



2022

Design & Construction
Standards
and
Guidelines



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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: 8/10/2022
Updated by: Mark Leighton

Included in this section:

- Product Specifications
- Design Guidelines
- Design Details/Drawings
- Supplemental Information
- Other Project Closeout Guidelines
- Other _____

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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:

Blank area for links to additional product information.

PHILLIPS EXETER ACADEMY

PROJECT CLOSEOUT GUIDELINES

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)
- Operation and Maintenance Manuals
- Record Submittals
- Warranty Information
- Materials and Finishes Manual
- Preventative Maintenance Program Information

SUBMITTAL FORMAT REQUIREMENTS

Project Closeout material shall be provided in both printed and electronic form.

PRINTED FORMAT

- Submit one (1) copy of final and approved manual within 15 days from the manual review period.
- Binders: Commercial quality, 8 1/2" x 11" binders with hardback, cleanable, plastic covers; one-inch minimum to three inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- Binder Cover and Side Edge: Identify each binder with typed or printed Owner's title of Project and identify subject matter of contents.
- Arrange contents by CSI Division and Section numbers and sequence according to Table of Contents.
- Provide tabbed fly leaf for each separate CSI Division, with typed description of contents, ie. product or major component parts of equipment. Provide a cover sheet for each section number.
- Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- Drawings: Provide with reinforced punched binder tab or pocket to hold drawing. Bind in with text; fold larger drawings to size of text pages or pocket.
- Record Drawings: Provide one full size hard copy set (in addition to the electronic formats required). Provide a sheet index with both the hard copy (printed) set, as well as the electronic copy, listing in detail all drawing sheets with the drawing/sheet number/ID (A-1, A-2, etc.), drawing titles and the most recent revision dates should be included on each sheet. Each sheet is to be stamped or labeled "Record Drawing".

ELECTRONIC FORMAT

- A. Contractor shall submit electronic files of all Closeout materials through a shared folder, initiated by the Owner.
- B. Replicate printed version in an electronic file format. 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*)
- C. 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.
- D. Provide electronic copy of all record coordination drawings, shop drawings (if applicable) in original software.

LABELING

- A. Clearly label all record documents with the **Owner’s Project Name** and the words “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 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 these 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. 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.
- J. 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 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.

OPERATIONS AND MAINTENANCE MANUALS

- A. Furnish separate manuals for each of the following groups of equipment:
 - Fire protection system
 - Utilities and plumbing systems.
 - Heating, ventilation and air conditioning system.
 - Electrical systems.
- B. Furnish bound and properly identified Manuals prior to request for Final Acceptance.
- C. 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.
- D. 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:
- E. Panel board circuit directories: Provide electrical service characteristics, controls and communications.
- F. Include color coded wiring diagrams as installed.
- G. 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.
- H. Maintenance requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and re-assembly instructions; alignment, adjusting, balancing, and checking instructions.
- I. 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.
- J. Provide servicing and lubrication schedule, and list of lubricants required.
- K. Include manufacturer's printed operation and maintenance instructions.
- L. Include sequence of operation by controls manufacturer.
- M. Provide control diagrams by controls manufacturer as installed.
- N. Provide Construction Manager's coordination drawings, with color coded piping diagrams as installed.
- O. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- P. Provide original manufacturer's parts (OEM) list, illustrations assembly drawings, and diagrams required for maintenance.
- Q. Provide list of original manufacturer's spare parts (OEM), current prices, and recommended quantities to be maintained in storage
- R. Include local source of supplies and replacement parts, and any other data pertinent for procurement procedures.
- S. Additional requirements: As specified in individual specification Sections.
- T. 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

- 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.
- Provide only “Approved or Approved as Noted” Submittals.
- Each Submittal 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 (eg. Shop drawings, product data, material data, test reports, etc.)
- Each Submittal is provided in printed format and electronic format.
 - Printed format: Submittal hard copies (paper) are organized as a packet and separated by CSI Division in the Closeout binder.
 - Electronic format: Each Submittal shall be one (1) electronic PDF, whereas the transmittal, review documents and supporting attachments have been combined into one file.
 - Each electronic Submittal file (PDF) 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

- At project completion provide warranties on products and installations in a separate binder (in printed format) and a separate file folder (in electronic format).
- 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.
- Organize the warranty documents into an orderly sequence based on the Table of Contents of the Closeout and Operating Manuals.

MANUAL FOR MATERIALS AND FINISHES

- 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.
- 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 required in electronic format (a Microsoft Excel template 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). A standard Microsoft Excel template(s) will be provided by PEA.
 - Standard Paper O&M Manual Submittals

- Comply with O&M Manual requirements in accordance with Contract Specifications.
- Electronic O&M Submittals
In addition to the standard paper O&M Manual, provide an electronic version of individual manufacturer maintenance manuals for equipment type provided. Provide these in a format acceptable to PEA for use in the CMMS system. (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.

PHILLIPS EXETER ACADEMY

ELECTRONIC FILE ORGANIZATION FOR PROJECT CLOSEOUT

Organize the electronic project files into the following Main Folders:

- Division ## (Create folders for each Division applicable to the project)
- Division 00
- Division 01, 02, etc.
- As Built (Record Drawings)
- RFI's
- Specifications
- Table of Contents (Closeout Manual)

Additional folders suggested for Division 01:

- Bid Tabs
- Building Permit
- Certificate of Occupancy
- Commissioning
- Contact List
- Progress Photos (clearly labeled with text)

Each Division # folder shall contain the following sub-folders:

- O & M Manuals
- Submittals (Approved or Approved as Noted ONLY)
- Warranties

Examples of Sub-folders and files under the Division 26 (Electrical) Folder:

- Division 26:
 - O & M Manuals
 - Lighting Control Systems O & M
 - Metering O & M
 - Lighting O & M
 - Submittals
 - 26 13 70 Outlet Boxes and Enclosures
 - 26 42 20 Metering
 - 26 50 30 Lighting Control Systems
 - 26 51 00 Lighting
 - Warranties
 - Lighting Control Systems Warranty
 - FA System Warranty

Submittals:

Submittal filenames are to be the CSI Specification Section Numbers and Titles

- Example filename: 05 12 00 Structural Steel

Submit Only “Approved” and “Approved As Noted” Submittals

Each Submittal is to be ONE electronic file, which contains:

- Transmittal letter(s)
- Submittal sheet noting the Specification Section number and a clear description of the subject matter
- Review stamps or seals by Architect, Consultants, and General Contractor
- Shop drawings or As Built drawings (if applicable)
- Product specifications or instructions (if applicable)
- Final Approval Date

Exhibit A – Equipment Naming Convention

Revised January 14, 2011

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 shall be utilized on various 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

Exhibit B – Equipment Naming Guidelines

Revised October 03, 2014

FLOOR/LEVEL CODES:

1 – 3 characters

| <u>Floor Code</u> | <u>Description</u> |
|-------------------|--|
| 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 |
| M | Mezzanine (Add Floor Level – ex. 1M for first floor mezzanine) |

| <u>Code</u> | <u>Description</u> |
|-------------|--------------------|
| 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

Exhibit B – Equipment Naming Guidelines

Revised October 03, 2014

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.

| <u>EQ Code</u> | <u>Description</u> |
|----------------|----------------------------------|
| AST | Above Ground Storage Tank |
| AC | Air Compressor |
| AC | Air Compressor, Med Gas |
| ACCU | Air Cooled Condensing Unit |
| AD | Air Dryer |
| AHU | Air Handler Unit |
| AM | Ammonia System |
| AQU | Aquarium |
| AS | Air Separator |
| ATS | Automatic Transfer Switch |
| BAS | Building Automation System |
| BAT | Battery |
| BBT | Boiler Buffer Tank |
| 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 |
| BR | Brine Cooling System |
| 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 |

Exhibit B – Equipment Naming Guidelines

Revised October 03, 2014

| | |
|------|--------------------------------|
| 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 |

Exhibit B – Equipment Naming Guidelines

Revised October 03, 2014

| | |
|------|--|
| 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 |

Exhibit B – Equipment Naming Guidelines

Revised October 03, 2014

| | |
|------|--------------------------|
| TG | Transfer Grill |
| TI | Temperature Indicator |
| TRAN | Transformer |
| TXF | Exhaust Fan, Toilet |
| UH | Unit Heater |
| UST | Underground Storage Tank |
| VFD | Variable Frequency Drive |
| VP | Vacuum Pump |
| VP | Vacuum 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 |

Exhibit B – Equipment Naming Guidelines

Revised October 03, 2014

ELECTRICAL PANEL ADDITIONS:

| <u>EQ Code</u> | <u>Description</u> |
|----------------|--|
| 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:

| <u>Facility</u> | <u>Floor</u> | <u>Pnl Prefix</u> | <u>Pnl Seq</u> | <u>Voltage</u> |
|-----------------|--------------|-------------------|----------------|----------------|
| 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 81 13 - Sustainable Design Requirements

Description of Material or System: Sustainable Design Requirements

Last Updated: 9/2/2022

Updated by: Heather Taylor and Warren Biggins

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Attached is an overview of Sustainability at Phillips Exeter Academy and the Guiding Principles for Sustainable Construction.

Links to additional product information:

Additional information can be obtained by contacting the Campus Architect or Manager of Sustainability & Natural Resources:

Heather Taylor, AIA LEED AP BD+C
Campus Architect
htaylor@exeter.edu

Warren Biggins
Manager of Sustainability & Natural Resources
wbiggins@exeter.edu

Overview of Sustainability at Phillips Exeter Academy:

Since 2005, the Academy has reduced its scope 1 & 2 carbon emissions by about 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 160 geothermal wells with over 100 more planned for near term projects and the installation of a .5MW solar array on the roof of the new field house. At the time of installation (2018), this was the largest solar installation at a high school in the state of New Hampshire. Several campus buildings and faculty homes are LEED Certified (5 at LEED Gold, 1 at LEED Silver). Since 2014, the Academy has purchased renewable energy certificates (RECs) matching 100% of the on-campus electricity demand. Going forward, all light fixtures are to be LED fixtures, 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.

Moving forward, the Academy strives to do its part to reduce the amount of fossil fuels used in campus buildings and operations through energy efficiency and utilizing renewable energy. ***The Academy's overarching sustainability goal is to achieve carbon neutrality.*** The following Guiding Principles for Sustainable Construction should thus be viewed as being in service of and complimentary to that goal.

Guiding Principles for Sustainable Construction

- **Vision:** Design, build, operate, and maintain environmentally responsible and efficient buildings that enhance occupants' health & well-being.
- **Strategies:**
 - ***New construction should be designed to meet a minimum standard of LEED Silver***
 - Building certification for new construction projects (LEED, Passive House, etc.) considered on a project by project basis
 - Incorporate geothermal in new construction and renovations where feasible
 - Explore using air-source heat pumps and hot water heaters where geothermal is not feasible
 - Optimize energy performance in new construction and reduce energy consumption in renovations
 - Retrofit existing buildings and residences with energy efficient systems and appliances when up for renewal
 - Explore opportunities for on-campus solar
 - Ensure optimal indoor environmental quality
 - Minimize waste generated from construction, renovation, and demolition of buildings
 - Minimize the amount of new construction tied into fossil-fueled central heating plant
 - Minimize the amount of Red List materials used in new construction and renovations
 - Convert steam heat dorms to hydronic
 - Utilize an enhanced building envelope in all new construction
 - Explore building retro-commissioning
 - Use LED lighting in all new construction and continue to replace existing lighting with LED
 - Pursue rebates for energy efficient products and systems



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 09/01/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is the PEA Design Guideline for faculty homes for cabinet hardware. Standard finish is Satin Nickel, however please confirm finish on a per-project basis as it may vary, due to existing conditions.

Links to additional product information:

www.amerock.com



WHAT'S NEW PRODUCTS SUPPORT ABOUT US WHERE TO BUY



ALLISON™ VALUE 1-1/4in(32mm) DIA Knob

Part No. BP1950G10

From rustic to modern-day casual to sophisticated beauty, The Allison™ Value Collection offers a variety of designs, making on-trend, quality hardware affordable.

The Amerock BP1950G10 Allison™ Value Knob is Finished in Satin Nickel.

FINISH OPTIONS



Antique English



Black Nickel



Brushed Chrome



Natural Bronze



Oil-Rubbed Bronze



Polished Brass



Polished Chrome



Satin Nickel

SPECIFICATIONS

Finish

Satin Nickel

Product Type

Knob

Product Detail

1-1/4in(32mm) DIA

Length/Diameter

1 1/4 in(32mm)

Width

N/A

Projection

1 1/8 in(29mm)

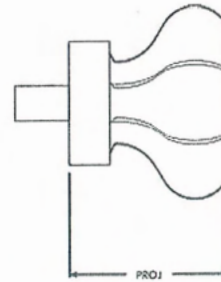
Material

Solid Brass

Hardware Included

Screw Size(s): #8-32 x 1in LGTH T.H. Machine Screw

Technical Drawings



KEY:
DIA = Diameter
PROJ = Projection



WHAT'S NEW PRODUCTS SUPPORT ABOUT US WHERE TO BUY

ALLISON™ VALUE 3-3/4in(96mm) CTC Pull

Part No. BP52991G10



From rustic to modern-day casual to sophisticated beauty, The Allison™ Value Collection offers a variety of designs, making on-trend, quality hardware affordable.

The Amerock BP52991G10 Allison™ Value Pull is Finished in Satin Nickel.

SPECIFICATIONS

| | |
|---------------------------|--|
| Finish | Satin Nickel |
| Product Type | Pull |
| Product Detail | 3-3/4in(96mm) CTC |
| Length | 4 3/4 in(121mm) |
| Width | 7/16in(11mm) |
| Projection | 13/16in(21mm) |
| Material | Zinc |
| Hardware Included | Screw Size(s): #8-32 x 1in LGTH T.H. Machine Screw |
| Technical Drawings | |

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

Last Updated: 7/12/2022

Updated by: Curtis Boivin

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is Phillips Exeter Academy's wood trim standards.

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-01-001; "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.

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: 9/1/2022

Updated by: Jeff Plimpton

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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**

Note: PEA will review and add any other info in the next round of updates.

Updated 9/1/2022

Links to additional product information:

<https://www.certainteed.com/residential-roofing/products/landmark-tl/>

<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 33 - Polymeric Slate Tile Roof System
Description of Material or System: Polymeric Slate Roof Tile
Last Updated: 8/10/2022
Updated by: Heather Taylor

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

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

1. Eco Star - Majestic Slate
2. Weslake - (formerly) Boral Inspire

See attached for specifications.

Links to additional product information:

<https://ecostarllc.com/>
<https://westlakeroyalroofing.com/>

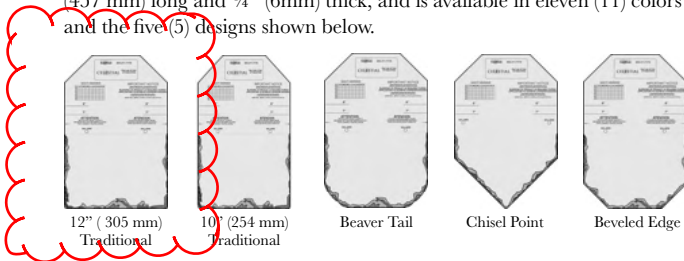


Polymeric Slate Tile Roof System

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, is 18" (457 mm) long and ¼" (6mm) thick, and is available in eleven (11) colors and the five (5) designs shown below.



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.
- Majestic Slate can be installed up to eight times faster than natural stone slate.
- 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°). 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 – 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. This shade variation may occur differently from pallet to pallet. Application of the product should not begin until all material has been delivered to the project site. Because of this shade variation the applicator must take precautions to ensure that the various shades of the product are properly blended. Tiles must be taken from different pallets and bundles to ensure consistency in application. **NOTE: EcoStar will not be responsible for the improper blending and application of the product. Contact EcoStar Customer Service for available factory-blended options.**

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

Ventilation – Roof venting should be installed at the same time as the ridge tiles. EcoStar's **EcoVent™** ridge venting is recommended for quality attic ventilation and an improved aesthetic appearance of the EcoStar roof system.

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

PRODUCT SPECIFICATIONS

| | 10" Tiles | 12" Tiles |
|--------------------------------------|--------------------------------|----------------------|
| PRODUCT CHARACTERISTIC | | |
| Length | 18" (457 mm) | |
| Width | 10" (254 mm) | 12" (305 mm) |
| Weight | 1.4 lbs. (0.64 kg) | 1.6 lbs. (0.73 kg) |
| Thickness | ¼" (6 mm) | |
| PACKAGING INFORMATION | | |
| Tiles per bundle | 25 | |
| Weight per bundle | 35 lbs. (15.88 kg) | 40 lbs. (18.14 kg) |
| Tiles per pallet | 1400 | |
| Weight per pallet | 1,960 lbs. (889 kg) | 2,240 lbs. (1016 kg) |
| Linear feet per bundle | 20.75 ft. (6.32 m) | 25 ft. (7.62 m) |
| FORMULATION | | |
| Materials | Thermoplastic Olefin | |
| PHYSICAL PROPERTIES (Typical) | | |
| 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 | |
| Texas Dept. of Insurance | Listed | |

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.

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.

*See www.ecostarllc.com for available warranties.



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

PRODUCT TECHNICAL DATA

EcoStar Fasteners™

Stainless Steel Ring Shank Fasteners

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.

