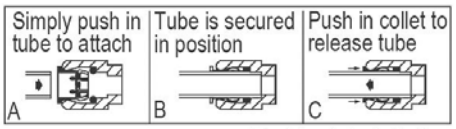
IMPORTANT!
INSTALLER PLEASE NOTE :

This water cooler has been designed and built to provide water to the user which has not been altered by materials in the cooler waterways. The grounding of electrical equipment such as telephone, computer, etc. to water lines is a common procedure. The grounding may be in the building but may also occur away from the building. This grounding can cause electrical feedback into a water cooler creating an electrolysis which creates a metallic taste or causes an increase in the metal content of the water. This condition is avoidable by installing the cooler using the proper materials as shown below.

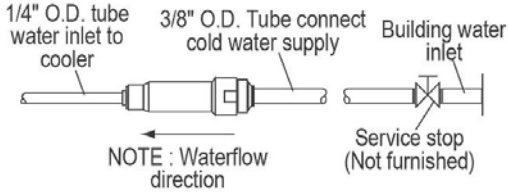
NOTICE

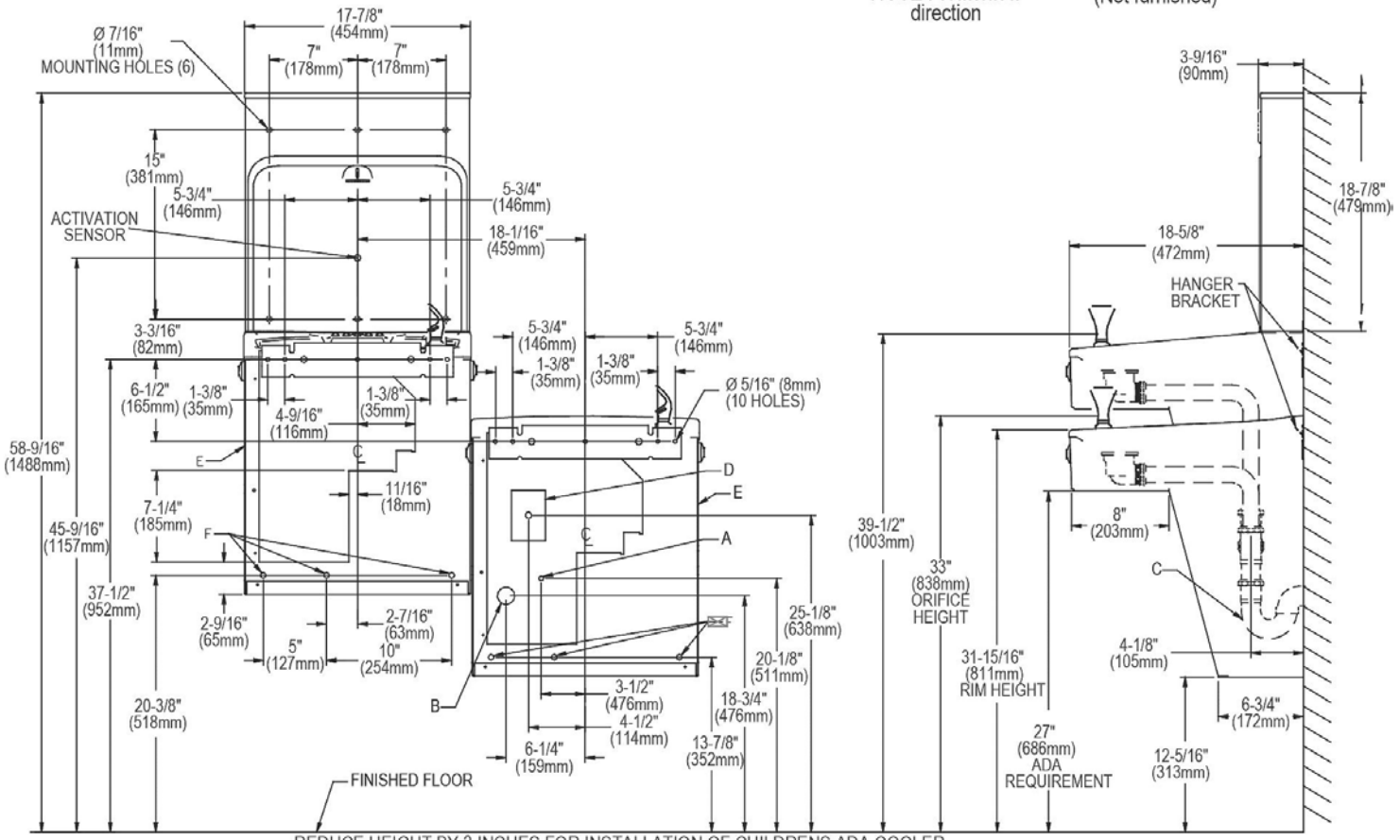
This water cooler must be connected to the water supply using a dielectric coupling. The cooler is furnished with a non-metallic strainer which meets this requirement. The drain trap which is provided by the installer should also be plastic to completely isolate the cooler from the building plumbing system.
Bottle filler unit on bracket attached to wall by 6 holes (as shown). Water and electrical will connect through pre-punched hole in basin.
Simultaneous operation of both bubblers on a bi-level unit may not be possible depending on water supply pressure. If simultaneous operation is desired, please ensure a minimum of 65 psi supply. Lower pressure may be possible for non-filtered and/or non-refrigerated installations.

OPERATION OF QUICK CONNECT FITTINGS



Pushing tube in before pulling it out helps to release tube





REDUCE HEIGHT BY 3 INCHES FOR INSTALLATION OF CHILDRENS ADA COOLER

LEGEND:
A = Recommended Water Supply location. Shut-off Valve (not furnished) to accept 3/8" O.D. unplated copper tube. Up to 3" (76mm) maximum out from wall.
B = Recommended Waste Outlet location. To accommodate 1-1/2" nominal drain. Drain stub 2" (51mm) out from wall.
C = 1-1/2" Trap (not furnished).
D = Electrical Supply (3) Wire Recessed Box Duplex Outlet.
E = Insure proper ventilation by maintaining 6" (152mm) minimum clearance from cabinet louvers to wall.
F = 7/16" (11mm) Bolt Holes for fastening to wall.
NOTE : New Installations Must Use Ground Fault Circuit Interrupter (GFCI). It is highly recommended that the circuit be dedicated and the load protection be sized for 20 amps.

In keeping with our policy of continuing product improvement, Halsey Taylor reserves the right to change product specifications without notice. Please visit Halseytaylor.com for the most current version of Halsey Taylor product specification sheets. This specification describes a Halsey Taylor product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

Halsey Taylor

SPECIFICATIONS

Halsey Taylor HydroBoost Bottle Filling Station & Single ADA Cooler Non-Filtered Refrigerated Stainless Steel

Model HTHB-HAC8SS-NF

PRODUCT SPECIFICATIONS

Halsey Taylor HydroBoost® Bottle Filling Station & Single ADA Cooler Non-Filtered Refrigerated Stainless Steel. Chilling Capacity of 8.0 GPH (gallons per hour) of 50° F drinking water, based on 80° F inlet water and 90° F ambient, per ASHRAE 18 testing. Features shall include Antimicrobial, Green Counter™, Laminar Flow, Mechanically Activated, Real Drain, Sanitary Sensor Activated. Furnished with Double Bubbler ™. Electronic Bottle Filler Sensor with Mechanical Front and Side Bubbler Pushbar activation. Product shall be Wall Mount (On Wall), for Indoor applications, serving 1 station(s). Unit shall be certified to UL 399 and CAN/CSA C22.2 No. 120. Unit shall be lead-free design which is certified to NSF/ANSI 61 & 372 (lead free) and meets Federal and State low-lead requirements.

Special Features:	Antimicrobial, Green Counter™, Laminar Flow, Mechanically Activated, Real Drain, Sanitary Sensor Activated
Finish:	Stainless Steel
Power:	115V/60Hz
Bubbler Style:	Double Bubbler ™
Activation by:	Electronic Bottle Filler Sensor with Mechanical Front and Side Bubbler Pushbar
Mounting Type:	Wall Mount (On Wall)
Chilling Capacity*:	8.0 GPH
Full Load Amps	6
Rated Watts:	370
Dimensions (L x W x H):	17-7/8" x 18-1/2" x 39-3/4"
Approx. Shipping Weight:	89 lbs.
Installation Location:	Indoor
No. of Stations Served:	1
*Based on 80° F inlet water & 90° F ambient air temp for 50° F chilled drinking water.	

- Mechanically-Activated bubbler continues to supply water in event of service disruptions.
- Touchless, sensor-activation, designed for easy use.
- Green Counter: Informs user of number of 20 oz. plastic water bottles saved from waste.
- Laminar flow provides clean fill with minimal splash.
- Silver Ion Antimicrobial protection on key plastic components to inhibit the growth of mold and mildew.
- Real Drain System eliminates standing water.
- Exclusive Double Bubbler which projects two separate streams that converge to form a fuller, more satisfying drink.

COOLING SYSTEM

- Compressor: Hermetically-sealed, reciprocating type, single phase. Sealed-in lifetime lubrication.

PART:_____QTY: _____

PROJECT:_____

CONTACT:_____

DATE:_____

NOTES:_____

APPROVAL:_____



Included with Product: **Water Cooler (8240081683-HTHB), Bottle Filler (HTHB-HAC-NF)**

▼ Ships in multiple boxes.

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Like your family, the Elkay family has values and traditions that endure. For almost a century, Elkay has been a family-owned and operated company, providing thousands of jobs that support our families and communities.

BUILT IN USA OF DOMESTIC AND FOREIGN PARTS

PRODUCT COMPLIANCE

ADA & ICC A117.1
ASME A112.19.3/CSA B45.4
Buy American Act
CAN/CSA C22.2 No. 120
GreenSpec®
NSF/ANSI 61 & 372 (lead free)
UL 399

c UL us — WQA TESTED & CERTIFIED INDEPENDENTLY C US — GreenSpec® LISTED www.GreenSpec.com

Complies with ADA & ICC A117.1 accessibility requirements when installed according to the requirements outlined in these standards. Installation may require additional components and/or construction features to be fully compliant. Consult the local Authority Having Jurisdiction if necessary.

Installation Instructions (PDF)

5 Year Limited Warranty on the refrigeration system of the unit. Electrical components and water system are warranted for 12 months from date of installation. **Warranty pertains to drinking water applications only. Non-drinking water applications are not covered under warranty.**

Warranty (PDF)

In keeping with our policy of continuing product improvement, Halsey Taylor reserves the right to change product specifications without notice. Please visit Halseytaylor.com for the most current version of Halsey Taylor product specification sheets. This specification describes a Halsey Taylor product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

- Condenser: Fan cooled, copper tube with aluminum fins. Fan motor is permanently lubricated.
- Cooling Unit: Combination tube-tank type. Continuous copper tubing with is fully insulated with EPS foam that meets UL requirements for self-extinguishing material.
- Refrigerant Control: Refrigerant R-134a is controlled by accurately calibrated capillary tube.

- Temperature Control: Easily accessible enclosed adjustable thermostat is factory preset. Requires no adjustment other than for altitude requirements.

Optional Accessories		
HWF3000	Halsey Taylor WaterSentry Plus Filter Kit (Bottle Fillers) Spec Sheet (PDF)	
MLP100	In-wall Carrier for Single-station On-wall Bottle Fillers, Coolers & Fountains Spec Sheet (PDF)	
98324C	Accessory - Cane Apron for HAC HVR EMABF & VRC Models (Stainless) Spec Sheet (PDF)	

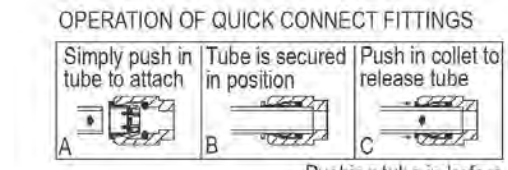
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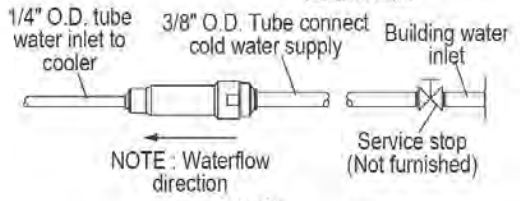
IMPORTANT!
INSTALLER PLEASE NOTE :

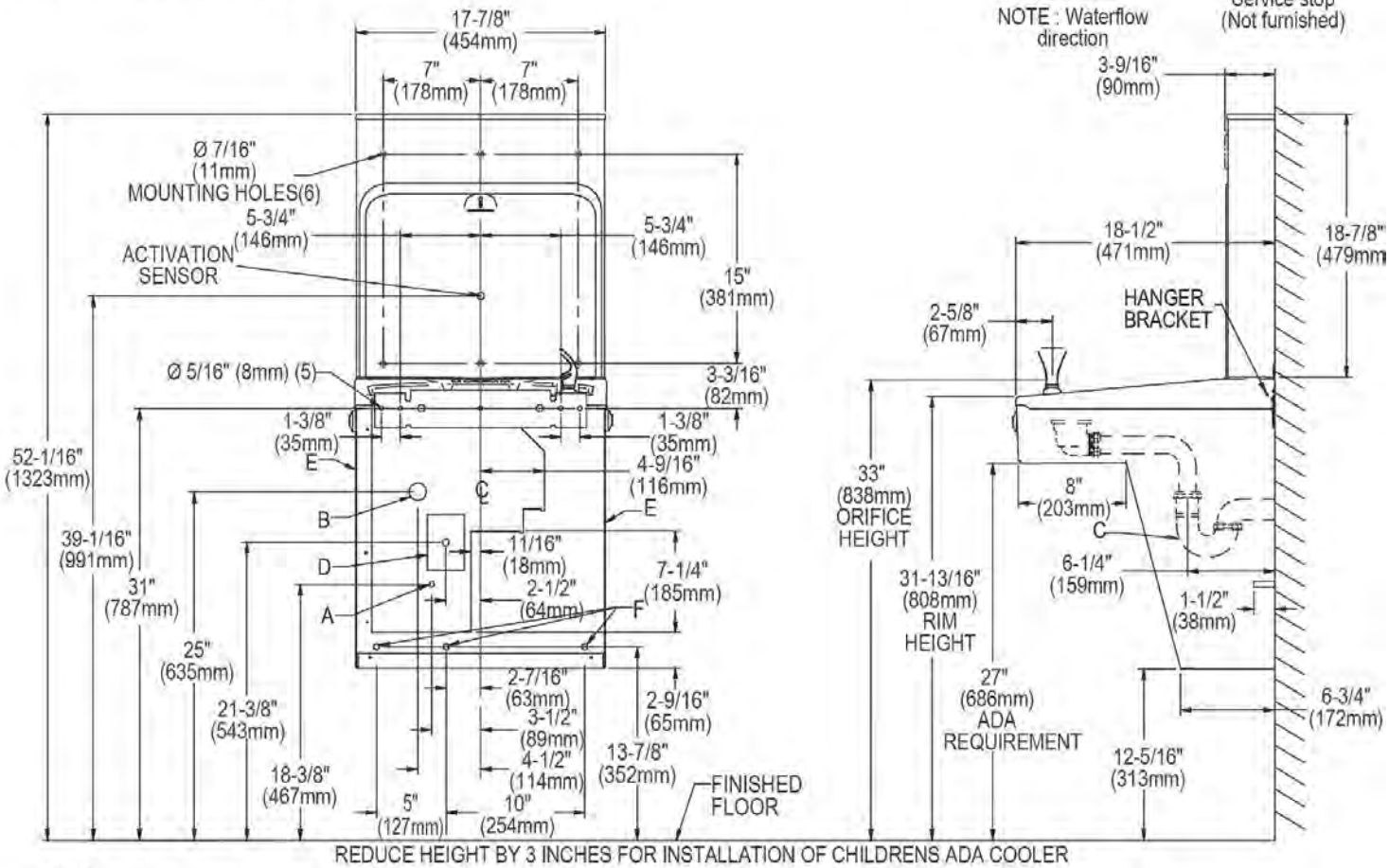
This water cooler has been designed and built to provide water to the user which has not been altered by materials in the cooler waterways. The grounding of electrical equipment such as telephone, computer, etc. to water lines is a common procedure. The grounding may be in the building but may also occur away from the building. This grounding can cause electrical feedback into a water cooler creating an electrolysis which creates a metallic taste or causes an increase in the metal content of the water. This condition is avoidable by installing the cooler using the proper materials as shown below.

NOTICE

This water cooler must be connected to the water supply using a dielectric coupling. The cooler is furnished with a non-metallic strainer which meets this requirement. The drain trap which is provided by the installer should also be plastic to completely isolate the cooler from the building plumbing system.
Bottle filler unit on bracket attached to wall by 6 holes (as shown). Water and electrical will connect through pre-punched hole in basin.







REDUCE HEIGHT BY 3 INCHES FOR INSTALLATION OF CHILDRENS ADA COOLER

LEGEND:
A = Recommended Water Supply location. Shut-off Valve (not furnished) to accept 3/8" O.D. unplated copper tube. Up to 3" (76mm) maximum out from wall.
B = Recommended Waste Outlet location. To accommodate 1-1/4" nominal drain. Drain stub 2" (51mm) out from wall.
C = 1-1/4" Trap (not furnished).
D = Electrical Supply (3) Wire Recessed Box Duplex Outlet.
E = Insure proper ventilation by maintaining 6" (152mm) minimum clearance from cabinet louvers to wall.
F = 7/16" (11mm) Bolt Holes for fastening to wall.
NOTE: New Installations Must Use Ground Fault Circuit Interrupter (GFCI). It is highly recommended that the circuit be dedicated and the load protection be sized for 20 amps.

In keeping with our policy of continuing product improvement, Halsey Taylor reserves the right to change product specifications without notice. Please visit Halseytaylor.com for the most current version of Halsey Taylor product specification sheets. This specification describes a Halsey Taylor product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating Ventilating and Air Conditioning
Specification Section:	23 00 00 Louvered Vent Cap with Hood
Description of Material or System:	Aluminum Louvered Vent Cap with Hood
Last Updated:	2/3/2023
Updated by:	Kris Smith

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred manufacturer for louvered vent caps with hood is

Manufacturer: **Seiho**
Model: **SFX Series Aluminum**

Sizes range from 3" to 12".

To be mounted on a PVC block.

Links to additional product information:

https://www.hvacquick.com/products/residential/Bathroom-Ventilation/Discharge-Caps/Seiho-SFX-Series-Aluminum-Louvered-Vent-Caps-With-Hoods?gclid=Cj0KCQiA8t2eBhDeARIsAAVEga2RK-

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	23 Heating Ventilating and Air Conditioning
Specification Section:	23 05 19 Meters and Gages for HVAC Piping
Description of Material or System:	Condensate Meter 1
Last Updated:	1/4/2024
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Preferred manufacturer is Badger Meter.

Links to additional product information:

https://www.badgermeter.com/products/meters/turbine-flow-meters/industrial-turbo-2---6-inch-meters/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 20 00 - HVAC Piping and Pumps
Description of Material or System:	Pex Tubing
Last Updated:	3/23/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
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- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

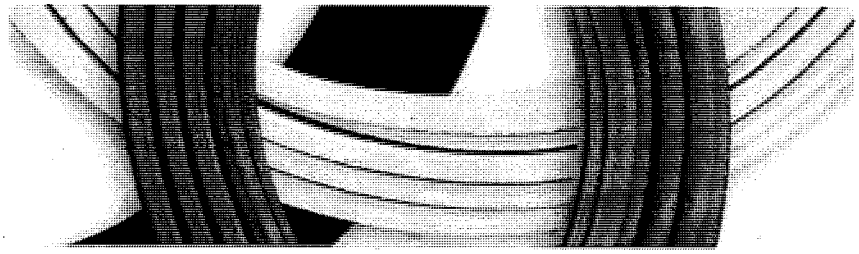
The following is the PEA Design Guideline to be used campus wide, for hydronic heating:

Viega Pex Tubing

Links to additional product information:

https://www.viega.us/en/homepage.html

Viega PEX Tubing Systems



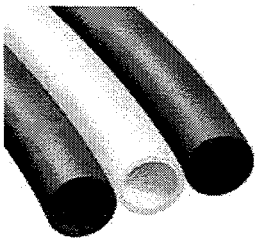
Viega offers three main PEX tubing products: ViegaPEX, ViegaPEX Ultra and FostaPEX tubing. Unlike copper, all PEX tubing products from Viega offer proven resistance to aggressive water conditions and temperature aging for longer life expectancy.

Our PEX tubing meets and exceeds strict standards within the plumbing industry for potable water. ViegaPEX is also one of the few brands that has obtained the PEX5006 (CL5) chlorine resistance ratings, allowing ViegaPEX to be used in continuously recirculating hot water systems.

back

ViegaPEX tubing

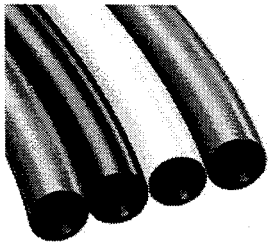
ViegaPEX is a durable product made of cross-linked polyethylene. The cross-linked polyethylene, or PEX, is stable for higher temperature applications such as plumbing and radiant heating. ViegaPEX offers a superior chlorine resistance and protection against corrosion and is resistant to ultra violet (UV) light for up to 60 days.



back

ViegaPEX Ultra tubing

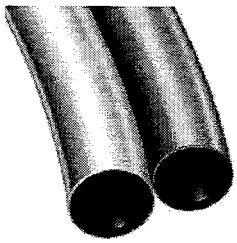
ViegaPEX Ultra provides exceptional protection against UV radiation from the sun for applications where tubing could be exposed to the outdoors for up to 6 months. ViegaPEX Ultra is also available in sizes from 3/8" to 2" for larger applications.



back

Viega FostaPEX

Fosta stands for Form-Stable PEX, so the piping will keep its shape after it is bent. A distinctively versatile product, FostaPEX balances stability with flexibility to create a unique tubing system that not only bends with ease but also holds its shape. Outer layers of aluminum and PE make this feature possible, while simultaneously extending UV protection. FostaPEX is a lead-free oxygen barrier pipe, which makes it compatible not only with potable water systems but also in hydronic applications. FostaPEX also has a low coefficient of expansion compared to standard PEX products and, since one fitting



system connects to all types of ViegaPEX tubing including FostaPEX, distributors need only one inventory and contractors need only one tool set.

Viega began production of FostaPEX in November 2009 at the Viega Manufacturing and Distribution Facility in McPherson, KS. Viega's FostaPEX production line in McPherson is currently the only multilayer production line in North America that produces pipe for both plumbing and heating applications. Viega FostaPEX is the only product on the market with a fully dimensional PEX tubing wall, allowing it to be used with the standard Viega PEX Press fitting system. Other PEX-AL-PEX tubing products require special fittings

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 22 00 - Steam and Condensate Piping and Pumps
Description of Material or System:	Steam Infrastructure Design Standards
Last Updated:	3/23/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☑ Other 2013 Steam Project "Lessons Learned"
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following memo is a list of Steam infrastructure design guidelines,

Links to additional product information:

Memorandum

Date: August 28, 2012

Job No.: RFS #12-7165

To: Mark Leighton, Phillips Exeter Academy

From: James Boudreau, Rist-Frost-Shumway Engineering, P.C. (RFS)

Re: Phillips Exeter Academy
2013 Steam Infrastructure "Lessons Learned"

The following list of "Lessons Learned" has been compiled by RFS with input from both PEA and RFS.

1. Provide steam control to building heating and building domestic hot water systems independently. This would include separate steam regulating valves and isolation valves for each as required.

2. Provide steam condensate flow meters at each condensate return system per PEA standards. Steam condensate flow meters shall have local readouts.

3. Provide steam pressure transmitters upstream and downstream of all new steam pressure regulating valves. If two regulating valves are installed, one for heat and one for domestic hot water, then provide one pressure transmitter for building steam supply and one each downstream of each of the steam regulating valves. Pressure transmitters shall always be installed at the location of the steam pressure gauges for ease of field calibration.

4. Provide valve identification per PEA standards for Facilities' reference and use. The valve identification should include the normal valve position with steam on.

5. Provide PPP (pressure powered pumps) for all steam condensate return systems where applicable and/or reasonable. CDs should show PPP as an option for PEA evaluation during bid process.

6. Provide steam vault high water alarms through the BAS when water levels exceed 6" above vault floor. Use of the water bug level alarm should be consistent on all projects.

7. "Liftmate" vault cover seals have failed in some instances allowing stormwater to enter the vault from the surface. RFS to investigate options for improvement in this area, and will ensure grading around vaults minimizes the potential for stormwater intrusion.

8. PEA prefers threaded connections in lieu of welded connections on smaller diameter condensate pipe.

9. No plastic supports or anchors shall be used within vaults. In some prior instances plastic anchors have been used to support electrical conduit and melted within the vault.

10. "Ladder-Up" to be specified at all vault ladders.

cc: RFS Steam Project Team

JLS:alb
J:\Master\7165\Correspondence\7165.2012-08-29.PEA Steam Lessons Learned.jtb.m.doc

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 22 00 - Steam and Condensate Piping and Pumps
Description of Material or System:	Steam Traps
Last Updated:	3/23/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following are the preferred manufacturers for steam traps:

Barnes and Jones

Tunstall

Links to additional product information:

https://barnesandjones.com/

https://tunstall-inc.com/

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	23 Heating Ventilating and Air Conditioning
Specification Section:	23 22 16 Steam, and Condensate Heathing Piping Specialties
Description of Material or System:	Steam Flowmeter Sensor
Last Updated:	1/4/2024
Updated by:	Kris Smith

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
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- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

See attached.

Links to additional product information:

Product in review 2025.

...Flowmeter sensor

Process connections
Meters are wafer style and clamp between customer's pipeline flanges.

Installation length
For further details, refer to chapter "Dimensions" on page 20.

Materials

Wetted parts		
Part	**Standard**	**Option**
Liner material	ETFE	
Measurement and grounding electrode for liner material		
Electrode material	Hastelloy C-4 (2.4610)	Tantalum, Platinum-iridium,
Grounding ring	Stainless steel	On request

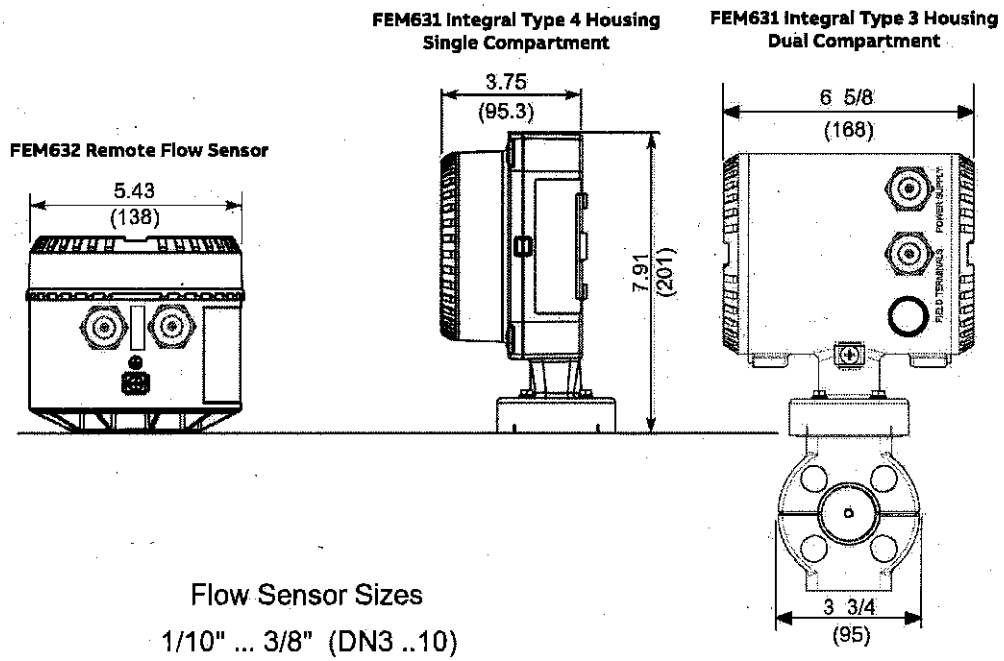
Flowmeter sensor housing



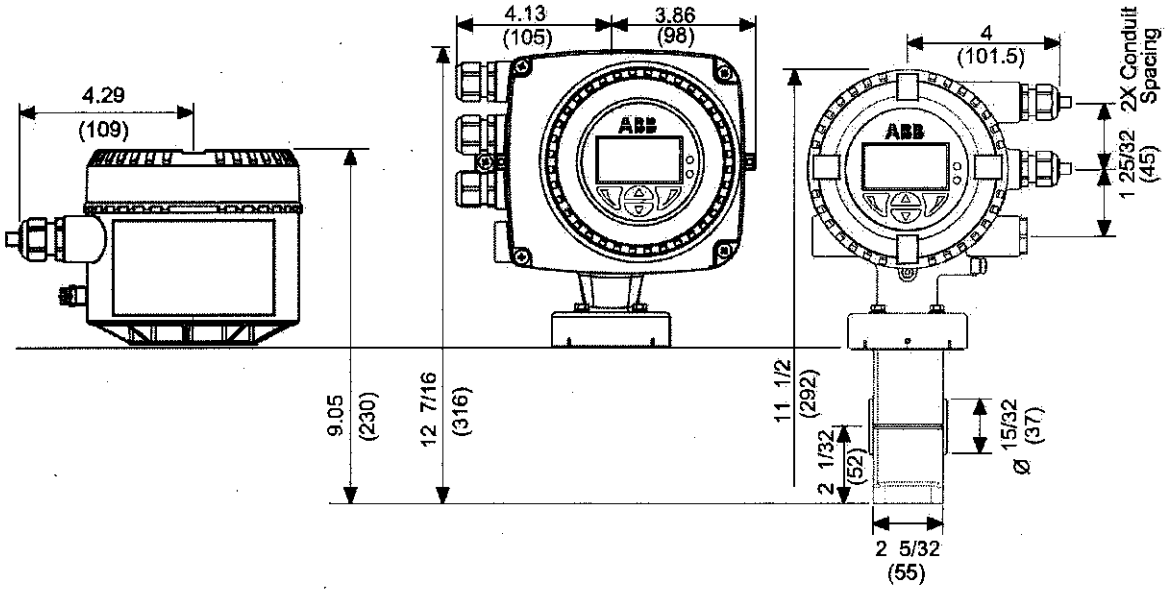
Component	Standard	Option
Housing	Cast aluminum, painted, paint coat > 80 µm thick, light gray, RAL 9002	
Terminal Box	Aluminum alloy, painted, > 80µm thick, light gray, RAL 9002	Plastic, gray white, RAL 9002
Meter Tube	304 Stainless steel	
Cable gland[1]	Polyamide, Stainless steel	

1. Cable gland with M 20 x 1.5 or NPT thread, to be selected via the order model number

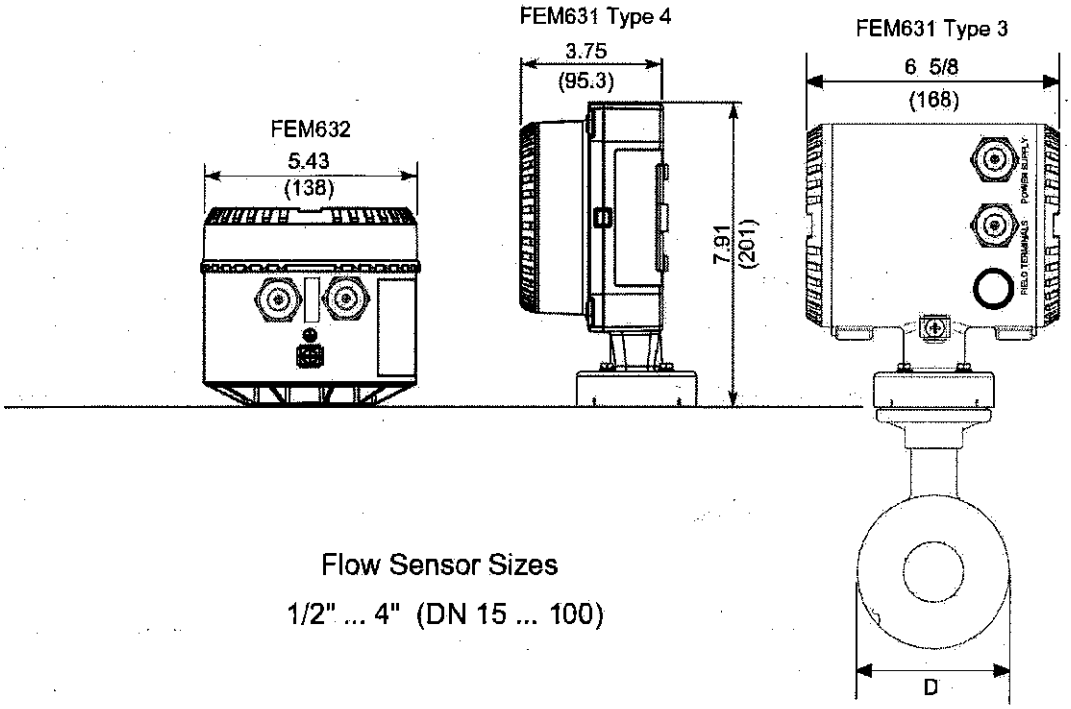
Dimensions



Flow Sensor Sizes
1/10" ... 3/8" (DN3 ..10)

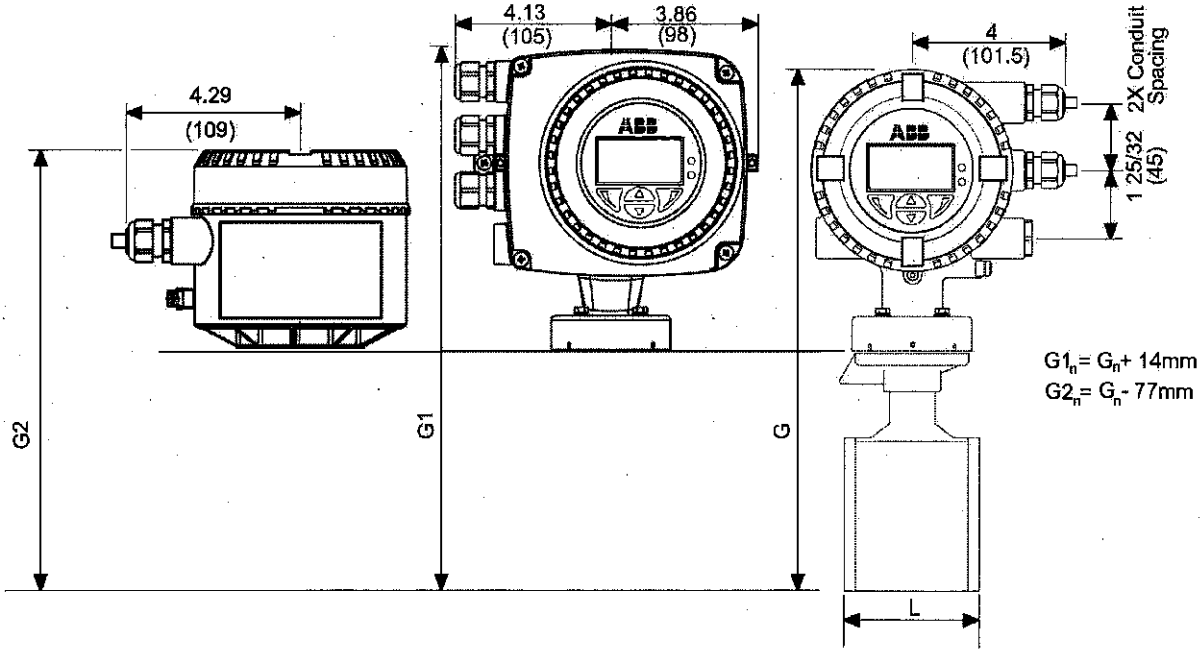


...Dimensions



Flow Sensor Sizes

1/2" ... 4" (DN 15 ... 100)



Dimensions - inches / (mm)							Approximate weight lb / (kg)	
Size inch / (DN)	**D**	**L**	**G3**	**G2**	**G1**	**G**	**Integral mount design**	**Remote mount design**
1/2 (15)	1-7/8 (48)	2-5/32 (55)	7-1/32(179)	9-1/16 (230)	12-1/16 (306)	11-1/2 (292)	10.5 (4.8)	6 (2.7)
1 (25)	2-5/8 (67)	2-5/3255)	7-27/32 (199)	9-27/32 (250)	12-27/32 (326)	12-9/32 (312)	11.5 (5.2)	7 (2.7)
1-1/2 (40)	3-3/8 (86)	2-3/4 (70)	8-9/16 (217)	10-1/2 (268)	13-9/16 (330)	13(330)	12.5 (5.7)	7 (3.2)
2 (50)	4 (102)	3-11/32 (85)	9-3/16 (233)	11-3/16 (284)	14-3/16 (360)	13-5/8 (346)	13.5 (6.1)	9 (4.1)
3 (80)	5-1/4 (133)	4-23/32 (120)	10-13/32 (264)	12-13/32 (315)	15-7/16 (391)	14-27/32 (377)	17.5 (7.7)	12 (5.5)
4 (100)	6-1/2 (165)	5-29/32 (150)	11-21/32 (296)	13-21/32 (347)	16-11/16 (423)	16-1/8 (409)	23.5 (10.7)	18 (8.2)

Transmitter

Features

- 4 ... 20 mA current output
- Current output in the event of an alarm can be configured to 21 ... 22.6 mA (NAMUR NE43)
- Measuring range: Can be configured between 0.02 ... 2 x QmaxDN
- Operating mode for flow measurement can be configured
- Programmable digital output. Can be configured as frequency output, pulse output or binary output.
- Two slots for optional plug-in cards for retrofitting additional current / digital outputs or a digital input.
- Damping: 0.04 ... 100 s configurable (1 τ)
- Low flow cut-off: 0 ... 20 % for current and pulse output
- Parameterization by means of HART communication
- Empty pipe detection1)
- Simulation of current and binary output (manual process execution)

1 Requirements for Empty Pipe detector function:
The conductivity of the fluid must be ≥ 20 µS/cm
Nominal diameter must be ≥ DN 10

LCD indicator (option)

- High-contrast LCD indicator
- Display of the current flow rate as well as the total flow rate
- Application-specific visualizations which the user can select. Two operator pages can be configured to display multiple values in parallel.
- Plain text fault diagnostics
- Menu-guided parameterization with four buttons
- "Easy Set-up" function for fast commissioning
- Parameterization of the device through the front glass with the housing closed

Isolation of outputs

The digital output terminals 41 / 42 and 51 / 52 have a common ground.
The current output and the digital outputs are electrically isolated from each other.