PRODUCT TECHNICAL DATA



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



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 3/4" (19 mm) tongue and groove decking with end gaps not exceeding 1/4" (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), 6 1/2" (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.



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). 1 ½" (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 2 ½" (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 2 ½" (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

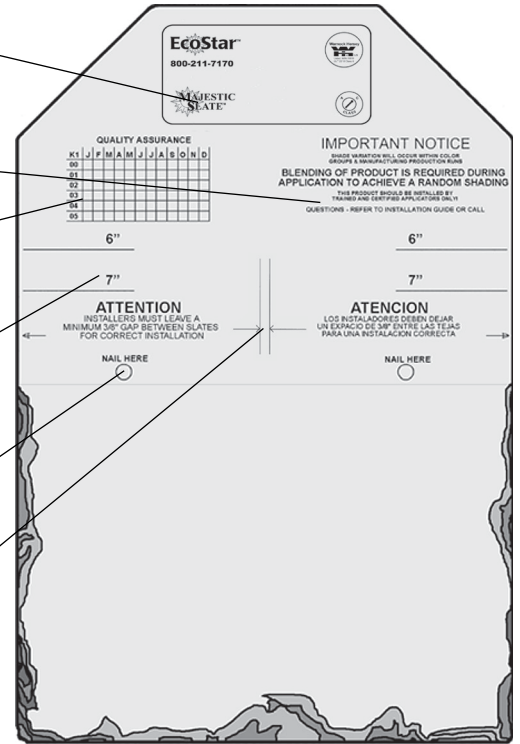
Two marks are molded into every tile. When these marks are placed in alignment with the top edge of the previous row of tiles, proper tile exposure is provided automatically.

TILE FASTENING

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

GAP

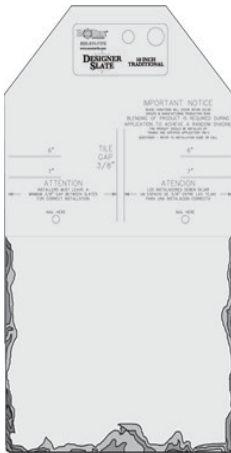
During installation the tiles must be placed a minimum of 3/8" (10 mm) apart. Tiles must never be installed directly adjacent to each other. This area of the tile states this in both English and Spanish.



Majestic Slate 12" (305 mm) Traditional

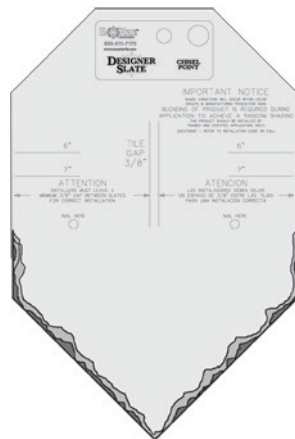
*12" wide x 18" long
(305 mm x 457 mm)*

Designer Slate



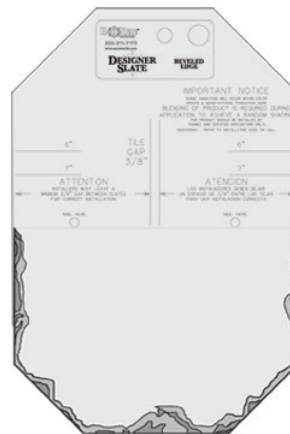
Majestic Slate 10" (254 mm) Traditional

*10" x 18" long
(254 mm x 457 mm)*



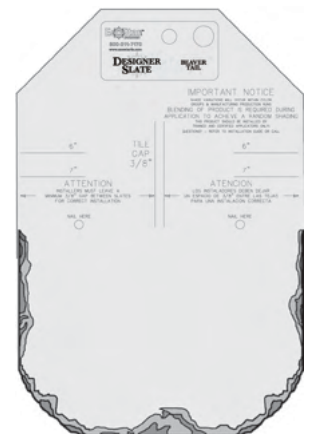
Majestic Slate Chisel Point

*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

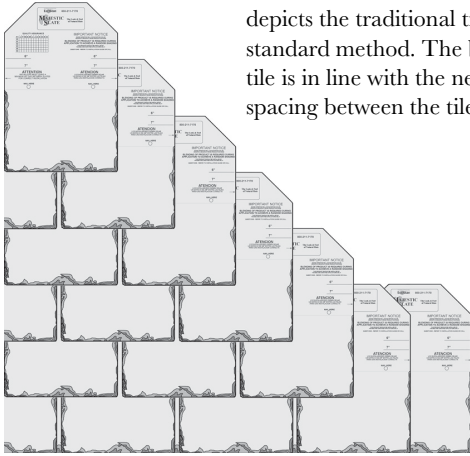
*12" wide x 18" long
(305 mm x 457 mm)*

Majestic Slate Installation Guide

PLEASE REMEMBER TO BEND TILES

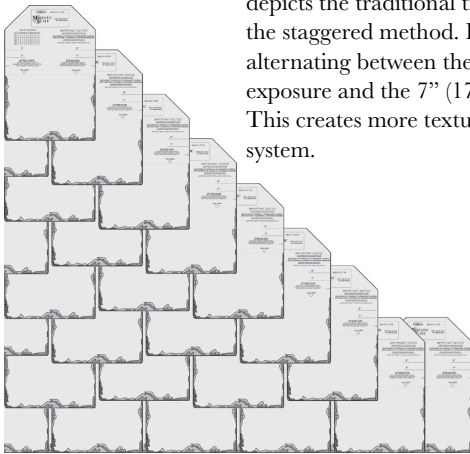
Majestic Slate Traditional Design

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 Traditional Design

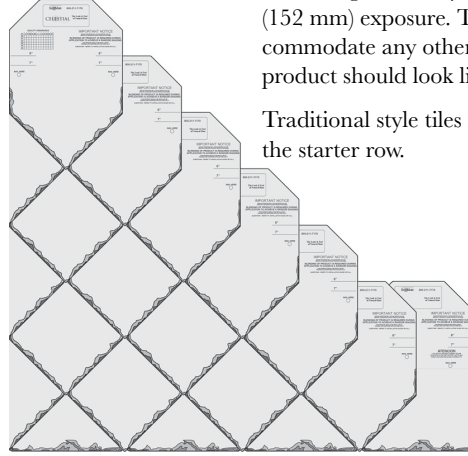
Staggered Installation: This drawing depicts the traditional tile installed using the staggered method. Each tile is installed alternating between the 6" (152 mm) exposure and the 7" (178 mm) exposure. This creates more texture in the roof system.



Majestic Slate 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.

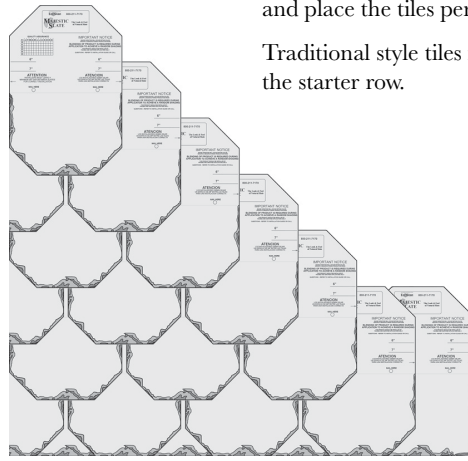
Traditional style tiles must be used as the starter row.



Majestic Slate Beveled Edge Design

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

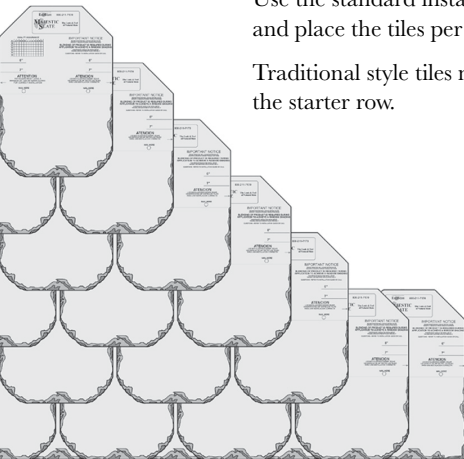
Traditional style tiles must be used as the starter row.



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.



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

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INSPIRE[®]

ROOFING PRODUCTS

by **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.

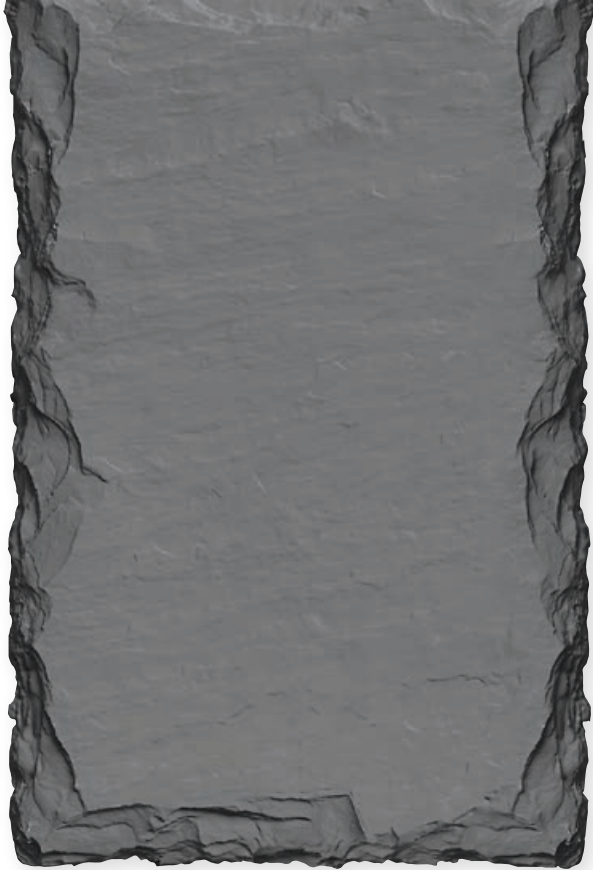
Something of true quality will validate your choice every day that you enjoy it and every time that you look at it. It will bring you peace of mind as well as the pleasure of enjoying its enduring style and performance.

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



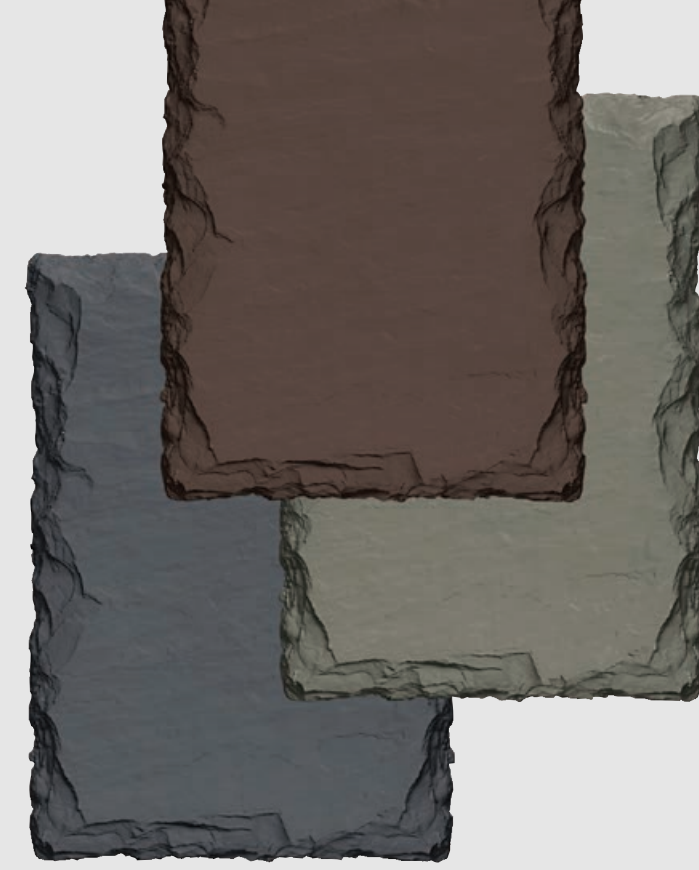
Arcella™ SHAKE

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

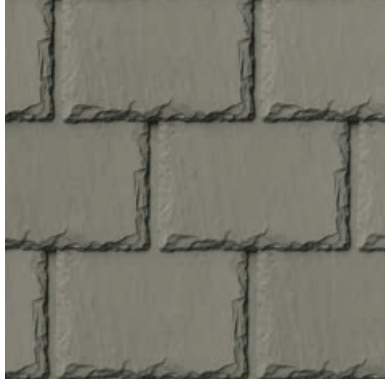
SLATE

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.



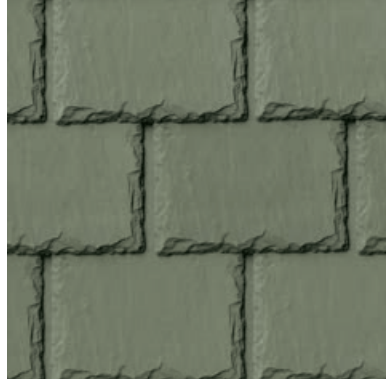
ASH GREY | CR-731

Cool Roof



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

SAGE GREEN | 815



MIST GREY | 803



WHEAT | CR-736

Cool Roof



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

BRANDYWINE | 806



WINTERGREEN | CR-792

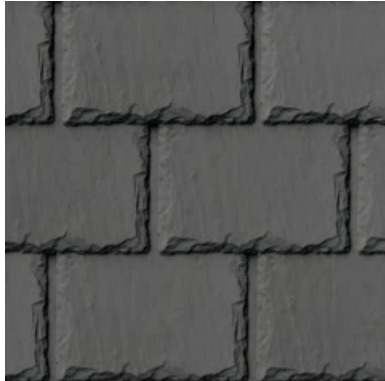
Cool Roof



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

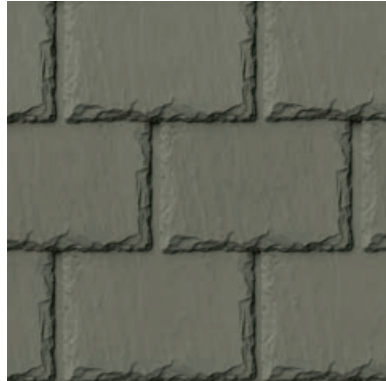
GRAPHITE | CR-733

Cool Roof

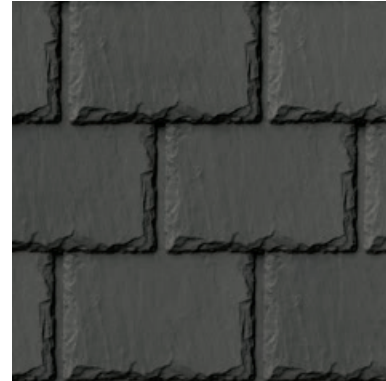


CRRC: 1134-0022 / Ref: .28 / Emi: .97 / SRI: 32

OLIVE | 814

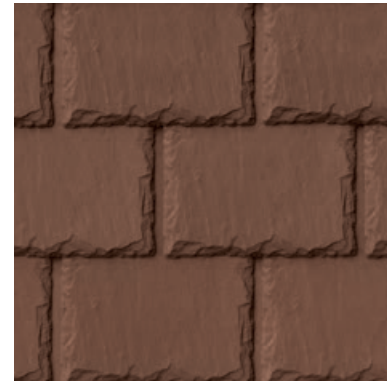


STEEL GREY | 804



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)

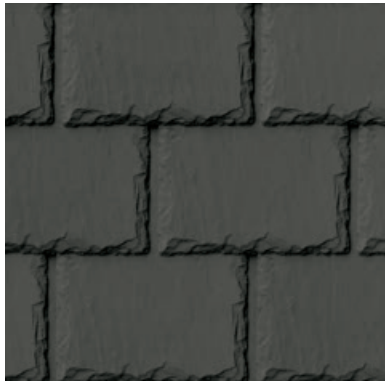
BRUNSWICK | 791



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

GRANITE | CR-732

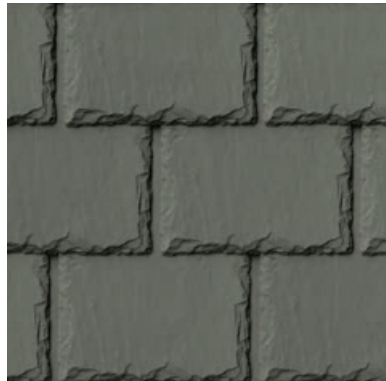
Cool Roof



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

EVERGREEN | CR-730

Cool Roof

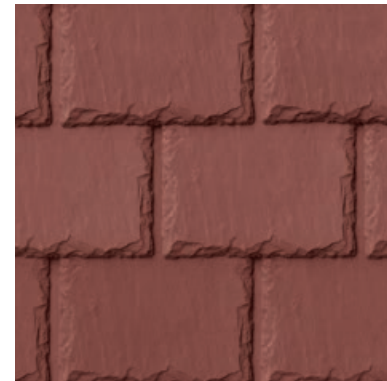


CRRC: 1134-0019 / Ref: .30 / Emi: .96 / SRI: 34

CHARCOAL BLACK | 801



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)