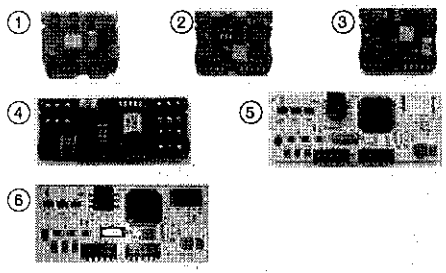


Figure 16 Optional plug-in cards

Plug-in card		Number[1]
①	Passive current output, 4 ... 20 mA (red) Order no. 3KQZ400029U0100	2
②	Passive digital output (green) Order no. 3KQZ400030U0100	1
③	Passive digital input (yellow) Order no. 3KQZ400032U0100	1
④	24 V DC power supply (blue) Order no. 3KQZ400031U0100	1
⑤	Modbus Communications (silver) Order no. 3KQZ407128U0100	1
⑥	Profibus DP Communications (gold) Order no. 3KQZ400027U0100	1

Table 15 Available plug-in cards

1. The "Number" column indicates the maximum number of plug-in cards of the same type that can be used.

...Transmitter

IP rating

In accordance with EN60529: IP 65 / IP 67, NEMA 4X

Vibration

In accordance with EN 60068-2

- In the 10 ... 58 Hz range, max. deflection 0.15 mm (0.006 inch)1)
- In the range of 58 ... 150 Hz, max. acceleration 2 g[1])

1. Peak load

Temperature data

	Standard
Ambient temperature	-20 ... 70 °C (-4 ... 158 °F)
Storage temperature	-40 ... 70 °C (-40 ... 158 °F)

NOTICE

When operating below -20 °C (-4 °F), the LCD display can no longer be read. Full functionality is assured at temperatures above -20 °C (-4 °F).

Housing design

Integral mount design	
Housing	Cast aluminum, painted
Paint	≥ 80 µm thick, RAL 9002 (gray white)
Cable gland[1]	Polyamide
	Stainless steel[2]

Remote mount design	
Housing	Cast aluminum, painted
Paint	≥ 80 µm thick, RAL 9002 (gray white)
Cable gland[1]	Polyamide
	Stainless steel[2]
Weight	
	4.5 kg (9.92 lb)

1. Cable gland with M 20 x 1.5 or NPT thread, to be selected via the order number.
2. On explosion-proof design.

...Transmitter

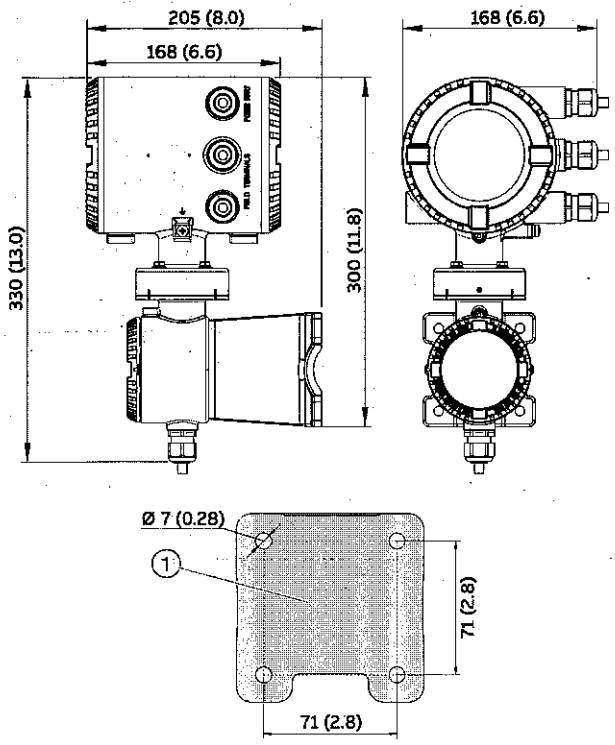


Figure 17 Mounting dimensions of double-compartment housing

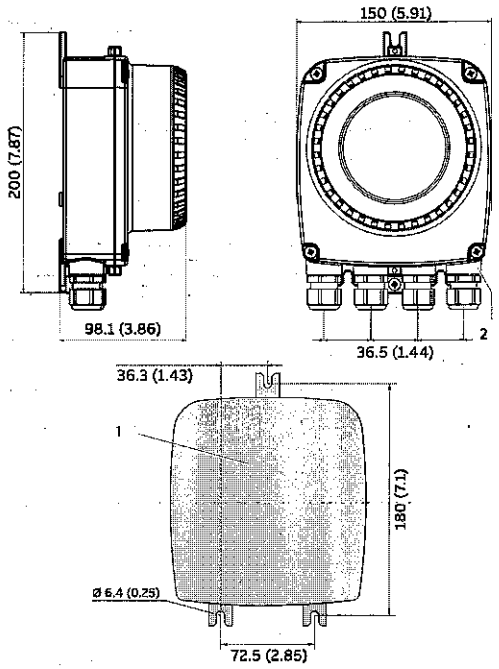


Figure 18 Mounting dimensions single-compartment housing

Pos.	Description
①	Hole pattern for mounting holes
②	Female thread (either 1/2" NPT or M20 x 1.5) refer to model coding. With 1/2" NPT there will be a plug instead of the PG cable inlet.

Table 16 Legend

Pos.	Description
①	Hole pattern for mounting holes
②	Female thread (either 1/2" NPT or M20 x 1.5) refer to model coding. With 1/2" NPT there will be a plug instead of the PG cable inlet

Table 17 Legend

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 22 23 - Steam Condensate Pumps
Description of Material or System:	Condensate Pumps
Last Updated:	3/23/2022
Updated by:	Kris Smith

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
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- ☑ Campus Wide
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- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Condensate pumps to be steam powered. The preferred manufacturers are Leslie Controls and Spirax Sarco.

Preferred Spirax Sarco model: **STR1007**

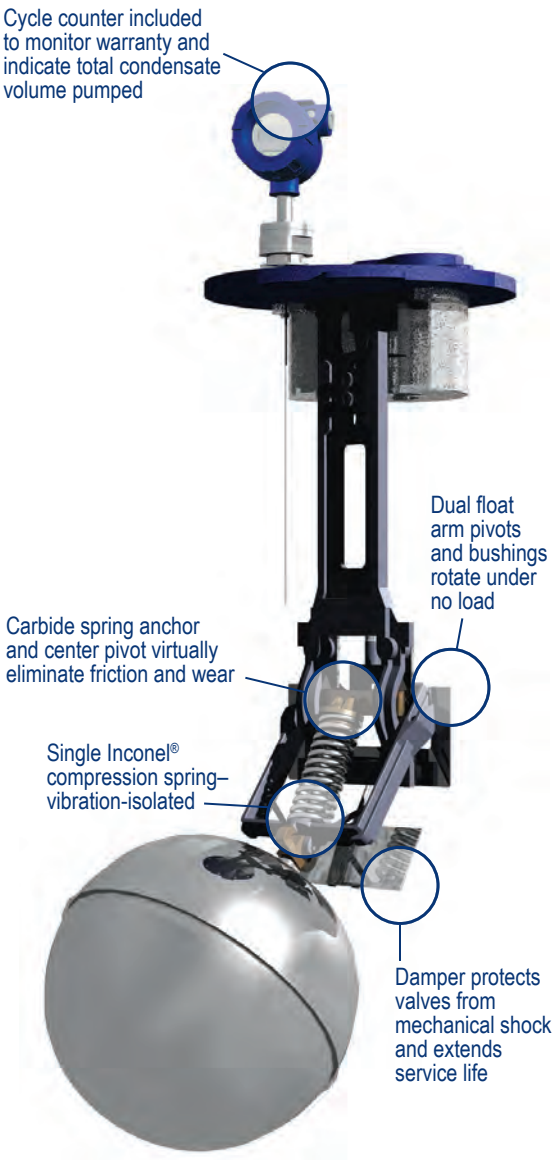
2025 - Please report to Kris Smith immediately if/when the product is encountered

Links to additional product information:

https://lesliecontrols.com/

https://www.spiraxsarco.com/

Pivotrol Condensate Pump



FEATURING RELIABLE PowerPivot® TECHNOLOGY

Help for Ailing Condensate Systems!

- Unmatched, standard 3x5 three million cycles or five-year warrant
- Lifetime spring warranty
- Full warranty coverage to 200 psi operation

3-Million-Cycles or 5-Year-Warranty Pivotrol

Our patented Powerpivots do away with troublesome pins and linkages. What's more—our exclusive damper lengthens valve and seat life by using the hydraulic inertia of the collected condensate to reduce mechanical shock as the valve actuators shift.

Stop! Consider Your System's Condition!

- Has your deaerator pressure gone up?
- Has your fuel consumption risen?
- Has heating become erratic?
- Are you experiencing banging and waterhammer upon startup?

All these are symptoms of malfunctioning or failed condensate pumps. You can't find a better engineered, better backed retrofit than thi tested, proven Pivotrol mechanism. It's the same as used in our new Pivotrol pumps.

Wait! Dollars Are at Risk!

Don't put this flyer down until you've considered your system performance—nothing has more potential to save fuel and improve operation than this upgrade. For expert applications help, call 800-883-4411 right now.

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 34 50 Bathroom Exhaust Fans
Description of Material or System:	Bathroom fan
Last Updated:	7/18/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following is the preferred specification for Bathroom Fans . Energy effiecient bathroom fan with LED light and Built in Humidity sensor- model number determined based on size of the room caculation. Manufacturer Panasonic . No Substitutes

Links to additional product information:

https://na.panasonic.com/us/home-and-building-solutions/ventilation-indoor-air-quality/ventilation-fans

Whisper FV-0511VFL1

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 52 00 - Heating Boilers
Description of Material or System:	Residential Boilers
Last Updated:	3/23/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Residential boilers to be Lochinvar Knight for gas fired, and Buderus for oil fired.

Links to additional product information:

https://www.lochinvar.com/knight/

https://www.buderus.com/en/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 80 00 - Decentralized HVAC Equipment
Description of Material or System:	Ecostyle Panel Radiators
Last Updated:	3/30/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for radiant and convective radiators is Ecostyle. Model and finishes to be determined on a per project basis.

Links to additional product information:

https://ecostyle.us/

Ecostyle Panel Radiators



- **Elegant Design**
- **Engineered for efficiency**
- **Easy to sub-zone**
- **Provides hybrid heat - radiant and convective**
- **Well suited for standard efficiency and condensing boilers**
- **Stove enameled finish for scratch and corrosion resistance**



www.ecostyle.us • 1-800-501-7697

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	23 Heating, Ventilating, and Air Conditioning (HVAC)
Specification Section:	23 82 36 - Finned-Tube Radiation Heaters
Description of Material or System:	Cast Iron Baseboard Panel
Last Updated:	3/23/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for cast iron baseboards is Weil-Mclain. The preferred model is the Snug baseboard.

Links to additional product information:

https://www.weil-mclain.com/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	25 Building Automation and Controls
Specification Section:	25 00 00 - Building Automation Systems
Description of Material or System:	Building Automation Systems
Last Updated:	9/1/2022
Updated by:	Kris Smith

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following is the PEA Design Guideline for Building Automation Systems.

Links to additional product information:

Schneider

Eco Struxure

In review for 2025.

SECTION 17000 - BUILDING AUTOMATION SYSTEM

PART 1 – GENERAL

1.00 General Notes to Designers

The information in this section 17000 represents current standards as of the date at the bottom of this page. Coordination with the appropriate sections of the mechanical and electrical specifications is required by the design team in order for mechanical and electrical systems to interface with the BAS control standards. The Construction Documents divisions 15000 and 16000 must appropriately reference the BAS Specifications and vice versa whether the BAS Division stands alone as Division 17000 or not. The following are general items requiring coordination. BAS designers and engineers, referred to as “designers” for the purpose of this document, shall include other appropriate sections in mechanical and electrical specifications as required to meet the BAS control standards in this section. Phillips Exeter Academy in this section shall be referred to as "PEA".

A. Where installed, perimeter radiation or local fan coil units shall be used to maintain night setback temperatures, rather than turning on large air handling systems when only a few rooms need unoccupied mode heating. Where perimeter radiation or local fan coils are installed, an individual temperature control sensor shall be provided for each room for heating control. Office space shall have a push button override button programmed for two hour intervals of delivered heating when the system is in the night, weekend or holiday setback program.
B. At the time Design Development Documents are delivered to PEA, the project architect and or mechanical and electrical engineers shall provide signed written certification that the design meets all requirements of the New Hampshire State Energy Code in accordance with the New Hampshire State Building Code. PEA may require additional specific energy efficiency measures defined on a case by case basis.
C. Electric heat shall not be allowed for any space, unless approved in writing by PEA.

1.01 General Notes to Designers

"UL" Listed Control Panels

A. All DDC / ATC / BAS control panels shall be assembled in a “UL” certified panel building facility and labeled as a "UL" assembly. All work shall meet "UL" Code 508A. All Panels shall be UL listed and labeled metallic interface panels with hinged, lockable doors and shall be provided for all BAS controllers, except VAV box controllers incorporating an integral damper actuator. All Control assemblies

shall display third party certification and label acceptable to the NH State Fire Marshall.

B. All components installed shall be labeled “UL” or “UR”. Two or more components within an enclosure shall be classified as an assembly, and shall meet the requirements of "UL" 508A.
C. All UL panels shall be assembled to match existing campus patterns, using the same components as existing panels on campus where applicable.
D. All safety circuits shall be isolated by a two pole din rail interior panel mounted 24VAC control relay with LED indicator. One contact shall shut down system through a hard wired loop; the second contact shall be wired to an input on the field controller for alarming. All relays shall be labeled, ex. (Freeze, Smoke).
E. Wire duct shall be used to house all control cabling and to separate class one and class two wiring.
F. Proper separation will be maintained between class one and class two circuits. The use of barriers shall be used for separation with in control panels, and separate conduits outside of control panels.
G Terminal blocks shall be used and numbered to match as built documentation. (The use of wire nuts is not permitted).
H. All conductors/cables entering the control panel shall be labeled and numbered to match as built documentation.
I. Low Voltage transformers shall be fused on primary and secondary (Line and Load).
J. Panel mounted receptacles shall be fused at 5 Amps and labeled "Service USE Only"
K. Panel exterior shall be labeled with BAS panel #, and Power Panel / Circuit # for panel power.
L. As-built documentation shall be posted on the inside door of each Control Panel (exceptions: VAV, CUH, PUH, FCU) unless grouped together in large panel, and included in O&M manuals after job completion.
M. Control panels shall be located in mechanical rooms, Electrical closets, or walk in areas that can be serviced without the use of ladders whenever possible. Control Panels installed in public areas shall be of the recessed lockable type.
(Exceptions: VAV, CUH, PUH, FCU) unless grouped together in large panel. They shall be installed in accordance with NEC, and all clearances shall apply. Enclosures or controllers other than VAV controllers shall not be installed in ceilings without written approval by PEA.

1.02 General Technical Notes to Designers

A. Temperature Control
1. Classroom, Office and Multi-use space temperature control shall be provided with the capability of automatic unoccupied set point shift for all

spaces with heating and/or air conditioning. Wall mounted individual room temperature sensors are preferred. Zone temperature sensors controlling several rooms shall not be allowed unless pre-approved by PEA and all rooms in each zone have equal heating and cooling load characteristics and equal functional uses.

2. Self-contained thermostatic radiator valves cannot provide automatic temperature setback, and shall not be allowed in renovations without approval from PEA.
3. The level of temperature control and mechanical ventilation provided by the existing building HVAC system shall be maintained or improved.

B. PEA requires that all Primary Building HVAC systems shall be controlled and monitored by the campus Building Automation System (BAS). Additional DDC control panels and BAS network connections shall be added as required. Secondary buildings shall be considered on a case by case basis.

C.

1. All HVAC systems and related controls shall meet the following minimum standards and design guidelines.
2. All HVAC systems shall be controlled by a complete DDC Building Automation System (BAS). Special permission from PEA Facilities Management is required for any HVAC equipment not directly controlled by the BAS. **All packaged HVAC equipment shall be furnished without third party electronics, and shall be built to allow field fit up of DDC controllers and end devices.** The BAS shall be fully integrated with the existing campus BAS system, and shall be fully compatible in all aspects with the existing campus BAS system hardware and software including alarm systems, energy monitoring, and hard-wired/fiber-optics communication links.
3. The BAS System shall be manufactured by Andover Controls or Schnieder Controls.
4. Specialized, field or factory-installed, non-BAS microprocessor control packages, such as, automated lighting control systems, chiller control packages, will be allowed only with special permission from PEA, and will be reviewed and approved to ensure adequate provisions for communication of necessary information to the BAS. BAC net/IP is the preferred communication protocol between the BAS and other PEA-approved, non-BAS devices. In general, all HVAC control functions shall be performed by the BAS.
5. All software to fully meet control and data logging requirements of the specifications and shall be contained within a building controller. Each Point shall be set up for extended logging.
6. Input points shall be wired to the same controller as the associated output points. Relying on a communications bus for input/output/set-point control

information transfer is not acceptable except in the case of global control points such as outside air temperature and humidity, building KW demand, and hot and chilled water system status. Global control points shall be pre-approved by PEA.

7. All input/output and numeric points associated with a specific system or piece of equipment shall be located on the same BAS controller.
8. The designer shall provide a proposed BAS point list and sequence of operation to PEA for pre-approval prior to completion of specifications and as part of the Design Development Document submission.
9. All alarm points shall be consistent with current PEA naming conventions, conditions parameters and algorithms.

1.03 Submittals

In addition to normal review, BAS contractor construction submittals shall be provided to PEA for review before granting final submittal approval.

1.04 Spare Parts

Contractors will be required to provide the following numbers of controllers to PEA prior to completion of the project.

Number of devices used on project:	Number of spares to be provided:
0-4	0
5-10	1
11-20	2
20 +	3

PART 2 - PRODUCTS

2.01 Controllers

A. All controllers will be fully programmable. Programs will be accessible to PEA through the BAS manufacturers programming tools. Application specific controllers with fixed function programming will not be allowed.
B. “Net I/O” is allowed only where directly plugged into Network Controllers. Remotely wired Net I/O is not allowed except for special applications pre-approved by PEA. Net I/O use in quantities greater than eight total I/O modules per building shall be pre-approved by PEA.
C. The network controller shall have a node limit capacity allowing for 20 percent future node expansion. The Net Controller power supply shall be 120/240 VAC with the UPS option.
D. All non-terminal unit controllers will have integral HOA switches with LED’s.

E. All BAS controllers shall be fully compatible with the existing PEA workstations and database.

F. All BAS controllers shall include flash memory and battery-backup to maintain software programs for a minimum of twenty-four hours.

G. All BAS controllers shall include LED pilot lights, software-reporting HAND-OFF-AUTO override switches, and analog potentiometers for all output points. Override switches are required on all outputs for trouble-shooting by PEA plumbers and electricians, and for equipment testing by PEA. The only exception to the requirement for output override switches shall be for VAV box controllers, gas-fired heating equipment, and small fan coil units where preapproved by PEA. HOA overrides shall not be combined with system status feedback inputs unless the combination device can differentiate (and report to the workstations) whether an inverse status was caused by loss of the status feedback input or by operation of an HOA override switch. Devices such as "MOB" units with a separately wired input point indicating use of override are acceptable.

2.02 Output Devices

A. All BAS output devices shall be configured/wired for "FAIL-SAFE" operation. Engineers shall specify during Design Development all output devices for PEA to review and approve prior to the execution of Construction Documents. Each output device shall revert to the designated failure position on loss of BAS controller power, loss of secondary control device power, and/or loss of controller software. Upon loss of power or control signal, all hot water and steam control valves and return air dampers shall fail in the open position; and outside air and exhaust air dampers shall fail in the closed position.(Exception: steam valves on steam to hot water heat exchangers shall fail closed.) The fail position feature shall be spring-driven**.** All hot water circulating pumps shall fail on. Failure mode operation relying upon a battery or other non-spring driven device is not acceptable.

B. All variable speed drives provided by the electrical contractor shall be manufactured by "ABB" or "Yaskawa". Please coordinate with Section 16000 of the specifications. All BAS VFD Control cabling shall be shielded.

C. All valve actuators shall have sufficient power and response time for the application. All valves shall have sufficient power to close against system pressure.

D. All control relays shall have integral LED indicator lights.

E. All BAS output devices should be electric/electronic. Pneumatic control devices are not acceptable without prior approval from PEA.

F. Electric modulating actuators shall directly accept a variable voltage control signal. Pulse-width modulation or other methods of modulating control are not acceptable. (Exception: tri-state pulse width modulated damper actuators are allowable on VAV boxes, (As long as a true damper position feedback input is provided.) **All**

valves, valve actuators, and electric damper actuators shall be manufactured by "Belimo".

G. **All analog output signals shall be voltage, no 4 - 20 MA will be permitted.**

2.03 Input Devices

A. BAS water sensing elements shall be dry type, installed in immersion wells.

B. Duct sensing elements (except freeze stats) shall be averaging type in large ducts, or in locations where air stratification may result in an unreliable reading from a probe type sensor. Averaging sensor elements shall be of sufficient length for the application.

C. Freeze stat elements shall not be averaging type. Freeze stats shall be manual reset, and shall trip if any one-foot section of the sensing element falls below set point.

D. Freeze stats shall be installed on all hot water and steam coils exposed to outside air. Freeze stats shall be double pole. One pole shall be hardwired to shut off fan, open coil valve, and close outside air damper independently of the BAS. The second pole shall provide freeze stat status as a BAS input. Exception: When used in conjunction with two pole control relay inside BAS Panel.

E. Temperature sensors shall be provided for return air, mixed air, and supply air on all air handling units. Mixed air sensing elements shall be of sufficient length to provide full coverage of the mixing box. As a minimum, averaging type sensors shall be required for all mixed and supply air ducts over 8 square feet in cross sectional area. Averaging sensors may be required for smaller ducts if the duct configuration may cause air stratification at the sensor location. (All temp sensors shall be 10K electronic thermister type).

F. Carbon dioxide sensors shall be provided in the return air of all dedicated air handlers serving auditoriums, lecture halls, and large classrooms for control of outside air ventilation to provide proper indoor air quality with maximum energy efficiency.

G. One carbon dioxide sensor calibration kit shall be provided for each model of carbon dioxide sensor used on the project.

H. Pneumatic devices connected to electronic transducers are not acceptable.

I. Humidity sensors shall be +/- 2% RH accuracy, fully electronic with no moving parts.

J. Devices to provide positive feedback status inputs shall be installed on all fans and pumps controlled by the BAS. Pump statuses and Constant volume Fan statuses shall be provided by a motor current sensing transducer, DPS switches or flow switches shall not be used to confirm Pump statuses. All current switches shall be provided as part of an integral UL-approved assembly. Status feedback for VFD's, chillers, and boilers are typically provided by fault and/or alarm contacts provided by the equipment manufacturer. All current switches shall be provided as part of an integral UL-approved assembly.

K. All direct-wired dedicated alarm input devices (e.g. sump level switches) shall have normally-closed contacts.
L. All classroom, office and multi-use room temperature sensors shall have integral override pushbuttons. Contractor shall program 2-hour override for unoccupied or night setback settings into those sensors designated to have override capability by PEA.
M. Design engineer shall work with PEA to determine which zone sensors will require set point adjusters, and document these on the design drawings.
N. All input devices shall be voltage or converted to voltage using resistors.
O. All Controls requiring human interface (viewing or resetting) shall be mounted externally on all equipment (AHUs, ERUs, etc…)

2.04 Metering / Monitoring

A. Metering to be determined as part of the design process and submitted to PEA for approval.

B.

Condensate Metering:
All meters shall match existing equipment on campus and have the output capability of 4-20MA, VOLTAGE, and PULSE signals to BAS equipment if needed. The standard signal to the campus BAS shall be pulse. Condensate meters shall be calibrated at the factory and signals verified by the meter manufacturer during startup on site with the BAS contractor. Meters shall include a factory local display for initial startup and future flow verification. Factory Field startup shall be provided by the contractor supplying each meter. A written calibration report shall be submitted with asbuilt drawings during the project close out. All meters shall be installed / Piped per Manufacturers recommendations and positioned to be read and serviced by PEA .

C.

Steam Pressure Monitoring:
Analog pressure transducers shall be installed upstream and downstream of each Steam PRV. Points shall be added to the campus BAS system graphics for monitoring and future trending.

D.

Electrical Metering:
Current sensors shall be provided at the service entrance of each building and provide a KWH signal to the campus BAS in the form of a pulsed output, or

networked to the system via Modbus. Current Sensors shall be manufactured by Veris Industries.

E. All hot water heaters should have temperature readouts on BAS of water temperatures leaving heaters, with alarm set points to activate on the BAS program to notify operators of discrepancies and or failures of heating units.

2.05 Air Handlers

A. Sequence of operation for air handling units utilizing any percentage of outside air shall have heating coil valve control and integral factory-installed coil face and bypass dampers. Below 40 degrees outside air temperature the coil valve shall remain open and the face and bypass damper shall modulate to maintain set point. Above 40 degrees outside air temperature the face and bypass damper shall remain in full face, and the coil valve shall modulate to maintain set point. Air handler outside air and return air ductwork shall be of sufficient length and configured so as to prevent any air stratification problems in the mixing box and coil areas.

B. Air handlers over 15,000 CFM shall have analog differential pressure transducers, to report filter loading status to the BAS.

C. PEA requires that all damper controllers be externally mounted when possible. Air handlers, with externally mounted controllers located indoors shall be provided by the manufacturer with damper shaft extensions that allow all damper motors to be installed exterior to the air handler. External shafts, piping or linkage must not pass through or obstruct the easy operation of access panels necessary for maintenance, for that purpose and shall be provided by the equipment manufacture with shafts extended to the exterior ready for controller mounting. All interior controllers shall be accessible by hinged access panels of sufficient size to permit easy access, adjustments and removal. Doors or exterior casing will be provided with a view port to allow the position and operation of the controller to be easily observed. An internal light is required on all AHU's with an airflow capacity greater than or equal to 15,000 CFM. All air handlers located outdoors shall be provided with weather tight enclosures and damper shaft extensions that allow all damper motors to be installed outside of the system air stream. All such enclosures shall be 3rd party certified and labeled to meet the requirements of the NHSFMO.

PART 3 – EXECUTION

3.01 Installation: Independent 3rd Party Testing and Labeling Requirements

The New Hampshire State Fire Marshall's Office (NHSFMO) has ruled that all enclosures containing 2 or more electrical devices are assemblies that require approval and labeling by an independent third party testing company that is

approved by the NHSFMO. This requirement applies to both custom-built panels, and instances where an electrical device (e.g. relay or current switch) is added to an already labeled assembly (e.g. motor starter, motor control center, control panel). Adding one or more electrical devices to an already labeled assembly requires that the assembly be re-examined and re-labeled with the added components. The BAS contractor shall be responsible for all costs associated with on-site field inspections and labeling. Field inspections shall be done by a representative from an NHSFMO-approved independent third party testing company such as UL. Phillips Exeter Academy requires that all such equipment installed on the campus have all components installed at the factory and that all third party labeling occur at the factory when possible.

3.02 Installation: General

A. Provide easy access through ceilings, walls, and ductwork to all HVAC and control equipment requiring maintenance service or inspection. Access doors shall be of size required by local jurisdiction, 24x24 inches minimum and labeled to indicate type of equipment inside. Hinged and latched access doors shall be provided for service of all dampers, coils, sensing elements, and other equipment located inside ductwork or air handlers. Access openings shall be readily accessible and large enough to reach any area of the equipment that may require inspection, cleaning, lubrication, tightening, adjustment, replacement, or other maintenance service. Access to mechanical spaces shall not require ladders or lifts and PEA requires that permission be granted in advance for any exceptions to this. Access dependent ladders or lifts shall be provided as part of the project.

B. Static pressure control on VAV air handlers shall be provided by electronic variable speed drives. Inlet vane or bypass dampers are not acceptable.

C. All output transducers and control relays shall be mounted in a UL labeled metallic field interface panel with a hinged, locked door .All devices shall be clearly labeled as to their function. Labels shall be fully descriptive, not software code names. Labels shall be attached to relay bases or control panel surface, not to the removable relay cube. All wires shall be tagged with numbers and a cross-reference chart provided indicating the wire numbers and their termination point.

D. All BAS associated 120 VAC power wiring (including all input and output power supplies) shall originate from clearly marked, BAS-dedicated circuit breakers. All input/output transducers shall be powered from the same circuit that supplies power to the associated BAS controller. All BAS equipment shall be fused in accordance with manufacturer's recommendations.

E. BAS controllers shall be labeled with the source of electrical power including panel number, circuit breaker number, and room number where electric panel is located.

F. Outside air temperature and humidity sensing elements shall be located on the building exterior, north exposure, away from windows, doors, exhaust openings, roof surfaces, and other areas that may affect accuracy. Sensors shall be located

at least 15 feet above grade, and shall have physical protection for the sensing element.

G. The BAS has a dedicated VLAN network. The BAS contractor shall provide all media converters, hubs, switches, etc. required for connection of, and between the BAS controller/s (and local desktop/laptop workstation, if required) to the campus BAS network. The BAS Contractor is responsible for all network drops to connect to the campus VLAN network. Network controller locations must be approved by PEA at the beginning of the design process.

H. If UPS power or emergency power is available in the building, all DDC controllers and VLAN network devices shall be powered from that source.

I. BAS software shall meet PEA standard conventions for PID loops, optimum start/stop, alarms, BTU and energy monitoring, data storage, and other control routines. BAS contractor shall meet with PEA BAS manager to discuss software strategies and conventions prior to software development.

J. All BAS controller and point names shall reference final PEA room numbers, not construction document room numbers. The BAS contractor shall submit all naming conventions to PEA for approval prior to writing final system software and shall be consistent with prior BAS projects.

K. The BAS contractor shall provide graphical floor plan displays with final PEA room numbers (not construction document room numbers) on the existing PEA workstations. Additional graphic panel displays of all mechanical systems and terminal HVAC equipment shall be linked via mouse click to the floor plan displays. Spreadsheet and/or schematic type graphic panels shall be broken out by zone or area in accordance with standard PEA practices for graphic panels. Generally, animated graphic panels are not required, spreadsheet text panels are used for all systems, and schematic diagrams are used for complex systems such as large air handlers, chiller plants, and pumping/piping systems. Floor plans shall show color-coded control zones with room sensors and terminal units. All graphical panels shall have links to display or edit all set points, control points, inputs, and outputs associated with the equipment being displayed. All graphics will be custom tailored to reflect actual field installations, and also match existing front end graphic layouts. Each main page graphic will be stamped with a digital photo of the building being served. Electronic copies of all asbuilts shall be linked from the main graphic page.

L. All BAS controllers shall be mounted with sufficient free space below the controller to allow for future installation of the maximum allowable number of expansion modules or additional controllers. Field panels shall be appropriately sized, with no wiring or other equipment located in the expansion area below the controllers.

M. All safety devices such as freeze stats, humidity high limits, and high static pressure switches shall be manual reset and shall perform all associated shutdown/failsafe actions via hardwiring. Software shall not be used to exclusively perform any shutdown/failsafe actions from safety devices. For example, freeze stats shall shut off fan, fully open coil valve, and close outside air damper via

hardwiring without relying on any software functions. Software shutdown/failsafe shall be provided as a redundant backup to the required hardwired shutdowns.

N. The BAS contractor shall provide all system alarms, schedules, and optimized start/stops in accordance with current PEA BAS conventions. Alarm, schedule, and control program strategies and configuration shall be consistent with existing conventions.
O. All BAS devices serving equipment powered by an emergency power source shall be powered by that same emergency power source.
P. The BAS contractor shall be responsible for maintaining, and storing off-site, contractor's own control software and workstation related software back-ups until the end of the warranty period. The BAS contractor shall be responsible for duplicating any work necessitated by contractor's failure to maintain and store their own software backups until the end of the warranty period.
Q. Discharge air temperature sensors shall be provided downstream of all heating and cooling coils (air handler coils, reheat coils, unit ventilators, fan coil units, VAV's, etc.)
R. Optimized start/stop shall be provided for all heating and cooling equipment. Separate optimized start calculations shall be performed for the heating season and the cooling season. Start and stop target times shall be provided by a schedule that allows different target times for each day of the week, and for holidays and vacation periods. Schedule strategies and configuration shall be pre-approved by PEA prior to beginning software development.
S. Provide a freeze protection safety program for all heating water pumps and heating zones to protect against failure of temperature sensors.

3.03 As Built Documentation

A. The BAS contractor shall provide as-built drawings and written sequences of operation that reflect **final PEA assigned room numbers.**
B. A copy of all as-built drawings shall be provided to PEA as part of the final project record drawings, in hard copy as well as electronic. Electronic As built links shall be added to BAS graphic home page or pages.
C. The BAS contractor shall submit to PEA copies of all graphic files and a text export file of the complete software code on a read-only CD.
D. The as built documentation shall include points list, I/O wiring diagrams, manufacturers' maintenance and troubleshooting data sheets for all BAS field devices, floor plans with all sensor and controller locations, BAS communications bus wiring diagrams showing location of the bus runs within the building, floor plan showing all electrical power panels and circuit numbers serving BAS equipment with locations of junction boxes.
E. BAS contractor shall install the following documentation in a plastic sleeved holder at each BAS controller location: written sequence of operation, controller I/O wiring diagram, controller locations, and floor plan showing sensor and controlled-equipment locations.

F. At each BAS controller, the BAS contractor shall mount an output override switch chart with complete descriptive names and software point names for each override switch. The chart shall clearly indicate what equipment is controlled by each numbered override switch.

3.04 Training

A. The BAS contractor shall provide 16 hours of training on all projects exceeding 10,000 square feet. Training will include hardware installation, system administration and programming. After completion of the course/courses it is expected that the PEA trainees will have the ability to select, install, program and service the new BAS system.

3.05 Testing and Verification

A. The BAS contractor shall be familiar with all commissioning specifications and be responsible for providing commissioning assistance with all divisions as required.

B. All tests required by this section shall be scheduled in advance with PEA and conducted in the presence of a PEA representative. BAS contractor shall obtain sign-off from the PEA observer and Commissioning Agent if applicable after successful completion of each test.

C. Inputs and Outputs:

1. For all inputs and outputs, BAS contractor shall prepare a point-to-point verification spreadsheet with columns for point name, date of verification test, test results, and PEA observer sign-off.
2. BAS contractor shall verify all input points by altering conditions **at the input device** and observing that an appropriate change in value for that point occurs on a locally connected computer terminal. Shorting or opening wires at the input device shall be an acceptable method of altering input conditions.
3. Results of each input test shall be recorded on a verification spreadsheet.
4. BAS contractor shall verify all output points by disabling and modifying the output point value via a locally connected computer terminal and observing that an appropriate change occurs **at the controlled device**. Results of each output test shall be recorded on the verification spreadsheet.
5. Any points failing the initial verification test shall be re-tested and recorded on the verification spreadsheet until the point passes the verification test.
6. BAS contractor shall provide PEA with the completed verification spreadsheet prior to project acceptance.

D. Lead-lag-standby equipment sets:

1. All lead-lag-standby equipment sets shall be tested for proper sequence of operation by causing a failure of each piece of equipment in the equipment set and observing that the appropriate back-up unit operates. Simulating equipment failure via software is not an acceptable test.

E. **Alarms:**

1. All alarm software shall be of the same format as the existing alarm software.
2. All alarms shall be tested by causing an alarm condition where ever possible. Simulation of alarm conditions via software is not an acceptable test.
3. BAS contractor shall demonstrate that an alarm signal is received at the PEA alarm console when the alarm condition occurs.
4. The condition shall be left in the alarm state and the BAS contractor shall demonstrate that the alarm signal clears when the alarm is acknowledged at a PEA workstation.
4. The alarm condition shall then be returned to normal and the BAS contractor shall demonstrate that the active alarm display indicates a return to normal condition at a PEA workstation.

F. **Trend Logs:**

1. BAS contractor shall set up workstation trend log groups and log configurations on designated inputs, outputs, and numerics.
2. Generally, each system, control zone, or HVAC unit shall have a separate trend group. BAS contractor shall meet with PEA to identify group names, point log types and intervals, and group member lists.
3. In order to provide historical trend logs covering an entire weekend period, most trended points will require logs with 128 entries at 30-minute intervals. BAS contractor shall provide linked secondary numeric points in the building network controller if the field controller memory cannot accommodate the required number of log entries.
4. The BAS contractor shall review trend logs with the PEA to confirm proper operation of control sequences and shall perform all required software/hardware modifications to obtain proper operation.

G. **Modulating control loops:**

1. The BAS contractor shall inspect each modulating control loop for stability and response time.
2. Inspections shall take place at a PEA workstation with a PEA representative present.
3. Each modulating control loop shall be tested by creating a significant change in the set-point numeric and, after five minutes, returning the set point to its normal value. Response time to return to the normal set point

shall be a maximum of 5 minutes. Certain types of outputs, as determined by PEA, will require faster or slower response time.

4. Oscillations during the response time period shall not exceed 10 percent of the set-point value.
5. At the end of the response time, control loops shall maintain set point within the following tolerances:

Air Pressure	+/- 0.5” w.c.	range 0-6” w.c.
	+/- 0.01” w.c.	range –0.1 to 2” w.c.
Airflow	+/- 2 percent of set-point in cfm	
Temperature	+/- 1.0 degrees F.	
Humidity	+/- 5% RH	
Fluid Pressure	+/- 2.0 psi	range 1-150 psi
	+/- 2.0” w.g.	range 0-50” differential pressure

6. BAS contractor shall tune modulating control loops as needed to meet the requirements of this section.

END OF SECTION

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 00 00 - Interior Lighting Color Standards
Description of Material or System:	Interior lighting color temperatures
Last Updated:	1/24/2024
Updated by:	Katie Gregory

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred campus standards for lighting color:

a. Typical interiors of academic classrooms, office spaces, student dorm rooms, bathrooms and public spaces, art studios, etc – all lights – 3000K

b. Typical Faculty residences single and multi-family and dorm apartments – all lighting – 2700K

c. Indoor athletic practice spaces – 4000K (Corridors, locker rooms, offices, etc in athletics - 3000K (if any question discuss with FM)

d. Goel Center for Theater & Dance – typically 3000K - except for specialized theater lighting.

Links to additional product information:

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 05 77 - Dimming and Lighting Controls
Description of Material or System:	Lutron LED wall Switches
Last Updated:	7/18/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following is the preferred manufacturer for LED dimmable wall switches:

Manufacturer: **Lutron**.
Model: **Diva Collection**

Confirm with Owner on a per-project basis.

Links to additional product information:

https://www.lutron.com/en-US/Products/Pages/StandAloneControls/leddimmers/Overview.aspx

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 09 43 Network Lighting Controls
Description of Material or System:	Lighting and controls
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA campus lighting: Basis of the design shall be **Acuitybrands** fixtures with **Nlight controls**.
PEA lighting controls: **Acuitybrands.** Control system determined on project scope. All networked wireless or wired shall be Acuitybrands Nlight. No Substitutes.