Aledora™ SLATE | Color Combinations

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

- ANAIS NIN

Aledora™ Slate

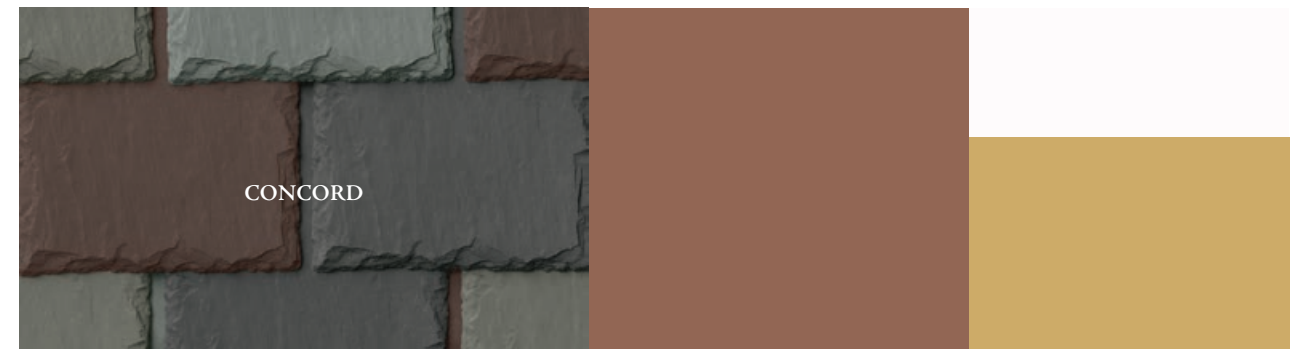


ALEDORA™ SLATE SW | NOTTINGHAM

ROOF

BODY

ACCENTS

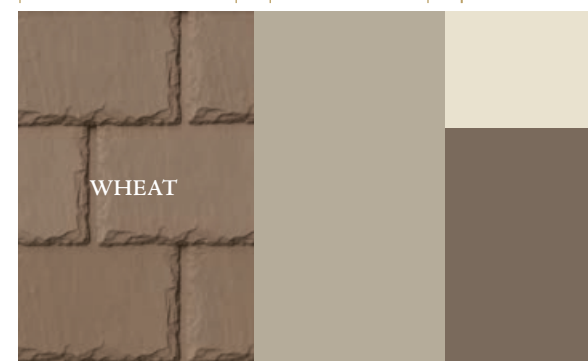


CONCORD

ROOF

BODY

ACCENTS

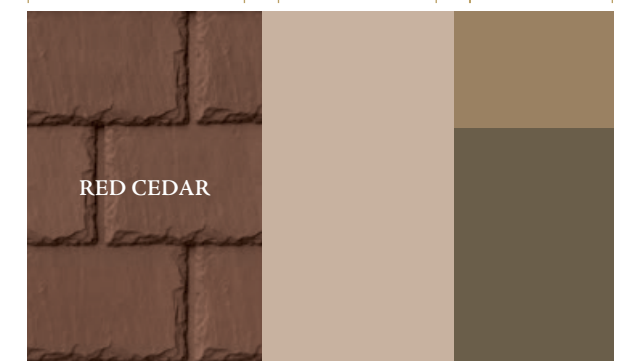


WHEAT

ROOF

BODY

ACCENTS

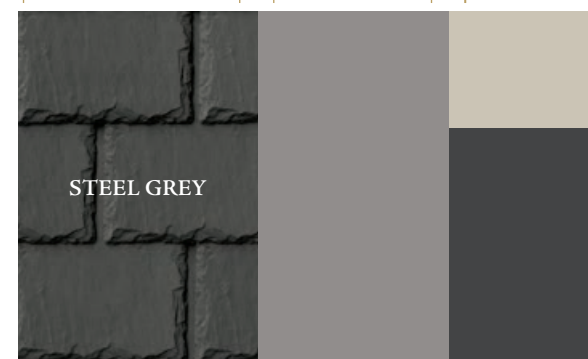


RED CEDAR

ROOF

BODY

ACCENTS



STEEL GREY

ROOF

BODY

ACCENTS

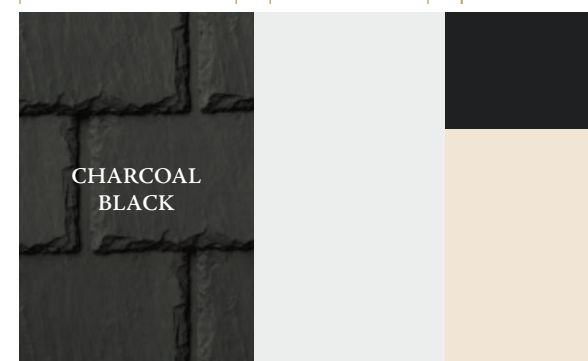


NOTTINGHAM

ROOF

BODY

ACCENTS

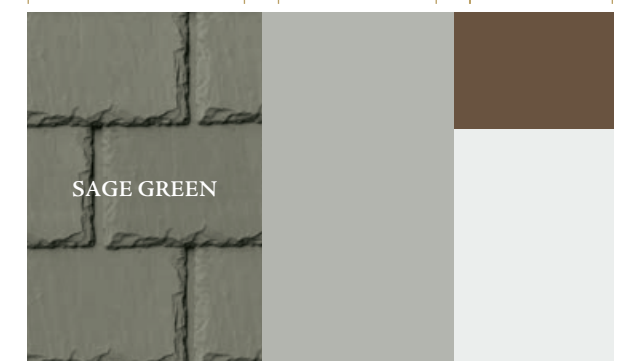


CHARCOAL
BLACK

ROOF

BODY

ACCENTS



SAGE GREEN

Classic SLATE | Colors

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



RED ROCK | 809



CONCORD | 789



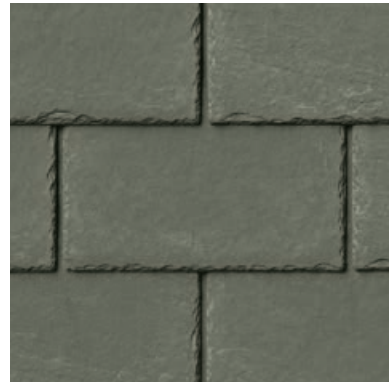
GRANITE | CR-732

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 |



BRANDY WINE | 806



NOTTINGHAM | 788



WINTERGREEN | CR-792

Cool Roof



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

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



GREY/BLACK BLEND | 718



COACHMAN | 790



BRUNSWICK | 791



*See details on page 22

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






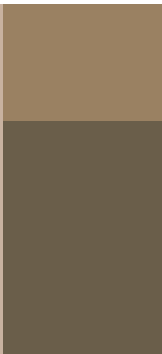


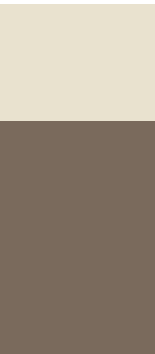

















Classic Slate

«Luxury is in each detail.»
- HUBERT DE GIVENCHY

CLASSIC SLATE | BRUNSWICK

Classic SLATE | Color Combinations

| ROOF | BODY | ACCENTS | ROOF | BODY | ACCENTS |
|---|---|---|---|---|---|
|  <p>GREY/BLACK BLEND</p> |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

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

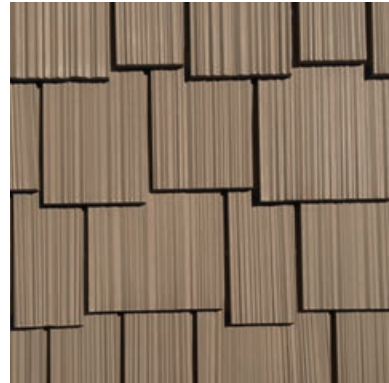
The warm, rustic aesthetics of hand-split cedar shakes come to life with Arcella™ Shake's authentic colors and subtle shade variations that create an inviting, natural look in every piece.

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

EVERGREEN | CR-730

Cool Roof



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

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

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 |
|---|---|---|---|---|---|
|  WEATHERED GREY |  |  |  CEDAR BROWN |  |  |
|  NEW CEDAR |  |  |  AGED CEDAR |  |  |
|  RUSTIC CEDAR |  |  |  GRAPHITE |  |  |
|  WHEAT |  |  | | | |

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 palette 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 |

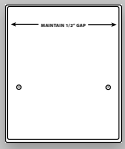
CLASSIC SLATE | Single Width

| 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 |

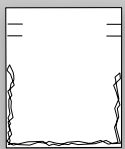
ALEDORA™ SLATE - STARTER

| 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 | | |

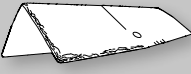
ALEDORA™ SLATE - HIP AND RIDGE

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

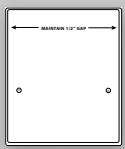
CLASSIC SLATE - STARTER

| 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 | | |

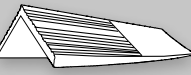
CLASSIC SLATE - HIP AND RIDGE

| 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 |
| | 1.5 lbs. | | 38 lbs. | 25 | 1.6 |
| | Liner Feet / Bundle | | | | |
| | 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 |
| | 1.7 lbs. | | 17 lbs. | 10 |
| | Liner Feet / Bundle | | | |
| | 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.

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

800.971.4148 | InspireRoofing.com

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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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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/>

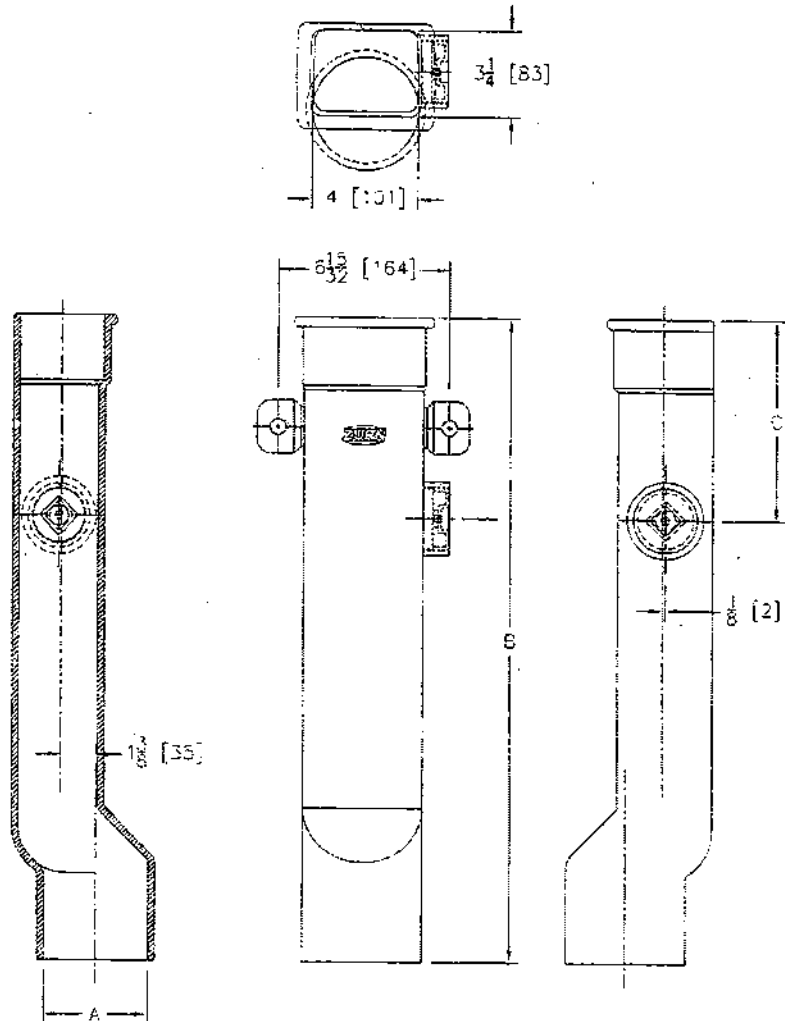


Z192-CA
4 X 3 [102 X 76]
DOWNPOUT BOOT WITH CLEANOUT ACCESS

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 _____ (Specify size/type) **OUTLET**
 4 [102] _____ NH No-Hub

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

SUFFIXES
 _____ -G Galvanized Cast Iron

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

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED

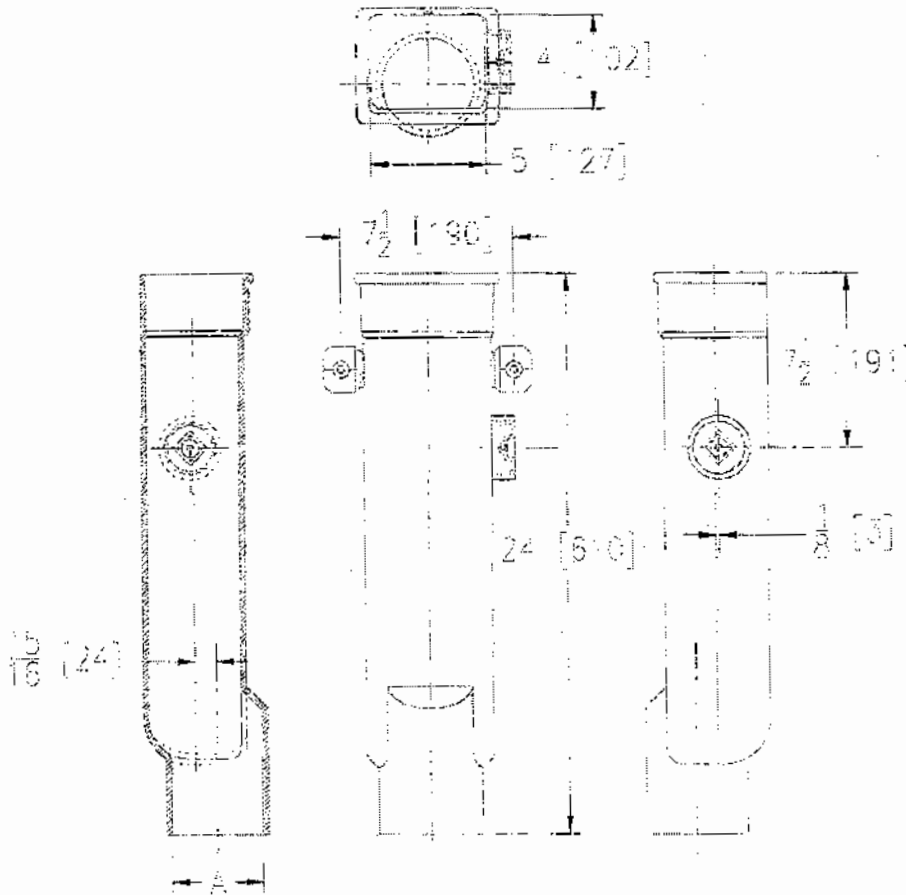


**Z191-CA
DOWNSPOUT BOOT
W/ CLEANOUT ACCESS WITH PLUG**

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

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

DWG. NO. 67610 PRODUCT NO. Z191-CA

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/02/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

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

Links to additional product information:

<http://www.glendyne.com/en/toiture.php>

Vendor:

NORTH COUNTRY SLATE
8800 Sheppard Avenue East
Scarborough, Ontario (Canada) M1B 5R4

800-975-2835 (phone)

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: 8/10/2022
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 preferred manufacturers for Polymeric slate roof tiles, in order of preference, is:

1. Eco Star - Majestic Slate
2. Weslake - (formerly) Boral Inspire

See attached for specifications.

Links to additional product information:

<https://ecostarllc.com/>
<https://westlakeroyalroofing.com/>

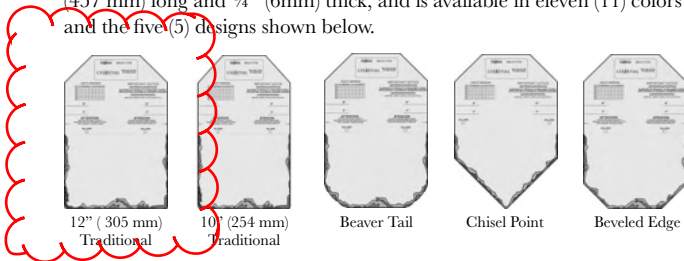


Polymeric Slate Tile Roof System

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, is 18" (457 mm) long and ¼" (6mm) thick, and is available in eleven (11) colors and the five (5) designs shown below.



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.
- Majestic Slate can be installed up to eight times faster than natural stone slate.
- 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°). 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 – 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. This shade variation may occur differently from pallet to pallet. Application of the product should not begin until all material has been delivered to the project site. Because of this shade variation the applicator must take precautions to ensure that the various shades of the product are properly blended. Tiles must be taken from different pallets and bundles to ensure consistency in application. **NOTE: EcoStar will not be responsible for the improper blending and application of the product. Contact EcoStar Customer Service for available factory-blended options.**

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

Ventilation – Roof venting should be installed at the same time as the ridge tiles. EcoStar's **EcoVent™** ridge venting is recommended for quality attic ventilation and an improved aesthetic appearance of the EcoStar roof system.

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

PRODUCT SPECIFICATIONS

| | 10" Tiles | 12" Tiles |
|--------------------------------------|--------------------------------|----------------------|
| PRODUCT CHARACTERISTIC | | |
| Length | 18" (457 mm) | |
| Width | 10" (254 mm) | 12" (305 mm) |
| Weight | 1.4 lbs. (0.64 kg) | 1.6 lbs. (0.73 kg) |
| Thickness | ¼" (6 mm) | |
| PACKAGING INFORMATION | | |
| Tiles per bundle | 25 | |
| Weight per bundle | 35 lbs. (15.88 kg) | 40 lbs. (18.14 kg) |
| Tiles per pallet | 1400 | |
| Weight per pallet | 1,960 lbs. (889 kg) | 2,240 lbs. (1016 kg) |
| Linear feet per bundle | 20.75 ft. (6.32 m) | 25 ft. (7.62 m) |
| FORMULATION | | |
| Materials | Thermoplastic Olefin | |
| PHYSICAL PROPERTIES (Typical) | | |
| 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 | |
| Texas Dept. of Insurance | Listed | |

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.