Links to additional product information:

https://www.acuitybrands.com/

https://www.acuitybrands.com/products/controls

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 09 43 Lighting Controls - Time Clocks
Description of Material or System:	Local Astronomical timer
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The perferred manufacturer for the time clock system is **Intermatic** Astronomical timer for local control of exterior lighting. Larger control systems: Nlight Eclypse would be used for lighting controls.

Links to additional product information:

https://www.intermatic.com/Product/ET8215C

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 14 00 Wiring Devices
Description of Material or System:	Range Controller
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Campus student common room range controller: **Cookstop CSA-4WS-IRF**. NO Substitutes

Links to additional product information:

https://www.cookstop.com/our-products.html

https://shop.cookstop.com/CookStop-4-Wire-Smart-Socket-Kit-CSA-4WS-IRF.htm

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 22 00 - Low Voltage Transformers
Description of Material or System:	Electrical distribution and Transfomers
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA campus electrical building distribution. Schneider Electric-Square D. No substitutes. Size and Types based on project design.

Links to additional product information:

https://www.se.com/us/en/product-category/4000-panelboards-switchboards-and-switchgear/?filter=business-4-low-voltage-products-and-systems

https://www.se.com/us/en/product-category/80394-transformers/?filter=business-4-low-voltage-products-and-systems

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 27 10 - Electricity Metering
Description of Material or System:	Metering
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Perferred campus metering manufacturer is **Schneider Electric**. Metering typed determined by project design. **PM8000 and PM5000 series** perferred. No substitutes. Campus standard Metering software is **Power Monitoring Expert** and all metering connected via IP address.

Links to additional product information:

https://www.se.com/us/en/product-category/4100-power-metering-and-energy-monitoring-systems

https://www.se.com/us/en/product-range/62252-powerlogic-pm8000-series

https://www.se.com/us/en/product-range/61281-powerlogic-pm5000-series

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 27 26 Switches and Outlets
Description of Material or System:	Devices
Last Updated:	8/25/2022
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Preferred manufacturers for switches and outlets are Hubbell and Leviton.

Links to additional product information:

https://www.hubbell.com/

https://www.leviton.com/en

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 28 16 Enclosed Switches and Circuit Breakers
Description of Material or System:	Safety and Disconnect Switches
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA campus Electrical building distribution. Schneider Electric-Square D. Heavy Duty No substitutes. Size and Types based on project design.

Links to additional product information:

https://www.se.com/us/en/product-category/80377-safety-switches-and-disconnect-switches/
https://www.se.com/us/en/product-range/7273-heavy-duty-safety-switches-/?parent-subcategory-id=80379

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 32 00 - Packaged Generator Assemblies
Description of Material or System:	Generators
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA campus generators: **Cat Generator and Kohler**. Cat Generator perferred . Size and type determined based on project design.

Links to additional product information:

https://www.cat.com/en_US/products/new/power-systems/electric-power.html

https://kohlerpower.com/en/generators/industrial/products/Gaseous+Generators

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 36 00 - Transfer Switches
Description of Material or System:	Transfer Switches
Last Updated:	11/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

PEA campus preferred transfer switches are: Schneider Asco. Size and type determined per project.

No Substitutes.

Links to additional product information:

https://www.ascopower.com/us/en/product-subcategory/89094-automatic-transfer-switches/

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Lighting
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Residential Recessed Downlilght
Last Updated:	11/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [x] Other Faculty Apartments
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The following is the preferred specification for recessed cans remodel or new construction for Faculty Housing or apartments.

Manufacturer: Juno
Color Temperature : 2700K

Ordering Information:
Trim Series: (Wafer LED Downlight) WF4 & WF6
Trim Style: DREG
Adjustable Lumen Output: ALO_##
Color temperature: SWW5

Links to additional product information:

Acuity Brands - Juno® Wafer Canless Downlights

Juno® Wafer Canless Downlights

Ultra-Thin and Installs Virtually Anywhere

Canless Wafer Downlights have an innovative, slim design that installs quickly and easily into as little as 3" of plenum allowing for them to fit into ceiling spaces where most traditional recessed housings do not. No housing required to install. Our Wafer portfolio offers solutions that feature switchable white color temperature settings, Wafer™, or solutions that feature both switchable white color temperature settings and adjustable lumen output options, Wafer™, to provide an all-in-one design that offers 15 skus in 1 product. The best part is these features are controlled by switches located directly on the fixture.

Downlights are available in 2", 4" and 6" aperture sizes, 90CRI+, 120V, and triac dimming down to 10%. They are wet location listed, making them ideal for use in a breadth of indoor and outdoor residential, hospitality, light commercial and multifamily applications.




Kitchen


Outdoor

JUNO

Ordering Information

Wafer™ - Switchable White Color Temperatures

Ordering Example: WF6 SWW5 90CRI MW

Trim Series	Trim Style	Color Temperature	Rendering Index	Finish
WF4 4" Wafer LED Downlight	**(blank)** Flat Smooth	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90 CRI** 90+ CRI	**MW** [2] Matte White
WF6 6" Wafer LED Downlight	**REG** Regressed Baffle			**MB** [2] Matte Black
WF8 8" Wafer LED Downlight	**ADJ** Adjustable			**ORB** [1] Oil-Rubbed Bronze
				BN [2] Brushed Nickel

Wafer™ - Switchable White Color Temperatures + Adjustable Lumen Outputs

Ordering Example: WF6 ALO19 SWW5 90CRI MW

Trim Series	Trim Style	Adjustable Lumen Output	Color Temperature	Rendering Index	Finish
Flat Trim Series					
WF2 2" Wafer LED Downlight	**RD** Flat	**ALO25** Adjustable Lumens (517/689/826)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White
WF4 4" Wafer LED Downlight	**(blank)** Flat Smooth	**ALO19** Adjustable Lumens (700/900/1100)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White
WF6 6" Wafer LED Downlight	**(blank)** Flat Smooth	**ALO19** Adjustable Lumens (800/1050/1300)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White
Deep Regressed Smooth Trim Series					
WF4 4" Wafer LED Downlight	**DREG SM** Deep Regressed Smooth	**ALO19** Adjustable Lumens (700/900/1100)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White
WF6 6" Wafer LED Downlight	**DREG SM** Deep Regressed Smooth	**ALO19** Adjustable Lumens (800/1050/1300)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** Matte White
Deep Regressed Baffle Trim Series					
WF2 2" Wafer LED Downlight	**DREG SM** Deep Regressed Baffle	**ALO25** Adjustable Lumens (544/725/907)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White
WF2 2" Wafer LED Downlight	**DREG B** Deep Regressed Baffle	**ALO25** Adjustable Lumens (544/725/907)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White
WF4 4" Wafer LED Downlight	**DREG B** Deep Regressed Baffle	**ALO19** Adjustable Lumens (700/900/1100)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White
WF6 6" Wafer LED Downlight	**DREG B** Deep Regressed Baffle	**ALO19** Adjustable Lumens (800/1050/1300)	**SWW5** Switchable White (2700K, 3000K, 3500K, 4000K, 5000K)	**90CRI** 90+ CRI	**MW** [3] Matte White

Accessories

Series

2-inch

2NCMFLP U	2in New Construction Mounting Frame with Lip
2NCMFLP R6	2in New Construction Mounting Frame with Lip, Retail Pack of 6
WFJB U	Remodel Joist Bar
WFEXC6 SW3PIN FT4	3-Pin 6FT Cable
WFEXC10 SW3PIN FT4	3-Pin 10FT Cable
WFEXC20 SW3PIN FT4	3-Pin 20FT Cable
WF2GR MW JZ	2" Wafer Goof Ring 2.75" ID x 4.75" OD

4-inch

WF8643 PAN U	Universal New Construction Pan
WF4 PAN R12	4" New Construction Pan, Retail Pack of 12
WF4GR MW JZ	4" Goof Ring
WFJB U	Remodel Joist Bar
WFEXC6 SW3PIN FT4	3-Pin 6FT Cable
WFEXC10 SW3PIN FT4	3-Pin 10FT Cable
WFEXC20 SW3PIN FT4	3-Pin 20FT Cable

6-inch

WF8643 PAN U	Universal New Construction Pan
WF6 PAN R12	6" New Construction Pan, Retail Pack of 12
WF6GR MW JZ	6" Goof Ring
WFJB U	Remodel Joist Bar
WFEXC6 SW3PIN FT4	3-Pin 6FT Cable
WFEXC10 SW3PIN FT4	3-Pin 10FT Cable
WFEXC20 SW3PIN FT4	3-Pin 20FT Cable

[1] Flat Wafer available in all color finish options. [2] Adjustable Wafer is available in Matte White, Matte Black, Brushed Nickel.
[3] Color finish trim inserts available for ALO + SWW5 Wafers, see spec sheet.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Pendant Light
Last Updated:	3/31/2022
Updated by:	Curtis Boivin

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred pendant lighting for faculty kitchens:

Manufacturer: **Progress Lighting**
Model name: **Replay**
Model number: **P5170-09**
Finish: **Brushed Nickel**

Finishes to be approved by Owner on a per project basis.

Links to additional product information:

https://www.hubbell.com/progresslighting/en

PROGRESS LIGHTING™

Project:

Fixture Type:

Location:

Contact:



P5170-09
Replay

One-light mini-pendant from the Replay Collection, features a linear form that provides a pleasingly elegant accent to your home. A sleek, metallic finish is complemented by white glass diffusers for a clean, modern silhouette. Brushed Nickel finish.

- Smooth forms and linear details.
- Pleasingly elegant frame.
- Simplified modern look.
- Etched glass shade.
- Brushed Nickel finish.

Category: Pendants
Finish: Brushed Nickel (Plated)
Construction: Steel Construction
Glass/Shade: Etched glass Shade

Diameter: 3-7/8 in
Height: 6-1/16 in
Overall Ht. W/Stem: 72 in

Etched glass Shade
Width: 3-7/8 in
Height: 5-1/8 in

MOUNTING	ELECTRICAL	LAMPING	ADDITIONAL INFORMATION
Ceiling stem	Prewired	Quantity: One 100 W max. Medium Base or LED equivalent	UL-CUL Dry Location Listed
Mounting strap for outlet box included	10 feet of wire supplied		1-year Limited Warranty
Six links of 9 gauge chain supplied	120 V	E26 base socket	
One 6", four 12" lengths of stem included			
Canopy covers a standard 4" recessed outlet box: 5" W., 0.875" ht., 5" depth			

PROGRESS LIGHTING™

Project:

Fixture Type:

Location:

Contact:



P5170-09
Replay

One-light mini-pendant from the Replay Collection, features a linear form that provides a pleasingly elegant accent to your home. A sleek, metallic finish is complemented by white glass diffusers for a clean, modern silhouette. Brushed Nickel finish.

- Smooth forms and linear details.
- Pleasingly elegant frame.
- Simplified modern look.
- Etched glass shade.
- Brushed Nickel finish.

Category: Pendants
Finish: Brushed Nickel (Plated)
Construction: Steel Construction
Glass/Shade: Etched glass Shade

Diameter: 3-7/8 in
Height: 6-1/16 in
Overall Ht. W/Stem: 72 in

Etched glass Shade
Width: 3-7/8 in
Height: 5-1/8 in

MOUNTING	ELECTRICAL	LAMPING	ADDITIONAL INFORMATION
Ceiling stem	Prewired	Quantity: One 100 W max. Medium Base or LED equivalent	UL-CUL Dry Location Listed
Mounting strap for outlet box included	10 feet of wire supplied		1-year Limited Warranty
Six links of 9 gauge chain supplied	120 V	E26 base socket	
One 6", four 12" lengths of stem included			
Canopy covers a standard 4" recessed outlet box: 5" W., 0.875" ht., 5" depth			



P5170-09 - Replay - 6.0625 Inch Height - Pendants Light - 1 Light - Line Voltage by Progress Lighting

Specs

Family/Collection:	Replay
Width/Diameter (in):	3.88"
Height:	6.06"
Canopy Width:	5
Max Hanging Height:	72.00"
Canopy Length:	5
Canopy Thickness:	0.88
Shade Width at Top (inches):	3.88"
Shade Height (inches):	5.13"
Overall Length:	3.88W x 6.06H"
Shade Size:	3.88 x 5.13
Weight:	2.42 lbs
Wire Length:	120.00"
Chain Length:	8.00"
# of Bulbs:	1
Standard Wattage:	100 Watts
Bulb Type:	Incandescent
Lamp Base Type:	Medium Base
Design Style:	Modern/Transitional
Voltage Rating:	120 V
Stem/Rod Lengths Included:	1-6, 4-12
Material:	Steel
Warranty:	1 Year Limited
Prop 65 Rating:	Yes
Downrod Included:	TRUE
Canopy Included:	Yes
Shade Included:	Yes

Style and Option 1

Style:	Brushed Nickel Finish with Etched Glass
Item #:	P5170-09
Price:	~~*Reg. $66.00*~~ Save 15% $56.10 On Sale



Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Residential Surface Mounted Light Fixture
Last Updated:	2/19/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

For faculty bedroom lighting, the preferred manufacturer is Juno Lighting.
Finishes to be selected on a per project basis, approved by the Owner.

FMLR and FMLSQ options.

Links to additional product information:

https://insights.acuitybrands.com/new-products/new-fmlr-round-fmlsq-square-flush-mounts-2







Juno® FMLR Round & FMLSQ Square Flush Mounts

Multi-Functional, Low Cost, DIY Friendly

The 11" FMLR Round and 15" FMLSQ Square Indoor Flush Mounts provide a modern aesthetic, at a low cost, with an easy installation, perfect for both contractors and DIYers. They ship as matte white but include a black interchangeable trim in the package to bring a design element to match with any desired aesthetic. Additionally, they feature a switch directly on the product that allows you to choose your desired color temperature. During install, simply toggle the switch to choose between 2700K (Soft White); 3000K (Warm White); 3500K (Neutral White); 4000K (Cool White); or 5000K (Daylight) to customize your lighting. In addition, the FMLSQ doubles as nightlight. Perfect for those areas that need a little extra light at night. Ideal for foyers, hallways, bedrooms, bathrooms, stairways, utility rooms and others.

Features include:

- **Easy Installation –** Easily installs directly into new or existing industry standard junction boxes.
- **Multi-Functional –** Features a switch that allows you to change color temperature from 2700K (soft white) up to 5000K (daylight).), dimming down to 10%, plus the black interchangeable trim ring.
- **Nightlight Mode (FMLSQ) –** Doubles as nightlight when simply toggling wall light switch.
- **Available –** With inventory readily available, get them today through your preferred authorized distributor or retailer.

JUNO®

Switching to Nightlight Mode is Easy – Just Simply Toggle the Light Switch on the Wall



Ordering Information

Series	Size	Color Temperature	CRI	Trim Ring Finish	Nightlight
FMLR Round Low Profile Flush Mount	**11IN** 11 inch	**SWW5** 2700K/3000K/3500K/4000/5000K	**90CRI** 90CRI	**WBT** White/Black Trim Ring	
FMLSQ Square Low Profile Flush Mount	**15IN** 15inch	**SWW5** 2700K/3000K/3500K/4000/5000K	**90CRI** 90CRI	**WBT** White/Black Trim Ring	**NL** Nightlight Mode







ENERGY STAR DAMP LOCATION™ C SA® US TITLE 24 PART 6 2700K 3000K 3500K 4000K 5000K DIMMABLE LED

JUNO®

One Lithonia Way, Conyers, GA 30012 | Phone: 800.705.7378 | www.acuitybrands.com
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AcuityBrands.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Bathroom lighting
Last Updated:	7/18/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☑ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following is the preferred specification for Bathroom faculty housing or apartments, and dormitories.

Manufacturer: **Progress Lighting**
Model: **Replay Collection**

Where possible preference is for vanity lighting fixtures to be on each side of the mirror, facing down.

Links to additional product information:

https://www.hubbell.com/progresslighting/en/search2?text=replay%20collection&CSRFToken=11533942-5be2-4b35-86dc-a63ccf6205f9&searchQuery=replay%20collection



P2131 - Replay - 1 Light in Modern style - 5.13 Inches wide by 9.75 Inches high by Progress Lighting

Specs

Family/Collection:	Replay
Width/Diameter (in):	5.13"
Height:	9.75"
Depth/Extension:	6.00"
Shade Width at Top (inches):	3.94"
Shade Height (inches):	5.13"
Back Plate Length:	5.13"
Back Plate Width:	5.13"
Overall Length:	5.13W x 9.75H x 6D"
Shade Size:	3.94 x 5.13
Height from Center:	7.25"
Weight:	1.20 lbs
Wire Length:	6.00"
# of Bulbs:	1
Standard Wattage:	100 Watts
Bulb Type:	Incandescent
Lamp Base Type:	Medium Base
Mount type:	Up/Down
Design Style:	Modern/Transitional
Voltage Rating:	120 V
Material:	Porcelain/Steel
Warranty:	1 Year Limited
Prop 65 Rating:	Yes
Shade Included:	Yes

Style and Option 1

Style:	Brushed Nickel Finish with Etched/Painted White Glass
Item #:	P2131-09

Price:	$47.00

Style and Option 2

Style:	Polished Nickel Finish with Etched Painted White Glass
Item #:	P2131-104
Price:	~~*Reg. $47.00*~~ Save 15% $39.95 On Sale

Style and Option 3

Style:	Antique Bronze Finish with Etched/Painted White Glass
Item #:	P2131-20
Price:	$47.00

Style and Option 4

Style:	Black Finish with Etched Painted White Glass
Item #:	P2131-31
Price:	~~*Reg. $47.00*~~ Save 15% $39.95 On Sale





P2159 - Replay - 3 Light in Modern style - 22 Inches wide by 7.88 Inches high by Progress Lighting

Specs

Family/Collection:	Replay
Width/Diameter (in):	22.00"
Height:	7.88"
Depth/Extension:	6.00"
Shade Width at Top (inches):	3.94"
Shade Height (inches):	5.13"
Back Plate Length:	5.13"
Back Plate Width:	5.13"
Overall Length:	22W x 7.88H x 6D"
Shade Size:	3.94 x 5.13
Height from Center:	5.25"
Weight:	3.10 lbs
Wire Length:	6.00"
# of Bulbs:	3
Standard Wattage:	100 Watts
Bulb Type:	Incandescent
Lamp Base Type:	Medium Base
Mount type:	Up/Down
Design Style:	Modern/Transitional
Voltage Rating:	120 V
Material:	Porcelain/Steel
Warranty:	1 Year Limited
Prop 65 Rating:	Yes
Shade Included:	Yes

Style and Option 1

Style:	Polished Nickel Finish with Etched/Painted White Glass
Item #:	P2159-104

Price:	~~*Reg. $100.00*~~ Save 15% $85.00

Style and Option 2

Style:	Antique Bronze Finish with Etched/Painted White Glass
Item #:	P2159-20
Price:	~~*Reg. $100.00*~~ Save 15% $85.00





P2160 - Replay - 4 Light in Modern style - 31.13 Inches wide by 7.88 Inches high by Progress Lighting

Specs

Family/Collection:	Replay
Width/Diameter (in):	31.13"
Height:	7.88"
Depth/Extension:	6.00"
Shade Width at Top (inches):	3.94"
Shade Height (inches):	5.13"
Back Plate Length:	5.13"
Back Plate Width:	5.13"
Overall Length:	31.13W x 7.88H x 6D"
Shade Size:	3.94 x 5.13
Height from Center:	5.25"
Weight:	4.00 lbs
Wire Length:	6.00"
# of Bulbs:	4
Standard Wattage:	100 Watts
Bulb Type:	Incandescent
Lamp Base Type:	Medium Base
Mount type:	Up/Down
Design Style:	Modern/Transitional
Voltage Rating:	120 V
Material:	Porcelain/Steel
Warranty:	1 Year Limited
Prop 65 Rating:	Yes
Shade Included:	Yes

Style and Option 1

Style:	Brushed Nickel Finish with Etched/Painted White Glass
Item #:	P2160-09

Price:	~~*Reg. $135.00*~~ Save 15% $114.75 On Sale

Style and Option 2

Style:	Polished Nickel Finish with Etched/Painted White Glass
Item #:	P2160-104
Price:	~~*Reg. $135.00*~~ Save 15% $114.75 On Sale

Style and Option 3

Style:	Antique Bronze Finish with Etched/Painted White Glass
Item #:	P2160-20
Price:	~~*Reg. $135.00*~~ Save 15% $114.75 On Sale



Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Student Dorm Room Standard Light
Last Updated:	1/4/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [x] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Preferred product is:
Acutiy Brands Mark Lighting
Slot 2 LED Surface Mount - see attached.

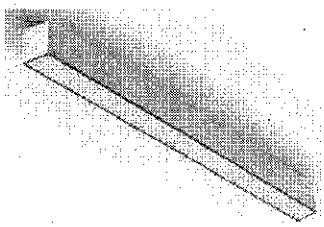
Links to additional product information:

https://marklighting.acuitybrands.com/

Submitted by:	Job Name:	Catalog Number:	Type:
VISIBLELIGHT	PEA NEW STUDENT DORMITORY	S2LS LLP XFT MSLX 80CRI 30K 800LMF MIN1 MVOLT WHT ZT	A4/B4/B5/ B7/B8

MARK ARCHITECTURAL LIGHTING™

Slot 2 LED
Surface Mount



The Slot LED family of luminaires offers an unparalleled package of performance and features for your next lighting project. Precision lumen DIRECTIR optics deliver optimized light where needed for ceilings and walls. With other key features such as simplified installation, seamless controls integration and superior color constancy, the Slot LED family from Mark Lighting offers exceptional quality and design flexibility.

Type:

Project:

Catalog Number:

Specification Features

Housing
Nominal 2.5" x 3.75" extruded aluminum housing

Finish
White, Black or Silver powdercoat

Reflector
Formed steel with high reflectance white

Distribution/Shielding
Extruded 90% transmissive acrylic lens with a textured surface providing diffuse illumination and a uniform appearance for direct lambertian distribution (No Optics). Wall Wash (WW) and Wall Graze (WG) distribution options incorporate co-extruded lenses. Shielding is available as an external blade louver for WW or WG options, or an internal blade louver in lieu of lambertian distribution diffuser.

LED Components
Linear: Nichia®- 757 series LED chips (>80 CRI)

Electrical
Long-life LEDs, coupled with high-efficiency drivers, provide superior quantity and quality of illumination for extended service life. 80% LED lumen maintenance at 60,000 hours (L80/60,000).

Color Consistency
The Acuity Brands circuit boards for the linear LED components use a precise binning algorithm which creates a consistent color temperature from board to board. The color a variation of no greater than a 2.5 Step MacAdam (2.5SDCM) along the black body locus from board to board.

Driver
eldoLED® driver provides natural dimming with smooth, continuous and flicker-free deep dimming. Supports operation between 120VAC and 277 VAC, with low inrush current (NEMA 410) and THD < 20%. Meets FCC Title 47 C.F.R. 15 Class A or Class B requirements. Lutron high performance driver options also available.

Certification
CSA tested to UL 1598 standards, assembled in the USA. Damp location listed.

Listings
DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

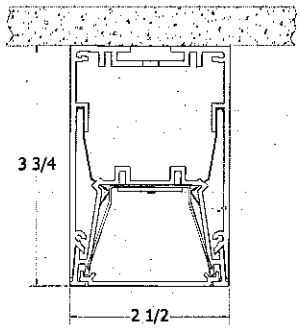
Warranty
5-year limited warranty. Complete warranty terms located at:
www.acuitybrands.com/support/warranty/terms-and-conditions

Note: *Actual performance may differ as a result of end-user environment and application.*

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

Technical Drawing



Buy American · nLIGHT · DLC PREMIUM · eldoLED · Declare.

Buy American:
Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/resources/buy-american for additional information.

Fixture Performance

4FT INDIVIDUAL (35K)	DIRECT			
Lumens Output	**400LMF**	**600LMF**	**800LMF**	**1000LMF**
Delivered Lumens	1766	2710	3577	4225
Input Watts	14.4	22.5	30.6	37.1
Lumen/Watt	122	120	116	113

** Consult factory for customized lumen output and wattage between 350LMF and 1050LMF*

A+ Capable Luminaire
This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a shaded background*
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

marklighting.com | 800-705-SERV (7378) | ©2014-2021 Acuity Brands Lighting, Inc. All Rights Reserved. We reserve the right to change design, materials and finish in any way that will not alter installed appearance or reduce function and performance.

Submitted by:	Job Name:	Catalog Number:	Type:
VISIBLELIGHT MANUFACTURERS' REPRESENTATIVE	PEA NEW STUDENT DORMITORY	S2LS LLP XFT MSLX 80CRI 30K 800LMF MIN1 MVOLT WHT ZT	A4/B4/B5/ B7/B8

MARK ARCHITECTURAL LIGHTING™

Slot 2 LED
Surface Mount

A+ Capable options indicated by this color background.

Ordering

Example: S2LS 32FT MSL8 90CRI 40K 1000LMF DARK EGLD 120 WHT ZT

S2LS	LLP	LENGTH AS REQ'D	MSLX	80CRI	30K	800LMF	

Series
- S2LS: Slot 2 Surface - Direct

Plan
- LCB: Linear center balanced
- LLP: Linear longest possible

Total Run Length
- _FT: Specify continuous run length (in whole feet; 2' minimum)

Unit length may affect available options.
2' & 3' only available as individual units

For runs longer than 8FT: ALWAYS order the run by the TOTAL RUN LENGTH. Ordering the sections individually will not provide the correct joining hardware to allow connection in the field.

Max Section Length
- MSL4 4'
- MSL5 5'
- MSL6 6'
- MSL7 7'
- MSL8 8'

MSLX - MAX SECTION LENGTH AS REQUIRED

Direct Light Source Color Rendering
- 80CRI: 80 CRI
- 90CRI: 90 CRI

Direct LED Color Temp
- 27K 2700K
- 30K 3000K
- 35K 3500K
- 40K 4000K
- 50K 5000K

Direct LED Light Output
- 400LMF 400 lumens per FT
- 600LMF 600 lumens per FT
- 800LMF 800 lumens per FT
- 1000LMF 1000 lumens per FT
- _LMF[1] # lumens per FT

Direct Distribution (Optics)
- (blank): Standard Lambertian distribution
- WW: Wallwash distributions
- WG: Wall graze distribution

WW and WG not available with Downlights, EGLD, LVRR or LVRRA.

				MIN1		MVOLT

Downlight
- (blank): No Downlight modules in fixture
- 2DL: LED downlights (2 per unit)
- _DL: LED downlights per run (3DL, 4DL, etc)

Must select all Downlight options.
Specify number of downlights modules.
Not available on 2' or 3' units.
Not available with 347V.
Maximum of 2DL in 4' & 5' units.

Downlight Shape
- (blank): No downlight modules in fixture
- RDD: Round
- SQD: Square

Not available with emergency options.
Not available with 4' unit with DCT.
Not available with any sensors on the same unit.

Downlight Color Rendering
- (blank): No downlight modules in fixture
- 80CRI: 80 CRI

Downlight Color Temp
- (blank): No downlight modules in fixture
- 27K: 2700K
- 30K: 3000K
- 35K: 3500K
- 40K: 4000K

Minimum Dimming Level
- NODIM[2]: Non-dimming
- MIN1: Constant current, dimming to 1%
- DARK: Constant current, dimming to 0.1%

Optional Shielding
- (blank): No louver
- LVRD[3]: Dropped louver
- LVRR[3]: Regressed louver painted to match fixture finish
- LVRRA[3]: Regressed louver, aluminum finish
- EGLD[3,4]: Edge View direct lens

Not available with Downlights.

Voltage
- MVOLT: Multi-volt 120-277V
- 120: 120V
- 277: 277V
- 347[4]: 347V

WHT		ZT			

Finish
- WHT: White (gloss)
- BLK: Black (gloss)
- SLV: Silver (gloss)
- WHTT: White (textured)
- BLKT: Black (textured)
- SLVT: Silver (textured)
- RALTBD: RAL paint finishes

Emergency Options
- E10WLCP[7]: 4' emergency section w/ battery pack, 1250 lumens
- _E10WLCP[7]: 4' emergency section w/ battery pack, 1250 lumens
- _EC[8]: # of emergency circuits
- BGTD[9]: Generator transfer device

Not available with 347V.

Control Input
- (blank): Non-dimming, line voltage
- ZT: 0-10V control
- NLIGHT[10]: nLight enabled
- NLTAIR2[10]: nLight Air Wireless Enabled
- DALI[11]: DALI compatible
- DMX[12,13]: DMX compatible
- ECOD[13,14,15]: Lutron Hi-Lume digital driver
- ECOD2[13,15,16]: Lutron Hi-Lume 2-wire (1% dimming)
- ECOD5[13,15]: Lutron 5-series digital driver (5% dimming)

Not available with NLTAIR2

Sensor
- (blank): Select if single zone/no zone without sensor
- NS: Select if multi-zone fixture with no sensor in main zone
- PDT_[15]: Occupancy sensor - dual technology (passive infrared & microphonics)
- ADC_[15]: Photocell-daylight dimming sensor
- API_[17]: PIR occupancy sensor & photocell
- APD_[17]: PDT occupancy sensor & photocell

Not available with Downlights.
Not available with 347V & nLight. (Use ZT Control Inputs where applicable.)
Not available on 2' or 3' units.

Secondary Sensor
- (blank): No additional zones/sensors
- SNS: Select if multi-zone fixture with no sensor in secondary zone
- SPDT_[15]: Occupancy sensor - dual technology (passive infrared & microphonics)
- SADC_[15]: Photocell-daylight dimming sensor
- SAPI_[17]: PIR occupancy sensor & photocell
- SAPD_[17]: PDT occupancy sensor & photocell

Not available with Downlights.
Not available with 347V & nLight. (Use ZT Control Inputs where applicable.)
Not available on 2' or 3' units.

Tertiary Sensor
- (blank): No additional zones/sensors
- TNS: Select if multi-zone fixture with no sensor in tertiary zone

Options
- BAA: Buy America(n) Compliant
- GLR[12]: Fast-blow fuse
- GMF[12]: Slow-blow fuse
- WL[13]: Wet Location
- DPL: Damp Location

Notes:
1. Limited to 350LMF to 1050LMF in 50LMF increments. Not available with ECOD, ECOD2, ECOD5 or DMX control input.
2. Not available with Control Input.
3. Not available with Sensor Options.
4. Not available with Emergency Options
5. Not available with sensors on 2', 3' & 4' units.
6. Not available with ZT & sensors, with emergency options, with NLIGHT in 5' units, with NLIGHT & downlights.
7. Not available with 2' or 3' units. Not available with DMX control option. One battery pack per unit. Only available on 8' unit with ECOD, ECOD2, ECOD5. If with ZT & API or APD, only available in 7' & 8' units.
8. Powers entire direct unit. Not available with DMX.
9. Must select 120 or 277 volt. Remote mounted. Not available with sensor and BGTD in same unit. Not available with DMX.
10. Comes with white CAT5 cord in addition to the standard power cord. Will require remote mounted nIO on 2' unit. One nLight device per zone or sensor, for multiple zones consult factory.
11. Must select DARK Dim Level.
12. Not available with 347V.
13. Must select MIN1 Dim Level. Not available on 2', 3' or 5' units.
14. 120V only.
15. Requires ZT or NLIGHT Control Input.
16. Must select MIN1 or DARK Dim Level. Not available with 347, WW, 2' or 3' units. Not available with WL. If ordered with E10WLCP, only available in 7' & 8' units. One NLTAIR2 device per zone or sensor, for multiple zones consult factory. For antenna location, see page 5.
17. Requires ZT, NLIGHT or NLTAIR2 Control Input.

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Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Student Room Closet Light Fixture
Last Updated:	1/4/2024
Updated by:	Jason Palmer

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☑ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Not all student dorm rooms have closet lights. Where PEA does specify closet lights, they should be the following product or similar:

Manufacturer: Contracor Select
Name: JSBT - Juno 6" SlimBasics JSBT Tapered Switchable White LED Surface Mount Disk Light with Motion Sensing.
Model Number: **JSBT 6IN SWW2 90 CRI PIR MW M6**

Links to additional product information:

https://www.acuitybrands.com/search#q=jsbt%20motion%20sensing&sort=relevancy&layout=card&numberOfResults=20

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Residential Under Cabinet Lighting
Last Updated:	1/4/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [x] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

LLI Architectural Lighting
Statis White 4.4W LED Tapelight - IP65
See attached technical information.

Links to additional product information:

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 51 00 - Interior Lighting
Description of Material or System:	Utility light
Last Updated:	11/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Light fixture for utility rooms is to be:
Lithonia Lighting

Catalog Number:
CLX L48 4000LM SEF RDL MVOLT GZ10 30K 80CRI WH / THCLZ WH PAIR / HC 36 M12

Type: C

Links to additional product information:

Submitted by:	Job Name:	Catalog Number:	Type:
VISIBLELIGHT	PEA NEW STUDENT DORMITORY Utility lights	CLX L48 4000LM SEF RDL MVOLT GZ10 30K 80CRI WH / THCLX WH PAIR / HC36 M12	C

LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

LED Linear

CLX

24", 36", 48" and 96" Lengths



Flat Diffuse Lens

Round Diffuse Lens



Wide Diffuse Lens

FEATURES & SPECIFICATIONS

INTENDED USE — The CLX is a linear lighting solution that is available in multiple lengths, lumen packages and distributions. Designed for versatility, the CLX can address virtually any indoor lighting need. The CLX is also offered in standard and high efficacy configurations and capable of being continuous row mounted or installed as a stand-alone fixture. Ideal for uplight and downlight in commercial, retail, manufacturing, warehouse, and display applications. **Certain airborne contaminants can diminish the integrity of acrylic and/or polycarbonate.** Click here for Acrylic-Polycarbonate Compatibility table for suitable uses.

CONSTRUCTION — Channel and cover are formed from code-gauge cold-rolled steel. Housing and lens endcaps are injection molded plastic to provide a more architectural look and feel. The endcaps come standard with a 7/8" knock out for continuous mounting but can be ordered without.

Finish: Paint options include high-gloss, baked white polyester (WH), galvanized (GALV), matte black (MB) and smoke gray (SKGY). Five-stage iron phosphate pre-treatment ensures superior paint adhesion and rust resistance.

OPTICS — Offered with acrylic lens and less lens configurations. Provides a choice of optical distributions including, wide, narrow, and aisle.

Models with wide diffuse lens provide up to 12% uplight. Please check the IES file for specific uplight value.

ELECTRICAL — Utilizes high-output LEDs integrated on a two-layer circuit board, ensuring cool-running operation. Optional internal pluggable wiring harness for reduced labor cost in row mounting applications. (See PLR_ ordering information on page 14.) Electronic LED driver is multi-volt input and 0-10V dimming standard (see Operational Data on page 6 for actual wattage consumption). This fixture is designed to withstand a maximum line surge of 2.5kV at 0.75kA combination wave for indoor locations, for applications requiring higher level of protection additional surge protection must be provided.

L70>100,000 hours at 25˚C.

LEDs provide nominal 80 CRI or 90 CRI at 3000 K, 3500 K,4000 K, or 5000 K.

Lumen output up to 2,500 lumens per foot.

INSTALLATION — Fixture may be ceiling or wall mounted (with or without THCLX hanger or angle mounted with CLXANGBRT), pendant or stem mounted with appropriate mounting options.

WARNING — Removing the lens and opening the fixture during installation exposes the LEDs, putting them at risk for damage.

If you plan to surface mount the fixture, we recommend using the THCLX. This eliminates the need to open the fixture.

If you plan to continuous row mount, we recommend using the PLR wiring harness option. This eliminates the need to open the fixture.

Damage to the LEDs caused during installation will not be covered under the warranty.