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.

*See www.ecostarllc.com for available warranties.



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

PRODUCT TECHNICAL DATA

EcoStar Fasteners™

Stainless Steel Ring Shank Fasteners

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.

PRODUCT TECHNICAL DATA



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



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 3/4" (19 mm) tongue and groove decking with end gaps not exceeding 1/4" (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), 6 1/2" (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.



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

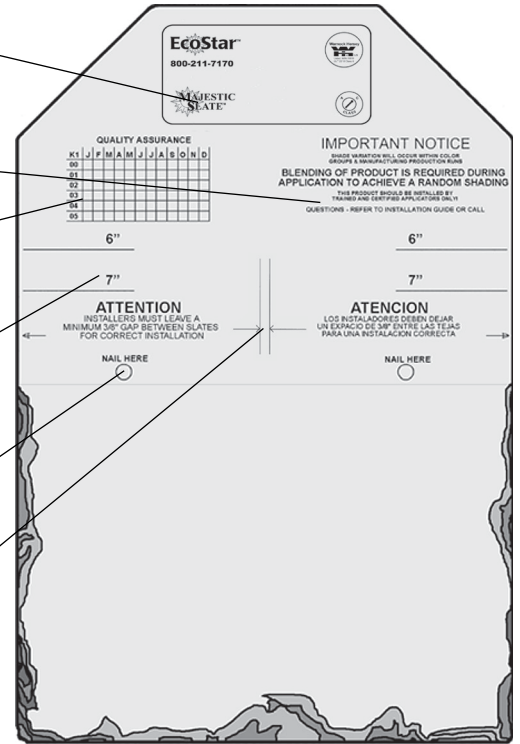
Two marks are molded into every tile. When these marks are placed in alignment with the top edge of the previous row of tiles, proper tile exposure is provided automatically.

TILE FASTENING

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

GAP

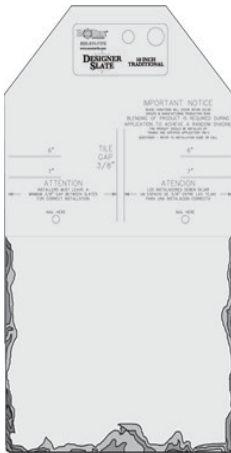
During installation the tiles must be placed a minimum of 3/8" (10 mm) apart. Tiles must never be installed directly adjacent to each other. This area of the tile states this in both English and Spanish.



Majestic Slate 12" (305 mm) Traditional

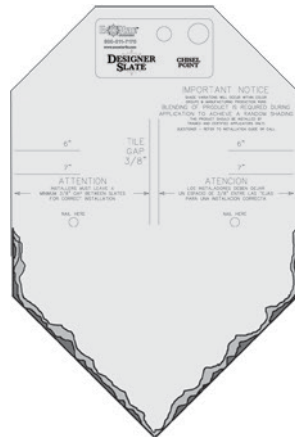
*12" wide x 18" long
(305 mm x 457 mm)*

Designer Slate



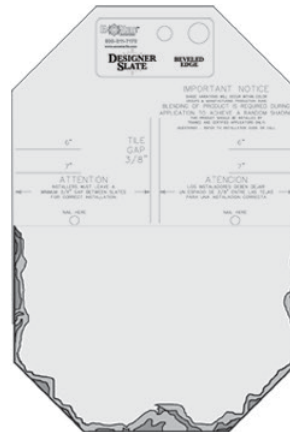
Majestic Slate 10" (254 mm) Traditional

*10" x 18" long
(254 mm x 457 mm)*



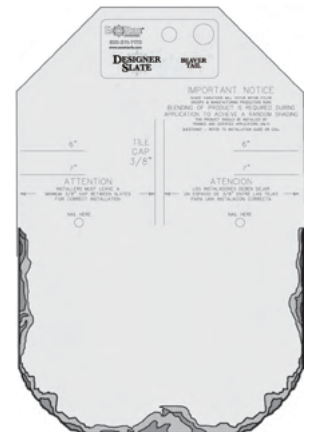
Majestic Slate Chisel Point

*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

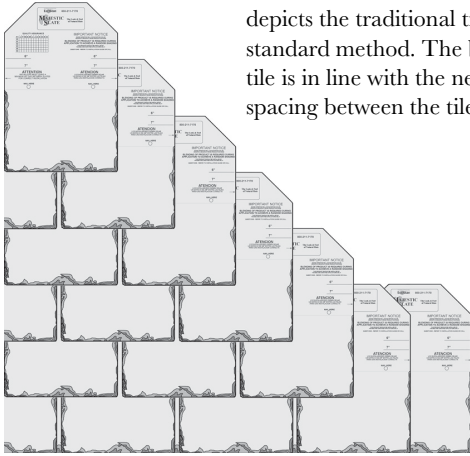
*12" wide x 18" long
(305 mm x 457 mm)*

Majestic Slate Installation Guide

PLEASE REMEMBER TO BEND TILES

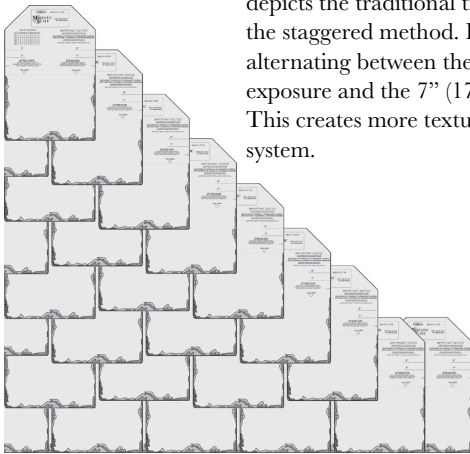
Majestic Slate Traditional Design

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 Traditional Design

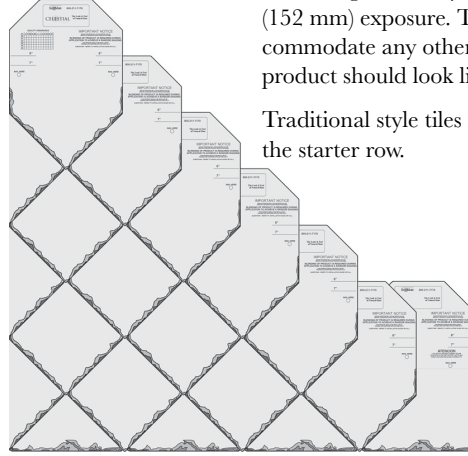
Staggered Installation: This drawing depicts the traditional tile installed using the staggered method. Each tile is installed alternating between the 6" (152 mm) exposure and the 7" (178 mm) exposure. This creates more texture in the roof system.



Majestic Slate 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.

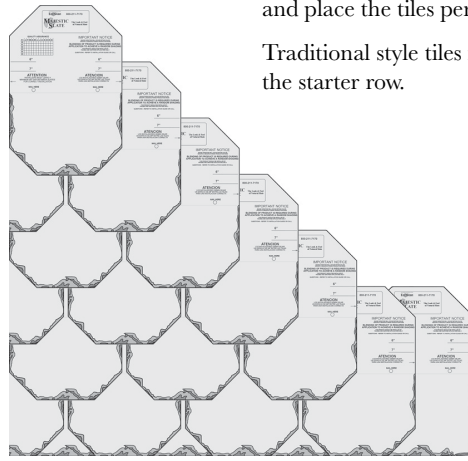
Traditional style tiles must be used as the starter row.



Majestic Slate Beveled Edge Design

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

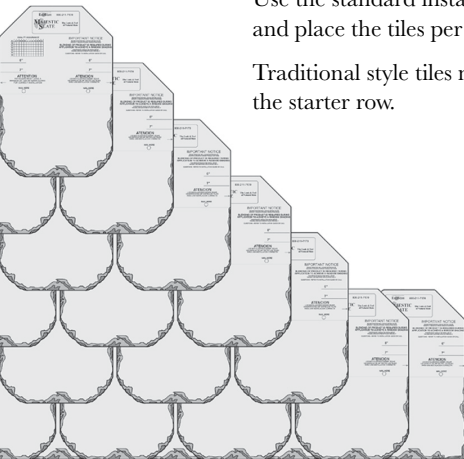
Traditional style tiles must be used as the starter row.



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.



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

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INSPIRE[®]

ROOFING PRODUCTS

by **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.

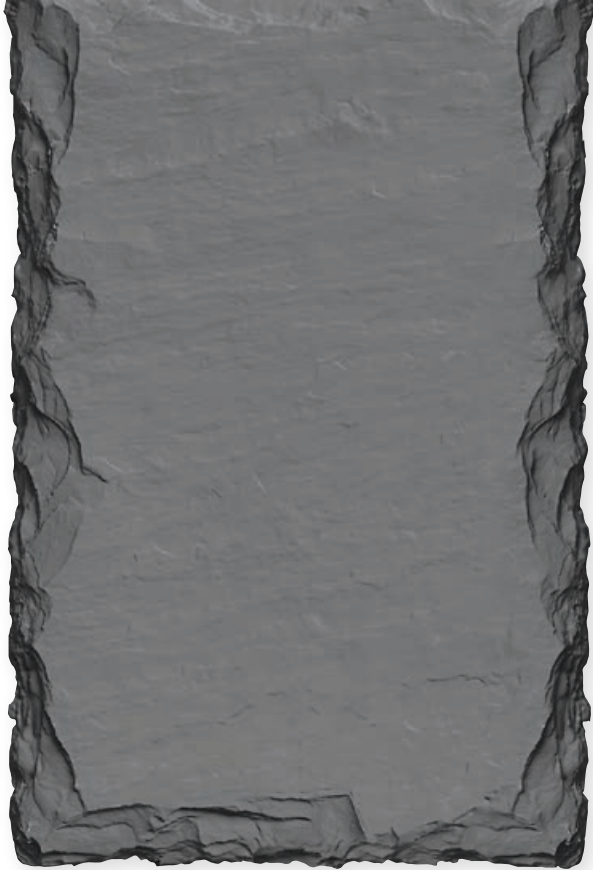
Something of true quality will validate your choice every day that you enjoy it and every time that you look at it. It will bring you peace of mind as well as the pleasure of enjoying its enduring style and performance.

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



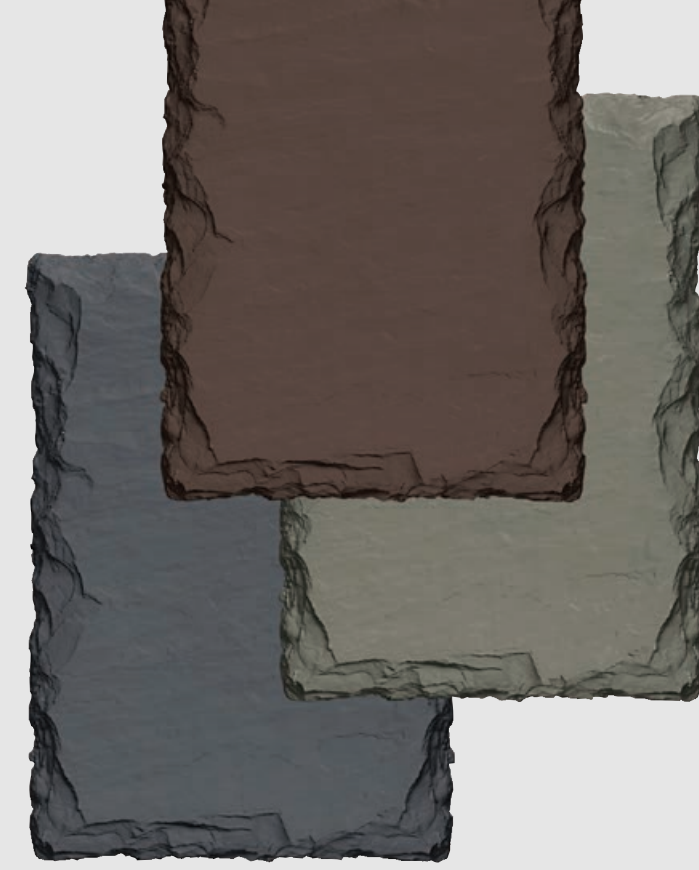
Arcella™ SHAKE

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.



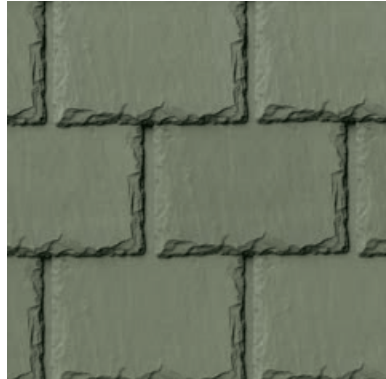
ASH GREY | CR-731

Cool Roof

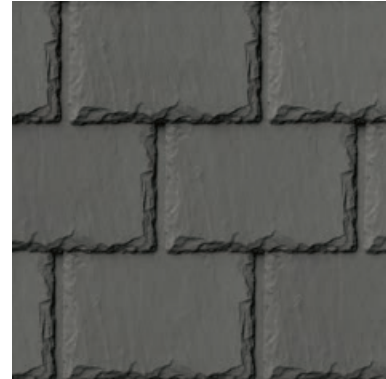


CRRC: 1134-0020 / Ref: .35 / Emi: .96 / SRI: 41

SAGE GREEN | 815

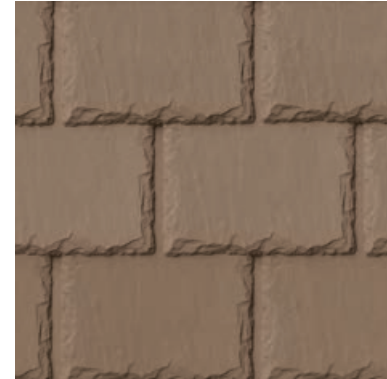


MIST GREY | 803



WHEAT | CR-736

Cool Roof



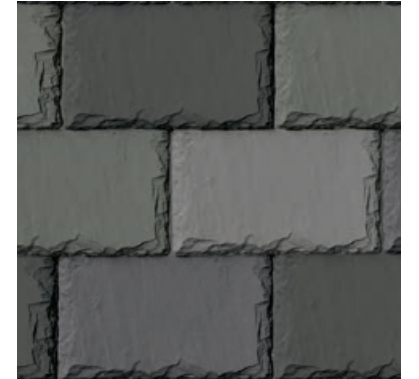
CRRC: 1134-0023 / Ref: .3 / Emi: .89 / SRI: 31

BRANDYWINE | 806



WINTERGREEN | CR-792

Cool Roof



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

GRAPHITE | CR-733

Cool Roof

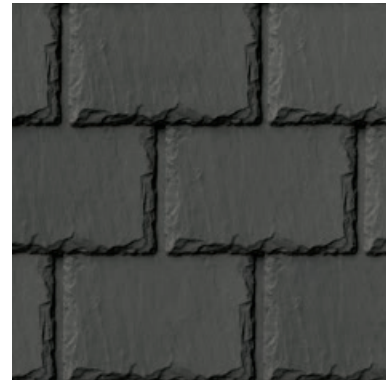


CRRC: 1134-0022 / Ref: .28 / Emi: .97 / SRI: 32

OLIVE | 814



STEEL GREY | 804



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)

GRANITE | CR-732

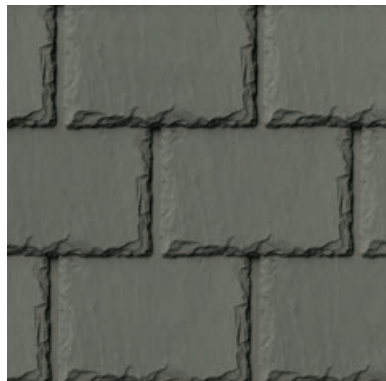
Cool Roof



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

EVERGREEN | CR-730

Cool Roof

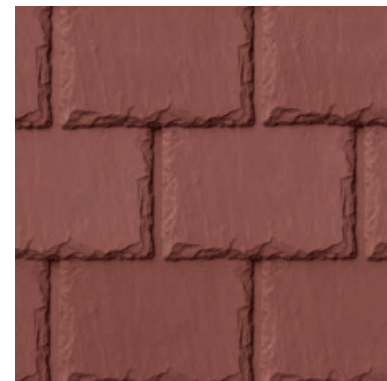


CRRC: 1134-0019 / Ref: .30 / Emi: .96 / SRI: 34

CHARCOAL BLACK | 801



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)