LISTINGS — CSA certified to US and Canadian safety standards. For use in damp locations between -4°F (-20°C) and 104°F (40°C). Optional High Ambient (HA) ranging to 122°F(50°C) available on certain lumen packages (See ambient temperature chart for additional information).
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY — 5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Stock configurations are offered for shorter lead times:

Stock Part Number	UPC	DLC QPL Product ID	DLC Premium
CLX L48 3000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525816	PJANKZR4	Yes
CLX L48 3000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525885	PKW32VKL	Yes
CLX L48 5000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525939	P77I8Z20	Yes
CLX L48 5000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525908	P8A42C1H	Yes
CLX L96 6000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525861	PPFTGRBV	Yes
CLX L96 6000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525915	PW6250TE	Yes
CLX L96 10000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525922	PYKOC7EW	Yes
CLX L96 10000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525830	PKYPL3SK	Yes
CLX L48 3000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525960	PJANKZR4	Yes
CLX L48 3000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525892	PKW32VKL	Yes
CLX L48 5000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525854	P77I8Z20	Yes
CLX L48 5000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525946	P8A42C1H	Yes
CLX L96 6000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525878	PPFTGRBV	Yes
CLX L96 6000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525823	PD0SSIAD	Yes
CLX L96 10000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525953	PYKOC7EW	Yes
CLX L96 10000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525847	PKYPL3SK	Yes

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

Submitted by:	Job Name:	Catalog Number:	Type:
VISIBLELIGHT	PEA NEW STUDENT DORMITORY	CLX L48 4000LM SEF RDL MVOLT GZ10 30K 80CRI WH / THCLX WH PAIR / HC36 M12	C

CLX LED Linear

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: CLX L48 5000LM SEF WDL MVOLT GZ10 40K 80CRI WH

CLX	L48	4000LM	SEF		RDL
Series	**Length**	**Nominal lumens**	**Performance package**	**Louver**	**Lens**
CLX LED linear	L24 24"[1,2]	1500LM 1,500 lumens	SEF Standard efficiency[5]	(Blank) Less louver	L/Lens Less lens
		2000LM 2,000 lumens	HEF Premium efficiency	SBLW Straight blade louver, white[6]	FDL Flat diffuse[7,8]
		2500LM 2,500 lumens		SBLMB Straight blade louver, matte black[6]	RDL Round diffuse[7,8]
		3500LM 3,500 lumens		SBLGV Straight blade louver, galvanized[6]	WDL Wide diffuse[7,8]
		4500LM 4,500 lumens		SBLSKGY Straight blade louver, smoke gray[6]	
		5000LM 5,000 lumens[3,4]			
	L36 36"[2]	2250LM 2,250 lumens			
		3000LM 3,000 lumens			
		3750LM 3,750 lumens			
		5250LM 5,250 lumens			
		6750LM 6,750 lumens			
		7500LM 7,500 lumens[3,4]			
	L48 48"	3000LM 3,000 lumens			
		4000LM 4,000 lumens			
		5000LM 5,000 lumens			
		7000LM 7,000 lumens[2]			
		9000LM 9,000 lumens[2]			
		10000LM 10,000 lumens[2,4]			
	L96 96"	6000LM 6,000 lumens			
		8000LM 8,000 lumens			
		10000LM 10,000 lumens			
		14000LM 14,000 lumens[2,4]			
		18000LM 18,000 lumens[2,4]			
		20000LM 20,000 lumens[2,4]			

	MVOLT	GZ10	30K	80CRI
Distribution	**Voltage**	**Driver[14]**	**Color temperature**	**Coloring rendering index**
(Blank) General	MVOLT 120-277V[16]	GZ10 Generic 0-10V, dims to 10%[15]	30K 3000 K	80CRI 80 CRI
ND Narrow[8,9]	120 120V	EZ1 eldoLED 0-10V, dims to 1%[2]	35K 3500 K	90CRI 90 CRI
WD Wide[8,9]	208 208V[17]		40K 4000 K	
AD2 Aisle, 24° off center[8,9]	240 240V[17]		50K 5000 K	
	277 277V			
	347 347V[12,13]			
	480 480V[12,13]			

Options						WH
						Finish
PS1050	Emergency battery pack, 10W, CA Title 20 Noncompliant[2,11,13,16,17]	PLR___	Plug-in wiring, see page 14 for ordering information	nLight® Wired:[23,25]		WH White
E10WLCP	Emergency battery pack, 10W Linear Constant Power, Certified in CA Title 20 MAEDBS[1,2,11,13,16,17]	PLR1LVG	Plug-in wiring,low voltage dimming[22]	N100	nLight® without lumen management	GALVW Galvanized with white lens end caps
BGTD	Generator transfer device, not avaialble with PS1050[13,16,18]	RRL___	RELOC®-ready luminaire. See page 14 for ordering information	NES7	nLight® nES 7 PIR integral occupancy sensor[26]	GALVB Galvanized with black lens end caps
OCS	5', 18/3 Reloc selectable One Pass cable[16] (fixture will bear dry location label)	SPD	Surge protection device, provides up to 6kV protection[20]	NESPDT7	nLight® nES PDT 7 dual technology integral occupancy control[26]	MB Matte black
HA	High ambient, for use in ambient temperatures up to 50°C[11]	BAA	Buy America(n) Act Compliant	NES7ADCX	nLight® nES 7 ADCX PIR integral occupancy sensor with automatic dimming photocell[26]	SKGYW Smoke gray with white lens end caps
EPNKO	Decorative endplate, no knock out[19]	nLight® Wireless:[23,24]		NESPDT7ADCX	nLight® nES PDT 7 dual technology integral occupancy sensor with automatic dimming photocell[26]	SKGYB Smoke gray with black lens end caps
OUTCTR	Wiring leads pulled through back center of fixture[21]	NLTAIR2 RES7	nLight® Generation 2 enabled PIR integral occupancy sensor with automatic dimming photocell	Individual controls:[23,25]		
OUTEND	Wiring leads pulled through end of fixture[21]	NLTAIR2 RES7PDT	nLight AIR Generation 2 enabled dual technology integral occupancy sensor with automatic dimming photocell	MSD7	PIR integral occupancy sensor	
Cord Sets:		NLTAIR2 RIO	No sensor control	MSDPDT7	PDT 7 dual technology integral occupancy control	
CS1W	Staight blade plug, 120V[10,16]			MSD7ADC	PIR integral occupancy sensor with automatic dimming control photocell	
CS3W	NEMA twist-lock plug, 120V[10,16]			MSDPDT7ADC	PDT integral occupancy sensor with automatic dimming control photocell	
CS7W	Staight blade plug, 277V[10,16]					
CS11W	NEMA twist-lock plug, 277V[10,16]					
CS25W	NEMA twist-lock plug, 347V[10,16]					
CS97W	NEMA twist-lock plug, 480V[10,16]					
CS93W	600V SEOOW white cord, no plug (no voltage required)					
CS6WG16STOWDSD	6' white cord, 16/5, no plug, includes low voltage dimming wires (no voltage required)[15]					

See Accessories and footnotes on next page

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CLX LED Linear

THCLX WH PAIR / HC36 M12

Accessories: *Order as separate catalog number.*

Mounting:

ZACVH M100	Adjustable 10' aircraft cable with Y hanger (1 pair)
ZAC120	One adjustable aircraft cable with canopy 120" [27]
ZACFP120	One adjustable aircraft cable with feed (3 conductor) and canopy, 120" [27]
ZACFPD120	One adjustable aircraft cable with feed (5 conductor) and canopy 120" [27]
ZAC240	One adjustable aircraft cable with canopy 240" [27]
ZACFP240	One adjustable aircraft cable with feed (3 conductor) and canopy, 240" [27]
ZACFPD240	One adjustable aircraft cable with feed (5 conductor) and canopy 240" [27]
SQ_	Swivel stem hanger (specify length in 2" increments up to 48") [27]

THCLX__	**Tong hanger (Must specify color) (one pair) [28]**
CLXANGBKT____	Angle bracket, (Must specify color) (one pair) [28]
HC36 M12	**Hanger chain, 36" (1 pair)**

Sensors & Controls:

LSXR	Sensor Switch * LSXR occupancy sensor [29]
NPP16D	**nLight® switching/dimming module**
NPP16DER	**nLight® switching/dimming module with emergency relay**
rPP20D	**nLight® air dimming/switching module**

Reflectors:

CLXRW24__	Wide decorative 24" reflector, (Must specify color) [30]
CLXRW36__	Wide decorative 36" reflector, (Must specify color) [30]
CLXRW48__	Wide decorative 48" reflector, (Must specify color) [30]
CLXRW96__	Two wide decorative 48" reflectors, (Must specify color) [30]
CLXRWU24__	Wide decorative 24" reflector with uplight, (Must specify color) [30]
CLXRWU36__	Wide decorative 36" reflector with uplight, (Must specify color) [30]
CLXRWU48__	Wide decorative 48" reflector with uplight, (Must specify color) [30]
CLXRWU96__	Two wide decorative 48" reflectors with uplight, (Must specify color) [30]
CLXRN24	Narrow 24" reflector, (Must specify color) [31]
CLXRN36	Narrow 36" reflector, (Must specify color) [31]
CLXRN48	Narrow 48" reflector, (Must specify color) [31]
CLXRN96__	Two narrow 48" reflectors, (Must specify color) [31]

Wireguards:

WGCLX24__	24" wireguard, (Must specify color) [32]
WGCLX36__	36" wireguard, (Must specify color) [32]
WGCLX48__	48" wireguard, XX, (Must specify color) 96" fixture requires two [32]

Notes

1 Not available with OUTCTR option.
2 Not available with HA option.
3 Not available with SEF when ordered in combination with EZ1.
4 Not available with NLTAIR2 RES7, NLTAIR2 RES7PDT, or NLTAIR2 RIO.
5 Not available with EZ1 when ordered with L24 with 5000LM or L36 with 7500LM.
6 When ordered with L24 only available with 1500LM or 2000LM in combination with GZ10 driver. Not for use with THCLX, CLXANGBKT, CLX reflectors or WGCLX accessories. Not available with RDL lens options.
7 Only available with general distribution.
8 Not available with CLXRN accessories.
9 Available L/LENS only.
10 Not available with PS1050, E10WLCP, or BGTD.
11 Not available with BGTD option.
12 Voltage selected utilizes a step-down transformer. Not available with L24 when ordered with N100.Not available with PS1050, E10WLCP or BGTD option.
13 Requires SPD option.
14 When continuous row mounting, fixtures must all have the same driver selection.
15 Not available with Individual controls, nLight wired networking, nLight wireless networking, nLight wireless zone control options.
16 Must specify voltage.
17 Not available with L24 or L36. Not available with L48 in combination with N100.
18 Available with L48 or L96 only. 20 Not available with PS1050 or E10WLCP options. Not available with 208 or 240V. Not available Individual controls, NLight Wired, or NLight Wireless options.
19 Not available OUTEND.
20 Required with PS1050, E10WLCP, BGTD, XAD, or XAD924.
21 Not available with PLR options.
22 Not available with Individual controls, NLight Wired, or NLight Wireless options. Refer to page 14 for more PLR details.
23 Sensor housing will be the same color as lens end caps.
24 Not available with L24 in combination with 5000LM, not available with L36 in combination with 7500LM, not available with L48 in combination with 10000LM, and not available with L96 in combination with 14000LM, 18000LM, or 20000LM. Not available with PLRs containing low voltage dimming wires.
25 Not available with any other control option. Requires EZ1.
26 Requires N100 option.
27 Ships standard as white.
28 Not available with louver, wireguards, wide reflectors.
29 More configurations on LSXR Specification Sheet.
30 L24 reflector is 22.65", L36 reflector is 34.01", L48 reflector is 46.80", L96 comes with two L48 reflectors.
31 For use with L/LENS fixtures only. L24 reflector is 22.75", L36 reflector is 34.20", L48 reflector is 46.85", L96 comes with two L48 reflectors.
32 Not for use with CLX wide reflector accessories.

OPTIONS AND ACCESSORIES



Narrow reflector
Ships separtely from fixture.
Order as:
CLXRN24__
CLXRN36__
CLXRN48__
CLXRN96__



Wide decorative reflector
Ships separtely from fixture.
Order as:
CLXRW24__
CLXRW36__
CLXRW48__
CLXRW96__



Wireguard
Ships separately from fixture:
96" fixture requires two WGCLX48.
Order as:
WGCLX24__
WGCLX36__
WGCLX48__



Aircraft Cable with Canopy
Available in 120" or 240"
Order as:
ZAC120
ZAC240



HANGER CHAIN
36" chain with Y hanger. ships as a pair
Order as:
HC36



ZACVH HANGER
10' Aircraft cable with Y hanger.
Order as:
ZACVH



Tong hanger
Ships as a pair
Order As:
THCLX__

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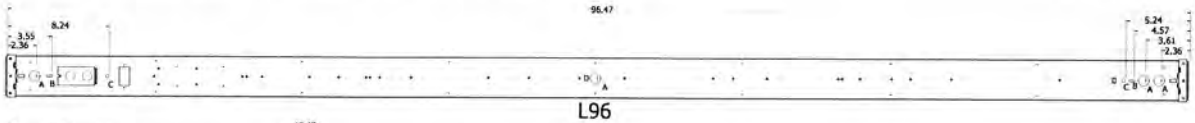
CLX LED Linear

DIMENSIONS

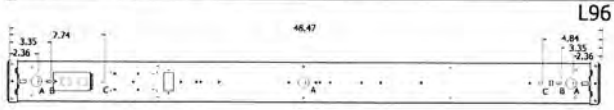
All dimensions are in inches (centimeters) unless otherwise indicated.
Dimensions may vary with options or accessories.

INTEGRATED SENSOR ADDS 2.0 INCHES TO STANDALONE FIXTURE LENGTH
HOUSING END CAP ADDS 0.236 INCHES TO FIXTURE LENGTH PER SIDE. DIMENSIONS BELOW INCLUDE ENDCAPS.

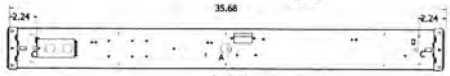
A - 7/8" KNOCK OUT
B - 0.5" by 0.16" SLOT
C - 0.3" DIA HOLE



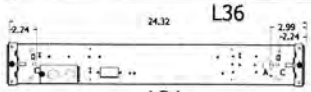
L96



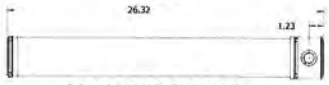
L48



L36



L24

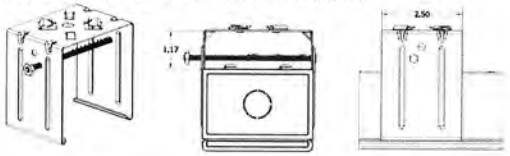


L24 WITH SENSOR

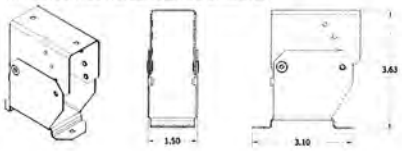
PALLET DIMENSIONS

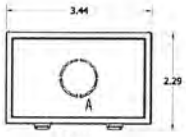
Length	Approx Weight	Fixtures per pallet	Pallet Dims (LXWXH)
L24	4 lb	100	54x46x37
L36	5 lb	80	54x46x37
L48	7.5 lb	64	54x46x37
L96	14 lb	64	98x46x37

THCLX - SHIPS TWO PER ORDER,
UTILIZES A #8 HEX HEAD SCREW AND NUT
FIXTURE SITS 1.3 INCHES FROM STRUCTURE WHEN MOUNTED

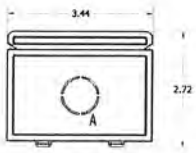


CLXANGBKT - SHIPS TWO PER ORDER
HOLES TO MOUNTING STRUCTURE ARE 0.175" DIA, 2.5" APART
FIXTURE SITS APPROXIMATELY 3.5" FROM STRUCTURE
WHEN MOUNTED HORIZONTAL TO STRUCTURE

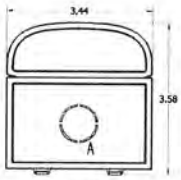




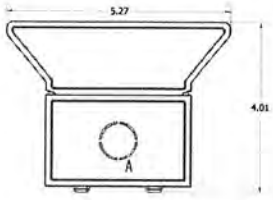
L/LENS



FDL



RDL



WDL

PHOTOMETRICS

See www.lithonia.com.

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CLX LED Linear

POWER SENTRY EMERGENCY BATTERY PACKS

		SEF Emergency Lumens	HEF Emergency Lumens
PS1050	Factory installable	1400	1500
E10WLCP	Factory installable	1400	1500
PS1555LCP	Field installable, remote mount only	2000	2100

Note: For emergency lumen output of specific model, please consult factory. One board will be illuminated during emergency operation.

CLX CHARACTERISTICS

Nominal Lumen Package	Length	Wattage								Length	Width	Depth	Comparable Light Source
		Standard efficiency				High efficiency							
		120V	277V	347V	480V	120V	277V	347V	480V	Dimensions are shown in inches			
2500LM	24"	19.9	19.9	25.9	25.9	18.5	18.5	24.5	24.5	24	3.5	3.75	1-lamp 32WT8, 1-lamp 54W T5HO, 50W HID
5000LM	24"	41.9	41.9	47.9	47.9	37.9	37.9	43.9	43.9	24	3.5	3.75	2-lamp 32WT8, 1-lamp 54W T5HO, 70W HID
3750LM	36"	28.1	28.1	34.1	34.1	27.0	27.0	33.0	33.0	36	3.5	3.75	1-lamp 32WT8, 1-lamp 54W T5HO, 50W HID
7500LM	36"	62.9	62.9	68.9	68.9	56.8	56.8	62.8	62.8	36	3.5	3.75	2-lamp 32WT8, 1-lamp 54W T5HO, 70W HID
5000LM	48"	35.4	35.4	41.4	41.4	32.9	32.9	38.9	38.9	48	3.5	3.75	2-lamp 32WT8, 1-lamp 54W T5HO, 70W HID
10000LM	48"	77.1	77.1	83.1	83.1	70.4	70.4	76.4	76.4	48	3.5	3.75	3 -lamp 32WT8, 2-lamp 54W T5HO, 100W HID
10000LM	96"	70.8	70.8	76.8	76.8	65.8	65.8	71.8	71.8	96	3.5	3.75	3 -lamp 32WT8, 2-lamp 54W T5HO, 100W HID
20000LM	96"	154.2	154.2	160.2	160.2	140.8	140.8	146.8	146.8	96	3.5	3.75	6 - lamp 32WT8, 4 -lamp 54T5HO, 200W HID

AMBIENT TEMPERATURE RATINGS

Driver Package		GZ10			EZ1			Any Driver	
Length	Lumen package	Direct Surface	THCLX/ Suspended	HA Option (Direct or Suspended)	Direct Surface	THCLX	Suspended 18"	BGTD Direct Surface	PS1050 Suspended
L24	1500LM	40C°	40C°	N/A	35C°	35C°	35C°	N/A	N/A
	2000LM	40C°	40C°		35C°	35C°	35C°		
	2500LM	40C°	40C°		35C°	35C°	35C°		
	3500LM	40C°	40C°		40C°	40C°	40C°		
	4500LM	40C°	40C°		35C°	35C°	40C°		
	5000LM	40C°	40C°		25C°	30C°	35C°		
L36	2250LM	40C°	40C°		40C°	40C°	40C°		
	3000LM	40C°	40C°		40C°	40C°	40C°		
	3750LM	40C°	40C°		40C°	40C°	40C°		
	5250LM	40C°	40C°		35C°	35C°	40C°		
	6750LM	30C°	40C°		35C°	35C°	40C°		
	7500LM	30C°	40C°		25C°	30C°	35C°		
L48	3000LM	40C°	40C°	50C°	40C°	40C°	40C°	35C°	25C°
	4000LM	40C°	40C°	50C°	40C°	40C°	40C°		
	5000LM	40C°	40C°	50C°	35C°	35C°	40C°		
	7000LM	30C°	40C°	N/A	35C°	35C°	40C°		
	9000LM	30C°	40C°		25C°	30C°	35C°		
	10000LM	30C°	40C°		25C°	30C°	35C°		
L96	6000LM	40C°	40C°	50C°	35C°	35C°	40C°		
	8000LM	30C°	40C°	50C°	35C°	35C°	40C°		
	10000LM	30C°	40C°	50C°	25C°	30C°	35C°		
	14000LM	40C°	40C°	N/A	35C°	35C°	40C°		
	18000LM	30C°	40C°		25C°	30C°	35C°		
	20000LM	30C°	40C°		25C°	30C°	35C°		

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CLX LED Linear

CLX OPERATIONAL DATA

	Length	Nominal lumen package	Performance package	CRI	Delivered Lumens				Wattage
					Color Temperature				
					3000K	3500K	4000K	5000K	
L/Lens	L24	1500LM	SEF	80	1497	1540	1582	1619	10.85
				90	1305	1333	1371	1441	10.85
			HEF	80	1493	1514	1582	1586	10.39
				90	1220	1237	1301	1301	10.39
		2000LM	SEF	80	2066	2125	2183	2235	14.48
				90	1801	1840	1892	1989	14.48
			HEF	80	2060	2089	2183	2189	13.46
				90	1684	1708	1796	1796	13.46
		2500LM	SEF	80	2616	2689	2763	2829	18.41
				90	2279	2329	2394	2517	18.41
			HEF	80	2607	2644	2763	2771	17.42
				90	2132	2161	2273	2273	17.42
		3500LM	SEF	80	3518	3617	3716	3804	25.83
				90	3065	3132	3220	3385	25.83
			HEF	80	3506	3556	3716	3726	25.04
				90	2867	2907	3057	3057	25.04
		4500LM	SEF	80	5040	5182	5325	5451	38.7
				90	4392	4487	4614	4851	38.7
			HEF	80	5024	5096	5325	5339	34.8
				90	4108	4165	4380	4380	34.8
		5000LM	SEF	80	5355	5506	5657	5791	41.48
				90	4667	4767	4902	5153	41.48
			HEF	80	5338	5414	5657	5672	38.11
				90	4364	4425	4653	4653	38.11
	L36	2250LM	SEF	80	2411	2547	2101	2207	16.36
				90	2479	2607	2146	2320	16.36
			HEF	80	2437	2554	1965	2095	15.47
				90	2547	2403	1992	2095	15.47
		3000LM	SEF	80	3221	3388	2730	2868	20.8
				90	3310	3133	2789	3015	20.8
			HEF	80	3167	3319	2553	2722	19.98
				90	3310	3123	2589	2722	19.98
		3750LM	SEF	80	4123	4337	3495	3671	26.47
				90	4236	4010	3570	3859	26.47
			HEF	80	4054	4248	3268	3485	25.09
				90	4236	3997	3314	3485	25.09
		5250LM	SEF	80	5545	5833	4700	4937	39.9
				90	5698	5393	4801	5190	39.9
			HEF	80	5452	5713	4396	4687	34.3
				90	5698	5376	4457	4687	34.3
		6750LM	SEF	80	7081	7448	6001	6303	54.85
				90	7275	6886	6131	6627	54.85
			HEF	80	6962	7294	5613	5984	47.97
				90	7275	6864	5691	5984	47.97
		7500LM	SEF	80	7756	8158	6574	6905	62.6
				90	7969	7543	6716	7260	62.6
			HEF	80	7626	7991	6148	6555	54.02
				90	7969	7519	6234	6555	54.02

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 56 19 LED Exterior Lighting
Description of Material or System:	Exterior Building Light
Last Updated:	11/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [x] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Exterior building light fixture is to be Gotham EVO 2" General Illumination Round Vandal/Tamper Resistant Downlight

Catalog Number: EVO2VR 30 / 07 MWD SMO MVOLT UGZ DWH

Type: EX1

Links to additional product information:

Submitted by:	Job Name:	Catalog Number:	Type:
VISIBLELIGHT	PEA NEW STUDENT DORMITORY EXTERIOR Building 6,4,#7	EVO2VR 10/07 MWD SMO MVOLT UGZ DWH	EX1

gotham | EVO

2" **General Illumination Round Vandal/Tamper Resistant Downlight**

SPECIFICATIONS

Optical and Trim Assembly

Fully serviceable and upgradeable lensed LED light engine suitable for field maintenance or service from below the ceiling.

Superior 100% Virgin-silicone refractive optic, enables maximum dimensional stability and optical transmission with no discoloration over life. Field inter-changeable optics.

Electrical

The luminaire shall operate from a 50 or 60 Hz ±3 Hz AC line over a voltage ranging from 120 VAC to 277 VAC. Support 347V via remote-mounted stepdown transformer. The fluctuations of line voltage shall have no visible effect on the luminous output.

The luminaire shall have a power factor of 90% or greater at all standard operating voltages and full luminaire output.

Sound Rated A+. Driver shall be >80% efficient at full load across all input voltages.

Controls

Luminaire shall be equipped with interface for nLight wired or nLight AIR networks with integral power supply as per specification.

Dimming

The luminaire shall be capable of continuous dimming without perceivable stroboscopic flicker as measured by flicker index (ANSI/IES RP-16-10) over a range of 100 – 1.0% of rated lumen output with a smooth shut off function to step to 0%.

Driver is inaudible in 24dB environment, and stable when input voltage conditions fluctuate over what is typically experienced in a commercial environment.

Construction

Light engine and driver are accessible from below ceiling.

Several additional mounting options available including a structural reinforcement pan, Chicago plenum, and Type IC.

Anodized extruded aluminum wiring compartment with hinged access. With two 1/2" trade-sized knockouts rated for 90°C.

Accommodates between 3/8" to 2-3/4"-thick ceilings.

Listings

Fixtures are UL Certified to meet US and Canadian Standards: All fixtures manufactured in strict accordance with the appropriate and current requirements of the "Standards for Safety" to UL, wet location covered ceiling. ENERGY STAR® Certified product.

IC rated with ICAT option. Fixtures with ICAT option are compatible with spray foam insulation with an R-value of 4.3 per inch or less.

Luminaire configurations are Energy Star certified through testing in EPA–recognized laboratories, with the results reviewed by an independent, accredited certification organization. Visit www.energystar.gov for specific configurations listed

Photometrics

LEDs tested to LM-80 standards. Measured by IESNA Standard LM-79-08 in an accredited lab. Lumen output shall not decrease by more than 30% over the minimum operational life of 60,000 hours.

Color appearance from luminaire to luminaire of the same type and in all configurations, shall be consistent both initially and at 6,000 hours and operate within a tolerance of <2.5 MacAdam ellipse as defined by the center of the quadrangles defined in ANSI C78.377-2015.

Warranty

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note:

Actual performance may differ as a result of end user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a **shaded background***
- This luminaire is part of an A+ Certified solution for nLight® control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a **shaded background***

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

GOTHAM ARCHITECTURAL DOWNLIGHTING | 1400 Lester Road Conyers, GA 30012 | P 800-705-SERV (7378) | gothamlighting.com
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The product images shown are for illustration purposes only and may not be an exact representation of the product.

gotham

gotham | EVO

2" General Illumination Round Vandal/Tamper Resistant Downlight

Tables of Use

Lumen Output Multiplier		
CRI	CCT	Multplier
80	2700K	0.910
	3000K	0.946
	3500K	1.000
	4000K	1.027
	5000K	1.054
90	2700K	0.784
	3000K	0.847
	3500K	0.874
	4000K	0.946

Driver		Control Provided				
Nomenclature	Description	NLT	NLTER	NLTAIR2	NLTAIREM2	NLTAIRER2
UGZ	0-10V driver dims to 1%	nPP16 D EFP	nPP16 D ER EFP	RPP20 D 24V G2	RPP20 D 24V EM G2	RPP20 D 24V ER G2

Marked Spacing in Inches 25°C Ambient			
Lumen Package	Fixed Center to Center MIN	Fixture Center to Building Member MIN	Space Above Fixture
2000	18	9	3
1500 (HAO)	18	9	3

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gotham

Submitted by:	Job Name:	Catalog Number:	Type:
VISIBLELIGHT	PEA NEW STUDENT DORMITORY	EVO2VR 30/07 MWD SMO MVOLT UGZ DWH	EX1

gotham | EVO

2" **General Illumination Round Vandal/Tamper Resistant Downlight**

DIMENSIONAL DATA

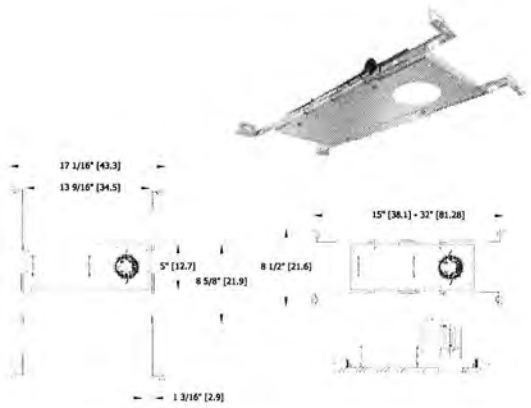
*Dimensions in inches [centimeters]

Aperture: 2-1/4" [5.7]	Ceiling Opening: 2-5/8" [6.7] self-flanged
Overlap Trim: 3" [7.6]	2-3/4" [7] flangeless

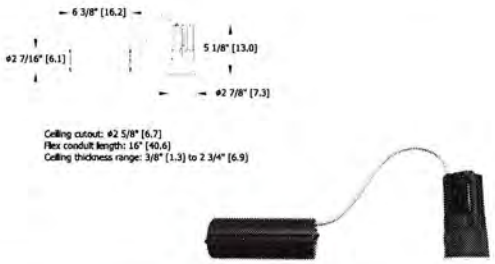
Recessed Application - Minimum Clearance Requirements



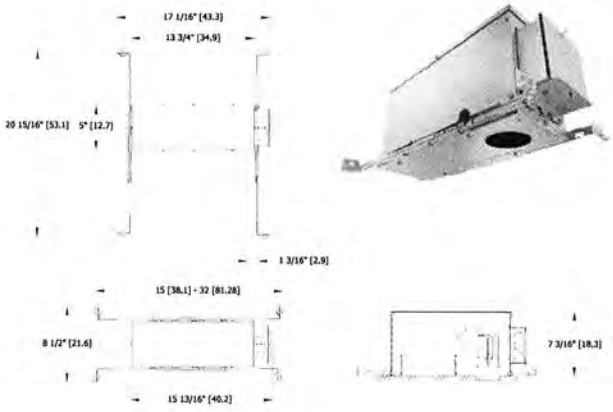
Structural Reinforcement Pan



1000 Lumen and Below Install-from-Below Construction



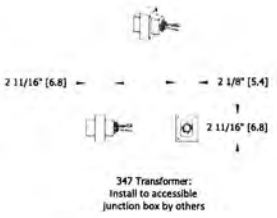
IC / Airtight Housing / Chicago Plenum Construction



1500 and 2000 Lumen or High Ambient Option Install-from-Below Construction



347V Transformer



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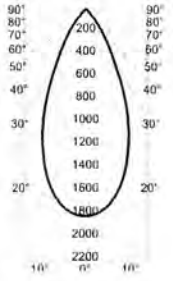
gotham | EVO

2" **General Illumination Round Vandal/Tamper Resistant Downlight**

Photometry

CONSULT WWW.GOTHAMLIGHTING.COM FOR ADDITIONAL PHOTOMETRY

EVO2VR 35/15 SMO ND Input Watts: 19.5, Delivered Lumens: 1142, LPW: 58.6, S/MH: 0.73, Test No: 19-959-01P101



CP Summary 0°	Zonal Lumen Summary Zone	Lumens	% Fixture
0°	1,813	0° - 30°	902	79%
5°	1,768	0° - 40°	1,080	95%
15°	1,402	0° - 60°	1,137	100%
25°	772	0° - 90°	1,142	100%
35°	282	90° - 180°	0	0%
45°	53	0° - 180°	1,142	100%
55°	9			
65°	3			
75°	1			
85°	0			
90°	0			

Coefficients of Utilization

ρf / ρc	80% 50%	80% 30%	80% 10%	20% 70% 50%	20% 70% 30%	20% 70% 10%	20% 50% 50%	20% 50% 30%	20% 50% 10%
pw									
0	119	119	119	116	116	116	111	111	111
1	111	109	107	109	107	105	105	103	102
2	104	100	97	102	99	96	99	96	94
3	98	93	89	96	92	89	94	90	87
4	92	87	83	91	86	82	89	85	82
5	87	81	77	86	81	77	84	80	76
6	82	77	73	81	76	72	80	75	72
7	78	72	68	77	72	68	76	71	68
8	74	68	64	73	68	64	72	67	64
9	70	65	61	70	64	61	69	64	61
10	67	61	58	66	61	58	66	61	58

Cone of Light

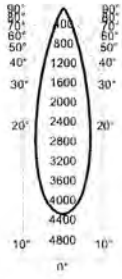
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	50.4	5.1
8.0	28.3	6.8
10.0	18.1	8.5
12.0	12.6	10.2
14.0	9.2	12.0

Beam Angle: 46.2°
Field Angle: 77.1°

Luminance (cd/sq.m)

	Average Luminance
0°	859,624
45°	35,679
55°	7,028
65°	3,479
75°	2,199
85°	1,532

ICO2SQVR 35/15 SMO 30D Input Watts: 19.8, Delivered Lumens: 1325, LPW: 66.9, S/MH: 0.49, Test No: 19-453-04P101



CP Summary 0°	Zonal Lumen Summary Zone	Lumens	% Fixture
0°	4,205	0° - 30°	1,190	90%
5°	3,921	0° - 40°	1,285	97%
15°	2,039	0° - 60°	1,320	100%
25°	494	0° - 90°	1,325	100%
35°	141	90° - 180°	0	0%
45°	30	0° - 180°	1,325	100%
55°	6			
65°	3			
75°	1			
85°	0			
90°	1			

Coefficients of Utilization

ρf / ρc	80% 50%	80% 30%	80% 10%	20% 70% 50%	20% 70% 30%	20% 70% 10%	20% 50% 50%	20% 50% 30%	20% 50% 10%
pw									
0	120	120	120	118	118	118	112	112	112
1	114	111	110	111	110	108	107	106	105
2	108	104	102	106	103	100	103	100	98
3	102	98	95	101	97	94	98	95	93
4	98	93	90	97	93	89	95	91	88
5	93	89	85	93	88	85	91	87	84
6	90	85	82	89	85	81	88	84	81
7	86	81	78	86	81	78	84	80	78
8	83	78	75	82	78	75	82	78	75
9	80	75	72	80	75	72	79	75	72
10	77	73	70	77	73	70	76	72	70

Cone of Light

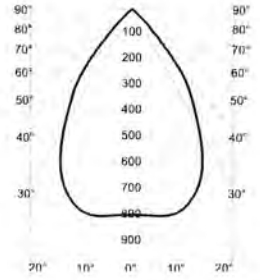
Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	116.8	3.2
8.0	65.7	4.2
10.0	42.0	5.3
12.0	29.2	6.3
14.0	21.5	7.4

Beam Angle: 29.4°
Field Angle: 52.6°

Luminance (cd/sq.m)

	Average Luminance
0°	1,396,817
45°	14,001
55°	3,475
65°	2,201
75°	1,540
85°	1,525

EVO2VR 35/15 SMO WD Input Watts: 19.5, Delivered Lumens: 946, LPW: 48.5, S/MH: 1.06, Test No: 19-959-03P101



CP Summary 0°	Zonal Lumen Summary Zone	Lumens	% Fixture
0°	789	0° - 30°	592	63%
5°	794	0° - 40°	835	88%
15°	791	0° - 60°	940	99%
25°	651	0° - 90°	946	100%
35°	396	90° - 180°	0	0%
45°	102	0° - 180°	946	100%
55°	15			
65°	4			
75°	1			
85°	0			
90°	0			

Coefficients of Utilization

ρf / ρc	80% 50%	80% 30%	80% 10%	20% 70% 50%	20% 70% 30%	20% 70% 10%	20% 50% 50%	20% 50% 30%	20% 50% 10%
pw									
0	119	119	119	116	116	116	111	111	111
1	110	108	105	108	106	104	104	102	100
2	102	98	94	100	96	93	97	94	91
3	94	89	85	93	88	84	90	86	83
4	88	82	77	86	81	77	84	80	76
5	81	75	71	81	75	70	79	74	70
6	76	70	65	75	69	65	74	68	64
7	71	64	60	70	64	60	69	63	59
8	66	60	56	66	60	55	65	59	55
9	62	56	52	62	56	52	61	55	51
10	58	52	48	58	52	48	57	52	48

Cone of Light

Mounting Height	Initial FC Center Beam	Beam Diameter
6.0	21.9	8.3
8.0	12.3	11.1
10.0	7.9	13.9
12.0	5.5	16.6
14.0	4.0	19.4

Beam Angle: 69.5°
Field Angle: 92.6°

Luminance (cd/sq.m)

	Average Luminance
0°	374,019
45°	68,272
55°	12,236
65°	4,825
75°	2,565
85°	1,632

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gotham

gotham | EVO

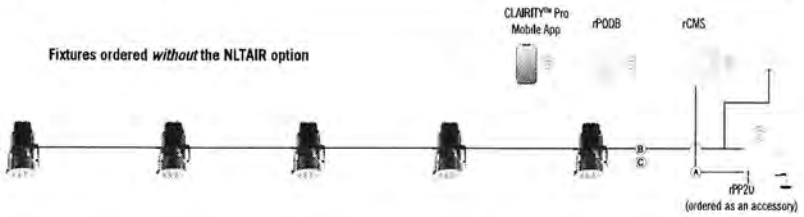
2" **General Illumination Round Vandal/Tamper Resistant Downlight**

NLIGHT AIR

Possibilites for nLight® AIR

nLight® AIR is the ideal solution for retrofit or new construction spaces where adding communication wiring is cost prohibitive. The integrated nLight AIR rPP20 Power Pack is part of each EVO Luminaire ordered with the NLTAIR option. These individually addressable controls offer the ultimate in flexibility during initial setup and for space repurposing.

Fixtures ordered *without* the NLTAIR option



nLight® AIR Control Accessories *Order as separate catalog number. Visit nLight AIR.*	
Wall Switches	**Model Number**
On/Off single pole	rPODB (color) G2
On/Off two pole	rPODB 2P (color) G2
On/Off & raise/lower single pole	rPODB DX (color) G2
On/Off & raise/lower two pole	rPODB 2P DX (color) G2

Fixtures ordered *with* the NLTAIR option



nLight® AIR Control Accessories *(cont.)*	
Occupancy Sensors (PIR/dual tech)	**Model Number**
Small motion 360°, ceiling	rCMS 9 / rCMS PDT 9
Large motion 360°, ceiling	rCMS 10 / rCMS PDT 10



NLIGHT

Possibilites for nLight® wired

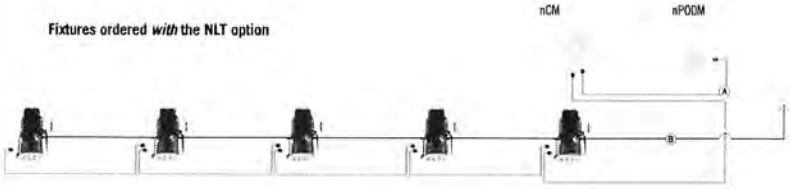
nLight® Wired The nLight® solution is a digital networked lighting control system that provides both energy savings and increased user configurability by cost effectively integrating time-based, daylight-based, sensor-based and manual lighting control schemes.

Fixtures ordered *without* the NLT option

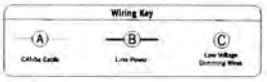


nLight® Wired Control Accessories *Order as separate catalog number. Visit nLight.*	
Wall Switches	**Model Number**
On/Off single pole	nPODM (XX)
On/Off two pole	nPODM 2P (XX)
On/Off & raise/lower single pole	nPOD DX (XX)
On/Off & raise/lower two pole	nPODM 2P DX (XX)
Graphic touchscreen	nPOD GFX (XX)
Photocell Controls	
Dimming	nCM ADCX

Fixtures ordered *with* the NLT option



nLight® Wired Control Accessories *(cont.)*	
Occupancy Sensors (PIR/dual tech)	**Model Number**
Small motion 360°, ceiling	nCM 9 / nCM PDT 9
Large motion 360°, ceiling	nCM 10 / nCM PDT 10
Wide View	nWV 16 / nWV PDT 16
Wall switch with raise/lower	nWSX LV DX / nWSX PDT LV DX
Cat-5 Cables (plenum rated)	
10', CAT5	CAT5 10FT J1
15', CAT5	CAT5 15FT J1



GOTHAM ARCHITECTURAL DOWNLIGHTING | 1400 Lester Road Conyers, GA 30012 | P 800-705-SERV (7378) | gothamlighting.com
© 2014-2020 Acuity Brands Lighting Inc. All Rights Reserved. Rev. 06/11/20 Specifications subject to change without notice.
The product images shown are for illustration purposes only and may not be an exact representation of the product.

gotham

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 56 00 - Exterior Lighting
Description of Material or System:	Walkway lighting
Last Updated:	1/4/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

PEA campus walkway lighting: **Acuitybrands** Model: Holophane **Arlington** Utility, night time friendly and nlight controls. Type and size based on project scope
Model AUCL3 Lantern
Arlington LED Post-Top Full Cut-off Lighting

Links to additional product information:

https://www.acuitybrands.com/products/detail/1815266/holophane/aucl3-lantern/arlingtonr-led-post-top-full-cut-off-lighting

https://www.acuitybrands.com/products/detail/1815266/holophane/aucl3-lantern/arlingtonr-led-post-top-full-cut-off-lighting

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 85 50 Heat Trace
Description of Material or System:	Heat Trace Cables
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred specifications for campus Heat trace is:

Manufacturer: **Nvent**
Model: **Raychem** - a self-regulating heat tape based on design.

Links to additional product information:

https://www.nvent.com/en-us/raychem

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	26 Electrical
Specification Section:	26 85 50 Heat Trace
Description of Material or System:	Heat Trace Controls
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Preferred manufacturer for Heat trace controls is **ETI**. Heat trace control panels for largest system - provide ETI controls. No Substitute

Links to additional product information:

https://www.networketi.com/

https://www.networketi.com/aps-4c/

https://www.networketi.com/eur-5a/

https://www.networketi.com/git-1-gutter-ice-sensor/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	27 Communications
Specification Section:	IT / Telecommunications
Description of Material or System:	Technical and Wiring Standards
Last Updated:	05/01/2023
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

See attached for Campus Wiring Standard

Links to additional product information:

https://exeter.edu/app/uploads/2024/08/telecommunications_technical_wiring_standards.pdf

IT/Telecommunications
Technical and Wiring Standards

FOR

Phillips Exeter Academy
Exeter, NH

No deviations will be permitted from these specifications without the express written consent of Phillips Exeter Academy

Revised May 2008
Revised January 2014
Revised February 2015
Revised February 2019
Revised May2023

February 26, 2015

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1.0 Introduction

This document describes the products and execution requirements relating to furnishing and installing Telecommunications Cabling at Phillips Exeter Academy. Vertical (Backbone) and Horizontal (workstation) cabling composed of Copper and Fiber Cabling, and support systems are covered under this document.

All cables and related terminations, support and grounding hardware shall be furnished, installed, wired, tested, labeled, and documented by the Telecommunications contractor as detailed in the following sections.

Product specifications, general design considerations, and installation guidelines are provided in this written document. Quantities of telecommunications outlets, typical installation details, cable routing and outlet types will be provided as an attachment to this document. If the bid documents are in conflict, the items specified for the project shall take precedence. Contractors shall meet or exceed all requirements for the cable system described in this document.

1.1 Regulatory References

All work and materials shall conform in every detail to the rules and requirements of the National Fire Protection Association, the local Electrical Code and present manufacturing standards.

All materials shall be listed by UL and shall bear the UL label. If UL has no published standards for a particular item, then other national independent testing standards shall apply and such items shall bear those labels. Where UL has an applicable system listing and label, the entire system shall be so labeled.

The cabling system described in this document is derived from the recommendations made in recognized telecommunications industry standards. The following documents are incorporated by reference:

1) ANSI/TIA/EIA - 568-C Commercial Building Telecommunications Cabling Standard Part 1: General Requirements
2) ANSI/TIA/EIA - 568-C Commercial Building Telecommunications Cabling Standard Part 2: Balanced Twisted-Pair Cabling Components
3) ANSI/TIA/EIA - 568-C Commercial Building Telecommunications Cabling Standard Part 3: Optical Fiber Cabling Components
4) ANSI/TIA/EIA - 569-B Commercial Building Standard for Telecommunications Pathways and Spaces
5) ANSI/TIA/EIA – 570-B Residential Telecommunications Cabling Standard
6) ANSI/TIA/EIA –606-A Administration Standard for Telecommunications Infrastructure of Commercial Buildings
7) ANSI/TIAIEIA – 607-A Commercial Building Grounding and Bonding Requirements for Telecommunications
8) ANSI/ TIA/EIA – 758-A Customer-Owned Outside Plant Telecommunications Cabling Standard
9) BICSI-TDMM, Building Industries Consulting Services International, Telecommunications Distribution Methods Manual (TDMM) - 11th. Edition
10) National Fire Protection Agency (NFPA - 70) National Electrical Code (NEC)

If this document and any of the documents listed above are in conflict, then the more stringent requirement shall apply. All documents listed are believed to be the most current releases of the documents. The Contractor has the responsibility to determine and adhere to the most recent release when developing the proposal for installation.

This document does not replace any code, either partially or wholly. The contractor must be aware of local codes that may impact this project.

2.0 About the Academy Network

2.1 Overview

The Academy campus-wide network consists of:

- Infrastructure
- Fiber optic cable backbone
- Copper and fiber premise wiring
- High-speed data network equipment

2.1.1 Infrastructure

Conduit, raceways, risers and cable trays are installed for the physical protection of fiber optic and copper cable. Voice and data network electronics and cross-connect hardware are maintained in a secured space within buildings.

2.1.2 Fiber Optic Cable Backbone

The fiber optic cable system is the distribution medium used to transmit data between and within specified buildings on campus. Multi-mode and/or single-mode fiber cable (depending upon the application) is installed to provide an infinite bandwidth transport system.

2.1.3 Premise Wiring Modifications

Service between distribution frames will be provided by fiber optic cable with Category 6 (or higher) carrying service from the distribution frame to the wall plate.

2.1.4 High-speed Data Network

The data network connects 50 plus buildings, using a 10 Gig Ethernet backbone which is currently supporting over 2,000 nodes. It is designed to provide a level of performance and security consistent with policies established by the Academy governing the use of network resources.

2.1.5 PBX and Remote Fiber Shelves

The Academy maintains and supports a Nortel Option 81C-telephone switch with three remote fiber shelves telephones on campus.

3.0 Wiring and Cabling Considerations when Specifying and Quoting a Job

3.1 Physical Environment

As a general rule, **fiber innerduct is not run inside buildings.** Exceptions will be determined by the IT department based upon the project. Fiber run inside buildings is installed inside EMT or Armored Fiber Cable. See section 3.6.4 for innerduct specifications.

3.2 Building Distribution

The Main Distribution Frame (MDF) is the primary equipment room in each building. Each building may also have additional wiring rooms referred to as Telecommunications Rooms or Intermediate Distribution Frames (IDF's). Distance determines if an IDF is required with 90 meters being the maximum acceptable copper distance.

The fiber backbone cable system links the MDF's together between each building. Whenever possible, the premise cabling system is designed in a straight vertical line from the basement MDF room up through the telecommunications wiring rooms on each floor. Fiber optic cable will be used in addition to Category 6 (or higher) to support connections exceeding the maximum distance.

3.3 Requirements of MDF, Telecommunications Rooms and IDFs

All telecommunications rooms must conform to ANSI/TIA/EIA 569 requirements.

Perimeters
Typically, no false ceiling; all surfaces treated to reduce dust; walls and ceiling painted white or pastel to improve visibility. **Limited Access**
Typically, single or double 36" x 80" lockable doors with no doorsills.
Other
Typically, no piping, ductwork, mechanical equipment or power cabling should be allowed to pass through the equipment room. No unrelated storage. **Ceiling Height**
Minimum clear height in room shall be 8 ft. (2.4 m), the height between the finished floor and the lowest point should be 10 ft. (3 m) to accommodate tall racks and overhead raceways. False ceilings should not be installed.
HVAC
24 hours a day, 365 days a year, 64° to 75° F, 30 to 55 percent humidity, positive pressure, with independent power from telecommunications equipment.

Lighting
Typically, 8.5 ft. high, providing 50 ft. candles at 3 ft. above floor.

Electrical
Typically, a minimum of two dedicated 20A, 110 V AC surge suppression duplex outlets on separate circuits is required. Convenience duplex outlets shall be placed at 6 ft. intervals around the perimeter. Emergency power should be considered and supplied if available.

Bonding and Grounding
Access shall be available to the bonding and grounding as specified in J-STD-607-A.

Dust
Less than 100 micrograms/cubic meter/24 hour period.

Rule of thumb: Allow 1 sq. ft. (929 sq. centimeter) of plywood wallmount for each 200 sq. ft. (19 sq. meter) area of floor space.

3.4.2 **Grounding and Bonding**

The facility shall be equipped with a Telecommunications Bonding Backbone (TBB). This backbone shall be used to ground all telecommunications cable shields, equipment, racks, cabinets, raceways, and other associated hardware that has the potential to act as a current carrying conductor. The TBB shall be installed in accordance with the recommendations contained in the ANSI/TIA/EIA-607 Telecommunications Bonding and Grounding Standard.

The main entrance facility/equipment room in each building shall be equipped with a telecommunications main grounding bus bar (TMGB). Each telecommunications room shall be provided with a telecommunications ground bus bar (TGB). The TMGB shall be connected to the building electrical entrance grounding facility. The intent of this system is to provide a grounding system that is equal in potential to the building's electrical ground system. Therefore, ground loop current potential is minimized between telecommunications equipment and the electrical system to which it is attached.

All racks, metallic backboards, cable sheaths, metallic strength members, splice cases, cable trays, etc. entering or residing in the TR or ER shall be grounded to the respective TGB or TMGB using a minimum #6 AWG stranded copper bonding conductor and compression connectors.

All wires used for telecommunications grounding purposes shall be identified with a green insulation. Non-insulated wires shall be identified at each termination point with a wrap of green tape. All cables and bus bars shall be identified and labeled in accordance with the System Documentation Section of this specification.

3.5 Cable Access: Internal and External

3.5.1 Internal Cable Access

- Rooms aligned vertically: coring (drilling) of the floor and placement of four (4") sleeves is used unless otherwise specified. A 4" sleeve will require a core hole 5" in diameter to accommodate a 4" EMT sleeve with protective bushings. This conduit needs to meet the same requirements as external conduits entering the building (see 3.5.2).
- Rooms not aligned vertically: raceway systems composed of trays and/or EMT (Electrical Metallic Tubing) is installed.

The installation of all raceway systems should be concealed**.** Conduit, wire mold and fishing the walls are three methods of concealing wires. The Academy standard for horizontal cabling is to have the electrical contractor install conduit with a pull string. All conduits should be reamed to prevent sharp edges or terminated with an insulated bushing.

The other options, fish the walls or use wire-mold, is only acceptable when specified by the Academy for a project. All wall outlets will be installed at 18" AFF or 48" AFF unless otherwise indicated in building specific plans.

The conduit must only transport telecommunications cables and be sized to provide for additional communications demands. In any situation where a conduit is being installed, the fill ratio must not exceed 60%.

If an installation will require more than two 90-degree angle turns in the conduit, a pull box is required. When installing a tray as part of an open raceway system, the tray must be more than one (1) foot from any source of electrical interference (i.e. fluorescent lights, motors, etc.). ANSI/TIA/EIA-606A should be consulted for administration of the conduit system.

3.5.2 External Cable Access

All new administrative/academic and dormitory building penetrations should utilize four (4) 4" conduits to come into the building. This conduit should be continued from the point of penetration

to the MDF. All conduits utilized for building penetration should be fire blocked (sealed) after cable installation.

3.5.3 Telecommunications hand holes shall:

- not be used in place of a maintenance hole or in a main conduit system
- not be used for splicing cables together
- have provisions for drainage (e.g., drain holes, open bottom, sump hole)
- not be shared with electrical installations other than those needed for telecommunications equipment
- meet applicable code requirements.

3.5.4 Covers

Hand-hole covers should be the same nominal size as the hand-hole. Covers may be made from a variety of materials such as fiberglass, steel and polymer concrete depending on the application. Covers that must withstand vehicular traffic should be rated for vehicular traffic.

3.5.5 Drain Slope

To avoid moisture damage to buried or underground systems underground conduit should be installed with a slope to allow drainage and prevent the accumulation of water. The slope should be no less than 10 mm per meter (.125 in per foot) when extending conduit away from building structures. Where conduit extends between maintenance holes, a slope of 10 mm per meter (.125 in per foot) should extend from the middle of the span to each maintenance hole.

3.5.6 Asbestos

- **The Academy is responsible for notifying the Contractor of any known asbestos in the buildings prior to work beginning. The telecommunication contractor is responsible for recognizing and preventing any asbestos hazards. Failure to do so may result in the Contractor incurring any cleanup or abatement cost.**

3.6 Entrance Facility

Must conform to ANSI/TIA/EIA – 569 requirements

3.6.1 National Electrical Code Adherence

All communications cables are to be installed in accordance with Article 800 of the National Electrical Code.

3.6.2 Protectors

Building Entrance Protectors shall be Circa Enterprises or equivalent. Plugin protector modules shall be black gas tube Avaya 3BIE-W or equivalent.

All protectors shall be grounded using AWG 6 for all lines. This conductor shall be grounded to the Telecommunications Main Grounding Busbar TMGB.

3.6.3 Surge Protectors

The AC power circuit feeding the electronic equipment must be provided with a surge protected outlet. No other equipment should be connected to this circuit.

3.6.4 Innerduct

A sleeved physical channel shall be provided for fiber optic cable. This is to be within the conduit system, unless the innerduct is plenum rated. The innerduct shall contain a pull string. Four one-inch innerducts shall be installed in every four-inch conduit where fiber optic cable is being installed.

4.0 Technical Standards for Administrative, Academic Buildings and Dormitories The following technical standards are required for all wire and cable installations in administrative/academic buildings and dormitories. Only when all the items described below are properly provided will the Academy approve the installation.

4.1 Approved Products

- Berk-Tek-LanMark, Belden or Super Essex, (Station Cables)
- 4-Pair UTP Cat 6 (or higher) (Station Cables)
- 4- pair UTP CAT 6A (or higher) (Wireless Access Points)
- High pair counts UTP Cable: Berk-Tek, Comscope and General.
- Optical Fiber Cable: Berk-Tek, Belden, Corning, and Superior Essex
- Coax Cable: CommScope.
- UTP connection product manufacture: Ortronics.
- Fiber Optic hardware product manufacturer: Ortronics, Corning.
- Fiber Optic termination connectors/splices/couplers: Ortronics, Corning, AFL.
- Cabinet manufacturer: Ortronics, Hubbell or equivalent
- Patch Panels manufacture: Ortronics.
- Multipair Voice Cable Termination: 110 style Ortronics Cat 5e Patch Panels
- Building Entrance Protector Terminals manufacturer: 3M.
- Building Entrance Protector Module manufacturer: Circa. or equivalent
- Wall phone jack : Allen Tel - AT630ABC-4-15

4.2 Wall Outlets

The modular jack assembly for administrative and academic buildings and dormitories should be an Ortronics Category 6 (or higher) rated Connector that adheres to the T568B Standard for pair assignments. The Academy standard for residences adheres to the T568A Standard for pair assignments. The Academy has chosen Ortronics hardware as a campus standard for internal wiring. The Academy uses Ortronics Color-Coded Designation Tabs: the red or pink Voice Icon and blue data Icon.

Ortronics
Components:
(TracJack Modules)

T568B, 45 exit RJ45 insert for data,
T568B, 180 exit RJ45 insert for voice

4.2.1 Wall Outlet Configurations

With the exception of Allen Tel used for wall phone jacks, Ortronics parts will used for each project.

4.2.2 Wall Outlet Placement

Wall outlet placement is:

(a) Standard outlet: center of station outlet will be 18" AFF (above finished floor). This height may be specified differently for a project in the event the outlet is not flush to the wall.

(b) Wall phone outlet: center of station outlet will be 48" AFF.

(c) Handicapped wall phone outlet: center of station outlet will be according to ADA Standards.

All outlets on each floor of each building section are to be connected to the Telecommunications room closest to the outlet.

4.3 MDF/IDF/Telecommunications components

4.3.1 Voice Termination

The cable will be terminated at the Main Distribution Frame (MDF) and if applicable, on at the Intermediate Distribution Frame (IDF), on Ortronics

110 block Patch Panels, labels shall conform to the TIA/EIA 606 color coding; voice horizontal stations on blue, first level backbone cable termination on white and interbuilding backbone cable termination on brown.

Cross-Connections: Ortronics 110 Style Patch Panel

4.3.2 Equipment cabinets for Data

In a majority of locations telecommunications rooms have lockable cabinets unless specified for the project. In certain situations racks may be specified by the Academy. All of the fiber termination, copper patch panels, Local Area Network hardware, and UPS systems will be contained in the cabinet. The cabinet should have a front door and have proper ventilation. The cabinet should be floor or wall mounted, have lockable doors, access panels and provide for proper ventilation unless otherwise specified. In smaller spaces the cabinet may be wall mounted.

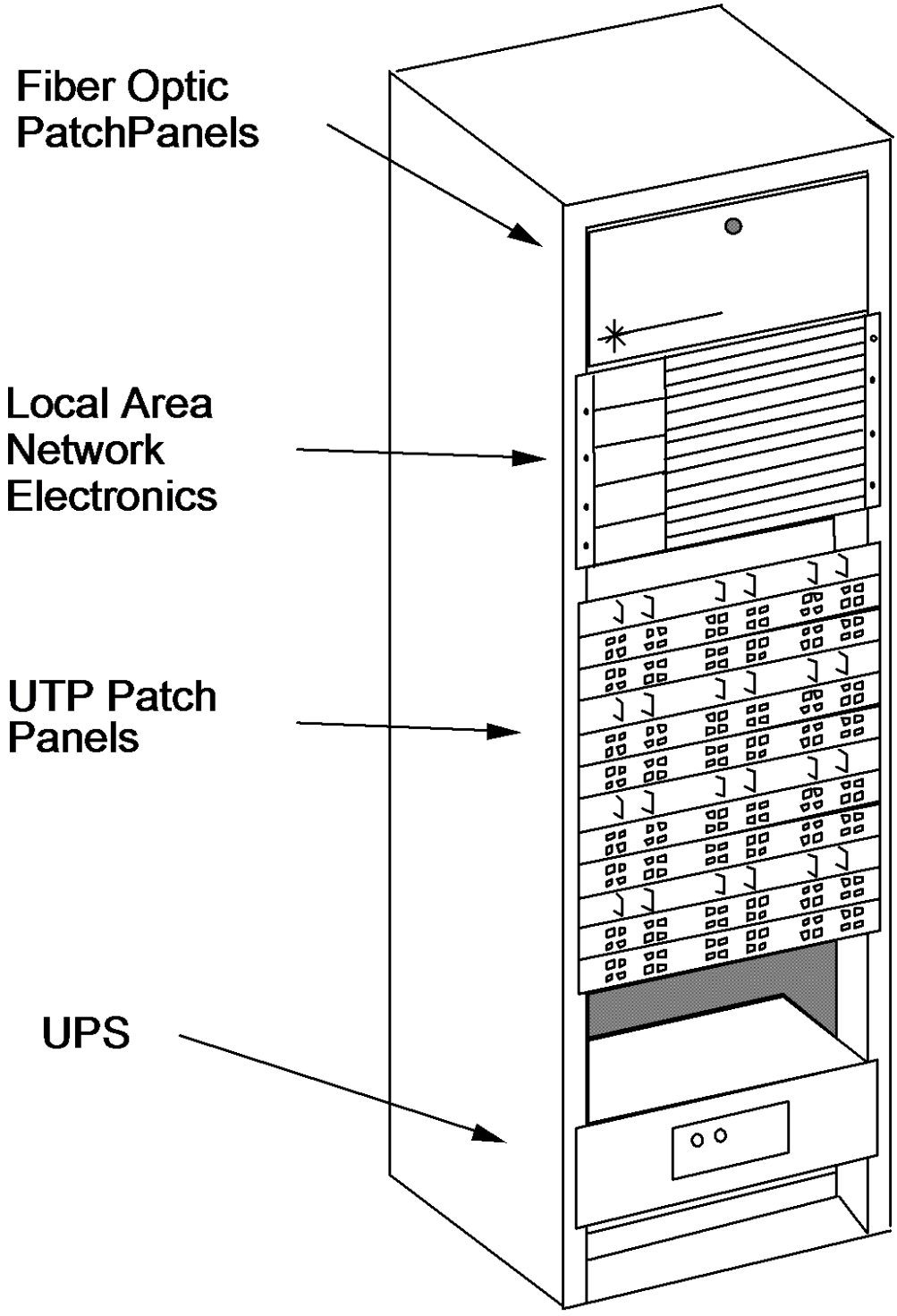
Additional issues to note:

1. Equipment cabinets containing active equipment such as a network concentrator chassis and UPS should be ventilated. To reduce heat build-up in densely populated cabinets a filtered ventilation fan system may be required.
2. An additional three (3) feet of cable should be left coiled and tied with Velcro wraps in the cabinets.
3. Equipment cabinets should be hinged to provide free space front and rear for access and servicing.
4. All equipment cabinets will be keyed to the same master.

The positioning of the equipment within the enclosure is important and the Academy requires consistency throughout the campus.

Fiber optic patch panels will be in the top most position followed by the Local Area Network electronics (which will be installed by the Academy IT Staff). Under the LAN electronics, cable wire management will be installed just above the Cat6 (or higher) patch panels. Wire management should be positioned in between each 12, 16, 24 or 48 port patch panel (see diagram). The UPS will be placed in the bottom most position of the cabinet.

Equipment Location within the Enclosure



4.3.3 Data Patch Panel

All data cables are terminated on a rack-mounted category 6 (or higher) rated multi-port 568B Ortronics patch panel (in administrative, academic and dormitories) with IDC rear connectors and numbered RJ-45 connectors on the front. Wall mounting data panels can be utilized in certain applications. Cable runs are permanently attached to the rear of the Patch Panel and the panel remains stationary to guarantee cable connection integrity. Wall mounted Patch Panels should be mounted on hinged brackets for easy access to the rear of the Patch Panel. All cables must be properly supported in the rear of the patch panels to prevent and reduce cable strain.

Each port of the patch panel should be sequentially labeled in accordance with the specifications in this guide. (Section 6.1)

Although the Telecommunications Contractor does **not** install patch cables, the contractor shall purchase patch cables.

4.3.4 Station Wiring (Horizontal Distribution)

Standard station wiring is always separate sheaths of 4-pair Cat 6 (or higher) solid copper twisted pair (24 AWG). All station wiring runs will home run directly to the Telecommunications room. Neither intermediate distribution points nor splices will be permitted. Station cables shall be installed in conduit. Free-air routing must be avoided unless an approved support is identified on the drawings and in modular furniture.

Two possible coverings (depending on the building environment) that can be used for the cables are:

- Poly-vinyl chloride (PVC) - used in the majority of plans
- Teflon - will be used where cable is placed in air plenum ceilings
- Color Code of Outer Sheath: Data – Blue, Voice - Gray

Distribution rings shall be provided to provide orderly routing of crosswire from station to feeder frame.

If station wiring is to be installed near fluorescent lamps, a minimum of 12” will be maintained between the wiring and the lamp fixture. Station wiring will not be installed next to high-voltage sources, electrical motors, or other sources of interference.

Splices in the horizontal wiring are not acceptable.

All cables run in ceilings for horizontal distribution must be bundled together and self-supported from the floor above or the building structure inside the ceiling every four linear feet with cable “J” hook type supports. They cannot be supported by the ceiling, ceiling hangers, or other utilities in the ceiling and must not lie on the ceiling. When horizontal cabling penetrates firewalls the opening will be sleeved and firestopped using an approved UL method. ***Unprotected wire drops from ceilings or exposed wiring along ceilings is not acceptable.***

4.3.5 Concealment

1. Station wiring must be concealed for protection and aesthetic reasons. The preferred concealment method is to pull cables through conduit within walls.
2. Cable trays and raceways (wire mold) are alternatives that the Academy will specify if the building or project does not provide for conduit.

3. Raceways (wire mold): if raceways are used the type of raceway and route will be specified by The Academy.
4. Conduit, cable trays and raceways (wire mold) will be installed in accordance with building and electrical codes.

No deviations will be permitted from these specifications without the express written consent of Phillips Exeter Academy.

4.4 Voice and Data Riser Systems

4.4.1 Voice Cable System

4.4.1.1 Composition

Composed of 24 gauge solid copper conductors, configured in twisted-pairs, insulated with expanded polyethylene covered by a PVC skin. This construction, in conjunction with a corrugated aluminum shield bonded to the outer jacket of PVC, form an ALVYN type sheath.

4.4.1.2 Sizing

Riser cable pairs will be two (2) times the number of stations to allow for the recommended 50% growth per station. Type ARMM riser-rated cable or an equivalent cable conforming to TIA/EIA 568B is acceptable. This cable will have a minimum rating of Category 2 or higher.

4.4.1.3 Installation

Standard installation method is to run the riser cable in conduit or floor sleeves from the Patch Panel in the MDF or IDFs. Riser Cable will be home run from the IDF to the MDF. There will be no additional junction points between the IDF and the MDF. It is also appropriate to run riser cable horizontally on the same floor when suggested by MDF and IDF placement. Academy IT staff will do voice station and riser patch cable connections.

4.4.2.1 Fiber Optic Cable and Hardware Specifications

The following specifications describe the installation of the fiber optic cable for the Phillips Exeter Academy backbone. Backbone Cable shall be run in cable tray and/or conduit as identified for the project. To future proof the Academy on longer run installations, single mode fiber (OS2) should be used when installing new fiber between buildings. OM 4 fiber rated cables may be used within buildings. These initiatives should be approved by ITS prior to installation.

4.4.2.2 Fiber Cable

Single mode fiber shall be OS 2

Multimode fiber cable shall be OM 4 micron multimode with a UL rating of OFNR or OFNP, as appropriate.

4.4.2.3 Fiber Terminations

All Fibers shall be terminated with SC connectors. Exposed fiber strands at termination should be coiled and secured to base of patch panel using fiber rings supplied with patch panels.

Approved connectors are Corning and AFL fuse connects:

- Multimode 50/125 micron fiber optic cable Corning Epoxy Polish PN 95-100-48 or UniCam PN 95-000-41.
- Singlemode Corning Epoxy Polish PN 95-250-08 or UniCam PN 95-200-42.

4.4.2.4 Fiber Optic Splicing

Fiber splicing should only be done at the request by Phillips Exeter Academy.

Insertion Loss (Attenuation) and Return Loss

ANSI/TIA/EIA-455-8 (OTDR Testing) defines acceptable results for splice insertion loss and splice return loss. Splice insertion loss shall not exceed 0.1 dB mean (0.3 dB maximum) and splice return loss shall have a return loss greater than or equal to 45.0 dB mean (40.0 dB minimum) for singlemode fiber.

Mechanical protection

Each fusion or mechanical splice shall be protected in a splice tray or similar protective device that will mount inside an enclosure.

The tray shall:

- store and organize the fibers and splices
- protect the fibers
- prevent the fibers from exceeding the minimum bend radius.

4.4.2.5 Fiber patch panels

Ortronics and Corning fiber optic patch panels, fiber cabinets and wall mount panels are acceptable.
Location of the patch panel within the building shall be as shown on drawings. The patch panel shall contain the required number of bulkhead feed-through adapters necessary to terminate each fiber cable as specified in the project.

4.5 UTP Horizontal Cabling

4.5.1 Category 6 Cable or greater

The Horizontal (workstation) Cabling System is based on the installation of (1) 4-pair Unshielded Twisted Pair (UTP) DATA (Category 6 rated or higher) Copper Cable. A quantity of (1) 4-Pair UTP VOICE (Category 6 rated or higher) Copper Cable will be added to the count if a combination DATA/VOICE location is needed. The cables shall be installed from the standard information wall outlet in the work area to the Telecommunications Room and routed to the appropriate MDF or IDF serving that area and terminated as specified in this document.

4.5.2 ANSI/TIA/EIA 568B defines the specific characteristics of the Category 6 system.

Category 6 Connecting Components

The connecting components include things such as patch panels, station jack assemblies, and cross-connect block system. The specifications also cover patch cords and cross-connect jumpers for which The Academy is responsible for the installation of these items.

4.5.3 Category 6 Cabling System Installation TIA/EIA 568-B and 569 provide guidance for the proper installation procedures for routing and terminating cable in a Category 6 system.

Horizontal cabling shall be 24 AWG, 4-pair UTFI, and UUNEC CMP (plenum-rated) as needed. Individual conductors shall be FEP insulated. Cable jacketing shall be lead-free. Cable shall meet full Enhanced Category 6 (or higher) performance as defined in this spec.

Notes:

- Cable shall be packaged in a way that minimizes tangling and kinking of cable during installation. Examples are packages that incorporate a rotating reel inside a box if available. Cables must not be kinked or deformed during installation.
- Ortronics recommends jacket stripback should be limited to no more than 1 inch from the point of termination.
- The amount of untwisting in a pair as a result of termination to connecting hardware shall be no greater than .5 inches.
- All Category 6 (or higher) cables that are terminated on patch panels will be properly supported on the back of the patch panels via a horizontal bar or brace. This bar can be part of the patch panel or mounted on the rack.

4.5.4 Horizontal Pathway Separation from EMI Sources

Article 800-52 of ANSI/NFPA 70 shall apply for separation

- From power cables
- And barriers within raceways
- Within outlet boxes or compartments

Other Related Requirements :

- The building shall be protected from lightning (see ANSI/NFPA 780, ref D.4)
- Surge protection shall be provided at the electrical service entrance
- All devices connecting from the exterior of buildings should be terminated using lightning surge protection.
- ANSI/TIA/EIA shall be followed

Precautions should be taken to ensure that water will not penetrate the pathway system. See ANSI/NFPA-70 Article 100 for definitions. **Coax Cabling Requirements**

- **Video Copper Cable** - Horizontal cabling shall be RG6 Quad Shield 75-Ohm cable, and CATVP (plenum-rated) as needed.
- Jack module shall be Ortronics TracJack and be 180^{o} exit.

5.0 Cabling Standards for Academy Residential Houses

During new construction or renovations of residential houses, the Academy will install copper for residential voice and/or data and coax for commercial TV and/or broadband service. Fishing through the walls or wire mold is acceptable when specified or approved by the Academy IT/Telecommunications Department.

Cabling and components should be installed in accordance with the 570A standard. Applicable national, state and local codes will take precedence over this standard.

Each individual wall outlet is cabled in a star fashion with each cable pulled back to a central point (Distribution Device) in the residence. One distribution device (cabinet) will accommodate voice, data, and CATV installed on an Academy standard backboard (see 3.3). Two dedicated 20Amp, 120Vac, non-switchable duplex electrical outlets will be installed by the electrical contractor; one within 5 feet of the distribution device and a second outlet installed in the device for voice and data.

Notes to the electrical contractor installing the conduit:

- Wall outlets would be located near electrical outlets but preferably one stud space away.
- Low voltage cables must maintain a minimum of 2" separation from 120V electrical wiring inside wall or ceiling spaces.
- The horizontal distribution of cables should be done as much as possible in crawlspace, basement or attic rather than through stud holes.

Installing Category 6 in residences during new construction or a renovation:

- Do not apply more than 25 feet/pounds of pulling tension when installing.
- Avoid cable kinking or nicking the outer jacket
- Do not exceed the minimum cable bend radius (4 times cable outer diameter (OD) for twisted pair and 10 times cable OD, unloaded and 20 times cable OD, loaded for coaxial cable.
- Unless the Telecommunications contractor gets prior approval from the Academy, cables should not be spliced. If a problem occurs, pull a new cable.
- Leave cable slack at both the Wall Outlet (a minimum of eight (8) inches) and the Distribution Device (3 feet).
- The Academy's labeling standards (section 6.1 of this guide) are to be followed in residences.

Ortronics Trackjack Components for Academy Residences are acceptable.

Blank inserts

RJ45 single insert for data, T568A, 45^{o} exit

RJ45 single insert for voice, T568A, 180^{o} exit

Coax insert, F-Connector, 180^{o} exit

Ortronics residential enclosure with hinged door

6.0 Administrative

ANSI/TIA/EIA 606-A Administration Standard for the Telecommunications Infrastructure of Commercial Buildings is incorporated by reference and is to be complied with. Each pathway (conduit, tray, raceway, etc.) that conveys telecommunications media from space to space must be given a unique identifier and labeled at each end-point.

Each telecommunications space (equipment room, telecommunications room, work area, entrance facility, manhole and handhold) must be uniquely identified and labeled.

6.1 Labeling

The Academy will submit to the cable vendor, floor plans which clearly document the appropriate port labels for all rooms. At a minimum, the labeling system shall clearly identify all components of the system, cabinets, patch panels, cables and if applicable, racks.

The labeling system shall designate the cables origin and destination with a unique identifier for the cable within the system. Horizontal cables shall be labeled at the workstation end and the patch panel end. Backbone cables (whether riser or horizontal) shall have an identifying number that is labeled at each - end. Labels shall be the same color on each end. Cable identifier must be linked to all pathways which it runs.

Racks and patch panels shall be labeled to identify the location within the cable system infrastructure.

All labeling information shall be recorded on the as-built drawings and test documentation.

All label printing will be machine generated by or a label maker or software (such as Ortronics Label MO software) using indelible ink ribbons or cartridges. Self-laminating labels will be used on cable jackets, appropriately sized to the OD of the cable and placed within view at the termination point on each end. Outlet, patch panel and wiring block labels shall be installed on or in the device. Wall outlets require a label both on the top (for voice) and bottom (for data) of the outlet.

Voice riser pairs need to be labeled in the basement, wiring rooms or IDFs with station jack ID numbers. Voice termination labels shall conform to the TIA/EIA 606 color coding specified in section 4.3.1.

6.2 Testing and Acceptance

6.2.1 General

All cables and termination hardware shall be 100% tested for defects in installation and to verify cabling system performance under installed conditions according to the requirements of ANSI/TIA/EIA-568-B Addendum 5, TSB-67 and TSB-95. All pairs of each installed cable shall be verified prior to system acceptance. Any defect in the cabling system installation including but not limited to cable, connectors, feed through couplers, patch panels, and connector blocks shall be repaired or replaced in order to ensure 100% useable conductors in all cables installed.

All cables shall be tested in accordance with this document, the ANSI/TIA/EIA standards. If any of these are in conflict, the Contractor shall bring any discrepancies to the attention of the project team for clarification and resolution.

To support future expansion, reconfiguration and maintenance, complete records of all system characteristics will be developed and maintained. On each element in the route, identification labels should be completed and attached. Labels will meet the requirements of UL 969 Standard for Marking and Labeling Systems. A Final Report will record system configuration, unique identifier, fiber labels, pathways (documentation of conduit runs would most likely be supplied by the electrical contractor) and "as built" details. Loss measurements and OTDR traces will also be included with the records. This report should be submitted as a hard copy and on diskette in Microsoft Excel format.

6.2.2 Copper Testing

All twisted-pair copper cable links shall be tested for continuity, pair reversals, shorts, opens and performance as indicated below. Additional testing is required to verify Category performance. Horizontal cabling shall be tested using a level IIe test unit.

(a) Continuity

Each pair of each installed cable shall be tested using a test unit that shows opens, shorts, polarity and pair-reversals, crossed pairs and split pairs. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests. The test shall be recorded as pass/fail as indicated by the test unit in accordance with the manufacturers' recommended procedures, and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested before final acceptance.

(b) Length

Each installed cable link shall be tested for installed length using a TDR type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set forth in the ANSI/TIAIEIA-568-B Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number. For multi-pair cables, the shortest pair length shall be recorded as the length for the cable.

(c) Verifying Category 6 (or higher) Performance

A level IIe or better test unit is required and must be updated to include the requirements of ANSIITIA/EIA-568-B.

The tests required are:

- Wire Map and Length
- Attenuation
- NEXT (Near end crosstalk)
- Return Loss
- ELFEXT Loss
- Propagation Delay
- Delay skew
- PSNEXT (Power sum near-end crosstalk loss)
- ACR
- PSACR
- PSELFEXT (Power sum equal level far-end crosstalk loss)

The minimum test requirements for 75 Ohm coaxial cable shall include a continuity test for the center conductor and shield.

6.2.3 Singlemode and Multimode Fiber Testing

All fiber testing shall be performed on all fibers in the completed end to end system. There shall be no splices unless clearly defined in an RFP. Testing shall consist of an end to end power meter test performed per ANSI/TIA/EIA (OTDR Testing) These tests also include continuity checking

of each fiber. Test set-up and performance shall be conducted in accordance with Industry Standards. (ANSI/TIA/EIA)

Where links are combined to complete a circuit between devices, the Contractor shall test each link from end to end to ensure the performance of the system. The values for calculating loss shall be those defined in the ANSI/TIA/EIA Standard.

6.3 System Documentation

Upon completion of the installation, the telecommunications contractor shall provide three (3) full documentation sets to The Academy IT department for approval. Documentation shall include the items detailed in the sub-sections below.

(1) Documentation shall be submitted within ten (10) working days of the completion of each testing phase (e.g. subsystem, cable type, area, floor, etc.). This is inclusive of all test result and draft as-built drawings. Draft drawings may include annotations done by hand. Machine generated (final) copies of all drawings shall be submitted within 30 working days of the completion of each testing phase. At the request of the Engineer, the telecommunications contractor shall provide copies of the original test results.

(2) The Academy may request that a 10% random field re-test be conducted on the cable system, at no additional cost, to verify documented findings. Tests shall be a repeat of those defined above. If findings contradict the documentation submitted by the telecommunications contractor, additional testing can be requested to the extent determined necessary by The Academy, including a 100% re-test. This re-test shall be at no additional cost to The Academy.

6.3.1 Test Results

Test documentation shall be provided by email within three weeks after the completion of the project. The email should be sent to Matthew Bernier, mbernier@exeter.edu. The email subject line should read "Project Test Documentation", the project name, and the date of completion (month and year). The results shall include a record of test frequencies, cable type, conductor pair and cable (or outlet) I. D., measurement direction, reference setup, and crew member name(s). The test equipment name, manufacturer, model number, serial number, software version and last calibration date will also be provided at the end of the document. Unless the manufacturer specifies a more frequent calibration cycle, an annual calibration cycle is anticipated on all test equipment used for this installation. The test document shall detail the test method used and the specific settings of the equipment during the test as well as the software version being used in the field test equipment.

The field test equipment shall meet the requirements of ANSI/TIAIEIA-568-B including applicable TSB's and amendments. The appropriate tester shall be used to verify the cabling systems.

The results generated for each cable by the wire (or fiber) test instrument shall be submitted as part of the documentation package. These results shall be submitted by the telecommunications contractor in electronic format (CD's). These diskettes shall contain the electronic equivalent of the test results as defined by the bid specification.

When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be documented.

6.3.2 As-Built Drawings

The drawings are to include cable routes and outlet locations. If the conduit is installed by the electrical contractor, documentation regarding pathways will be provided to the cable vendor. Outlet locations shall be identified by their sequential number as defined elsewhere in this document. Numbering, icons, and drawing conventions used shall be consistent throughout all documentation provided. The Owner will provide floor plans in electronic format (DWG, AutoCAD v14 or 2000) on which as-built construction information can be added. These documents will be modified accordingly by the telecommunications contractor to denote as-built information as defined above and returned to the Owner.

The Contractors shall annotate the base drawings and return them in electronic (AutoCAD v14 or 2000) format.

Final Acceptance & System Certification

Completion of the installation, in-progress and final inspections, receipt of the test and as-built documentation, and successful performance of the cabling system for a two-week period will constitute acceptance of the system. Upon successful completion of the installation and subsequent inspection, and approval by Ortronics, the end user shall be provided a numbered certificate identifying the project.

Certifications

Ortronics Certified Technicians for Copper Cable installations

Corning Certified Technicians for Fiber Optic Cable installations

Any exceptions must be approved by ITS

Appendix A – Communications Symbols Legend

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	27 Communications
Specification Section:	IT / Telecommunications
Description of Material or System:	IT/Telecommunications Technical and Wiring Standard
Last Updated:	12/20/2024
Updated by:	Heather Taylor

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

See attached for Campus Wiring Standard

Links to additional product information:

https://exeter.edu/app/uploads/2024/08/telecommunications_technical_wiring_standards.pdf

PHILLIPS EXETER ACADEMY

CONSTRUCTION AND RENOVATION STANDARDS

IT NETWORKING AND EQUIPMENT

Description

Standards and guidance for providing IT equipment and related services within new construction and building renovation projects.