Aledora™ SLATE | Color Combinations

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

- ANAIS NIN

Aledora™ Slate



ALEDORA™ SLATE SW | NOTTINGHAM

ROOF

BODY

ACCENTS

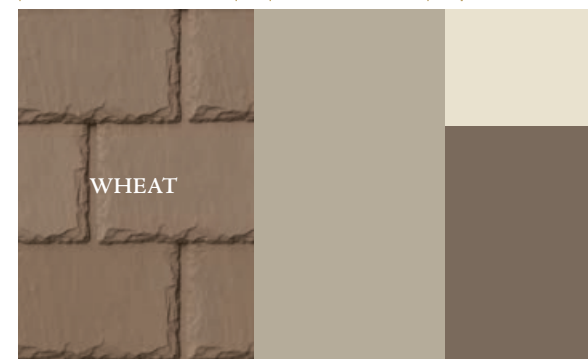


CONCORD

ROOF

BODY

ACCENTS

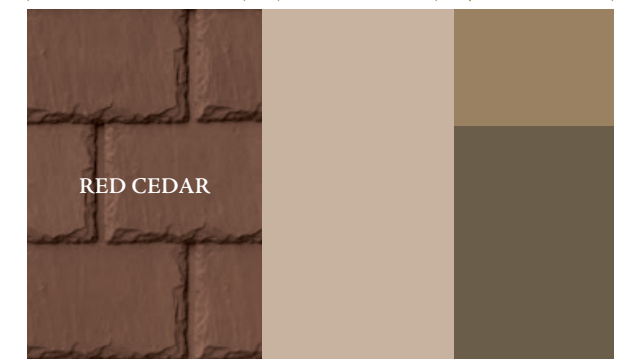


WHEAT

ROOF

BODY

ACCENTS

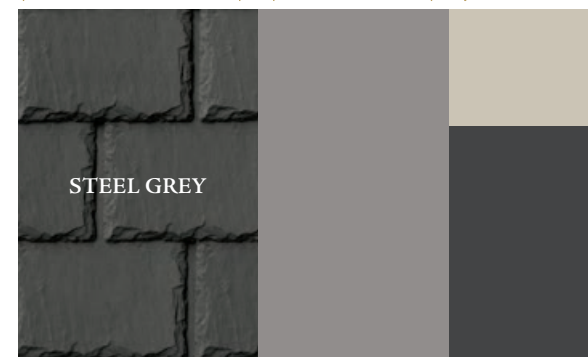


RED CEDAR

ROOF

BODY

ACCENTS



STEEL GREY

ROOF

BODY

ACCENTS

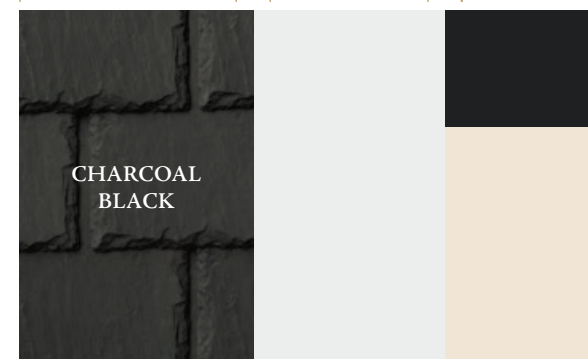


NOTTINGHAM

ROOF

BODY

ACCENTS

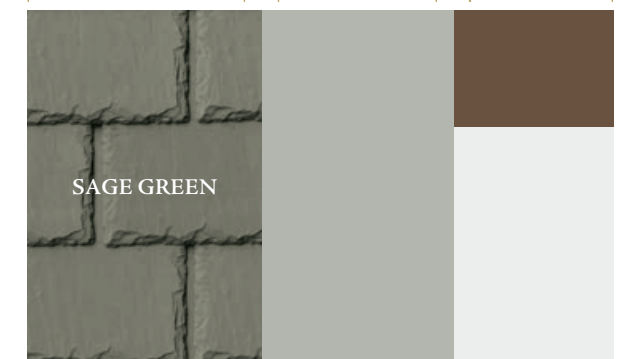


CHARCOAL
BLACK

ROOF

BODY

ACCENTS



SAGE GREEN

Classic SLATE | Colors

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



RED ROCK | 809



CONCORD | 789



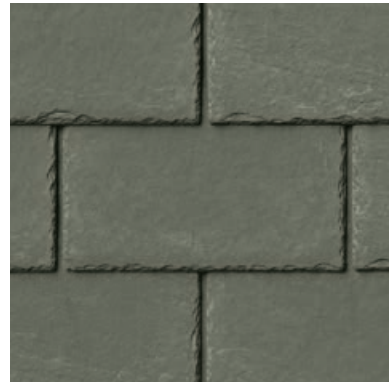
GRANITE | CR-732

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 |



BRANDY WINE | 806



NOTTINGHAM | 788



WINTERGREEN | CR-792

Cool Roof



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

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



GREY/BLACK BLEND | 718



COACHMAN | 790



BRUNSWICK | 791








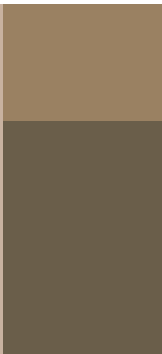


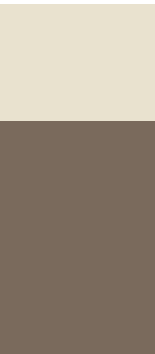

















Classic Slate

«Luxury is in each detail.»
- HUBERT DE GIVENCHY

CLASSIC SLATE | BRUNSWICK

Classic SLATE | Color Combinations

| ROOF | BODY | ACCENTS | ROOF | BODY | ACCENTS |
|---|---|---|---|---|---|
|  <p>GREY/BLACK BLEND</p> |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

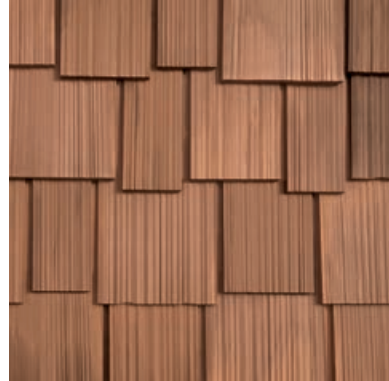
The printed colors shown in this brochure may vary from actual available tile colors. Always use actual product samples for color selection.

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

EVERGREEN | CR-730

Cool Roof



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

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

AGED CEDAR | 753





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 |
|---|---|---|---|---|---|
|  WEATHERED GREY |  |  |  CEDAR BROWN |  |  |
|  NEW CEDAR |  |  |  AGED CEDAR |  |  |
|  RUSTIC CEDAR |  |  |  GRAPHITE |  |  |
|  WHEAT |  |  | | | |

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 palette 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 |

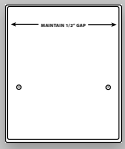
CLASSIC SLATE | Single Width

| 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 |

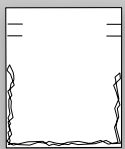
ALEDORA™ SLATE - STARTER

| 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 | | |

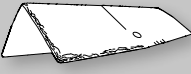
ALEDORA™ SLATE - HIP AND RIDGE

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

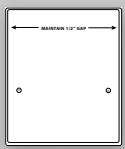
CLASSIC SLATE - STARTER

| 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 | | |

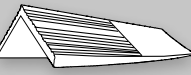
CLASSIC SLATE - HIP AND RIDGE

| 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 |
| | 1.5 lbs. | 38 lbs. | 25 | 1.6 |
| | Liner Feet / Bundle | | | |
| | 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 |
| | Liner Feet / Bundle | | | |
| | 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.

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

800.971.4148 | InspireRoofing.com

© 2018 Boral Roofing LLC BR120-1/18



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: 9/6/2022

Updated by: Heather Taylor

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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);

Required Warranty: Manufacturer's standard form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks. Special Warranty includes: roofing membrane, base flashings, roof insulation, fasteners, cover boards, walkway products and other components of the membrane roofing system. Warranty shall also cover leaks caused by accidental punctures. Warranty Period: 25 years from date of Substantial Completion.

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

Links to additional product information:

<https://www.carlislestec.com/>



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Division 7

Specification Section:

07 70 00-ROOF SPECIALTIES AND ACCESSORIES

Description of Material or System:

Stainless Steel Chimney Caps

Last Updated:

08/26/2022

Updated by:

Included in this section:

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

Guideline applies:

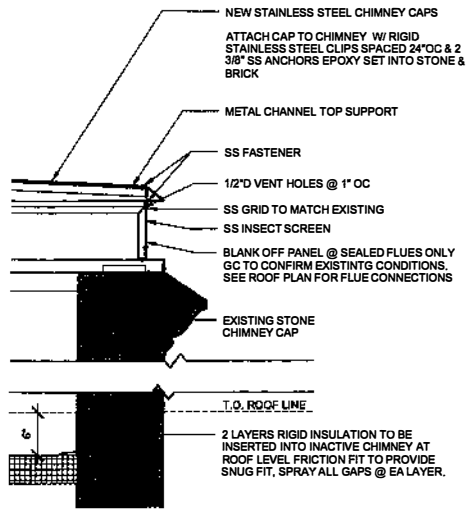
- | | |
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| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
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| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

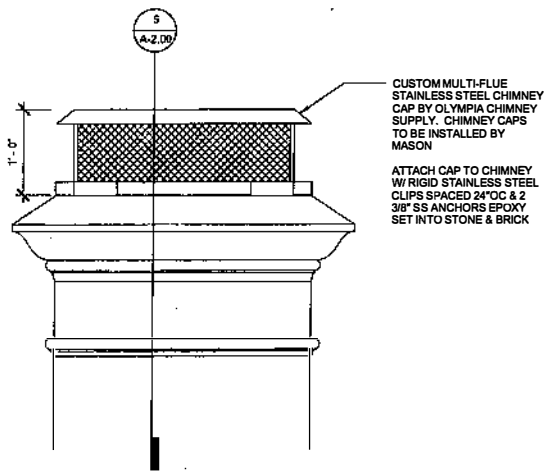
Attached is a sample detail for stainless steel chimney caps.

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:

- | | |
|---|---|
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| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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/>

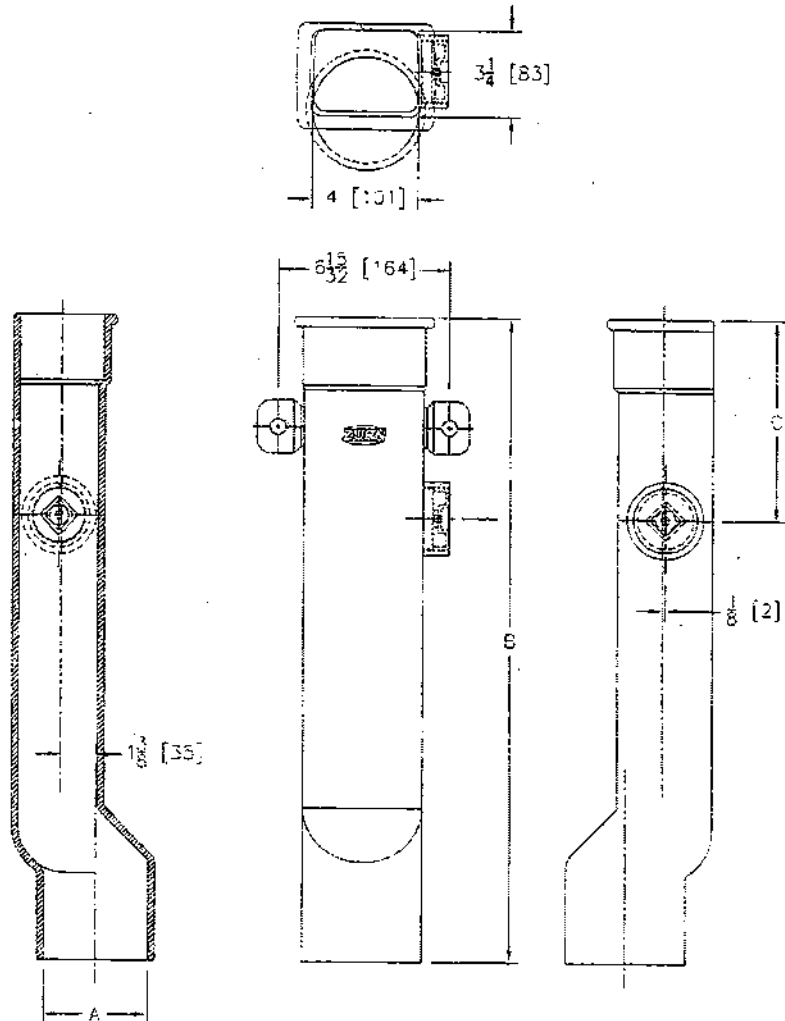


Z192-CA
4 X 3 [102 X 76]
DOWNPOUT BOOT WITH CLEANOUT ACCESS

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 _____ (Specify size/type) **OUTLET**
 4 [102] _____ NH No-Hub

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

SUFFIXES
 _____ -G Galvanized Cast Iron

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

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED

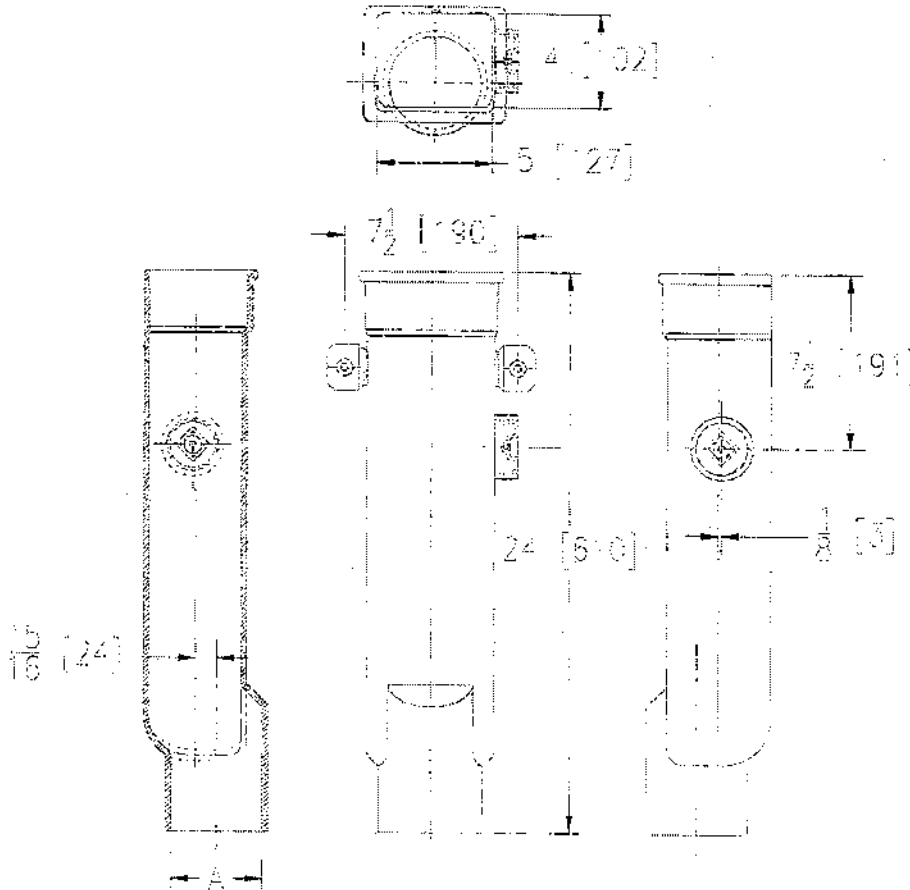


**Z191-CA
DOWNSPOUT BOOT
WI CLEANOUT ACCESS WITH PLUG**

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

| | | |
|----------------|---------------------|-----------------|
| REV. A | DATE: 5/20/10 | C.N. NO. 111142 |
| DWG. NO. 67610 | PRODUCT NO. Z191-CA | |

*REGULARLY FURNISHED UNLESS OTHERWISE SPECIFIED

Phillips Exeter Academy
Construction Standards and Guidelines

Division: 8 Openings
Specification Section: 08 11 00 - Metal Doors and Frames
Description of Material or System: Storm Door
Last Updated: 5/6/2022
Updated by: Jeff Plimpton

| | | |
|---|--|--|
| Included in this section: | Guideline applies: | |
| <input type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:
The preferred manufacturer for a Faculty residence storm door is Larson.

Manufacturer: Larson
Model Number: 146 FV Clear
Approved Colors: Black, green or white only
Handle set design: Curved
Handleset finish: Brushed Nickel, Brass, or Aged Bronze only

Links to additional product information:
<https://www.larsondoors.com/>

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 8 Openings

Specification Section: 08 11 13 - Hollow Metal Doors and Frames

Description of Material or System: Bulkhead Door

Last Updated: 3/29/2022

Updated by: Jeff Plimpton

| | | |
|--|--|--|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

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

Manufacturer: **Bilco**
Model Number: **RVS-F-1.**

Links to additional product information:

<https://www.bilco.com/>



an AmesburyTruth™ company

Classic Series Basement Doors



Build a Better Basement

Now available with factory-applied powder coat finish

BILCO Classic Series steel basement doors are now offered with a factory-applied polyester powder coat finish. The polyester resin provides a durable, weather-resistant coating. Cured at higher temperatures than most wet coatings, the result is a tougher and chip-resistant coating, providing both a decorative and protective finish.



Product Features

- Easy to Operate... Gas Spring lift assistance provides smooth, easy, one-hand operation and prevents the doors from slamming closed.
- Weathertight... Sheds water, keeps areaway dry and free of debris.
- Rugged... Heavy gauge steel and sturdy concealed hinges ensure all-season operation and lasting service.
- Secure... Slide bolt lock and internal mounting flanges make your home safe and secure. Keyed lock kit available (see page 2 for more information).

Experience. Innovation.

800-854-9724 | WWW.BILCO.COM



Log on to www.BILCO.com to find a sales representative near you.



Matching foundation plates with a powder coat finish are now available.



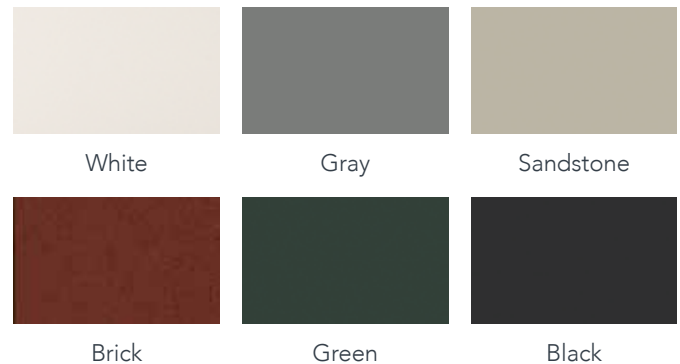
NEW! Powder coated basement doors can be ordered with a keyed lock kit. Doors are pre-punched with lock kit mounting holes for easy installation.



Enjoy the convenience of locking and unlocking your basement door from the outside.

Advantages & Standard Features:

- Offered in six standard colors (see chart on right) with a textured finish
- Available on our most popular steel sided doors, sizes B and C, and extension panels
- Offers a superior finish to conventional paint
- Makes the BILCO door durable, attractive and extremely scratch-resistant
- Is ideal for exterior applications
- Retains exterior color longer
- Process is environmentally friendly and virtually pollution-free



Due to the printing process, colors shown approximate as close as possible to the actual paint colors.

The BILCO Company | P.O. Box 1203, New Haven, CT | 800-854-9724 | email: residential@bilco.com

Phillips Exeter Academy
Construction Standards and Guidelines

Division: 8 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: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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>

Insulated Fire-Rated

ACCESS DOOR

Designed for wall and ceiling applications, this fire-rated Insulated Access Door is UL and Warnock-Hersey listed. Engineered with mineral fiber to assist in reducing heat transfer in the event of a fire.

FEATURES

FIRE-RATED Independently tested and labeled for 1-1/2 hours for wall applications and 3 hours for ceiling applications.

EASY OPERATION This self-closing door features an inside knurled knob latch release that is easy to operate.

CUSTOM SIZING Custom sizes available from 6 inches by 6 inches to 48 inches by 48 inches.



DETAILS

DOOR 20 gauge Steel, Self-Closing

FRAME 16 gauge Steel

SIZE

- Min: 6 inches by 6 inches
- BIT Max: 24 inches by 72 inches or 48 inches by 48 inches
- BIW/BIP Max: 36 inches by 48 inches

INSTALLATION Ceiling or Wall

HINGE

- BIT: Flush Continuous Piano
- BIW/BIP: Concealed Pin

FINISH White Powder Coat

INSULATION 2 inch Thick, Fire-Rated Mineral Fiber, R-8

CERTIFICATION

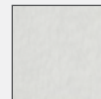
- UL listed "B" label for 1-1/2 hours (Wall)
- Warnock-Hersey listed for 3 hours (Ceiling)

ORDER GUIDE

| BASE | FLANGE | LATCH | WIDTH | X | LENGTH | OPTIONS |
|-----------|--|--|---|----------|--------|--|
| BI | | | | X | | |
| | T 1 inch Flange W Drywall Bead P Plaster Bead | K Knurled Knob / Key Operated Latch Bolt M Mortise Lock (1-1/8") Prep | Standard Sizes (W x L) 8" x 8" 18" x 24" 24" x 48" 10" x 10" 20" x 30" 30" x 30" 12" x 12" 22" x 22" 32" x 32" 12" x 18" 22" x 30" 36" x 36" 12" x 24" 22" x 36" 36" x 48" 14" x 14" 24" x 24" 48" x 48" 16" x 16" 24" x 30" 18" x 18" 24" x 36" | | | B Galvannealed G Gasketing M Masonry Anchors S Type 304 Stainless Steel |

Rough opening is door size + 1/4 inch minimum. Additional sizes available, call for more information.
*Wall application only.

MATERIALS

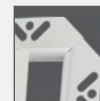


White
Powder Coat

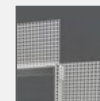
FLANGES



1 inch Flange

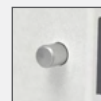


Drywall Bead

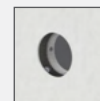


Plaster Bead

LATCHES



Knurled
Knob



Mortise
Lock Prep

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 8 Openings

Specification Section: 08 15 13 - Interior MDF 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:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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: 8 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:

- 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 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/>

2283 RAISED PANEL SHORT

PERSONALIZING OPTIONS

GOOD / **BETTER** / BEST

COLORS¹

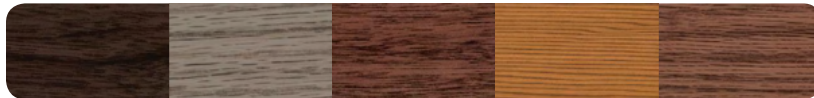


White Almond Sandstone Brown Bronze



Evergreen Gray Desert Tan Black

ACCENTS WOODTONES¹



Walnut Driftwood Mahogany Cedar Dark Oak

SHORT WINDOW INSERTS



No Inserts Stockton Cascade



Prairie Waterton Sherwood



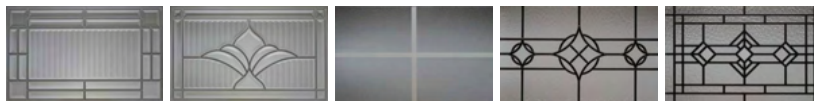
Cathedral Sunburst

GLASS Plain available as non-insulated Polycarbonate



Plain Frosted Tinted Obscure Glue Chip

DESIGNER GLASS



Hawthorne Somerset Hampton Newport Temple

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

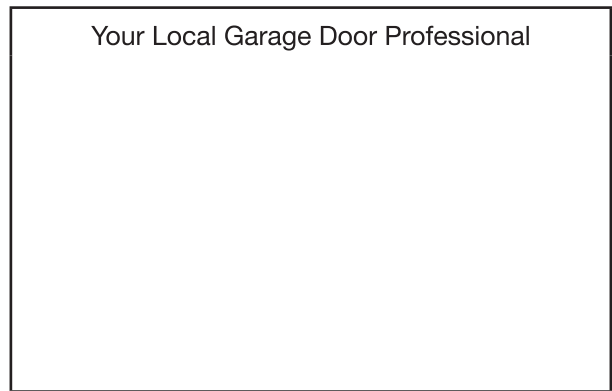


Specifications

| | |
|--------------------------------------|---|
| Panel Style | Raised Panel |
| Section Construction | 2" Thick - 2-Sided Steel |
| Section Material | Medium Duty / 27 ² Ga. Steel |
| Insulation Type | 1-13/16" Polystyrene |
| R-value / Thermal Performance | R-9.65 |
| Powder Coating¹ | 188 colors |
| Window Style³ | Short [19.25" x 12.75"] |
| Glass | Insulated and Non-Insulated |
| Wind Load | Non-Impact and Impact Rated |
| 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 and woodtones match. ² Lower steel gauge [ga.] number indicates stronger steel. ³ Model number indicates window style.



Phillips Exeter Academy

Construction Standards and Guidelines

Division: 8 Openings

Specification Section: 08 52 13 - Aluminum Clad Wood Windows

Description of Material or System: Aluminum Clad Wood Windows

Last Updated: 8/29/2022

Updated by: Jeff Plimpton

| | | |
|--|--|--|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input checked="" type="checkbox"/> Other <u>For arched top windows only</u> | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

For **replacement of arched top windows**, the preferred window type is aluminum clad wood windows. The preferred manufacturer is **Marvin Windows - the Ultimate Series**.

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**.

Links to additional product information:

<https://www.marvin.com>

<https://azekexteriors.com/>

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 8 Openings

Specification Section: 08 54 23 - Fiberglass Windows

Description of Material or System: Fiberglass Windows

Last Updated: 8/29/2022

Updated by: Jeff Plimpton

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

For replacement fiberglass windows in **dormitories**, the preferred manufacturer is **Marvin Windows**.

For **faculty single and multi-family residences**, replacement windows outside of the historic district are fiberglass windows. Preferred manufacturers are **Paradigm and Simonton**. Both agree to a lifetime warranty. No exceptions taken.

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.

Links to additional product information:

- <https://www.marvin.com>
- <https://paradigmwindows.com/>
- <https://www.simonton.com/>
- <https://azekexteriors.com/>



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/26/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Preferred vendor for steel fire extinguisher cabinets is Samson.

Confirm final product selection with PEA FM and Campus Safety.

Links to additional product information:

<http://www.activarcpg.com>



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 4/7/2016

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Standards for door hardware.

Links to additional product information:

SECTION 08710
FINISH HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes

- 1. Furnish and deliver all mechanical and electrical finish hardware necessary for all doors, also hardware as specified herein and as enumerated in hardware sets and as indicated and required by actual conditions at the building. The hardware shall include the furnishing of all necessary screws, bolts, expansion shields, drop plates, and all other devices necessary for the proper application of the hardware.

B. Related Sections

- 1. Section 08 HOLLOW METAL WORK
- 2. Section 08 WOOD DOORS
- 3. Section 08 ALUMINUM ENTRANCES
- 4. Section 16 ELECTRICAL

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere, unless specifically listed in the hardware sets:

- 1. Windows
- 2. Cabinets of all kinds, including open wall shelving and locks.
- 3. Signage, except as noted.
- 4. Complete toilet accessories including coat hooks, unless note otherwise.
- 5. Overhead doors, unless noted otherwise.
- 6. Wire partition hardware (except padlocks)
- 7. Handrail Brackets
- 8. Lockers
- 9. All rough hardware

10. Transformers, junction boxes, wire and hook-up of electrical detectors and closers
11. Astragals and metal edges as required for 45/60/90 minute rated wood doors and all hollow metal doors.

1.3 REFERENCES

- A. Applicable state and local building codes and standards.
- B. FIRE/LIFE SAFETY
 1. NFPA - National Fire Protection Association
 - a. NFPA 70 – National Electric Code
 - b. NFPA 80 - Standard for Fire Doors and Fire Windows
 - c. NFPA 101 - Life Safety Code
 - d. NFPA 105 - Smoke and Draft Control Door Assemblies
 2. NH State Fire Code SAF-C 6000
- C. UL - Underwriters Laboratories
 1. UL 10B - Fire Tests of Door Assemblies
 2. UL 10C - Positive Pressure Test of Fire Door Assemblies
 3. UL 1784 - Air Leakage Tests of Door Assemblies
 4. UL 305 - Panic Hardware
- D. Accessibility
 1. ADA - Americans with Disabilities Act
 2. ICC (CABO) / ANSI A117.1 - Accessible and Usable Buildings and Facilities
 3. Architectural Barrier-Free Design Code (ABFDC-NH)
- E. DHI - Door and Hardware Institute
 1. Sequence and Format for the Hardware Schedule
 2. Recommended Locations for Builders Hardware
- F. ANSI - American National Standards Institute
 1. ANSI/BHMA A156.1 - A156.24 - Standards for Hardware and Specialties

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 requirements. Prior to submittal field verify existing doors and/or frames

receiving new hardware and/or existing conditions receiving new openings. Verify new hardware is compatible with the existing door/frame preparation and/or existing conditions. Advise architect within the submittal package of incompatibility or issues.

- B. Catalog Cuts: Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
- C. Submittals to be supplied on standard 8-1/2" x 11" paper.
- D. Final Hardware Schedule Content: Submit schedule with hardware sets in vertical format as illustrated by the Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening. Include the following information:
 - 1. Door Index; include door number, heading number, and Architects hardware set number.
 - 2. Opening Lock Function Spreadsheet; list locking device and function for each opening.
 - 3. Type, style, function, size, and finish of each hardware item.
 - 4. Name and manufacturer of each item.
 - 5. Fastenings and other pertinent information.
 - 6. Location of each hardware set cross-referenced to indications on Drawings.
 - 7. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 8. Mounting locations for hardware.
 - 9. Door and frame sizes and materials.
 - 10. Name and phone number for the local manufacturer's representative for each product.
 - 11. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and/or access control components). Operational description should include how the door will operate on egress, ingress, and/or fire/smoke alarm connection.
- E. Samples: If requested by the Architect, submit production sample or sample installations as requested of each type of exposed hardware unit in the finish indicated, and tagged with a full description for coordination with the schedule.
 - 1. Samples will be returned to the supplier in like-new condition. Units that are acceptable to the Architect may, after final check of operations, be incorporated into the Work, within limitations of key coordination requirements.

- F. Templates: After final approval of the hardware schedule, provide templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware.
- G. Riser and Wiring Diagrams: After final approval of the hardware schedule, submit riser and wiring diagrams as required for the proper installation of complete electrical, electromechanical, and electromagnetic products.
- H. Operations and Maintenance Data: Provide in accordance with Division 1 and include the following:
 - 1. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - 2. Catalog pages for each product.
 - 3. Name, address, and phone number of local representative for each manufacturer.
 - 4. Parts list for each product.
 - 5. Copy of final approved hardware schedule, edited to reflect, "As installed."
 - 6. As installed "Wiring Diagrams" for each opening connected to power, both low voltage and 110 volts.
 - 7. One (1) complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
 - 8. Copy of warranties including appropriate reference numbers for manufacturers to identify the project.
- I. Certificates of Compliance: Upon request of Architect or Authority Having Jurisdiction certificates of compliance for fire-rated hardware and installation instructions shall be made available.

1.5 QUALITY ASSURANCE

- A. Substitutions: Products are to be those specified to ensure a uniform basis of acceptable materials. Requests for substitutions must be made in accordance with Division 1 requirements. If proposing a substitute product, submit product data for the proposed item with product data for the specified item and indicate basis for substitution and savings to be made. Provide sample if requested. Certain products have been selected for their unique characteristics and particular project suitability.
 - 1. Items specified as "no substitution" shall be provided exactly as listed.
 - 2. Items listed with no substitute manufacturers listed have been requested by the Owner or Architect to match existing for continuity and/or future performance and maintenance standards or because there is no known equal product.

3. If no other products are listed in a category, then "no substitution" is implied.
- B. **Supplier Qualifications:** A recognized architectural hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an accredited Architectural Hardware Consultant (AHC), who is available to the Owner, Architect, and Contractor, at reasonable times during the course of the Work for consultation.
- C. **Single Source Responsibility:** Obtain each type of hardware (latch and locksets, hinges, exit devices, closers, etc.) from a single manufacturer.
- D. **Fire-Rated Openings:** Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwrites Laboratories, Intertek Testing Services, Factory Mutual, or other testing and inspecting organizations acceptable to the authorities having jurisdiction for use on types and sizes of doors indicated in compliance with requirements of fire-rated door and door frame labels.
- E. **Electronic Security Hardware:** When electrified hardware is included in the hardware specification, the hardware supplier must employ an individual knowledgeable in electrified components and systems, who is capable of producing wiring diagrams and consulting as needed. Coordinate installation of the electronic security hardware with the Architect and electrical engineers and provide installation and technical data to the Architect and other related subcontractors. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Tag each item or package separately with identification related to the final hardware schedule, and include installation instructions with each item or package.
- B. Each article of hardware shall be individually packaged in manufacturer's original packaging.
- C. Contractor will provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- D. Items damaged in shipment shall be replaced promptly and with proper material and paid for by whomever did the damage or caused the damage to occur.
- E. Hardware shall be handled in a manner to avoid damage, marring, or scratching. Irregularities that occur to the hardware after it has been delivered to the Project shall be corrected, replaced, or repaired by the Contractor. Hardware shall be protected against malfunction due to paint, solvent, cleanser, or any chemical agent.
- F. Prior to submittal, carefully inspect existing conditions to verify finish hardware required to complete Work, including size, strike plate size, quantities, and sill

conditions material. **This means a job site visit!** If conflict between the scheduled material and existing conditions, submit request for directions from Architect.

- G. No direct shipments will be allowed unless approved by the Contractor.

1.7 WARRANTY

- A. Provide manufacturer's warranties as specified in Division 1 and as follows:
 - 1. Closers: 10 years, except electronic closers, 2 years.
 - 2. Exit Devices: 3 years, except electrified devices, 1 year.
 - 3. Mortise Locksets: 3 years, except electrified locksets, 1 year.
 - 4. Cylindrical Locksets: 7 years, except electrified locksets, 1 year.
 - 5. Continuous Hinges: 10 years.
 - 6. Other hardware: 1 year.
- B. No liability is to be assumed where damage or faulty operation is due to improper installation, improper use, or abuse.
- C. Products judged to be defective during the warranty period shall be replaced or repaired in accordance with the manufacturer's warranty, at no additional cost to the Owner.