Owner: Heffner, Scott R.
sheffner@exeter.edu

Document Revision History

Version	Date	Revision Description	Author(s)
V1	9/13/2022	Initial Draft	Scott Heffner, Derek Rolfe, Donna Archambault, Matt Wentworth
V1.1	1/18/2023	FIRST REVISION – ADDED LCD TV SUPPORT OPTION AS STANDARD FOR CLASSROOMS	Scott Heffner
V1.2	9/6/2024	Added naming convention for data closets. Clarified responsibility for dorm common room TVs.	Scott Heffner

CONSTRUCTION AND RENOVATION STANDARDS

I. Documentation Standards

a. All renovation and construction projects that involve IT, no matter how small, must be documented in **IT Team Folder\Projects\Construction and Renovation Projects**.
   i. Create a folder for each project named: FY<##>BuildingName-<Description>
      1. Where FY<##> is the fiscal year that the project STARTS/STARTED in.
      2. Where <Description> is a short version of the work being done.
         a. It is OK to just say 'Renovation' or 'Construction' but consider updating the name to be more specific if another renovation project hits the same building in the same year.
      3. e.g. FY22-LamontHealth-ClassroomRedesign for the project to redesign the Health Ed classrooms into new spaces. (Yeah, it is not a perfect naming convention. Open to suggestion.)

b. When a renovation is completed, move the folder into **IT Team Folder\Projects\Construction and Renovation Projects\Completed Projects** to avoid confusion with newer projects.
   i. If there are special needs, support documentation should be added to the appropriate IT Team Folder\Operations folder.

II. Ownership of Work Product (by type of work)

a. IT Data Closet Infrastructure
   i. IT Data Closet Naming Convention – ITS
      1. Closets with network connectivity to other buildings or the Internet
         a. MDF + <room #>
      2. Closets that only connect to other closets in the same building or to individual data drops:
         a. IDF + <room #>
   ii. Equipment Racks and Cabinets owner – ITS
      1. Guidelines for using a four-post rack versus a cabinet
         a. Four-post racks: Fully Secured Data Closets (ITS, Facilities Management and Campus Safety access only)
         b. Locking Cabinets: Data Closets with mixed use
   iii. **IT Network Equipment Owner – ITS**
      1. Network switches with Power over Ethernet+ capabilities
         a. See 'Wired Networking' specs below to calculate number of Ethernet drops required. Do not forget drops for wireless access points, door controllers, security cameras, printers, A/V equipment, IP telephony and special use equipment (e.g. Ethernet enabled microscopes in Biology lab or computers in Computer Science lab.).
      2. UPSes, spec'd to power required equipment (varies by location)
   iv. **Power Requirements Owner – Facilities**
      1. Specs vary by equipment/power draw required for location
         a. Typically *dedicated* (2x) 20A 120V circuits.
   v. **HVAC Requirements Owner – Facilities**
      1. Exact specs vary by equipment/power draw, room size and any additional equipment within the room
      2. Standard:

a. Equipment must be maintained between:
    i. 60°F and 78°F
    ii. 30% and 70% relative humidity
        1. Must not create environment conducive to condensation or static electricity

vi. **Security Controls Owner – Campus Safety / Facilities**

b. Structure Cabling
    i. Ethernet –
        1. **Conduits and Pathways Owner - Facilities**
        2. **Fiber Optic Cabling Owner: ITS**
            a. Please see the Wiring Standards document in the Contractors Corner section of the main website for details
        3. Ethernet Cable runs (to end user) Owner: ITS
            a. Please see the Wiring Standards document in the Contractors Corner section of the main website for details

c. Wireless Networking
    i. Requires a predictive heat map using accurate floor plans with wall construction/composition data. (See 'Wireless Networking' specs below for details.)
    ii. **Ethernet Cabling for Wireless Access Points Owner: ITS**
    iii. **Wireless Access Point Owner: ITS**
        1. This includes all/any construction work for wall penetrations not already included in the pathways/conduit work owned by Facilities.

d. A/V Equipment Owner
    i. **Classrooms Owner: ITS**
    ii. **Conference Rooms Owner: ITS**
    iii. **Common Rooms Owner: Facilities (Carpentry)/Dorm (via Dean of Students)**
        1. **IT will assist in getting the smart TVs online but does not purchase or maintain the devices.**
    iv. Other: Custom
        1. **Large venues design: Facilities, consulting with ITS**
        2. **Large venues implementation: ITS**

e. **IP Telephony Owner: ITS**
    i. See '**Telephony'** section below for details.

f. Coaxial Cable (TV) Owner: Facilities

III. Wired Networking Standards

a. Dorms
    i. Faculty Apartments
        1. Include 1 data drop in:
            a. Primary bedroom
            b. Faculty dorm office
            c. Primary living area
        2. Include 1 coax drop in:
            a. Primary bedroom

b. Primary living area

ii. Student Rooms
1. Include one data drop per room, regardless of occupancy (single, double, etc)

iii. Common Rooms
1. Include one data drop for a wall-mount RingCentral phone
2. Include one data drop near the TV in case the dorm provides a gaming system or other network device. (NOTE: We do not provide AppleTVs for Common Rooms.)
3. Include on coax drop for TV

iv. Hallway and Common Room Phones
1. A hallway data drop is required on every other floor for student use *except* on floors where a common room already has a phone.

v. Data Closets
1. Please see the Wiring Standards document in the Contractors Corner section of the main website for details

Commented [HSR1]: e need a standard for ensuring that these phones maintain power in an emergency. That also means ensuring that our switches stay up OR that this device is analog somehow.

Can we count on Internet staying up? Local PSTN gateway instead? Might be a ton of work to re-add structured cabling for those lines.

b. Administrative and Academic Buildings

i. Classrooms
1. Include 2 data drops at Faculty desk
2. Include 1 data drop for AppleTV (either by projector or behind TV, depending on the A/V setup in the room)
3. HDMI Connectors
   a. HDMI Source Autodetection Unit
   b. Include 1 HDMI drop at BlueRay/DVD player
   c. Include 1 HDMI drop convenient to the Harkness table.

ii. Department Rooms
1. Include 2 data drops (1 laptop, 1 printer)

iii. Offices (including Faculty Offices)
1. Include 2 data drops per desk (one for computer, one for phone)

iv. Conference Rooms
1. Include 1 data drop for AppleTV (either by projector or behind TV, depending on the A/V setup in the room)
2. Include 1 data drop for a laptop, convenient to the conference room table.
3. Include 1 HDMI drop convenient to the conference room table run to a jack next to either the projector or LCD TV

v. Large Meeting Spaces
1. Large meeting spaces require special build-outs. Document each large meeting space on one of our A/V request forms, to include location of wired drops and A/V equipment in the box designated for drawing the room.

IV. Wireless Networking Standards

a. Indoor wireless – all Administrative buildings, Academic Buildings and Dorms (but not Faculty housing outside of dorms)
    i. IT vendor will provide predictive survey based on updated floor plan provided by construction team
        1. Survey will include predicted AP placements, quantities and quote for hardware and service
        2. IT requests that building engineers hired by Facilities not spec AP placements to avoid confusion
        3. Any changes to construction materials, such as fortifying walls or changing the thickness of sheetrock, must be sent to IT for an evaluation of the impact to our predictive wireless survey immediately.
    ii. All indoor locations require a predictive wireless analysis and custom installation to ensure adequate coverage in all rooms.
    iii. The predictive wireless analysis should be stored in the project folder associated with the renovation or construction.
        1. If the renovation is small, we still need a project folder.
    iv. All installations require post-installation coverage assessments to ensure performance and coverage standards are being met.
    v. Construction projects should plan to allow for 1 week before new building residence move in for ITS to complete post-installation assessments.
    vi. All access points need to be mounted so that they are oriented north
        1. Note: this means mud rings need to be installed so the screw holes run north to south
b. Outdoor Wireless
    i. Only provided in Wetherell and JSmith quads currently
    ii. Approvals for outdoor wireless require budgeting and planning as the equipment is both expensive, difficult to maintain and unsightly. (Requires both IT and Architect approval prior to installation.)

V. Audio-Visual Standards (each A/V setup must be documented in an A/V request form)

a. Dorms (not including classrooms within dorms)
    i. IT does not provide A/V equipment for dorms, not even in the common rooms.
b. Classrooms
    i. Standard deployment:
        1. Ceiling-mounted Projector
            a. Quad power outlet in the ceiling where the projector will be mounted
            b. Data drops and cabling as described above in the 'Wired Network Standards' section.
            c. AppleTV w/Ditto app (located near the projector)
            d. Projector screen
                i. 94" projection screen
                    1. If using Crestron use an automated screen (otherwise manual).
                    2. Standard is **NOT** to have Crestron in classrooms.

e. Amplifier and speakers
    i. Amplifier located near the projector
    ii. Speakers located on either side of the projector screen
2. Wall-mounted LCD TV (typically 65")
    a. Quad power outlet behind the TV.
    b. Data drops and cabling as described above in the 'Wired Network Standards' section.
    c. AppleTV w/Ditto app (located near the LCD TV)

ii. Small Room deployment (less than 9' from projector to the screen):
1. Wall-mounted LCD TV (typically 55")
2. Quad power outlet behind the TV.
3. Data drops and cabling as described above in the 'Wired Network Standards' section.
4. AppleTV w/Ditto app (located near the LCD TV)

c. Offices
i. IT does not provide A/V equipment for offices. Exceptions to this rule require IT Director approval. (e.g. The CFO has an A/V setup which was approved.)

d. Conference Rooms
i. Standard deployment:
1. Ceiling-mounted Projector
    a. Quad power outlet in the ceiling where the projector will be mounted
    b. Data drops and cabling as described above in the 'Wired Network Standards' section.
    c. AppleTV w/Ditto app (located near the projector)
    d. Projector screen
        i. 94" projection screen
            1. If using Crestron use an automated screen (otherwise manual).
                a. Standard is **NOT** to have Crestron in conference rooms.
    e. Amplifier and speakers
        i. Amplifier located near the projector
        ii. Speakers located on either side of the projector screen

ii. Small Room deployment (less than 9' from the projector to the screen):
1. Wall-mounted 55" LCD TV
    a. Quad power outlet behind the TV.
    b. Data drops and cabling as described above in the 'Wired Network Standards' section.
    c. AppleTV w/Ditto app (located near the projector)

e. Large Meeting Spaces
i. Large meeting spaces require special build-outs. Document each large meeting space on one of our A/V request forms, to include location of wired drops and A/V equipment in the box designated for drawing the room.

ii. The vendor, ProAV must be involved in the design of the large meeting space even though the lead designers are from another company brought in by Facilities Management (such as Accu-Tech).
    1. ProAV's involvement insures that they will be able to support the venue post-live which was not the case on Goel.

VI. Telephony Standards

a. For any building with emergency phones/alarm lines requested, install cable for analog gateway.
b. If ADA access panel is required, confirm with facilities on wiring needs.
c. Dorms
    i. Faculty Apartments
        1. IT does not provision phones in Faculty apartments.
    ii. Student Rooms
        1. IT does not provision phones in Student dorm rooms.
    iii. Common Rooms
        1. IT provides one hard-wired phone in each dorm common room.
    iv. Hallway and Common Room Phones
        1. IT provides one hard-wired phone on every other floor *except* on floors where a common room already has a phone.
d. Classrooms
    i. IT does not provision hard-wired phones in classrooms except upon request from a department head.
e. Offices
    i. IT does not provision hard-wired phones in offices except upon request from a department head.
f. Conference Rooms
    i. IT does not provision hard-wired phones or video conferencing capabilities in conference rooms except upon request from a department head ***and*** approval from the IT Director.
g. Large Meeting Spaces (The Forum, Assembly Hall, Grainger, and Wetherell Dining Hall)
    i. IT does not provision hard-wired phones in large meeting spaces.

Commented [ADL2]: We have one phone jack in each of the conference rooms for audio conference calls. Tracey is asking if we should no longer set up conference rooms with audio jacks?

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 10 00 Access Control - Safety
Description of Material or System:	28 01 20 - Operation and Maintenance of Video Surveillance
Last Updated:	11/2024
Updated by:	Paul Gravel

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☑ Other
- ☐ Other

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other
- ☐ Other
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Campus Safety is to be involved in the design development phase of all new construction and renovation projects over $1M, to make recommendations about video surveillance.

Multi-sensor dome and 180* dome cameras are the preferred products.

Standard hight for camera installation is eight to ten feet (8'-0" - 10'-0") above grade.

Links to additional product information:

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Surveillance
Specification Section:	28 10 00 - Electronic Access Control and Intrusion Detection
Description of Material or System:	Alarm System
Last Updated:	5/9/2022
Updated by:	Paul Gravel

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for security alarms is DMP. Model types will be specific to the project.

Manufacturer: **Digital Monitoring Products (DMP)**

Links to additional product information:

https://www.dmp.com/

The most affordable codeless arming and disarming available — with a slim new look!



7000 Series Thinline LCD Keypads offer high-quality, cost-effective security control in a stylish, sleek new design.

- Visual and audible alarm notification
- Silence alarm while system remains armed
- Optional integrated proximity reader
- Four optional on-board fully programmable zones
- Retrofit to any DMP panel

Enhanced Options
7063 and 7073 keypad proximity readers accept DMP 1300 Series proximity credentials.

THINLINE™ LCD KEYPADS 7060/7063/7070/7073

FEATURES

- Attractive Thinline keypad housing available in several colors
- Large, 32-character, Liquid Crystal Display (LCD)
- Custom 16-character home or business name
- Keypad and logo backlighting turns Red in alarm conditions
- User-adjustable brightness, tone, and volume controls
- Supports "Is this a false alarm?" and Cancel/Verify™ features
- Built-in diagnostics for ease of service
- Simple harness connection to 4-wire keypad bus
- Connect devices directly to keypad zones
- View system events/user activity through keypad display
- AC power and Armed LED
- Suitable for access, burglary, and fire applications
- Distinct fire, burglary, zone monitor, and prewarn tones
- Displays time of day, armed zones, and armed areas
- Optional backboxes for conduit or wall-mount applications
- Unique silence feature allows the user to silence alarm bells and still keep the system armed
- Compatible with all DMP panels

VERSATILE SUPERVISED AND UNSUPERVISED OPERATION

When programmed for supervised operation, the keypad occupies its own unique device address on the keypad data bus.

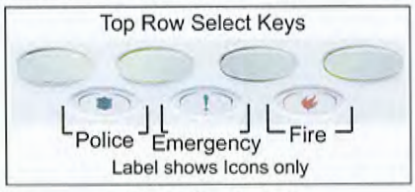
Unsupervised operation allows you to install an unlimited number of keypads set to the same device address. Increasing the number of keypads allows maximum system operating flexibility.

USER-FRIENDLY MENU FUNCTIONS

The User Menu allows you to quickly browse through menu options. Disarming and Arming functions are fast and easy. Any function allowed by the user authority level is simply accessed through the keypad, such as silencing alarms, resetting sensors, or displaying events.

2-BUTTON PANIC KEYS

The top row of keys can be used as 2-button panic keys. The user simply presses and holds two of the keys simultaneously to send either a panic, non-medical emergency, or fire report to the Central Station.



Panic Key Labels

"IS THIS A FALSE ALARM?" AND CANCEL/VERIFY™

In a Home/Sleep/Away or All/Perimeter system, you can CANCEL a burglary alarm or VERIFY that a valid burglar alarm has occurred or similarly answer whether it is a false alarm with YES or NO. Selecting VERIFY or YES manually verifies that an alarm occurred and sends an alarm verification message to the central station.

KEYPAD SHORTCUT KEYS

Keypad shortcut keys are provided to simplify operation and allow the user to more quickly arm, check in, monitor, exit, or reset the system. One-button arming creates the simplest keypad available. Use the one-button shortcut keys for common functions, or use the ATM style menu for advanced functions, whichever method meets the user's needs or level of expertise with the system.

END-USER CONTROL

Each of the Thinline Series keypads provides a simple User Options menu for adjusting brightness, speaker tone, and volume.

VALUABLE VISUAL ALARM INDICATOR

In a normal state, both the keypad and logo backlighting remain Green. However, during an alarm state, the keypad and logo turn Red. The change in color allows persons on-site to instantly recognize an alarm condition.



Red Backlighting



Green Backlighting

DISTINCT SOUND PATTERNS

The keypads also provide distinct sound patterns for fire, burglary, zone monitor, and prewarn that can help users identify the event occurring on their system.

RETROFIT ANY EXISTING DMP SYSTEM

Retrofitting is quick and easy. Thinline keypads have the same footprint as existing DMP keypads and mount in currently installed backboxes. Thinline Series keypads require no special modules or panel upgrades. You can provide a new look and greater functionality to an existing system at just a fraction of the cost of all new equipment.

MULTIPLE-KEYPAD SAVINGS

Install multiple keypads on the same wire run. Compatibility and cost savings make the Thinline Series an asset in every installation.

OPTIONS

The Thinline Series keypads also provide Keypad Options and Keypad Diagnostics menus available only to system installers and service technicians. Enter Keypad Options to set the keypad address and change the default keypad message.

Test the keypad operation at any time without disabling the system. The diagnostics program tests the LCD segments and backlighting, each of the 16 keyboard keys, and the four zones on the 7070 and 7073 keypads.

WEATHER INFORMATION

Up-to-date weather information for today and tomorrow will be displayed in the status list for Cell or Network connected panels. If the panel is not capable of supporting weather, the space will be blank. Eight statuses are available to indicate the weather: SUNNY, CLEAR, P-CLOUDY, CLOUDY, RAINY, SNOWY, STORMY, AND FOGGY.



UNIVERSAL PROGRAMMING TOOL

System installation and programming can be achieved without carrying around or purchasing expensive external programmers since panel and add-on module programming is integrated into DMP Keypads.

Individually program panels, CellComSL Series Communicators, iComSL Series Communicators, and other programmable add-on modules directly from the keypad.

7070/7073 FOUR EXPANSION ZONES

Zone expansion is available right on the keypad where you need it the most. The four expansion zones on the 7070 and 7073 models are fully programmable Class B protection zones that can be used for a variety of fire, burglary, and access control applications.

ZONE TYPE SELECTION

Keypad zones can be programmed using the same zone types available on the panel. Select supervised, unsupervised, night, fire, panic, exit, and emergency operation depending on the user requirements.

ZONE DEVICE CHOICES

Connect PIRs, door and window contacts, pull stations, sprinkler tamper switches, and silent panic buttons. Plan the installation to afford the best coverage while eliminating potential problems associated with multiple wire runs.

7063/7073 CODELESS ARMING AND DISARMING

The innovative 7063 and 7073 Thinline keypads contain an on-board DMP proximity reader that allows users to simply present their proximity credentials to the keypad to gain access to a protected area.

7073 MOMENTARY BYPASS

To provide an entry and exit window on systems with 24-hour perimeter protection, DMP offers the momentary bypass feature. Momentary bypass allows the user enough time to enter or exit the area. If the door remains open when the timer expires, a zone open/short is sent to the panel for the keypad Zone 2.

REQUEST-TO-EXIT (REX)

To enable easy user exit from an area, connect a motion sensing or mechanical device to Zone 3 on the keypad. As the user trips the zone, the keypad activates the door strike allowing the user to exit the area without presenting a card or entering a user code.

PRIVATE LABELING

DMP offers dealers the option to present their company logo on the 7000 Series keypads. The logo displays on the rubber logo insert and replaces the DMP logo. The backlighted logo glows Green during normal operation and turns Red in an alarm state.

Logo Location



KEYPAD MODEL FEATURES

Model	2-Button Panic	Red in Alarm	4-Zones	Internal Prox Reader	Wiegand Input Internal Form C Door Strike Relay
7060	X	X			
7063	X	X		X	
7070	X	X	X		
7073	X	X	X	X	X

KEYPAD ACCESSORIES

Alternate Housings

THIN-LCD-B	Black Housing
THIN-LCD-I	Ivory Housing
THIN-LCD-P	Platinum Housing
THIN-LCD-W	White Housing



THIN-LCD-B

Backboxes

695	Keypad Conduit Backbox
696	Keypad Backbox

Keypad Wiring Harness

300	4-wire harness
300-5	5-wire harness
300-12	12-wire harness
300-512	12-wire harness, 5 ft. long

Proximity Credentials

1306	Prox Patch™
1306PW	Prox Patch™
1326	ProxCard II® Card
1346	ProxKey III® Access Device
1351	ProxPass®
1386	ISOProx II® Card

External Proximity Readers

PP-6005B	ProxPoint® Plus Proximity Reader
MP-5365	MiniProx™ Proximity Reader
PR-5455	ProxPro® II Proximity Reader
MX-5375	MaxiProx® Proximity Reader
TL-5395	ThinLine II® Proximity Reader

SPECIFICATIONS

Operating Voltage	12 VDC
Dimensions	7" W x 5.25" H x 0.5" D
Display Type	LCD
Colors	White or Ivory

COMPATIBILITY

7000 Thinline Series keypads are compatible with all DMP panels. Thinline keypads are not available in a Fire Keypad Variation.

CURRENT DRAW

7060 Standby	72mA
Alarm	87mA
7063 Standby	85mA
Alarm	100mA
7070 Standby	72mA + 1.6mA per active zone
Alarm	87mA + 2mA per active zone
7073 Standby	85mA + 1.6mA per active zone
Alarm	100mA + 2mA per active zone

KEYPAD ORDERING INFORMATION

The Thinline Series keypads are available in White or Ivory to complement any decor. Select from the following options:

7060-W	7060N-W
7063-W	7063N-W
7070-W	7070N-W
7073-W	7073N-W



7060-I	7060N-I
7063-I	7063N-I
7070-I	7070N-I
7073-I	7073N-I



LISTINGS AND APPROVALS

California State Fire Marshall (CSFM)

FCC Part 15 ID: CCKPC0086

Industry Canada ID: 5251A-PC0086

New York City (FDNY COA #6167)

Underwriters Laboratory (UL) Listed

ANSI/UL 294	Access Control System Units
ANSI/UL 365	Police Connected Burglar
ANSI/UL 609	Local Burglar
ANSI/UL 1023	Household Burglar
ANSI/UL 1076	Proprietary Burglar
ANSI/UL 1610	Central Station Burglar
ANSI/UL 1635	Digital Burglar
ANSI/UL 985	Household Fire Warning
ANSI/UL 864	Fire Protective Signaling 9th Edition (7070,7073)

Underwriters Laboratory Canada (ULC) Listed

ULC 5545	Household Fire
ULC Subject-C1023	Household Burglar
ULC/ORD-C1076	Proprietary Burglar
ULC S304	Central Station Burglar

For additional information, access www.dmp.com and select Compliance.

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SECURITY SIGNALING UL LISTED

CAL FIRE

DMP Adds a Whole New Dimension to Wireless–

Two Way



Two-Way offers increased security

Two-way Supervised Wireless Repeaters and Receivers from DMP deliver unparalleled flexibility and simplicity while processing every system message efficiently.

- Simple programming
- Superior range
- Seamless integration with DMP panels and other hardwired devices

Whether the installation is new construction, an upgrade, or retrofit, Two-way Wireless Repeaters and Receivers from DMP get the job done faster with less effort.

DMP 1100 SERIES WIRELESS RECEIVERS

SYSTEM FEATURES

- Two-way supervised communication
- Extended range with the 1100DH and 1100XH
- 3-, 60- or 240-minute supervision window; selectable by zone or output to maximize effectiveness
- Frequency-hopping 900MHz Spread-Spectrum technology
- Attractive and durable plastic housing for all units

1100 SERIES RECEIVERS

- 1100D/1100DH/1100DI
  Receiver for XT Series Panels
- 1100X/1100XH
  Receiver for XR Series Panels
- 1100R
  Repeater for XT, XTL, and XR Series Panels

1100 Wireless Receivers

TWO-WAY COMMUNICATION

Superior to traditional wireless devices that just broadcast until the zone is restored, DMP 1100 Series require an acknowledgement from the 1100 Series Receiver, indicating successful communication. This smart technology ensures that each and every communication is received and efficiently processed at the panel.

900MHz SPREAD-SPECTRUM TECHNOLOGY

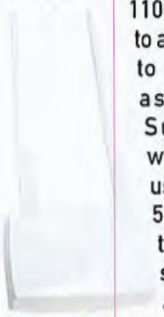
DMP wireless communication employs 900MHz frequency-hopping spread-spectrum to ensure clear and accurate signal transmissions without interference in practically any environment.

INCREASED SECURITY

Other wireless devices can take up to four hours before the system recognizes a missing device! With Two-way communication, if the receiver misses an expected supervision message, the system immediately reports the zone or output as missing, so your systems integrity and reliability are never compromised.

1100D & 1100X RECEIVERS

Competitively priced for residential or commercial applications, the 1100D and 1100X Receivers allow you to add wireless transmitters to DMP panels as easily as adding a keypad. Supporting up to 32 wireless transmitters using the 1100D or up to 500 transmitters using the 1100X, DMP receivers satisfy all wireless applications.



1100DH & 1100XH RECEIVERS

The more powerful 1100DH and 1100XH offer the same Two-way wireless capabilities as the basic 1100D and 1100X models, but with the added power needed for harsh RF environments. The 1100DH installs on the keypad bus of the XT Series panels. The 1100XH installs on the wireless bus of the XR100/XR500 or XR150/XR550 Series panels.

1100DI RECEIVER

This economical receiver provides the same basic features as the 1100D model but in a more compact unit. The 1100DI connects anywhere on the keypad bus of XT Series panels and is suitable for either residential or small commercial applications.

1100R REPEATER

Extend the communication range of DMP wireless devices with the 1100R Wireless Repeater. Use up to eight 1100R repeaters with any DMP 1100 Series Receiver system. The plug-in DC power supply is backed up by a 24-hour battery. On-board LEDs provide built-in survey capability to enable single-person installation and eliminating the requirement for an external survey kit. An internal case tamper switch provides device security.

COMPATIBILITY

XTL, XT, and XR Series Panels.

SPECIFICATIONS

Frequency Range 903-927 MHz
Flame-retardant ABS constructed housings.

1100D/1100X RECEIVER

Operating Voltage	8.0 to 14 VDC
Current Draw	40mA
Housing Dimensions	4.65" L x 1.4" W x 3.1" H
Antenna Dimensions	8.6" H

1100DH/1100XH RECEIVER

Operating Voltage	8.0 to 14 VDC
Current Draw	240mA
Housing Dimensions	4.65" L x 1.4" W x 3.1" H
Antenna Dimensions	8.6" H

1100DI RECEIVER

Operating Voltage	8.0 to 14 VDC
Current Draw	45mA
Housing Dimensions	3.3" L x 1.6" W x 1.2" H

1100R REPEATER

Operating Voltage	8.0 to 14 VDC
Housing Dimensions	4.65" L x 1.4" W x 3.1" H
Antenna Dimensions	8.6" H

ACCESSORIES

376L	DC Plug-in Power Supply (1100R only)
1100RBAT	Rechargeable Battery (1100R only)

PATENTS

U.S. Patent No. 7,239,236

LISTINGS AND APPROVALS

California State Fire Marshal (CSFM)
FCC Part 15 Registration ID

CCK1100	1100D, 1100X
CCKPC0110	1100R
CCKPC0111	1100DI
CCKPC0114	1100DH, 1100XH

Industry Canada ID

5251A-PC0082	1100D, 1100X
5251A-PC0110	1100R
5251A-PC0111	1100DI
5251A-PC0114	1100DH, 1100XH

Underwriters Laboratories (UL) Listed
Listings for 1100 Series Receivers and Repeaters

ANSI/UL 365	Police Station Connected Burglary Accessory
ANSI/UL 609	Local Burglary Alarm Units and System Accessory
ANSI/UL 634	Connections and Switches for use with Burglar Alarm Systems Accessory
ANSI/UL 639	Intrusion Detection Units Accessory
ANSI/UL 1023	Household Burglar Alarm System Units Accessory
ANSI/UL 1076	Proprietary Burglar Alarm Units Accessory
ANSI/UL 1610	Central Station Burglary Alarm Units Accessory
ANSI/UL 985	Household Fire Warning System Accessory

Additional listings for 1100D and 1100X

ANSI/UL 636	Holdup Alarm Units and Systems Accessory

Additional listings for 1100X, 1100XH and 1100R

ANSI/UL 864	Control Units for Fire-Protective Signaling Systems

Additional listings for 1100R

ANSI/UL 268	Smoke-Automatic Fire Detectors

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2500 North Partnership Boulevard
Springfield, Missouri 65803-8877

800.641.4282 | dmp.com
Designed, Engineered & Manufactured in Springfield, Missouri

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 13 00 - Access Control
Description of Material or System:	Access Control Reader
Last Updated:	1/4/2024
Updated by:	Paul Gravel

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Preferred manufacturer for the card access system is Gallagher.
The card readers are MIFARE T15.

Mount type: mullion or surface mounted.

Links to additional product information:

Gallagher T15 MIFARE Reader - Easy Choice For Outdoor Use

Technical Specification







Features:

- Make: Gallagher
- Model code: T15
- Reader Type: Mifare
- IP Rating: IP68
- Mount Type: Mullion

Read more

Additional info:

Superior environmental protectionThe robust construction of Gallagher's T15 Reader makes it perfect for deployment in environmentally challenging locations. The T15 delivers outstanding all-weather performance, making it

Read more

Contact Manufacturer

Datasheet

Make	Gallagher
Manufacturer	Gallagher Security
Category	Access Control > Access control readers
Model code	T15
Reader Type	Mifare
IP Rating	IP68
Mount Type	Mullion or surface mounted
Read Range mm	25 ~ 75
Electrical Specifications	Voltage: 9 ~ 16 V DC
Physical Specifications	Dimensions mm: 139 x 44 x 23
Environmental Specifications	Operating Temp °C: -35 ~ +70 C (-31 ~ +158 F) Operating Humidity %: 95
Protection	IP68, IK07
Additional info	**Superior environmental protection** The robust construction of Gallagher's T15 Reader makes it perfect for deployment in environmentally challenging locations. The T15 delivers outstanding all-weather performance, making it the easy choice for outdoor use. **Slim form factor** Available in standard and multi-technology variants, the T15 sits easily on a mullion, and delivers reliable card reading performance when mounted on a variety of surfaces (including metal).

Download PDF Version

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 13 00 - Access Control
Description of Material or System:	Access Control Product Overview
Last Updated:	1/4/2024
Updated by:	Katie Gregory via Paul Gravel

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
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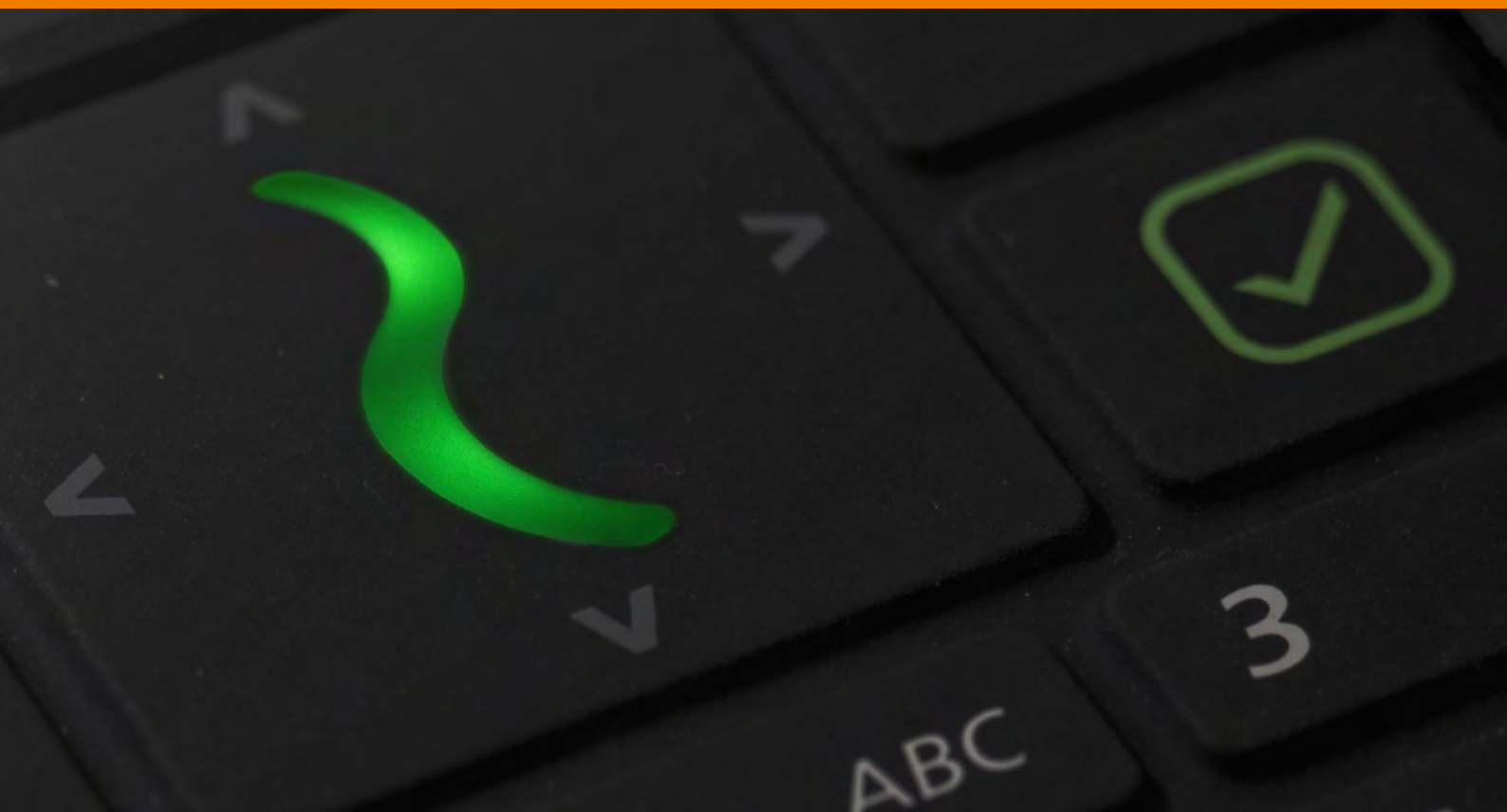
See attached.

Links to additional product information:

Access Control Product Overview

Flexible, integrated access control solutions

security.gallagher.com





The Gallagher difference

Our innovation is driven by the desire to solve problems, **meet your needs** and provide real business value.

We create and deliver access management solutions designed to protect **what's important to you**.

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Secure site management, control and access 4

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Contactless card readers for access control 10

System architecture
The Gallagher security system overview 11

Access control solutions



Management

Complete site management

Gallagher Command Centre is a powerful operator-friendly security management system that enables you to:

- Manage cardholders, including their access, credential and photo identification
- Monitor alarms and control all system aspects
- Retrieve and report on stored system information
- Interface to and exchange information with third party systems
- Configure the site and all system components

Control

Extended control capacity

Gallagher controller devices can greatly expand the control capabilities of a security system:

- Remove the risk of one compromized connection taking down all downstream devices
- Monitor and report the state of balanced inputs
- Enforce decisions to switch output relays
- Manage multiple access points efficiently

Access

Secure access control

Gallagher's reader range provides contactless proximity card readers for access control management delivering:

- Rapid and secure access decision responses
- Support for multiple card technologies and mobile credentials
- A diverse selection of reader mounting and protection accessories

Complete site management

Gallagher Command Centre

Gallagher Command Centre is the central site management platform for the Gallagher security system. Utilizing a client server architecture, the software provides a powerful and versatile feature set, enabling system operators to configure, monitor, and control the security system.

Gallagher Command Centre can be fully customized to suit your business needs, providing:

- Site hardware and system components, including: access, intruder alarm and perimeter security fencing
- Schedules to automate access and alarm state changes. Doors may be configured as requiring credential only, credential plus PIN, dual access (two unique credentials), free access etc
- Entry and exit delays for intruder alarm zones
- Individually programmed responses for a cardholder or all members of an access group
- System division and assigned privileges to manage operators
- Communication with Gallagher Controllers with peer-to-peer communication independent of the server. This allows data to be automatically distributed to areas of the system where it is required
- Dial-up support for remote sites or off-site alarm monitoring
- Communication between Gallagher Command Centre and Gallagher Controllers using up to 256 bit AES encryption; a recognized industry leading level of data protection
- Configuration, live operation and reporting of on-site guard tours

Command Centre Web

Command Centre Web is the latest evolution in our suite of Command Centre products. It provides the flexibility and security to easily manage your stie from anywhere with an internet connect. It can be used on a PC, tablet, or mobile phone.

Command Centre Web connects back to the sites on-premise server using the API Gateway and is secured with two-factor authentication using Gallagher Mobile Connect.

This solution will evolve with our customer's needs. The first module is Cardholder Management and allows cardholder admin to be undertaken without needing a full Command Centre workstation set up. Perfect for reception, public guard stations, and anyone else who may need to perform cardholder management tasks but does not need to do other security-related tasks such as alarm management.

Gallagher Mobile Solutions

The Gallagher range of mobile solutions is comprehensive, and combines the power of Command Centre with the flexibility of mobile devices. Available for both iOS and Android, the apps are downloadable from Apple App and Google Play stores.

Mobile Connect App

Our Mobile Connect App securely transforms your mobile device into an access card or ID card**, at Gallagher and Salto BLE readers* using Bluetooth® wireless technology.

Optional two-factor authentication with fingerprint or PIN lets you add an additional security step, and ensures that the person at the door, is exactly who they say they are.

Access can be set up remotely (great for temporary visitors) and the easy set-up with two-step provisioning takes no time at all.

Access is made more convenient, and with FIDO open-standards you are secured by a globally recognized method of authentication.

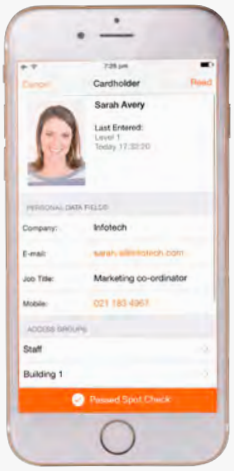
fido alliance member

For more information, refer to the datasheet:
Gallagher Mobile Connect App

Command Centre Mobile App

The Gallagher Command Centre Mobile App enables you to extend your security and access control and provides you with the ability to manage your security from your mobile device.

The App interfaces directly with Gallagher Command Centre, providing a secure link directly to the site management capabilities that already bring security and business efficiency to your site.



For more information, refer to the datasheet:
Command Centre Mobile App

*Requires Gallagher Command Centre v8.10+ **Mobile ConnectDigital ID requires Gallagher Command Centre v8.40+

Features and integrations



The power of Gallagher Command Centre allows extensive integration with other systems*, helping businesses to comply with a wide range of regulation standards, save money and create safe and well managed workplaces.

Interfacing Tools

Command Centre has a wide range of tools (including REST APIs) available to extend the functionality and flexibility of the Gallagher system. Integrate with other infrastructure and technologies to deliver cost and time efficiencies and improve data integrity.

Building Automation and Control

The Gallagher BACnet interface allows you to run your lighting and heating only when people are in the room. Monitor and control your HVAC (heating, ventilation and air conditioning) and other business management systems through Command Centre.

Video integrations

Integrate and monitor third party video surveillance systems through Command Centre. Equip your operators with a single system in the control room, increasing efficiencies and reducing costs.