1.8 MAINTENANCE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Approval of manufacturers other than those listed shall be in accordance with paragraph 1.05.A.
- B. Note that even though an acceptable substitute manufacturer may be listed, the product must provide all the functions and features of the specified product or it will not be approved.

| Item | Scheduled Manufacturer | Acceptable Substitute |
|---------------------------------------|------------------------|-----------------------|
| Hinges | Ives (IVE) | Hager, McKinney |
| Flush Bolts & Coordinators | Ives (IVE) | Burns, Rockwood |
| Locksets & Deadlocks | Schlage (SCH) | |
| Exit Devices & Mullions | Von Duprin (VON) | |
| Computer Managed Locks | Schlage (SCH) | |
| Computer Managed Residence Hall Locks | Schlage (SCH) | |

| | | |
|---------------------------------------|----------------------|--------------------|
| Electric Strikes | Von Duprin (VON) | |
| Door Closers | LCN (LCN) | |
| Electro-Hydraulic Automatic Operators | LCN (LCN) | |
| Door Trim | Ives (IVE) | Burns, Rockwood |
| Protection Plates | Ives (IVE) | Burns, Rockwood |
| Overhead Stops | Glynn-Johnson (GLY) | Rixson, Sargent |
| Stops & Holders | Ives (IVE) | Burns, Rockwood |
| Thresholds & Weatherstrip | National Guard (NGP) | Reese, Pemko, Zero |
| Silencers | Ives (IVE) | Burns, Rockwood |
| Magnetic Holders | LCN (LCN) | |
| Cylinders & Keying | Schlage (SCH) | |

- C. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
- D. Where the hardware specified is not adaptable to the finished shape or size of the members requiring hardware, furnish suitable types having the same operation and quality as the type specified, subject to the Architect's approval.

2.2 MATERIALS

A. Fasteners

1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
3. Thru-bolted hardware (Panic Devices, Fire Exit Devices, Closers, Overhead Holders and Stop) at all high use doors.
4. Hardware shall be installed with the fasteners provided by the hardware manufacturer.
5. All Thresholds installed at exterior openings to be supplied with Stainless Steel fasteners.

B. Hinges

1. Provide hinges of type, material, and height as outlined in the following guide for this specification:
 - a. 1 3/4" thick doors up to and including 3'-0" wide:
Exterior: standard weight, ball bearing, bronze/stainless steel, 4 1/2" high
Interior: standard weight, ball bearing, steel, 4 1/2" high
 - b. 1 3/4" thick doors over 3'-0" wide:
Exterior: heavy weight, ball bearing, bronze/stainless steel, 5" high
Interior: heavy weight, ball bearing, steel, 5" high

- c. 2 1/4" thick doors:
Exterior: heavy weight, ball bearing, bronze/stainless steel, 5" high
Interior: heavy weight, ball bearing, steel, 5" high
2. Provide 3 hinges per door leaf for doors 90 inches or less in height, and one additional hinge for each 30 inches of additional door height.
3. Template Hinges: Provide only template hinges which conform to ANSI whenever applicable, for all interior applications.
4. Hinges to be used on exterior doors or doors which are subject to special atmospheric conditions, (pool area, chemical laboratories, food service areas etc.) shall be non-ferrous material, brass, bronze or stainless steel.
5. Mineral core wood labeled doors, without special hinge reinforcement, shall be hung on half-surface ball bearing hinges using thru bolts and grommet nuts.
6. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins
7. The width of hinges shall be 4 1/2" at 1 3/4" thick doors, and 5" at 2 1/4" thick doors. Adjust hinge width as required for door, frame, and/or wall conditions to allow proper degree of opening.
8. Provide hinges with electrified option only where specified. Provide with sufficient number and gage of concealed wires to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to the electrified locking component.
9. Acceptable manufacturers and/or products: Ives BB series, Hager BB series, McKinney TA/T4A series.

C. Continuous Hinges

1. Provide continuous hinges where specified in the hardware sets fabricated from tempered aluminum, 6063-T6 alloy.
2. Provide with three interlocking extrusions in a pinless assembly, installed to full height of door frame.
3. Hinges shall be capable of supporting door weights up to 540 pounds (83" height), 620 pounds (95" height), and shall be successfully tested for 1,250,000 cycles.
4. On fire-rated doors, provide continuous hinges that are classified for use on rated doors by a testing agency acceptable to the authority having jurisdiction.

5. Install hinges with fasteners supplied by manufacturer. Hole pattern shall be symmetrically patterned.
 6. Acceptable manufacturers and/or products: Pemko CFM83HD/CFM95HD, Roton, Ives, McKinney, Stanley
- D. Flush Bolts (Surface Bolts will not be accepted)
1. Manual flushbolts shall have a spring loaded snap action lever, which will retract the bolt when moved to the "up" position and project the bolt into the head when moved to the "down" position. Flushbolts shall have a 5/8" throw with a vertical adjustment. Flushbolts shall be made from forged brass.
 2. Automatic flushbolts shall retract without any manual actuation. Bolts shall have a minimum throw of 3/4" and shall have an override feature to prevent damage to the door or bolts should some obstruction partially or totally prevent bolt head penetrating strike. Bolts shall have a minimum vertical adjustment of 1/2" . When used on label fire doors, automatic flush bolts shall bear U.L. listing. Provide dust proof strikes for bottom bolts.
 3. All flush bolts will have appropriate extensions that provide operation at no higher than 6'6" from the finished floor.
 4. Acceptable manufacturers and/or products: Ives, Burns, Rockwood
- E. Coordinators
1. Provide a bar-type coordinating device, surface applied to the underside of the stop at the frame head where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors.
 2. Provide a filler bar of the correct length for the unit to span the entire width of the opening, and appropriate brackets for parallel arm door closers and surface vertical rod exit device strikes. Factory-prep coordinators for vertical rod devices if required.
 3. Acceptable manufacturers and/or products: Ives, Burns, Rockwood
- F. Mortise Locks
1. Provide mortise locks certified as ANSI A156.13, Grade 1 Operational, Grade 1 Security, and manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance. Lock case shall be multi-function and field reversible for handing without opening the case. Cylinders: Refer to 2.4 KEYING.
 2. Provide locks with a standard 2 3/4" backset with a full 3/4" throw stainless steel mechanical anti-friction latchbolt. Deadbolt shall be a full 1" throw, constructed of stainless steel.
 3. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.

4. Lever trim shall be solid brass, bronze, or stainless steel, cast or forged in the design specified, with wrought roses and external lever spring cages. Levers shall be thru-bolted to assure proper alignment, and shall have a 2-piece spindle.

Lever design shall be: Schlage **17** with “A”, or “Merano” Rose. Have also used “N” escutcheon at retro fit openings in the past. **LEVER DESIGN OF 17 OR 07 (LEVER DESIGN TO MATCH EXISTING AT SPECIFIC BUILDING, BOTH 17 AND 07 USED IN THE PAST).**

 - a. Lever trim on the secure side of doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.
 5. Acceptable manufacturers and/or products: Schlage L9000 series.
- G. Extra Heavy Cylindrical Locks – Grade 1 (retrofit only not accepted on new construction)
1. Provide cylindrical locks conforming to ANSI A156.2 Series 4000, Grade 1. Cylinders: Refer to 2.4 KEYING.
 2. Provide locksets able to withstand 1500 inch pounds of torque applied to the locked outside lever without gaining access per ANSI A156.2 Abusive Locked Lever Torque Test and cycle tested to 3 million cycles per ANSI A156.2 Cycle Test.
 3. Provide locks with a standard 2-3/4” backset, unless noted otherwise, with a 1/2” latch throw. Provide proper latch throw for UL listing at pairs.
 4. Provide locksets with a separate anti-rotation throughbolts, and shall have no exposed screws. Levers shall operate independently, and shall have 2 external return spring cassettes mounted under roses to prevent lever sag.
 5. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
 6. Disassembly of lockset for cylinder removal shall not be required. Cylinder shall be changed by removing the lever.
 7. Lever trim shall be solid cast levers without plastic inserts, and wrought roses on both sides. Locksets shall be through-bolted to assure proper alignment.
 - a. Lever design shall be Schlage **Athens.**
(LEVER DESIGN TO MATCH EXISTING AT SPECIFIC BUILDING, BOTH ATHENS AND SPARTA USED IN THE PAST).
 - b. Lever trim on the secure side of doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.
 8. Acceptable manufacturers and/or products: Schlage ND series.
- H. Deadbolts
1. Provide mortise deadlock series and function as specified. Cylinders: Refer to 2.4 KEYING.

2. Provide deadlocks with a standard 2 3/4" backset. Deadbolt shall be a full 1" throw, constructed of stainless steel.
 3. Provide manufacturers standard strike.
 4. Disassembly of deadbolt for cylinder removal shall not be required
 5. Acceptable manufacturers and/or products: Schlage L400 series
- I. Exit Devices
1. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to the standard architectural finishes to match the balance of the door hardware. Cylinders: Refer to 2.4 KEYING.
 2. All exit devices shall have Cylinder dogging unless otherwise specified.
 3. Exit devices shall incorporate a fluid damper or other device that eliminates noise associated with exit device operation. Touchpad shall extend a minimum of one half of the door width, but not the full length of the exit device rail. End-cap will have two-point attachment to door. Only compression springs will be used in devices, latches, and outside trims or controls.
 4. Devices to incorporate a deadlatching feature for security and/or for future addition of alarm kits and/or other electrical requirements.
 5. Vertical rod devices shall be capable of being field modified to less bottom rod devices by removal of bottom rod and adding firing pin(s), if required at fire rated openings.
 6. Provide manufacturer's standard strikes.
 7. Provide exit devices factory cut to door width and height. Locate exit devices at a height recommended by the exit device manufacturer, allowable by governing building codes, and approved by the Architect.
 8. Mechanism case shall sit flush on the face of all flush doors, or spacers shall be furnished to fill gaps behind devices. Where glass trim or molding projects off the face of the door, provide glass bead kits.
 9. Removable mullions shall be a 2" x 3" steel tube. Where scheduled, mullion shall be of a type that can be removed by use of a keyed cylinder, which is self-locking when re-installed. Fixed mullions shall be Von Duprin Steel Mullions #4954, SP28 Finish. Key Removable Mullions shall be Von Duprin Steel Mullion #KR4954, SP28.
 10. Where lever handles are specified as outside trim for exit devices, provide heavy duty lever trims with forged or cast escutcheon plates. Provide vandal-resistant levers that will travel to a 90-degree down position when more than 35 pounds of torque are applied, and which can easily be re-set.
 - a. Lever style will match the lever style of the locksets.

- b. Lever trim on doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.
 - 11. Exit devices shall be UL listed panic exit hardware. Exit devices for fire rated openings shall be UL labeled fire exit hardware.
 - 12. Provide clear powder coating on plated finishes or field drill weep holes per manufacturer's recommendation for exit devices used in full exterior application, highly corrosive areas, and where noted in the hardware sets.
 - 13. Provide electrical options as scheduled.
 - 14. Acceptable manufacturers and/or products: Von Duprin 99 series with 996L Control.
- J. Hardwired Exterior Door Electronic Access Control System
- 1. All Card Readers, Controls, Interface Panels, Local Alarms, Door Contacts, Motion Detectors and Software shall be compatible with existing Campus wide system.
 - 2. Thin Line II, HID Readers mullion or recessed electrical box mounted.
- K. Electric Strikes
- 1. Provide electric strikes designed for use with the type locks shown at each opening.
 - 2. Provide electric strikes UL Listed as burglary-resistant electric door strikes and where required shall be UL Listed as electric strikes for fire doors and frames. Provide fail-secure type electric strikes, unless specified otherwise.
 - 3. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.
 - 4. Acceptable manufacturers and/or products: Von Duprin 6211 series.
 - 5. All Electric Strikes used with Rim Exit Devices shall be 6111 Series as manufactured by Von Duprin, Indianapolis, Indiana.
- L. Door Closers
- 1. Provide door closers that are fully hydraulic, full rack and pinion action with a high strength cast iron cylinder. Cylinder body shall be 1-1/2" in diameter, and double heat-treated pinion shall be 11/16" in diameter.
 - 2. Provide hydraulic fluid of a type requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F. Fluid shall be fireproof and shall pass the requirements of the UL10C "positive pressure" fire test.
 - 3. Spring power shall be continuously adjustable over the full range of closer sizes, and allow for reduced opening force for the physically handicapped.

Hydraulic regulation shall be by tamper-proof, non-critical valves. Closers shall have separate adjustment for latch speed, general speed, and backcheck.

4. Provide closers with a solid forged steel main arms and factory assembled heavy-duty forged forearms.
5. Provide special template, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other finish hardware items interfering with closer mounting.
6. Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors.
7. Closers shall not incorporate a pressure relief valve.
8. Closer cylinders, and arms shall have a powder coating finish that has been certified to exceed 100 hours salt spray testing by an independent testing laboratory used by BHMA for ANSI certification. For metal components that can't be powder coated, a special rust inhibiting finish (SRI) must be used.
9. Acceptable manufacturers and/or products: LCN 4040XP series

M. Door Closers (Light Duty Interior)

1. Provide door closers at interior doors certified to ANSI/BHMA A156.4 Grade 1 requirements by a BHMA certified independent testing laboratory.
2. Door closers shall have fully hydraulic, full rack and pinion action with a high strength cast iron cylinder, and shall utilize full complement bearings at shaft. Cylinder body shall be 1-1/8 inch diameter, and heat-treated pinion journal shall be 5/8 inch diameter.
3. Provide all-weather hydraulic fluid. Fluid shall be fireproof and shall pass the requirements of the UL10C "positive pressure" fire test.
4. Closers shall not incorporate Pressure Relief Valve (PRV) technology.
5. Provide special template, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other finish hardware items interfering with closer mounting.
6. Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless necessary.
7. Acceptable manufacturers and/or products: LCN 4030 series, No Substitute.

N. Electro-Hydraulic Automatic Operators

1. Provide low energy automatic operator units with hydraulic closer complying with ANSI A156.19 where automatic operators are specified.

2. Provide hydraulic fluid of a type requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F. Fluid shall be fireproof and shall pass the requirements of the UL10C "positive pressure" fire test.
3. Spring power shall be continuously adjustable over the full range of closer sizes, and allow for reduced opening force for the physically handicapped. Hydraulic regulation shall be by tamper-proof, non-critical valves. Closers shall have separate adjustment for latch speed, general speed, and backcheck.
4. Provide units with on/off switch for manual operation, push and go function to activate power operator or power assist functions, motor assist adjustable from 0 to 30 seconds in 5 second increments, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay up to 30 seconds.
5. Provide units with conventional door closer opening and closing forces unless the power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check valve, sweep valve, latch valve, speed control valve, and pressure adjustment valve to control door closing.
6. Provide drop plates, brackets, or adapters for arms as required for details.
7. Provide hard-wired wall-mounted actuator switches when specified in the Hardware Sets for operation. Actuators shall be weather-resistant type at exterior applications.
8. Provide key switches, with LED's, recommended and approved by the manufacturer of the automatic operator as required for the function as described in the operation description of the hardware group with the provisions below. Cylinders: Refer to 2.4 KEYING.
9. Where automatic operators are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by the manufacturer of the automatic operator for each individual leaf. Exterior and vestibule doors with automatic operators shall be sequenced to allow ingress or egress through both openings as directed by the Architect. Locate the actuators, key switches, and other controls as directed by the Architect.
10. All Operators to be provided with Concealed Switch and Torx Screws. No switches (On/Off or Holdopen) to be mounted on the exterior. This option hides the switches within the header of the unit, on the inside wall of the end cap. Options require "-CS -TORX" to be added to the model number when ordering.
11. Provide units with vestibule inputs, which allow sequencing operation of two units, and a SPDT relay for interfacing with latching or locking devices.
12. Release buttons and control as specified in hardware sets, if any questions contact lock shop supervisor for clarifications.
13. Acceptable manufacturers and/or products: LCN 4640 Series

O. Door Trim

1. Provide push plates 4" wide x 16" high x 0.050" thick and beveled 4 edges. Where width of door stile prevents use of 4 inches wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Push bars shall be of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as specified. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4" wide x 16" high x 0.050" thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Acceptable manufacturers and/or products: Ives, Burns, Rockwood

P. Protection Plates

1. Provide kick plates, mop plates, and armor plates minimum of 0.050" thick and beveled 4 edges as scheduled. Furnish with machine or wood screws, finished to match plates. Sizes of plates shall be as follows:
 - a. Kick Plates - 8" high x 2" LWOD on single doors, 1" LWOD on pairs
 - b. Mop Plates - 4" high x 2" LWOD on single doors, 1" LWOD on pairs
 - c. Armor Plates - 36" high x 2" LWOD on single doors, 1" LWOD on pairs
2. Acceptable manufacturers and/or products: Ives, Burns, Rockwood

Q. Overhead Stops and Overhead Stop/holders

1. Provide heavy duty overhead stops or overhead stop/holders as specified for exterior and interior vestibule single acting doors.
2. Provide overhead stops or overhead stop/holders at interior doors as specified. Provide surface mounted overhead stops at any door where conditions do not allow a wall stop or a floor stop presents a tripping hazard.
3. Where overhead holders are specified provide friction type at doors without a closer and positive type at doors with a closer.
4. Surface holders shall be furnished with sex nuts and thru bolts.