Workforce Management

Ensure compliance to industry regulations and optimise production uptime with our full range of workforce management solutions.

Proactively: ensure people have the right certification; monitor and screen for fatigue or drug and alcohol presence; notify supervisors or restrict access where there are any anomalies.

Elevator integrations

Use Command Centre and Gallagher's elevator High Level Interfaces (HLI) to control access to building floors from elevator cars.

For more information on these and other third party integrations visit: security.gallagher.com

*Some integrations require optional licenses. Contact Gallagher or a Certified Channel Partner to find out more.

Gallagher Controllers

Controller 6000 C300100

The Gallagher Controller 6000 enforces business rules, monitors the environment, communicates with other integrated systems, and makes offline access decisions.

The Gallagher Controller 6000 (C6000) is the interface between the Gallagher Command Centre Server and distributed field hardware. The C6000 is capable of processing, storing, and communicating data in real time when the Gallagher Command Centre Server is offline. The Controller 6000's straight forward system architecture provides powerful and flexible configuration options.



- Has two RS485 connections, which may be individually configured to support HBUS, GBUS, SensorBUS or Aperio™ communications
- Provides connectivity to the 4H & 8H HBUS device modules as well as 4R & 8R reader modules
- Communicates directly with other Gallagher Controllers over a LAN/WAN using TCP/IP for the purposes of monitoring, back-up and control without requiring the Gallagher Command Centre server to be online
- Provides I/O functionality via the HBUS and Reader Modules and other I/O expansion options
- Communicates via the 4H or 8H Modules with Gallagher readers using the high speed HBUS RS-485 protocol
- OSDP RS-485 reader support
- Provides onboard front and rear tamper monitoring
- Includes a USB port as an alternative to the network connection for securely loading software into the Controller
- Sends and receives events from third party systems within the C6000 using the Gallagher Controller Application Programming Interface (API)
- Supports high level interfaces for elevator access control
- Supports the Gallagher T20 Terminal for management and operation of intruder alarm functions and Gallagher Perimeter Security Fence Controllers for integrated perimeter security.
- Supports alarm management and remote alarms transmission via multiple mediums:
  - LAN/WAN networks using TCP/IP protocol
  - Cellular networks, via cellular modem
  - PSTN Alarms, via Gallagher Dialer
- Stores up to 500,000 (standard) or 50,000 (Mobile Connect) credentials, and 80,000 events
- Controls up to 10 monitored doors
- Enables operation of integrated perimeter security, with the Gallagher T20 Terminal and Gallagher Perimeter Security Fence Controllers.
- Supports on-board controller logic with no server connection required.
- Supports automated software upgrades for all downstream connected HBUS devices.

Controller 6000 Enhanced C300101

The Controller 6000 Enhanced retains all of the functionality of the standard C6000 while providing additional features such as:

- Automated high and low temperature shutdown in extreme temperatures
- Dual ethernet ports for ethernet link redundancy
- Support for 10MB/100MB/1GB Ethernet network communications
- Dedicated encryption chip for ultra-secure encryption key storage
- Hardware watchdog relay for additional Controller system responsiveness

High Sec Controller 6000 C305101

The High Sec Controller 6000 meets and complies with Federal Information Processing Standard (FIPS) 201-2.

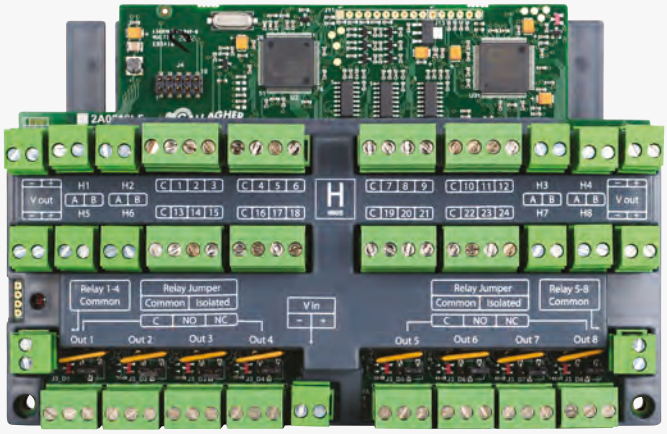
While offering all of the benefits of the Controller 6000 Enhanced, the High Sec Controller 6000 is also capable of performing contactless PIV smart card authentication checks. It natively enforces the revocation status of PIV smart card certificates, and performs cardholder specific access control decisions without the need for constant server connectivity.



For more information, refer to the datasheet:
Gallagher Controller 6000

Gallagher reader modules

Gallagher modules support star-wiring of other control devices, and I/O connectivity for door and equipment monitoring.



4H Module C300142 / **8H Module** C300182

HBUS Modules

The 4H and 8H modules utilize the HBUS protocol which runs at speeds up to 1Mb/s - substantially faster than most other RS-485 based communication protocols. This increased communication speed improves the response time of other Gallagher HBUS devices.

Connectivity

Gallagher 8H and 4H modules allow HBUS devices to be star-wired back to a secure controller cabinet. Star-wiring removes the risk of one faulty connection taking down all downstream devices as on a daisy-chained run, and each HBUS port can also support multiple HBUS devices. Gallagher 8H and 4H modules monitor and report the state of balanced inputs, and enforce decisions to switch output relays, if required.

Data protection

All communication between the Controller 6000 and its connected HBUS devices are secured using industry leading authentication and encryption techniques. All HBUS devices maintain a heartbeat to alert the system should any device be taken offline, and to protect against a wide range of potential attack methods.

Easy retrofit

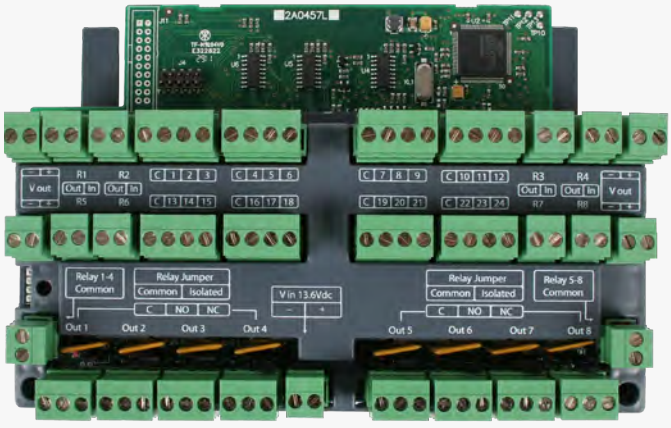
HBUS Modules are designed to run on all Controller 6000s, allowing an easy retrofit of previous expansion modules.

For more information, refer to the datasheet:
Gallagher HBUS Modules

4R and 8R Modules

Gallagher 4R or 8R modulescan connect readers via the Wiegand protocol, or via the legacy Cardax IV protocol. The 8R reader module clips into the Controller 6000 to provide connectivity for:

- Up to 8 Gallagher readers (Cardax IV), or up to 4 Wiegand readers
- Monitoring of 24 inputs
- 8 relay outputs



4R Module C300141 **8R Module** C300181

Gallagher HBUS I/O devices

Gallagher HBUS I/O Devices provide flexible, cost effective, secure input and output expansion options, and shared cabling with other HBUS devices.

High speed communication

The HBUS communication protocol is based on the RS485 standard and allows each HBUS I/O Device to communicate with the Gallagher C6000 Controller over a distance of up to 500m (1640 ft.) at a speed of 1Mb/s.

HBUS Device software is automatically available with Controller 6000 software upgrades; no operator intervention is required.

Features and benefits

- Unique identities for all field devices
- Extends the connectivity of the Gallagher C6000 via HBUS
- Automated device software upgrades
- T grade authentication and encryption levels to prevent data tampering
- Variable end-of-line resistance



HBUS 16 In 16 Out Board
C300688
- 16 inputs
- 16 outputs



HBUS 8 In 2 Out Door Module
C300660
- 8 inputs
- 2 outputs
- 2 doors with Gallagher HBUS readers



HBUS 8 Port Hub
C300698
- 8 downstream ports



HBUS 8 In Board
C300680
- 8 inputs



HBUS 8 In 4 Out Board
C300684
- 8 inputs
- 4 outputs



HBUS 4 In 2 Out Door Module – Wiegand
C300665
- 4 inputs
- 2 outputs
- 2 doors with 2 Wiegand readers

For more information, refer to the datasheet:
Gallagher HBUS I/O Devices

Gallagher Cabinets

Two Gallagher Cabinets are available to accommodate the Gallagher controllers and the Gallagher HBUS Module. A range of colors and power supply options are available.



Single Cabinet C200100



Dual Cabinet C200104

For more information, refer to the datasheet:
Gallagher Cabinets

Gallagher card readers

The Gallagher T-Series Reader and Terminal range provides contactless card and mobile credential readers for access control management as part of the Gallagher site management platform.

Secure, high speed access readers

- High speed RS485 protocol, HBUS, offers an access decision response time of 200 milliseconds
- Unparalleled reader security through IT grade authentication and encryption between the reader and controller with HBUS
- Support for multiple card technologies including: MIFARE®, MIFARE DESFire EV1® and MIFARE DESFire EV2®, MIFARE Plus® and MIFARE Classic®*, as well as 125 kHz proximity and Bluetooth® wireless technology (Multi technology readers only)
- Unrivaled reader durability and water/dust protection
- Environmentally friendly – RoHS compliant and designed for minimal power consumption
- Support for custom site encryption keys
- Heartbeat monitoring to ensure reader status can be monitored in real time
- Extensive range of reader mounting and protection accessories

*MIFARE Classic, MIFARE Plus, MIFARE DESfire EV1 and MIFARE DESfire EV2 are registered trademarks of NXP B.V.

T20 Terminal C300450

- Display company logo's, promotional imagery, and messaging, and enforce cardholder competencies through message display.
- Card Only and Card + PIN access modes (including duress access support, and dual cardholder authentication).
- Control Outputs to manage building facilities.
- Arm and disarm up to 50 alarm zones distributed across any system controllers, with optional automated input isolation, and automated alarms acknowledgment.
- Display up to 200 unacknowledged alarms and 100 acknowledged alarms, and manage up to 100 inputs. An alarms only variant is available (The T20 Alarms Terminal– C300463) when reader capability is not required.
- Maintain system integrity with scheduled or manual tests.
- IP66 rated environmental protection, and IK08 rated impact protection.
- Extensive perimeter management functions.
- Multiple language support.
- Integrated rear tamper.
- Fully configurable Mimic Panel.
- Software upgradeable in situ.



T30 Keypad Reader C300495

- Protection from the elements, with an environmental protection rating of IP68
- Supports Gallagher Mobile Connect
- A dedicated arming key with Alarm Zone status indication
- Surface and flush box mounting options
- IK09 impact protection rating



T-Series Reader range

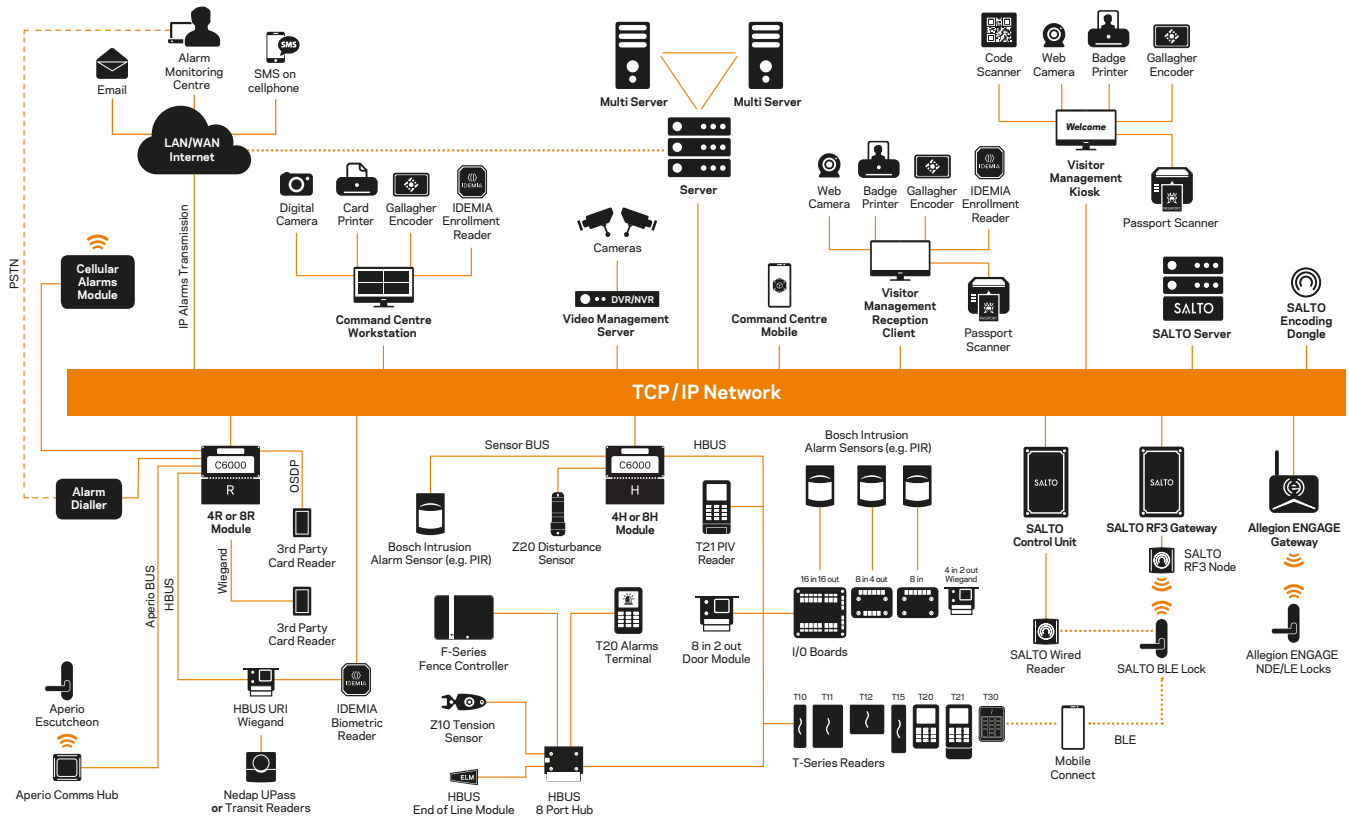
- Contemporary design - classic black and white, with both mullion or flushbox mounting variants
- IP68 environmental protection and IK07 for impact protection
- Configurable illumination and sound; where visual or audible indications may cause distraction
- Limited Lifetime Warranty



T12	T11	T10	T15
C300440	C300430	C300400	C300480

System architecture

Gallagher delivers a complete access control platform with a product architecture that extends from powerful software to robust and reliable hardware. Connected via information networks, all components synergize to provide any site with a scalable security solution that is consistently effective.



Gallagher World Headquarters

181 Kahikatea Drive, Melville, Hamilton 3204
New Zealand

Phone +64 7 838 9800
Email security@gallagher.com

Regional Offices

Americas	+1 877 560 6308
Asia	+852 3468 5175
Australia	+61 3 9308 7722
India	+91 98 458 92920
Middle East	+971 4 566 5834
South Africa	+27 11 974 4740
United Kingdom / Europe	+44 2476 64 1234

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security.gallagher.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 05 13 - Cables for Electronic Safety and Security
Description of Material or System:	Network Cable for Electronic Safety and Security
Last Updated:	1/4/2024
Updated by:	Katie Gregory via Paul Gravel

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Product is to be:

ANSI.TIA/EIA 568 Category 6 550 MHZ 360 degree

Links to additional product information:

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 23 00 - Video Surveillance
Description of Material or System:	Fixed Dome Network Camera
Last Updated:	1/4/2024
Updated by:	Katie Gregory via Paul Gravel

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
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- [ ] Other _____
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- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for a fixed dome network camera is Vivotek.

Manufacturer: Vivotek
Model Number:Vivotek-FD8169A

Links to additional product information:

http://www.vivotek.com.my/product-vivotek-fd8169a.html

FD8169A

Fixed Dome Network Camera



2MP · 20M IR · Smart Stream II · SNV · Defog · VIVOCloud

VIVOTEK's FD8169A is an easy-to-use fixed dome network camera specifically designed for indoor security applications, with a 2MP sensor enabling a viewing resolution of 1920x1080 at a smooth 30 fps. Dynamic and highly adaptable, the FD8169A is an all-in-one camera capable of capturing high quality video at high resolutions of up to 2 Megapixels.

The FD8169A features VIVOTEK's sophisticated Smart Stream II technology, allowing the camera to optimize image quality for desired regions, and thus ensure maximum efficiency of bandwidth usage and savings of up to 50% on bandwidth and storage requirements.

What's more, in order to adapt to constantly changing lighting conditions, the FD8169A features a removable IR-cut filter as well as IR illuminators effective up to 20M for superior image quality around the clock. Incorporating a number of advanced features standard for VIVOTEK cameras, including video rotation, defog, a dedicated MicroSD/SDHC/SDXC card slot, and VIVOTEK's 32-channel recording software, the FD8169A is the ideal solution for your indoor surveillance needs.

Key Features

- 2-Megapixel CMOS Sensor
- 30 fps @ 1920x1080
- Real-time H.264, MJPEG Compression (Dual Codec)
- Removable IR-cut Filter for Day & Night Function
- Built-in IR Illuminators, Effective up to 20 Meters
- Built-in 802.3af Compliant PoE
- Built-in MicroSD/SDHC/SDXC Card Slot for On-board Storage
- Supports ONVIF Standard to Simplify Integration and Enhance Interoperability
- SNV (Supreme Night Visibility) for Low Light Conditions
- Smart Stream II to Optimize Bandwidth Efficiency
- 3D Noise Reduction
- Smart IR Technology to Avoid Overexposure
- VIVOCloud Mobile App
- Trend Micro IoT Security within Standard Warranty Period



Without Smart Stream II



With Smart Stream II



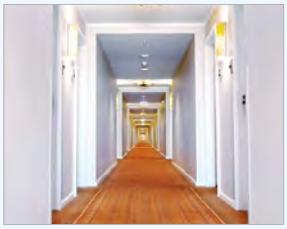
Ordinary Camera



VIVOTEK SNV Camera



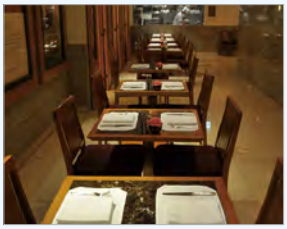
Library



Hotel



Retail



Restaurant

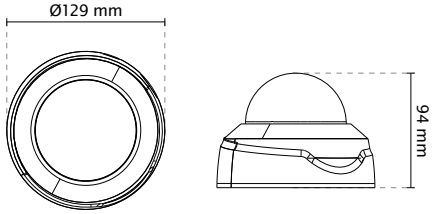
Technical Specifications

Model	FD8169A
System Information	
CPU	Multimedia SoC (System-on-Chip)
Flash	128MB
RAM	256MB
Camera Features	
Image Sensor	1/2.9 Progressive CMOS
Maximum Resolution	1920x1080 (2MP)
Lens Type	Fixed-focal
Focal Length	f = 2.8 mm
Aperture	F1.8
Field of View	114˚ (Horizontal) 61˚ (Vertical) 132˚ (Diagonal)
Shutter Time	1/5 sec. to 1/32,000 sec.
WDR Technology	WDR Enhanced
Day/Night	Removable IR-cut filter for day & night function
Minimum Illumination	0.06 Lux @ F1.8 (Color) 0.01 Lux @ F1.8 (B/W)
Pan/Tilt/Zoom Functionalities	ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in)
IR Illuminators	Built-in IR illuminators, effective up to 20 meters with Smart IR IR LED*8
On-board Storage	Slot type: MicroSD/SDHC/SDXC card slot Seamless Recording
Video	
Compression	H.264 & MJPEG
Maximum Frame Rate	30 fps @ 1920x1080 In both compression modes
Maximum Streams	4 simultaneous streams
S/N Ratio	68.5 dB
Dynamic Range	69.4 dB
Video Streaming	Adjustable resolution, quality and bitrate Smart Stream II
Image Settings	Time stamp, text overlay, flip & mirror Configurable brightness, contrast, saturation, sharpness, white balance, exposure control, gain, backlight compensation, privacy masks Scheduled profile settings, 3D noise reduction, video rotation, defog
Audio*	
Audio Capability	One-way audio
Compression	G.711, G.726
Interface	Built-in microphone
Effective Range	5 meters

*Audio feature is only available on part number 100168800G and 100192100G.

Network	
Users	Live viewing for up to 10 clients
Protocols	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE, CoS, QoS, SNMP, 802.1X, UDP, ICMP, ARP, SSL, TLS, CIFS/SMB
Interface	10 Base-T/100 BaseTX Ethernet (RJ-45) *It is highly recommended to use standard CAT5e & CAT6 cables which are compliant with the 3P/ETL standard.
ONVIF	Supported, specification available at www.onvif.org
Intelligent Video	
Video Motion Detection	Five-window video motion detection
Alarm and Event	
Alarm Triggers	Motion detection, manual trigger, periodical trigger, system boot, recording notification, camera tampering detection
Alarm Events	Event notification using HTTP, SMTP, FTP, NAS server and MicroSD card File upload via HTTP, SMTP, FTP, NAS server and MicroSD card
General	
Connectors	RJ-45 for Network/PoE connection
LED Indicator	System power and status indicator
Power Input	IEEE 802.3af PoE Class 0
Power Consumption	Max: 8.5 W
Dimensions	Ø: 129 mm x 94 mm
Weight	Net: 416.4 g
Safety Certifications	CE, LVD, FCC Class B, VCCI, C-Tick, UL
Operating Temperature	Starting Temperature: 0˚C ~ 50˚C (32˚F ~ 122˚F) Working Temperature: -10˚C ~ 50˚C (14˚F ~ 122˚F)
Humidity	90%
Warranty	24 months
System Requirements	
Operating System	Microsoft Windows 8/7
Web Browser	Internet Explorer 10/11 Chrome version 58.0.3029 or above
Other Players	VLC: 1.1.11 or above QuickTime: 7 or above
Included Accessories	
Others	Quick installation guide, alignment sticker, screw pack

Dimensions



Compatible Accessories

Mounting Kits



AM-21A
L-shape Bracket



AM-528
Mounting Adapter



AM-51D
Adapter Ring

Cloud-based Solution

Stratocast™

Ordering Information

Model	Description	Part Number
FD8169A	2MP, 20M IR, Fixed-focal, Operating Temp. -10˚C ~ 50˚C	100144600G
FD8169A (Audio)	2MP, 20M IR, Fixed-focal, Build-in Mic, Operating Temp. -10˚C ~ 50˚C	100168800G
FD8169A (Black)	2MP, 20M IR, Fixed-focal, Build-in Mic, Operating Temp. -10˚C ~ 50˚C, Black	100192100G

All specifications are subject to change without notice. Copyright © VIVOTEK INC. All rights reserved. Ver. 15
6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. T: +886-2-82455282 F: +886-2-82455532 E: sales@vivotek.com W: www.vivotek.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 23 00 - Video Surveillance
Description of Material or System:	Multi-Directional Camera
Last Updated:	1/4/2024
Updated by:	Katie Gregory via Paul Gravel

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
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- [ ] Other _____
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- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Manufacturer: Axis Multi-Directional Camera
Model Number: Axis QP37 and P47. Please coordinate intended camera with Safety office.

Links to additional product information:

https://www.axis.com/products/multidirectional-cameras

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 23 00 - Video Surveillance
Description of Material or System:	Thermal Network Camera
Last Updated:	1/4/2024
Updated by:	Katie Gregory via Paul Gravel

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
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- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer for a thermal network camera is Axis Communications.

Manufacturer: Axis Communications
Model Number: Axis Q 1941-E Thermal Network Camera.

Links to additional product information:

https://www.axis.com/products/axis-q1941-e#technical-specifications

AXIS Q1941-E Thermal Network Camera

Outstanding detection and powerful video analytics

AXIS Q1941-E is an outdoor, bullet style, thermal camera with a built-in window heater for harsh weather conditions. 384x288 resolution and lens alternatives between 7 mm to 60 mm make it possible to optimize detection performance. It supports Electronic Image Stabilization to keep the video smooth during vibrations, and Axis Zipstream that lowers bandwidth and storage requirements. AXIS Q1941-E comes with AXIS Guard Suite analytics and have support for more analytics such as AXIS Perimeter Defender or any other AXIS Camera Application Platform third party applications.

- > High performance for intelligent video analytics via ACAP
- > Outstanding image contrast gives reliable detection and fast verification
- > Electronic Image Stabilization
- > Axis Zipstream technology
- > AXIS Guard Suite included



AXIS Q1941-E Thermal Network Camera

Models	AXIS Q1941-E 7 mm/13 mm/19 mm/35 mm or 60 mm
Camera	
Image sensor	Uncooled Micro bolometer 384x288, pixel size: 17 µm Spectral range: 8-14 µm
Lens	Athermalized **7 mm** Horizontal field of view: 55°, F1.18 Near focus distance: 1.3 m (4.3 ft) **13 mm** Horizontal field of view: 28°, F1.0 Near focus distance: 5.3 m (17 ft) **19 mm** Horizontal field of view: 19.4°, F1.23 Near focus distance: 9.2 m (30 ft) **35 mm** Horizontal field of view: 10.5°, F1.2 Near focus distance: 33 m (108 ft) **60 mm** Horizontal field of view: 6.2°, F1.25 Near focus distance: 91 m (300 ft)
Sensitivity	NETD < 70 mK
Video	
Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles Motion JPEG
Resolution	Sensor is 384x288. Image can be scaled up to 768x576.
Frame rate	Up to 8.3 fps and 30 fps
Video streaming	At least three H.264 and Motion JPEG streams, simultaneous and individually configured in max. resolution in full frame rate Axis Zipstream technology in H.264 Controllable frame rate and bandwidth VBR/ABR/MBR H.264
Image settings	Compression, brightness, sharpness, contrast, exposure zone, text and image overlay, privacy mask, mirroring of images, electronic image stabilization, multiple palettes Rotation: 0°, 90°, 180°, 270° including Corridor Format
Audio	
Audio streaming	Two-way, full duplex
Audio encoding	24bit LPCM, AAC-LC 8/16 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz Configurable bit rate
Audio input/output	External microphone input or line input, line output
Network	
Security	Password protection, IP address filtering, HTTPS[a] encryption, IEEE 802.1x (EAP-TLS)[a] network access control, digest authentication, user access log, centralized certificate management, brute force delay protection, signed firmware
Supported protocols	IPv4, IPv6 USGv6, HTTP, HTTPS[a], SSL/TLS[a], QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, Bonjour, UPnP™, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SRTP, SFTP, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, LLDP, MQTT v3.1.1
System integration	
Application Programming Interface	Open API for software integration, including VAPIX® and AXIS Camera Application Platform; specifications at *axis.com* One-click cloud connection ONVIF® Profile G and ONVIF® Profile S specification at *onvif.org*
Event triggers	Analytics, temperature, external input, time scheduled, edge storage events
Event actions	Record video: SD card and network share Upload of images or video clips: FTP, SFTP, HTTP, HTTPS network share and email Pre- and post-alarm video or image buffering for recording or upload Notification: email, HTTP, HTTPS, TCP and SNMP trap Overlay text, play audio clip
Data streaming	Event data
Built-in installation aids	Pixel counter
Analytics	
Applications	**Included** AXIS Motion Guard, AXIS Fence Guard, AXIS Loitering Guard AXIS Video Motion Detection, audio detection, active tampering alarm **Supported** AXIS Perimeter Defender Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*
General	
Casing	IP66-, IP67- and NEMA 4X-rated Metal casing (aluminum) with integrated dehumidifying membrane and a germanium window Color: White NCS S 1002-B
Sustainability	PVC free
Memory	512 MB RAM, 256 MB Flash
Power	Power over Ethernet IEEE 802.3af/802.3at Type 1 Class 3 Typical 4.8 W, max 11.8 W 8–28 V DC, typical 6.6 W, max 13 W 20–24 V AC (50/60 Hz), typical 11 VA, max 19 VA Power supply not included.
Connectors	RJ45 10BASE-T/100BASE-TX PoE I/O connector for DC or AC input, two configurable inputs/outputs and mic in/line in, line out, (AXIS Multicable A I/O Audio not included), AC/DC input
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption Support for recording to network-attached storage (NAS) For SD card and NAS recommendations see *axis.com*
Operating conditions	-40 °C to 60 °C (-40 °F to 140 °F) Humidity 10–100% RH (condensing) De-icing capability, compliant to MIL-STD-810F Method 521.3
Storage conditions	-40 °C to 70 °C (-40 °F to 158 °F)
Approvals	**EMC** EN 55022 Class A, EN 50121-4, IEC 62236-4, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI Class A, RCM AS/NZS CISPR22 Class A KCC KN22 Class A, KN24 **Safety** IEC/EN/UL 60950-1, IEC/EN/UL 60950-22, IS 13252 EN 62368-1 **Environment** EN 50581, NEMA 250 Type 4X, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6 Class 4M4, IEC 60068-2-27, IEC 60068-2-52, IEC 60721-3-4 Class 4K3, MIL-STD-810F Method 521.3 IEC 60529 IP66/IP67 **Network** NIST SP500-267
Dimensions	344 x 146 mm (13 9/16 x 5 3/4 in)
Weight	7/13/19/35 mm: 2000 g (4.4 lb) 60 mm: 2200 g (4.9 lb)
Included accessories	Resistorx® L-key, wall and ceiling mount bracket terminal block connector Installation Guide, Windows® decoder 1-user license
Optional accessories	AXIS T98A17-VE Surveillance Cabinet, AXIS T94G01P, AXIS T91A47 Pole Mount, AXIS Multicable A I/O Audio, Axis PoE Midspans, AXIS T8129 PoE Extender, AXIS T8640 PoE+ over Coax Adapter Kit, AXIS T8604 Media Converter Switch AXIS T8415 Wireless Installation Tool For more accessories, see *axis.com*
Video management software	AXIS Companion, AXIS Camera Station, Video management software from Axis' Application Development Partners available at *axis.com/vms*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese
Warranty	5-year warranty, see *axis.com/warranty*

Export control This product is subject to export control regulations. You should always consult and comply with the regulations of the appropriate local export control authorities.

Environmental responsibility:

axis.com/environmental-responsibility

a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Surveillance
Specification Section:	28 23 00 - Video Surveillance
Description of Material or System:	CCTV - Multi-Sensor Dome Network Camera
Last Updated:	5/9/2022
Updated by:	Paul Gravel

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
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- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for a (CCTV) Multi-sensor adjustable dome network camera is Vivotek.

Manufacturer: **Vivotek**
Model Number: **MA8391-ETV**

Links to additional product information:

https://www.vivotek.com/

MA8391-ETV

Multi-Sensor Adjustable Dome Network Camera



12MP Total Resolution • Multi-Directional • Adjustable Views • Remote Focus • SNV • IP66 • IK10 • -40°C ~ 55°C

The new MA8391-ETV is the most versatile product offering to date from VIVOTEK. The MA8391-ETV provides high resolution images through four independent sensors, with each sensor utilizing a remote focus lens. By having each sensor independent of each other, the MA8391-ETV can view four different regions simultaneously and therefore reduce the total number of cameras needed for surveillance, helping to reduce total installation time and costs.

Featuring four independent 3MP CMOS Sensors, the MA8391-ETV network camera can provide the most flexibility in surveillance monitoring. Each sensor utilizes a 2.8 to 8 mm remote focus lens and 3-axis design along a circular track to enable full 360° coverage. This enables the MA8391-ETV to capture every angle for comprehensive video coverage from a single IP address, making this camera ideally suited for surveillance in areas such as hallway intersections, building corners, parking garages/lots, and shopping malls.

In addition to its versatile coverage, the MA8391-ETV is armed with a robust IP66 and IK10-rated housing to enable the multi-directional camera to withstand rain and dust as well as to protect against vandalism or tampering.

Key Features

- 12-Megapixel Total Resolution
- 4 Independent Sensors, Adjustable Views
- Remote Focus
- 7 fps (2048x1536) per Sensor
- Removable IR-cut Filter for Day & Night Function
- Smart Stream II to Optimize Bandwidth Efficiency
- SNV (Supreme Night Visibility)
- 3D Noise Reduction for Low-light Conditions
- Weather-proof IP66-rated and Vandal-proof IK10-rated Housing
- -40°C ~ 55°C Wide Temperature Range for Extreme Weather Conditions
- Built-in Microphone
- Built-in MicroSD/SDHC/SDXC card slot



Multiple sensors, Adjustable views

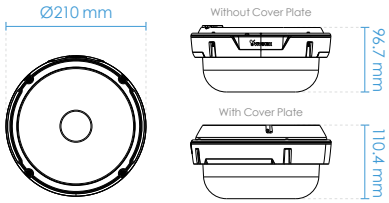
Technical Specifications

Model	MA8391-ETV
System Information	
CPU	Multimedia SoC (System-on-Chip)
Flash	128MB
RAM	1GB
Camera Features	
Image Sensor	1/2.8" Progressive CMOS
Maximum Resolution	2048x1536 (3MP) x 4
Lens Type	Vari-Focal, Remote Focus
Focal Length	f = 2.8 ~ 8 mm
Aperture	F1.6
Field of View	51° ~ 105° (Horizontal) 37° ~ 72° (Vertical) 63° ~ 140° (Diagonal)
Shutter Time	1/5 sec. to 1/32,000 sec.
WDR Technology	WDR Enhanced
Day/Night	Removable IR-cut filter for day & night function
Minimum Illumination	0.23 Lux @ F1.6 (Color) 0.01 Lux @ F1.6 (B/W)
Tilt Range	0° ~ 105° each lens
Rotation Range	±90° each lens
Pan/Tilt/Zoom Functionalities	ePTZ: 48x digital zoom (4x on IE plug-in,12x built in)
On-board Storage	Slot type: MicroSD/SDHC/SDXC card slot Seamless Recording
Video	
Compression	H.264 & MJPEG
Maximum Frame Rate	7 fps @ 2048x1536
Maximum Streams	4 simultaneous streams
S/N Ratio	66.5 dB
Dynamic Range	60 dB
Video Streaming	Adjustable resolution, quality and bitrate, Configurable video cropping for bandwidth saving; Smart Stream II
Image Settings	Time stamp, text overlay, flip & mirror, scheduled profile settings, configurable brightness/contrast/saturation/sharpness, white balance, exposure control, gain, backlight compensation, privacy masks
Audio	
Audio Capability	One-way Audio
Compression	G.711, G.726
Interface	Built-in Microphone
Effective Range	5 meters

Network	
Users	Live viewing for up to 10 clients
Protocols	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE, CoS, QoS, SNMP, 802.1X, NTCIP, ARP, SSL, TLS, CIFS/SMB
Interface	10 Base-T/100 BaseTX Ethernet (RJ-45) *It is highly recommended to use standard CAT5e & CAT6 cables which are compliant with the 3P/ETL standard.
ONVIF	Supported, specification available at www.onvif.org
Intelligent Video	
Video Motion Detection	Five-window video motion detection
Alarm and Event	
Alarm Triggers	Motion detection, manual trigger, digital input, periodical trigger, system boot, recording notification, camera tampering detection, audio detection
Alarm Events	Event notification using digital output, HTTP, SMTP, FTP, NAS server and MicroSD card File upload via HTTP, SMTP, FTP, NAS server and MicroSD card
General	
Connectors	RJ-45 for Network/PoE connection AC 24V Power input Digital input *1 Digital ouput *1
LED Indicator	System power and status indicator
Power Input	AC 24V IEEE 802.3at PoE Class 4
Power Consumption	Max. 24 W
Dimensions	Ø 210 x 110.4 mm Ø 210 x 96.7 mm (without cover plate)
Weight	1,572 g
Casing	IP66, IK10
Safety Certifications	CE, LVD, FCC Class A, VCCI, C-Tick, UL
Operating Temperature	Starting Temperature: -30°C ~ 55°C (-22°F ~ 131°F) Working Temperature: -40°C ~ 55°C (-40°F ~ 131°F)
Humidity	90%
Warranty	36 months
System Requirements	
Operating System	Microsoft Windows 7/8
Web Browser	Internet Explorer 10/11
Other Players	VLC: 1.1.11 or above Quicktime: 7 or above
Included Accessories	
Others	Quick installation guide, warranty card, alignment sticker, desiccant bag, screw driver, screws pack

Technical Specifications

Dimensions



Compatible Accessories

Mounting Kits



AM-529
Mounting Adapter
(1.5" PS11 Male
Connector)



AM-116/117
Pendant Pipe
(1.5" PS11)
(20 cm/40cm)



AM-114
Pendant Head
(Outdoor)



AM-21C
Wall Mount Bracket



AM-314
Pole Mount Adapter



AM-414
Corner Mount Adapter

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6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C. | T: +886-2-82455282 | F: +886-2-82455532 | E: sales@vivotek.com | W: www.vivotek.com

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Surveillance
Specification Section:	28 23 00 - Video Surveillance
Description of Material or System:	CCTV - 180 degree Panoramic Network Camera
Last Updated:	5/9/2022
Updated by:	Paul Gravel

Included in this section:

- ☑ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The preferred manufacturer for a (CCTV) 180 degree Panormaic Network camera is Vivotek.

Manufacturer: **Vivotek**
Model Number: **CC8371-HV**

Links to additional product information:

https://www.vivotek.com/

CC8371-HV

180° Panoramic Network Camera



3MP • WDR Pro • 180° Panoramic View • 15M IR • IK10 • IP66 • 3DNR • Anti-Ligature

VIVOTEK's CC8371-HV is a vandal-proof IR fisheye network camera offering up to 30 fps at 3-Megapixel resolution. With its unique design and inconspicuous appearance, the CC8371-HV is suitable for a wide array of environments. Featuring 180° horizontal panoramic views with adjustable 25° tilt angle, the camera allows users amazing flexibility of viewing angles and options. The camera's weather-proof compact size also makes it an ideal choice for indoor and outdoor scenarios such as boutiques, convenience stores, banks, schools, parking lots and residential homes. Without ligature edges, it can also be very effective in tough security installations like prisons and mental facilities.

The CC8371-HV can view up to 180 degrees, providing complete video security without losing angle coverage. Featuring WDR Pro, the camera captures both the dark and bright areas of an image and combines the differences to create a highly realistic representation of the original scene. Further, with added SNV technology, high-quality full-color surveillance video becomes possible even under low-light conditions. These combined features enable the camera to provide video quality remarkably close to the capabilities of the human eye. Further increasing the level of surveillance, a built-in microphone can record sound within a 5-meter radius.

The CC8371-HV also has built-in 180° IR illuminators up to 15 meters. So no matter day or night, light or dark, the CC8371-HV's versatility is unmatched.

Key Features

- 3-Megapixel CMOS Sensor
- 30 fps @ 2048x1536
- Anti-Ligature Design
- 180° Horizontal Panoramic View
- 180° IR Illuminators up to 15 Meters
- WDR Pro (100dB) to Provide Extreme Visibility in High Light Contrast Scenes
- SNV (Supreme Night Visibility)
- Weather-proof IP66-rated and Vandal-proof IK10-rated Housing
- ±25° Tilt Lens
- Built-in Microphone
- 3D Noise Reduction for Low-light Conditions
- Real-time H.264 and MJPEG Compression (Dual Codec)
- Built-in IEEE 802.3af Compliant PoE
- Built-in MicroSD/SDHC/SDXC card slot



Without 180° IR



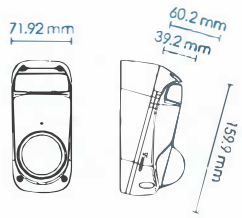
With 180° IR

Technical Specifications

Model	CC8371-HV
System Information	
CPU	Multimedia SoC (System-on-Chip)
Flash	128MB
RAM	256MB
Camera Features	
Image Sensor	1/2.8" Progressive CMOS
Maximum Resolution	2048x1536 (3MP)
Lens Type	Fixed-focal
Focal Length	f = 1.45 mm
Aperture	F2.2
Field of View	180° (horizontal) 120° (vertical) 180° (diagonal)
Shutter Time	1/5 sec. to 1/32,000 sec.
WDR Technology	WDR Pro
Day/Night	Removable IR-cut filter for day & night function
Minimum Illumination	<0.07 Lux @ F2.2 (Color) <0.001 Lux @ F2.2 (B/W)
Tilt Range	±25°
Pan/Tilt/Zoom Functionalities	ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in)
IR Illuminators	Built-in IR illuminators, effective up to 15 meters with Smart IR
On-board Storage	Slot type: MicroSD/SDHC/SDXC card slot Seamless Recording
Video	
Compression	H.264 & MJPEG
Maximum Frame Rate	30 fps @ 2048x1536
Maximum Streams	3 simultaneous streams
S/N Ratio	59.2 dB
Dynamic Range	100 dB
Video Streaming	Adjustable resolution, quality and bitrate; Smart Stream II
Image Settings	Time stamp, text overlay, flip & mirror, scheduled profile settings, configurable brightness/contrast/saturation/sharpness, pixel calculator, 3D-Noise reduction, white balance, exposure control, gain, backlight compensation, privacy masks
Audio	
Audio Capability	One-way Audio
Compression	G.711, G.726
Interface	Built-in Microphone
Effective Range	5 meters
Network	
Users	Live viewing for up to 10 clients
Protocols	IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTSP/RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE, CoS, QoS, SNMP, 802.1X ,SSL/TLS, ARP, NTCIP, CIFS/SMB
Interface	10Base-T/100 BaseTX Ethernet (RJ-45) *It is highly recommended to use standard Cat. 5e & Cat. 6 cables which are compliant with the 3P/ETL standard.
ONVIF	Supported, specification available at www.onvif.org
Intelligent Video	
Video Motion Detection	Five-window video motion detection
Alarm and Event	
Alarm Triggers	Motion detection, manual trigger, periodical trigger, system boot, recording notification, camera tampering detection, audio detection
Alarm Events	Event notification using HTTP, SMTP, FTP, NAS server and MicroSD Card File upload via HTTP, SMTP, FTP, NAS server and MicroSD card
General	
Connectors	RJ-45 for Network/PoE connection
LED Indicator	System power and status indicator
Power Input	IEEE 802.3af PoE Class 0
Power Consumption	Max. 11.3 W
Dimensions	159.9 x 71.92 x 60.2 mm (Dome to rear panel), 39.2 mm (Flat to rear panel)
Weight	492 g
Casing	IP66, IK10
Safety Certifications	CE, LVD, FCC Class B, VCCI, C-Tick, UL
Operating Temperature	Starting Temperature: -10°C ~ 50°C (14°F ~ 122°F) Working Temperature: -20°C ~ 50°C (-4°F ~ 122°F)
Humidity	90%
Warranty	24 months
System Requirements	
Operating System	Microsoft Windows 8/7
Web Browser	Internet Explorer 10/11
Other Players	VLC: 1.1.11 or above Quicktime: 7 or above
Included Accessories	
Others	Quick installation guide, warranty card, mounting bracket, tilt bracket, screw pack

Technical Specifications

Dimensions



PRESENTED BY:
PELMAC INDUSTRIES
INCORPORATED
www.pelmac.com (800) 244-5916

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety And Security
Specification Section:	28 31 00 - Fire Detection and Alarm
Description of Material or System:	Fire Alarm Radio box
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA Campus fire alarm building radio box: **AES 7707P-88-ULP-M IntelliNet 2.0 Fire Subscriber**

Links to additional product information:

https://aes-corp.com/products/fire/

https://aes-corp.com/wp-content/uploads/2020/07/7707-Datasheet_Updated.pdf

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety And Security
Specification Section:	28 31 00 - Fire Detection and Alarm
Description of Material or System:	Fire Alarm System
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

Perferred Campus Fire Alarm system - **Simplex**
Addressable system with addressable speaker strobes.
No Substitutes.

Links to additional product information:

https://simplex-fire.com/en/us/Pages/default.aspx?value=HOME

https://simplex-fire.com/en/us/Pages/ProductDetail.aspx?productdetail=Simplex+4100ES+Fire+Alarm+Control+Unit

https://simplex-fire.com/en/us/Pages/ProductDetail.aspx?productdetail=TrueAlarm+Addressable+Sensors

https://simplex-fire.com/en/us/Pages/ProductDetail.aspx?productdetail=TrueAlert+ES+Addressable+Notification+Appliances

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 31 00 - Fire Detection and Alarm
Description of Material or System:	Smoke Alarm + CO Alarm
Last Updated:	11/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer is Kidde.

Firex Series
Model CUAC10YFEX-V
30CUA10

No substitutes.

Links to additional product information:

https://www.kidde.com/home-safety/en/us/products/fire-safety/detect-products/detect-combination-smoke-carbon-monoxide-alarm-hardwired-with-10-year-backup-battery-30CUA10/

Combo smoke alarm + CO Alarm, hardwired with 10-year backup battery.

Phillips Exeter Academy
Construction Standards and Guidelines

Division:	28 Electronic Safety and Security
Specification Section:	28 31 00 - Fire Detection and Alarm
Description of Material or System:	Smoke Alarm
Last Updated:	11/2024
Updated by:	Jason Palmer

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [x] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred manufacturer is Kidde.

Firex Series
Model SMAC10YFEX
20SA10

No substitutes.

Links to additional product information:

https://www.kidde.com/home-safety/en/us/products/fire-safety/detect-products/detect-smoke-alarm-hardwired-with-10-year-backup-battery-20SA10/

Smoke Alarm, hardwired with 10-year backup battery.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	28 Electronic Safety And Security
Specification Section:	28 31 00 Fire Detection and Alarm
Description of Material or System:	Mass Notification
Last Updated:	7/26/2022
Updated by:	Jason Palmer

Included in this section:

- ☑ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

PEA campus perferred manufacturer for mass notification is **ATI systems**. No Substitutes.

Links to additional product information:

https://www.atisystems.com/
https://www.atisystems.com/products/indoor-speaker-systems/remote-terminal-unit/

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	32 Exterior Improvements
Specification Section:	32 14 13 Precast Concrete Pavers
Description of Material or System:	Concrete Pavers
Last Updated:	2/6/2023
Updated by:	Jeff Plimpton

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☑ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

The following is the preferred specification for concrete pavers campus wide.

Links to additional product information:

https://unilock.com/

GAGNE & SON

CONCRETE PRODUCTS

HOLLANDSTONE

Elegance and practicality strike a balance in Gagne & Son Hollandstone pavers. Compatible with traditional and contemporary architecture, Hollandstone is strong and durable making it the ideal choice for driveways, walkways and borders. Gagne & Son Hollandstone is considered a traditional paver and is available in multiple color options including several stunning blends.

Its name is rumored to come from Holland where individual stone pavers were used to provided a flexible yet durable road in the 1940s.


Pavers: Hollandstone
Color: Natural

FEATURES

- Traditional rectangular shape
- Smooth finish
- Most variety of colors out of any paver
- Pattern options from herringbone, basket weave, running bond, and more

SHAPE OPTIONS


RECTANGLE

DIMENSIONS & COVERAGE

4" x 8" 2 3/8" thick 4.5 pcs/sf 120 sf/pallet

COLOR OPTIONS


NATURAL


CHARCOAL


RED


FIELDSTONE BLEND


GRANITE HILL BLEND


OLD PORT BLEND


SUNSET BLEND

SPECIAL ORDER


Pavers: Hollandstone
Color: Charcoal

Belgrade | Auburn | Westbrook | Kittery | Saco | Topsham | Holden

MASONRY - HARDSCAPING - PRECAST - CONSTRUCTION SUPPLIES

www.gagneandson.com | 1-800-339-3313

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	32 Exterior Improvements
Specification Section:	32 33 13 Site Bicycle Racks
Description of Material or System:	Bike Rack
Last Updated:	1/24/2024
Updated by:	Katie Gregory

Included in this section:

- ☐ Product Specifications
- ☐ Design Guidelines
- ☐ Design Details/Drawings
- ☐ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

Overview of system/product/guideline:

All campus bike racks shall be of similar type and style.

Links to additional product information:

www.bikeracks.com
Bike Security Racks Co., Inc.

Bike Racks

Materials

- Bike racks shall be Bike-Rail, (BR-model) as manufactured by Bike Security Racks Company, 12 Sawyer Loop, Wentworth, NH 03282; Telephone 800-545-2757; FAX 603-786-9652. Capacity shall be determined by Project Manager.

- Construction: Schedule 40, ASTM A500, welded seamless-steel pipe for header and posts and (3/8" x 3") H.R. steel flat-bar for base ends. A schedule 40, black plastic sleeve cover shall be installed on top header of bike rack.

- Finishes: Heavy duty hot-dipped galvanized finish and black thermoplastic powder coat (8-10 mils) thick.

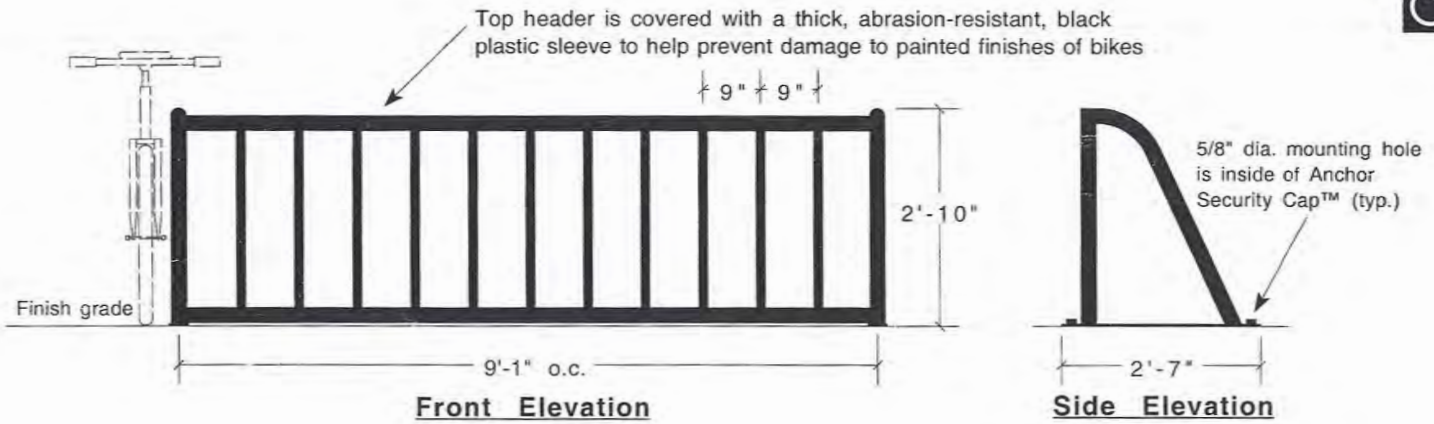
Execution

- Bike racks shall be located as indicated on the Drawings and in accordance with manufacturer's assembly and installation instructions.

- Mounting option and anchoring method shall be determined by Project Manager.

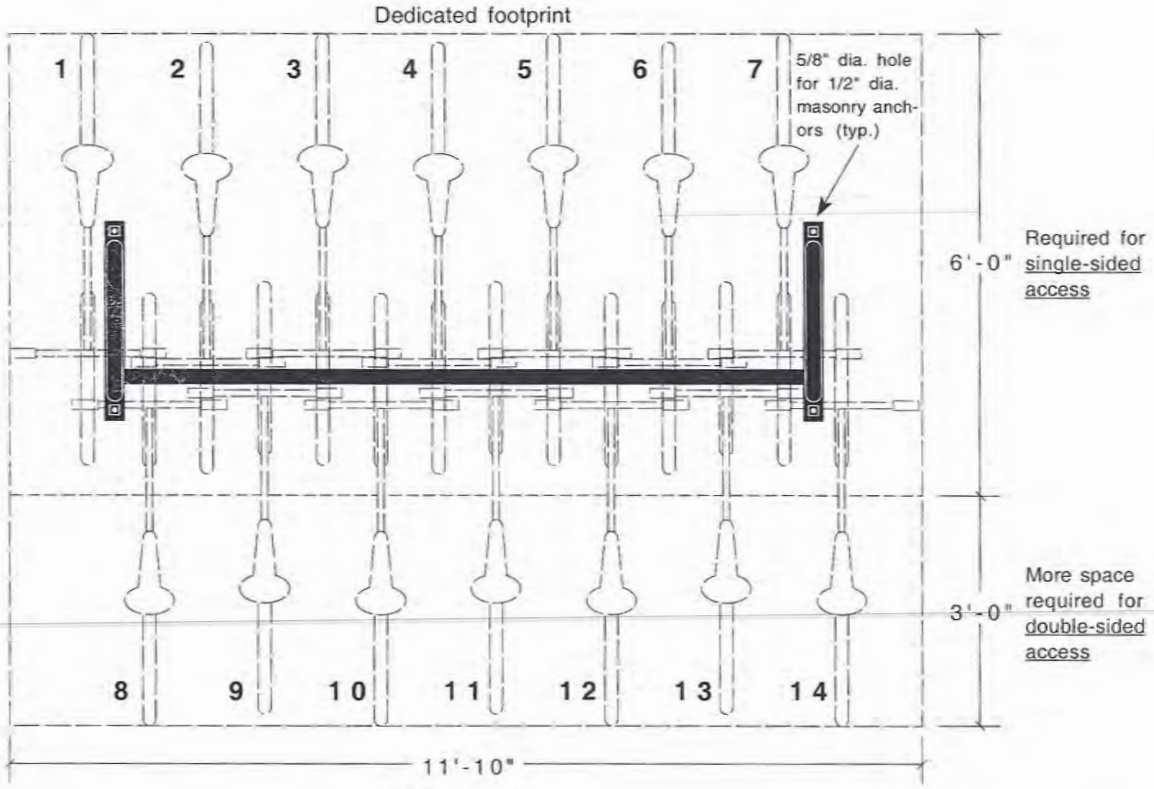
BR-12.9 Bike-Rail™ Version 9, Surface-Mounted, Moderate Security Bike Rack

Bike Security Racks Co., Inc.
12 Sawyer Loop
Wentworth, NH 03282
(800) 545-2757 Ph.#
(603) 786-9652 FAX



Front Elevation

Side Elevation



Plan View

ORDERING INFORMATION

Bike-Rail™ Version 9 Bike Racks
Surface-Mounted Models

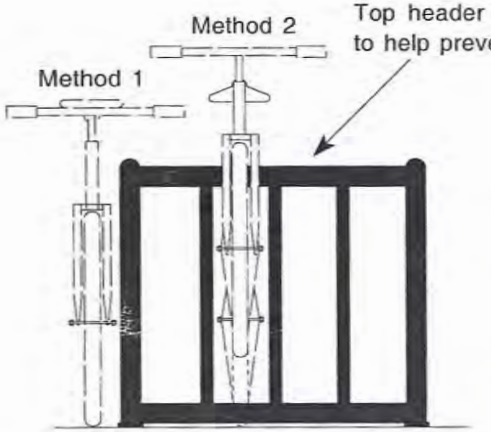
Model #	Length	Bike Capacity 1 side	2 sides
BR- 4.9	3' - 1"	3	6
BR- 6.9	4' - 7"	4	8
BR- 8.9	6' - 1"	5	10
BR-12.9	9' - 1"	7	14
BR-16.9	12' - 1"	9	18
BR-20.9	15' - 1"	11	22
BR-24.9	18' - 1"	13	26

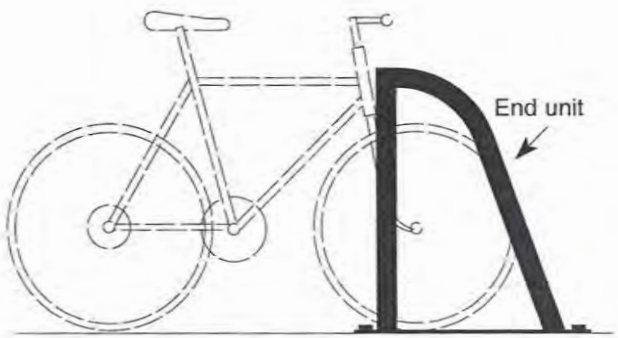
Intermediate sizes quoted on request.

©Apr. 2004 Bike Security Racks Co., Inc. All Rights Reserved

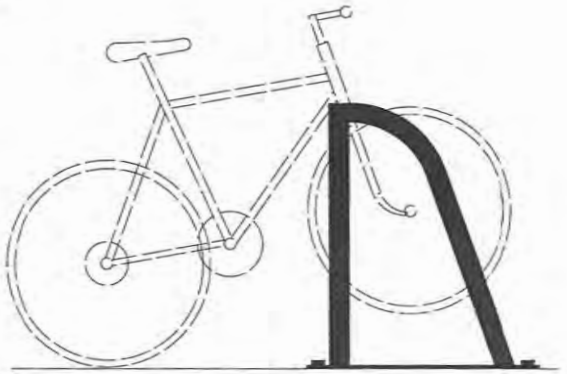
Two Common Methods of Locking Bicycles to Bike-Rail™

Bike Security Racks Co., Inc.
12 Sawyer Loop
Wentworth, NH 03282
(800) 545-2757 Ph.#
(603) 786-9652 FAX





Method 1



Method 2

Specifications

Model#:
- BR-12.9 Bike-Rail™ : Moderate Security Bike Rack

Capacity:
- Single-sided access: (7) on 18" centers
- Double-sided access: (14) bikes on 9" centers

Materials:
- 2" nom., Sched. 40, ASTM A500, welded seamless-steel pipe for bottom header and end units
- 1-1/2" nom., Sched. 40, ASTM A500, welded seamless-steel pipe for top header
- 1" nom., Sched. 40, ASTM A500, welded seamless-steel pipe for posts
- 3/8" x 3" H.R. steel flat-bar for base of end units
- 1-1/2" nom., Sched. 40, black plastic sleeve covers top header

Finishes:
- Hot-dipped galvanizing
- Black, abrasion-resistant thermoplastic powder coating 8 to 10 mils thick
- Standard-colored, abrasion-resistant thermoplastic powder coating 8 to 10 mils thick (extra)
- Hot-dipped galvanized substrate plus thermoplastic powder coating 8 to 10 mils thick (extra)
- Satin-finished #304 stainless-steel construction (extra)

Fabrication:
- All metallurgical joints are MIG welds
- Rear side of posts are partially welded to allow venting during galvanizing process
- Bike-Rail Coupler Units™ are used to butt-join bike racks 18'-1" or longer

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Phillips Exeter Academy

Construction Standards and Guidelines

Division:	32 Exterior Improvements
Specification Section:	32 33 23 - Site Trash and Litter Receptacles
Description of Material or System:	Trash Receptacles for exterior applications
Last Updated:	1/24/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [x] Other Catalog Cut sheet
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Recycling bins to be used campus wide. See following guidelines.

Links to additional product information:

Trash & Mixed Recycling Receptacles

Materials

- Trash & Mixed Recycling Receptacles shall be model (EC32rcLX-2) (Double-32 Gallon Roll Cart Enclosure) recycled plastic unit as manufactured by Landmark Studio & Design, W184 S8425 Challenger Drive; Muskego, WI 53150-7821; Telephone 888-337-7677; FAX 262-679-8485.

- Construction: 2-compartment recycled plastic lumber container with rigid liners, black posts and black single border panels, sloped roof, and access doors as specified by Project Manager. Waste and Mixed-Recycling compartments shall have rectangular openings.

- Labels: Waste compartment shall have a Green logo with white lettering and Mixed Recycling shall have a Blue logo with white lettering.

Execution

- Trash & Mixed Recycling Receptacles shall be located as indicated on the Drawings and in accordance with manufacturer's assembly and installation instructions.

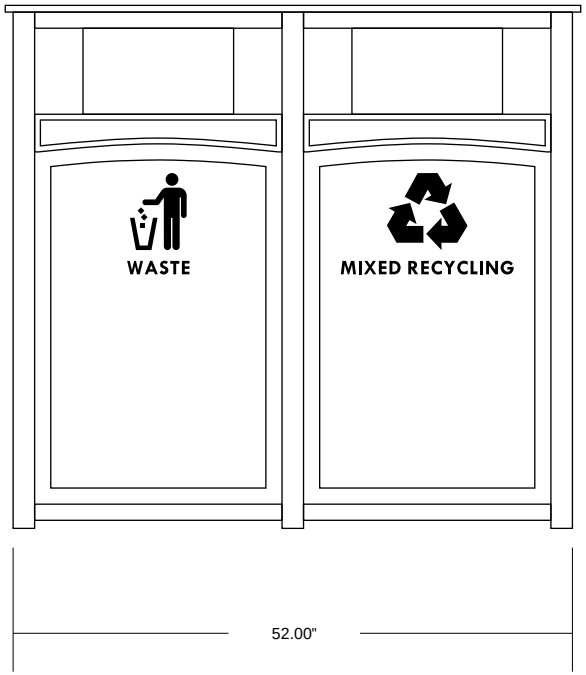
- Mounting option and anchoring method shall be determined by Project Manager.

LANDMARK STUDIO & DESIGN

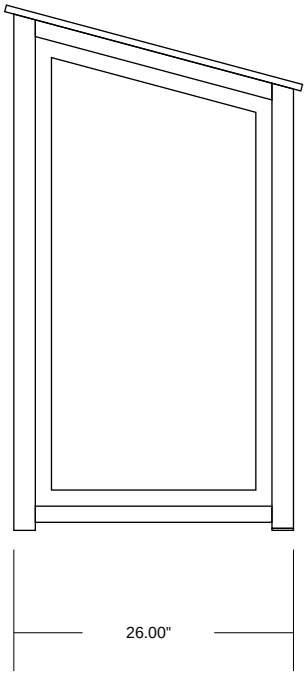
CLIENT NAME	Phillips Exeter
SALES DATE	
PROOF DATE	7-24-13
DRAWING NUMBER 1030 1	ACCOUNT REPRESENTATIVE CHAD

NOTES ▶
The inside dimensions of each section of the enclosure are 24 1/4" wide by 22 3/4" deep
The height to the bottom of Waste Opening is 38 1/2"
The dimensions of this unit are base off a line size of 19 3/8" x 21 1/16" x 37 5/8"
The liner dimensions were given to us by you our customer

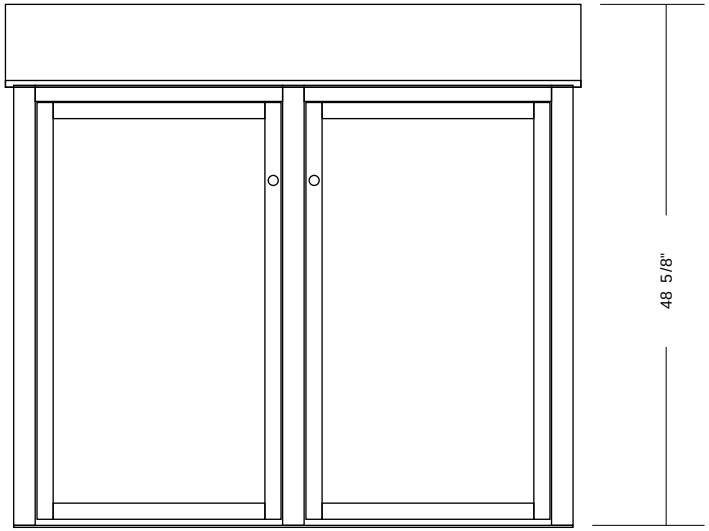
Front



Side



Back



PRODUCT CODE	EC32LX-2-Cust			MATERIAL	HDPE			COLORS		MFG READY	
TRIM–EDGE / INSET		LOGO (Y / N)		ENGRAVED / DECAL		RESIN POURED (Y / N)		RESIN COLORS		M&T	

CUSTOMER APPROVAL

By signing, you are approving the layout for production. In signing this release form, the customer is approving the layout, spelling, colors, and any other modifications that are shown or described. Orders cut to this layout are non-returnable. Delivery is 4-5 weeks after receipt of signed approval. PLEASE SIGN BELOW AND FAX OR EMAIL TO YOUR ACCOUNT REPRESENTATIVE. Note: These proofs and/or drawings in whole or in part, may NOT be used except by written agreement with Landmark Golf Course Products.

☐ CHECK IF APPROVED VIA EMAIL
(office use only)

Signature _____ Date _____


WASTE
MIXED RECYCLING
49.5”
26.5”
50”

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	32 Exterior Improvements
Specification Section:	32 33 43.13 - Site Seating
Description of Material or System:	Site Benches
Last Updated:	1/24/2024
Updated by:	Katie Gregory

Included in this section:

- [x] Product Specifications
- [x] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

The preferred model and manufacturer for a campus bench is the Scarborough Bench by Landscapeforms.

Manufacturer: Landscape Forms
Model Name: Scarborough Bench
Type: Backed, 72" - Horizontal Strap
Construction: Freestanding, surface mountable
Finishes: Powder-coated steel
Color: Black

Campus benches shall be located as indicated on the drawings and in accordance with manufacturer's assembly and installation instructions.

Campus benches shall be surface mounted on masonry pad as specified on the drawings with dimensions determined by Project Manager.

Links to additional product information:

https://www.landscapeforms.com/en-US/Pages/default.aspx



Phillips Exeter Academy

Construction Standards and Guidelines

Division:	32 Exterior Improvements
Specification Section:	32 92 00 Turf and Grasses
Description of Material or System:	Campus Grass Mix
Last Updated:	1/4/2024
Updated by:	Katie Gregory via Ed Ball

Included in this section:

- [x] Product Specifications
- [ ] Design Guidelines
- [ ] Design Details/Drawings
- [ ] Supplemental Information
- [ ] Other _____
- [ ] Other _____

Guideline applies:

- [ ] Academic Buildings
- [ ] Administrative
- [ ] Athletic Facilities
- [ ] Campus Wide
- [ ] Other _____
- [ ] Other _____
- [ ] Dormitories
- [ ] Faculty Residences
- [ ] Support
- [ ] Utility

Overview of system/product/guideline:

Attached are the specifications for campus lawns.

Links to additional product information:

Supplier:
Charles C. Hart
304 Main Street
Wethersfield, CT 06109
Phone: 860-529-2537
Fax: 860-563-7221

DIVISION 2 – SITEWORK

02900 LANDSCAPING

Campus Lawns and Grasses - 02930

Materials

- Topsoil shall be from on-site stockpiles augmented by topsoil furnished by Contractor and approved by Project Manger. Topsoil shall be a natural, fertile, friable loam, typical of cultivated soils of the locality. A soil analysis shall be performed on all topsoil to determine soil characteristics, fertility and pH.

- All topsoil shall be of good, rich, uniform grade without admixture of subsoil material. It shall be free from hard clods, stiff clay, hardpan, sods, large stones, lime, cement, bricks, coal, ashes, cinders, slag, concrete, asphalt, construction debris, boards, sticks, roots or other deleterious material.

- Commercial fertilizer shall be a complete fertilizer as recommended by the soil test. Fertilizer shall be delivered to the site in the original unopened containers, which shall bear the manufacturer's name and guaranteed statement of analysis. At least 40 percent by weight of the nitrogen content of the fertilizer shall be derived from organic materials. Fertilizer for lawn areas shall contain not less than 8 percent nitrogen, 6 percent phosphorus and 4 percent potash by weight of ingredients or as otherwise indicated by the soil analysis results.

- Lawn seed mix shall be a fresh, clean new seed crop. The Contractor shall furnish a dealer's guaranteed statement of the composition of the mixture and the percentage of purity and germination of each variety.

- Lawn seed shall be purchased from a recognized distributor and shall be composed of the following varieties mixed in the percentages indicated, or as specified by the Project Manager. Seed shall test to minimum percentages of purity and germination specified.

    - 33% Fine Fescue
    - 33% Perennial Ryegrass
    - 33% Kentucky Bluegrass Blend

- Fiber Mulch shall be composed of wood cellulose fiber containing no germination or growth inhibiting factors. The fiber shall be colored green to allow visual metering during application, have the properties of even dispersal and suspension when agitated in water, and when uniformly sprayed on soil surface to form an absorbent covering allowing percolation of water to underlying soil.

- Site Protection Fence shall be a Wood Stake and Rope Fence to protect all newly seeded areas.

- Wood Stakes shall be (4') in length and (1-1/2" x 1-3/4") with a chiseled point. A (7/16") hole shall be drilled on center, approximately (4-1/2") from the top of the stake.

Wood Stakes shall be painted with one coat of a Benjamin Moore Exterior MoorGard Low Luster Paint, Color: Essex Green.

- Rope for fence shall be a (3/16") solid braid nylon rope; Color: White.

Execution

- All work under this section shall be performed by staff experienced in lawn installation under the full-time supervision of a qualified foreman.

- After acceptance of subgrade work performed under other sections, whatever additional grading is necessary shall be performed to bring the subgrade to a true, smooth slope parallel to and except where otherwise indicated, 6-inches below grade of all areas to receive topsoil. Furnish and install grade stakes sufficiently spaced to insure correct line and grade of subgrade and finished grade. Immediately before placing topsoil, loosen the surface of all subgrade. In areas that have been severely compacted, scarify to a depth of 12-inches by approved methods.

- Place and spread topsoil to a depth sufficiently greater than the depth required for areas so after natural settlement and compaction, the complete work will conform to the lines, grades and elevations indicated. After topsoil has been spread, prepare it carefully by scarifying or harrowing and hand raking. Remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign material and stones over 1-inch in diameter and dispose legally off site.

- Apply commercial fertilizer and work thoroughly into the topsoil in two applications. The first application shall be within one week before seeding or sodding, at the rate of 35 lbs per thousand square feet, harrowed into the top 2-inches of topsoil. The second application shall be as determined by the soil analysis recommendations.

- Apply ground limestone at the rate recommended by the soil analysis, and after the topsoil has been spread and graded.

- Incorporate superphosphate into the topsoil with the first application of commercial fertilizer at the rate of 20 lbs per thousand square feet or at the rate recommended by the soil analysis.

- The season for seeding shall be from April 1 to May 31 and from August 15 to October 15, unless otherwise approved by the Project Manager. The actual planting of lawns shall be done, however, only during periods within this season, which are normal for such work as determined by weather conditions and by accepted practice in this locality.

- Seeding shall consist of soil preparation, seeding, raking, rolling, weeding, watering and otherwise providing all labor and materials necessary to secure the establishment of acceptable turf.

- Immediately before any seed is sown, the ground shall be scarified, harrowed, raked and broomed until the surface is smooth, friable and of uniformly fine texture. No seeding shall be done during windy weather. Seed shall be sown in two directions at right angles to each other. Sow the seed evenly by hand or with approved seeding device in the proportions and at the rate of 5 lbs. per 100 square feet of area. The seed shall be covered with a thin layer of topsoil by light raking or other approved method, rolled in both directions with a hand roller weighing not more than 100 lbs. per foot of width, and watered with a fine spray.

- All slopes 3:1 or steeper shall be overseeded with Annual Ryegrass, 98 percent purity, 90 percent germination, at the rate of 1 lb per 1,000 square feet, in addition to the specified seed mix. This shall be a separate sowing executed after the sowing of the regular mixture and before the raking and rolling operations.

- Hydroseeding: At their option, the Contractor may accomplish seeding by use of approved hydroseeding equipment designed specifically for this work. Mix seed, fertilizer, wood cellulose fiber mulch and non asphaltic-fiber binder in required amount of water to produce a homogeneous slurry. Add fiber mulch after seed, water, and fertilizer have been thoroughly mixed and apply at the rate of 200 pounds per acre dry weight. The slurry shall be applied within 30 minutes of mixing to prevent burning of the seed by fertilizer. Immediately following the application of the slurry mix, make separate application of fiber mulch and fiber binder at the rate of 1,000 pounds dry weight, on the ground, material shall form a blotter like cover impregnated uniformly with grass seed. Cover shall allow rainfall or applied water to percolate to underlying soil.

- Maintenance: Shall begin immediately after each portion of lawn is planted and the Contractor shall be responsible for maintenance of the lawn including watering, weeding, fertilization, mowing and replanting as necessary to establish a uniform stand of the specified grasses and until final acceptance. Scattered bare spots, none of which are larger than 72 square inches, will be allowed in seeded areas up to a maximum of 2 percent of any lawn area. After the grass has started, all areas and parts of areas, which fail to show uniform stand of grass, for any reason whatsoever, shall be reseeded and such areas and parts of areas shall be reseeded repeatedly until all areas are covered with a satisfactory growth of grass. At time of first cutting, keep mower blades not less than 2-1/2-inches high. Contractor is responsible for maintenance until final acceptance or two cuttings, whichever is longer.

- Provide temporary Site Protection Fence around newly seeded areas to keep the area undisturbed until grass is well established. Wood Stakes shall be spaced (10') on center maximum. Install nylon rope through holes in stakes allowing adequate slack in rope for shrinkage.

- Prior to acceptance, any damage resulting from erosion, gulleys, washouts or other causes shall be repaired by filling with topsoil, tamping, refertilizing and reseeding.

- Upon acceptance of established lawns, the Contractor shall remove Site Protection Fence and provide materials to the Phillips Exeter Academy Grounds Department.

Phillips Exeter Academy

Construction Standards and Guidelines

Division:	32 Exterior Improvements
Specification Section:	32 94 13 - Landscape Edging
Description of Material or System:	Drip edge and drip edge stone
Last Updated:	12/22/2025
Updated by:	Katie Gregory

Included in this section:

- ☐ Product Specifications
- ☑ Design Guidelines
- ☐ Design Details/Drawings
- ☑ Supplemental Information
- ☐ Other _____
- ☐ Other _____

Guideline applies:

- ☐ Academic Buildings
- ☐ Administrative
- ☐ Athletic Facilities
- ☐ Campus Wide
- ☐ Other _____
- ☐ Other _____
- ☐ Dormitories
- ☐ Faculty Residences
- ☐ Support
- ☐ Utility

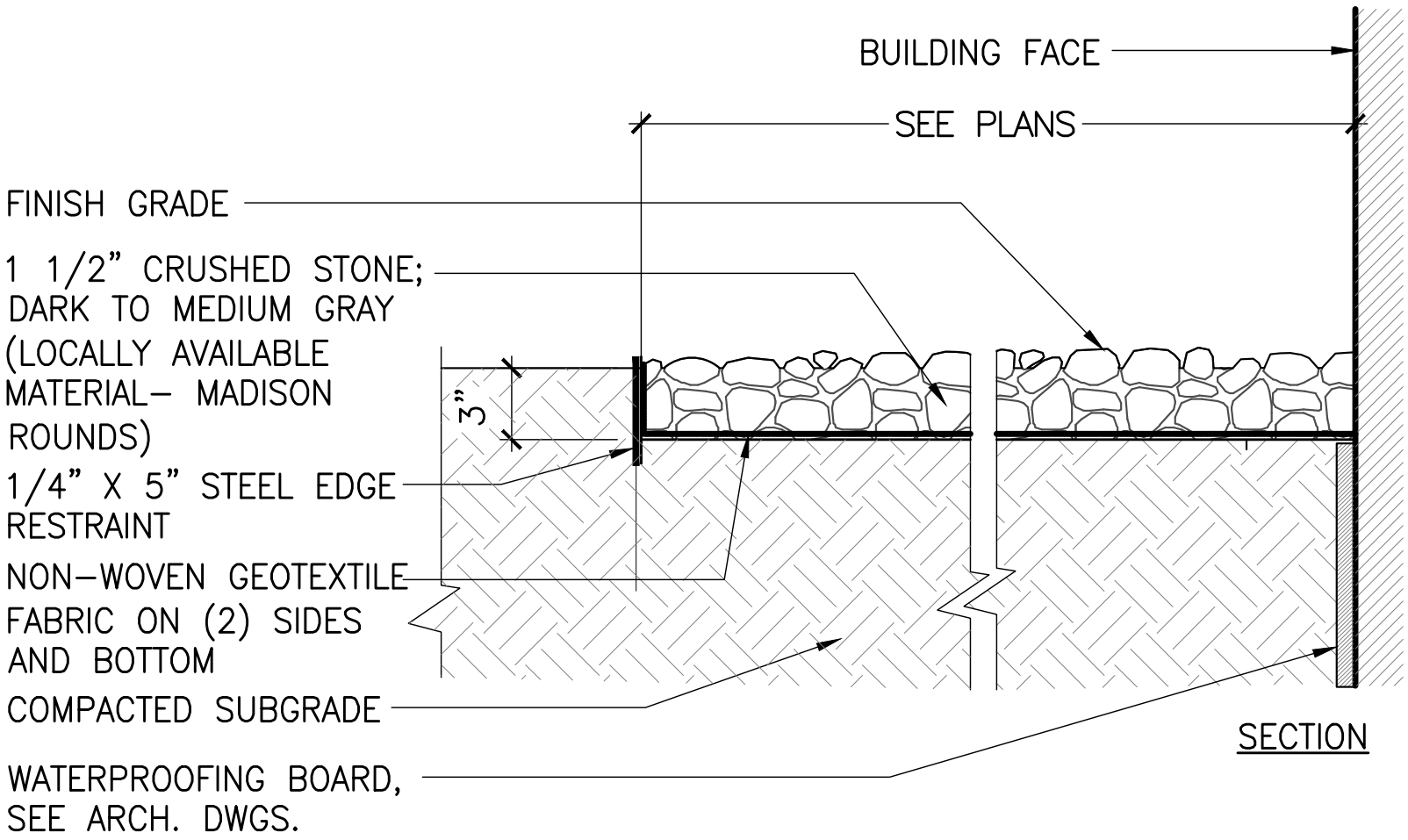
Overview of system/product/guideline:

See attached detail drawing for drip edge products and installation intent.

Drip edge is to be:
1/4" x 5" steel edge restraint

Drip edge stone is to be:
1 1/2" crushed stone; dark to medium gray
(locally available material - madison rounds)

Links to additional product information:



2 DRIP EDGE

SCALE: 1'–1/2"=1'–0"