5. Acceptable manufacturers and/or products: Glynn-Johnson, Rixson, Sargent
- R. Door Stops and Holders
1. Provide door stops for all doors in accordance with the following requirements:
 - a. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
 - b. Where wall stops cannot be used, provide dome type floor stops of the proper height.
 - c. At any opening where a wall or floor stop cannot be used, a medium duty surface mounted overhead stop shall be used.
 2. Roller type stops shall be used in areas when the interfering swing of one door may cause damage through contact with another door.
 3. All stops to be fastened to concrete shall use expansion shields and machine screws.
 4. Acceptable manufacturers and/or products: Ives, Burns, Rockwood
- S. Thresholds, Seals, Door Sweeps, and Gasketing:
1. Provide thresholds, weatherstripping (including door sweeps, seals, astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items as closely as possible. Provide door sweeps, seals, and astragals of a type where resilient or flexible seal strip is easily replaceable and readily available.
 2. Seals shall be manufactured from silicone rubber with a self-adhesive strip. Seals shall be bulb design with a 1/4" compression and designed to be installed on metal or wood door frames.
 3. All exterior doors to have a sweep consisting of a 1-3/4" brush in an aluminum housing.
 4. All exterior door openings to have perimeter weatherstripping that consists of minimum 3/4" brush in an aluminum housing.
 5. Thresholds shall be thermal barrier flat saddle type, handicap accessible to meet ANSI 117.1 1980, and shall be manufactured from aluminum.
 6. Thresholds installed at exterior openings to be supplied with Stainless Steel fasteners.
 7. Acceptable manufacturers and/or products: National Guard, Pemko, Reese, Zero
- T. Silencers:

1. Provide "Push-in" type silencers for each hollow metal or wood frame. Provide 3 for each single frame and 2 for each pair frame. Omit where gasketing is specified or required by code.
2. Acceptable manufacturers and/or products: Ives, Burns, Rockwood

U. Magnetic Holders:

1. Provide wall mounted electromagnetic door release with a minimum of 25 pounds of holding force, and a positive release button to initiate the closing motion. Projection of holder and armature must be coordinated with other hardware and wall conditions to ensure that door sits parallel to wall when fully open. Where magnetic holders are used on fire-rated doors, they must be wired into the fire control panel for fail-safe operation.
2. Acceptable manufacturers and/or products: LCN

2.3 FINISHES **(MATCHES THOSE ALREADY USED IN SPECIFIC BUILDING. POLISHED BRASS (US3) USED MOST OFTEN, BUT SATIN CHROME (US26D) HAS BEEN USED IN THE PAST AS WELL. FINISH SHALL BE CONFIRMED ON A PER-PROJECT BASIS.)**

- A. Finish of all hardware shall be US3 (BHMA 605/632) with the exceptions as follows:
 1. Continuous Hinges: US32D (BHMA 630).
 2. Door Closers: Powder Coat to Match.
 3. Latch Protectors: US32D (BHMA 630).
 4. Weatherstripping: Gold Anodized Aluminum.
 5. Thresholds: Extruded Architectural Bronze, Polished
- B. Finish of all hardware shall be US26D (BHMA 626/652) with the exceptions as follows:
 1. Hinges at Exterior Doors: US32D (BHMA 630).
 2. Push Plates, Pulls, and Push Bars: US32D (BHMA 630).
 3. Protection Plates: US32D (BHMA 630).
 4. Overhead Stops and Holders: US32D (BHMA 630).
 5. Door Closers: Powder Coat to Match.
 6. Wall Stops: US32D (BHMA 630).
 7. Latch Protectors: US32D (BHMA 630).
 8. Weatherstripping: Clear Anodized Aluminum.
 9. Thresholds: Mill Finish Aluminum.

2.4 KEYING

- A. All permanent cylinders and cores will be Schlage Everest 29 T FSIC (Full Size Interchangeable Core) restricted keyway.
- 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.
- F. Questions about Phillips Exeter keying and cylinders should be directed to:

Marshall Miller
Phillips Exeter Locksmith
1-603-777-4439 (p)
mmiller@exeter.edu
- G. Approved products: Schlage

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to installation of any hardware, examine all doors, frames, walls and related items for conditions that would prevent proper installation of finish hardware. Correct all defects prior to proceeding with installation.

3.2 INSTALLATION

- A. Coordination:
 - 1. Prior to installation of hardware, schedule and hold a meeting for the purpose of instructing installers on proper installation and adjustment of finish hardware. Representatives of locks, exit devices, closers, automatic operators, and electrified hardware shall conduct training; provide at least 10 days notice to representatives. After training a letter of compliance, indicating when the training was held and who was in attendance, shall be sent to the Architect.
 - 2. Prior to installation of electrified hardware, schedule and hold a meeting for the purpose of coordinating finish hardware with security, electrical, doors and frames, and other related suppliers. A representative of the supplier of finish hardware, and doors and frames, the electrical subcontractor, and the Owner's security contractor shall meet with the Owner, Architect, and General Contractor prior to ordering finish hardware. After training a letter of compliance, indicating when the training was held and who was in attendance, shall be sent to the Architect.
- B. Hardware will be installed by qualified tradesmen, skilled in the application of commercial grade hardware. For technical assistance if necessary, installers may contact the manufacturer's rep for the item in question, as listed in the hardware schedule. Sole installation vendors shall include:
 - 1. Andover Controls
- C. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.

- D. Install each hardware item in compliance with the manufacturer's instructions and recommendations, using only the fasteners provided by the manufacturer.
- E. Do not install surface mounted items until finishes have been completed on the substrate. Protect all installed hardware during painting.
- F. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- G. Operating parts shall move freely and smoothly without binding, sticking, or excessive clearance.
- H. Existing Doors and/or Frames: Remove existing hardware being replaced, tag, and store according to contract documents. Field modify and prepare existing door and/or frame for new hardware being installed. Provide necessary fillers, Dutchmen, reinforcements, and fasteners for mounting new hardware and to cover existing door/frame preps.
- I. Wire (including low voltage), conduit, junction boxes, and pulling of wire is by Division 16, Electrical. Electrical Contractor shall connect wire to door position switches and run wire to central room or area as directed by the Architect. Wires shall be tested and labeled with the Architects opening number. Connections to/from power supplies to electrified hardware and any connection to fire/smoke alarm system, and/or smoke evacuation system where specified is by Division 16 (Electrical).

3.3 ADJUSTING, CLEANING, AND DEMONSTRATING

- A. Adjust and check each operating item of hardware and each door, to insure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly.
- B. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make a final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- C. Clean adjacent surfaces soiled by hardware installation.
- D. Instruct Owner's personnel in the proper adjustment, lubrication, and maintenance of door hardware and hardware finishes.

3.4 FIELD QUALITY CONTROL

- A. Prior to Substantial Completion, the installer, accompanied by representatives of the manufacturers of locks, exit devices, closer, and any electrified hardware, shall perform the following work:
 - 1. Examine and re-adjust each item of door hardware as necessary to restore function of doors and hardware to comply with specified requirements.

2. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.
3. Replace hardware items that have deteriorated or failed due to faulty design, materials, or installation of hardware units.
4. Prepare a written report of current and predictable problems of substantial nature i. the performance of the hardware.
5. At completion of project, a qualified factory representative for the manufacturers of locksets, closer, exit devices, and access control products shall arrange and hold a training session to instruct the Owner's personnel on the proper maintenance, adjustment, and/or operation of their respective products. After training a letter of compliance, indicating when the training was held and who was in attendance, shall be sent to the Architect.

3.5 PROTECTION

- A. Provide for the proper protection of complete items of hardware until the Owner accepts the project as complete. Damaged or disfigured hardware shall be replaced or repaired by the responsible party.

3.6 HARDWARE SCHEDULE

- A. Provide hardware for each door to comply with requirements of Section "Finish Hardware," hardware set numbers indicated in door schedule.
- B. It is intended that the following schedule includes complete items of finish hardware necessary to complete the work. If a discrepancy is found in the schedule, such as a missing item, improper hardware for a frame, door or fire codes, this preamble will be the deciding document.
- C. Locksets, exit devices, and other hardware items are referenced in the Hardware Sets for series, type, and function. Refer to the preamble for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets

Set created by Allegion
John Gant AHC, FDAI, CCPR
john.gant@allegion.com
www.allegionne.com
Phone: 802-482-4763
Cell: 781-775-5010



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/26/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is the PEA preferred product for faculty home garage door openers. (or equal)

Links to additional product information:

www.garaga.com


 1 888 296-3049  FIND A DEALER

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[Home](#) > [Commercial & Industrial](#) > [LiftMaster 3900](#)

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[LiftMaster GT](#)
[LiftMaster GH](#)
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[LiftMaster J](#)
[LiftMaster H](#)
[LiftMaster HCTDCU](#)


LiftMaster 3900

Features

[Standard Security Systems](#)
[Included in package](#)
[Optional Accessories](#)
[Documents to Download](#)

FEATURES

The Model 3900 is a jackshaft door opener, as manufactured by The Chamberlain Group, Inc. and is for use on light-duty commercial standard, vertical and high lift sectional doors with torsion assemblies. It is rated up to 10 cycles per hour during peak periods. It features a compact design ideal for limited height, cathedral, or obstructed ceiling installations.



Features:

Motor : Heavy-duty 24VDC with variable speed smooth start and stop.

Voltage : 120V

Maximum door weight : 650 lbs.

Minimum sideroom required : 14"

Requirements: for doors up to 14' high, 18' wide or 180 square foot maximum

Quick-Connect™ terminals for faster wire installation.

Compact design.

6-foot power cord that makes connecting to a power source easier than ever.

Push button limit settings.

Wall-mount installation: mounts on the left or right side of door. No rails to hang, the door opener simply mounts on the wall and attaches to the door torsion bar. Unit requires an electrical outlet within 6 feet.

Patented absolute positioning technology.

UL and CSA listed.

Lifetime motor warranty.

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Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 09/06/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input checked="" type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Student mirrors-Series framed mirror, OR plate glass mirror:
Nominal 6.0mm (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.

Links to additional product information:

Blank area for links to additional product information.

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 9 Finishes

Specification Section: 09 64 00 - Wood Flooring

Description of Material or System: Engineered Wood 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:

The preferred manufacturer for engineered wood flooring is **Bois BSL**.

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".

Wood to be sourced from Pennsylvania or further north.

Links to additional product information:

<https://boisbsl.com/en/floors/>

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:

- | | |
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| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 of Work:

Division 9

Specification Section:

09 67 00-Fluid-Applied Flooring

Description of Material or System:

Guidelines for floors at student shower areas

Last Updated:

08/26/22

Updated by:

Included in this section:

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

Guideline applies:

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|---|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input checked="" type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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.

Links to additional product information:

Preferred manufacturer:
<https://www.stonhard.com/>



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Division 9

Specification Section:

09 68 00-Carpet

Description of Material or System:

Broadloom Carpet for Stair Runners

Last Updated:

4/14/2020

Updated by:

Jeff Plimpton

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

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

Links to additional product information:

<https://www.hunterdouglas.com/window-treatments/wood-metal-bl>

camden hall 30

product type: **broadloom**
 style number: **5B050**
 construction: **solid cut pile**
 fiber: **nylon**
 dye method: **100% piece dyed**
 primary backing: **synthetic**
 secondary backing: **classicbac®**
 protective treatments:
 warranty: **10 year commercial limited**

| | u.s. | metric |
|--------------------------|------------------------|-----------------------|
| product size: | 12.00 feet | 3.66 m |
| gauge: | 1/10 inch | 39.4 per 10cm |
| stitches: | 9 per inch | 35 per 10cm |
| finished pile thickness: | 0.201 inches | 5.11 mm |
| average density: | 5373 per cu.yd. | 0.199 g/cm3 |
| kilotex: | | 8.32 kilotex |
| total thickness: | 0.360 inches | 9.14 mm |
| tufted weight: | 30.0 oz/yd2 | 1017.2 gms/sqm |
| pattern repeat: | none | |



recommended installation method

direct glue

performance + testing

antimicrobial assessment: **passes (AATCC-174) (When installed using Shaw 1036 adhesive)**
 pill test: **pass**
 radiant panel: **class I**
 nbs smoke: **less than 450**
 electrostatic propensity: **less than 3.5 kv**
 CRI greenlabel plus: **USA (GLP8878)**

attributes + certifications

| | |
|--|---|
| Cradle to Cradle Certified™ | silver level (version 3.1) |
| Health Product Declaration (HPD): | per ghs sds disclosure |
| Environmental Product Declaration (EPD): | 3rd party certified in accordance with ISO14044, ISO14025 & EN15804 |
| nsf 140: | gold |
| CRI Green Label Plus (GLP): | USA (GLP8878) |
| ce marking (EN 14041): | 3rd party certified |
| environmental guarantee*: | pickup & delivery available in americas |
| total recycled content: | 0% (post industrial 0% post consumer 0%) |
| product packaging: | 100% recyclable |
| country of origin**: | USA |

green leed contribution credit

| | |
|--|---|
| MR Credit: Building Product Disclosure and Optimization Environmental Product Declarations - Option 1. Environmental Product Declaration (EPD) | 3rd party certified in accordance with ISO14044, ISO14025 & EN15804 |
| MR Credit: Building Product Disclosure and Optimization Material Ingredients - Option 1: Material Ingredient Reporting | C2C silver level (version 3.1) |
| MR Credit: Building Product Disclosure and Optimization Material Ingredients - Option 2. Material Ingredient Optimization | C2C silver level (version 3.1) |

additional information

* To learn more about the recyclability of our products and our Environmental Guarantee, please visit shawcontract.com.

Meets or exceeds all local and national regulations in country of manufacture. (Manufactured in an ISO 9001 & ISO 14001 certified facility or equivalent)



Specifications are subject to nominal manufacturing variances. Material supply and/or manufacturing processes may necessitate specification changes without notice. This carpet is an exclusive design and may not be duplicated in any manner. Use of this design in the creation of another carpet design is also strictly prohibited. Visit shawcontract.com/testing for more information.

Corporate Headquarters +1 800 257 7429 | +1 706 532 7984 | Atlanta +1 404 853 7429 | Bangalore +9180 6759 0334 x 0335 | Beijing +86 10 6568 5881 | Chicago +1 312 467 1331 | Dubai +971 4 313 2496 | Hong Kong +852 2623 0371 | Latin America (Miami) +1 305 827 5912 | London +44 207 961 4120 | Los Angeles +1 800 233 1614 | Melbourne +1 800 556 302 | Mexico City +55 5010 7600 | Nantong +86 400 800 7429 | New York +1 212 953 7429 | San Francisco +1 415 955 1920 | Santiago +562 2431 5000 x 550 | Shanghai +86 21 5258 9799 | Singapore +65 6733 1811 | Sydney +1 800 556 302



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Division 9

Specification Section:

09 68 00-Carpet

Description of Material or System:

Broadloom Carpet-Graphic Loop

Last Updated:

4/14/2020

Updated by:

Jeff Plimpton

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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.

Links to additional product information:

gradient

product type: **broadloom**
 style number: **5A153**
 construction: **graphic loop**
 fiber: **eco solution q® nylon**
 dye method: **100% solution dyed**
 primary backing: **synthetic**
 secondary backing: **classicbac®**
 protective treatments: **ssp® shaw soil protection**
 warranty: **10 year commercial limited**

| | u.s. | metric |
|--------------------------|-------------------------|-----------------------|
| product size: | 12.00 feet | 3.66 m |
| gauge: | 1/8 inch | 31.5 per 10cm |
| stitches: | 12 per inch | 48 per 10cm |
| finished pile thickness: | 0.098 inches | 2.49 mm |
| average density: | 11020 per cu.yd. | 0.409 g/cm3 |
| kilotex: | | 13.58 kilotex |
| total thickness: | 0.278 inches | 7.06 mm |
| tufted weight: | 30.0 oz/yd2 | 1017.2 gms/sqm |
| pattern repeat: | none | |
| gsa approved product | true | |



recommended installation method

direct glue

coordinating products

broadloom: **tint, tone**
 carpet tile: **brilliance tile, striking tile, gradient tile**

performance + testing

antimicrobial assessment: **passes (AATCC-174) (When installed using Shaw 1036 adhesive)**
 pill test: **pass**
 radiant panel: **class I**
 nbs smoke: **less than 450**
 electrostatic propensity: **less than 3.5 kv**
 CRI greenlabel plus: **USA (GLP8472)**

attributes + certifications

| | |
|--|---|
| Cradle to Cradle Certified™ | silver level (version 3.1) |
| Health Product Declaration (HPD): | per ghs sds disclosure |
| Environmental Product Declaration (EPD): | 3rd party certified in accordance with ISO14044, ISO14025 & EN15804 |
| nsf 140: | gold |
| CRI Green Label Plus (GLP): | USA (GLP8472) |
| ce marking (EN 14041): | 3rd party certified |
| environmental guarantee*: | pickup & delivery available in americas |
| total recycled content: | 11% (post industrial 11% post consumer 0%) |
| product packaging: | 100% recyclable |
| country of origin**: | USA |

green leed contribution credit

| | |
|--|---|
| MR Credit: Building Product Disclosure and Optimization Environmental Product Declarations - Option 1. Environmental Product Declaration (EPD) | 3rd party certified in accordance with ISO14044, ISO14025 & EN15804 |
| MR Credit: Building Product Disclosure and Optimization Material Ingredients - Option 1: Material Ingredient Reporting | C2C silver level (version 3.1) |
| MR Credit: Building Product Disclosure and Optimization Material Ingredients - Option 2. Material Ingredient Optimization | C2C silver level (version 3.1) |

additional information

* To learn more about the recyclability of our products and our Environmental Guarantee, please visit shawcontract.com.

Meets or exceeds all local and national regulations in country of manufacture. (Manufactured in an ISO 90001 & ISO 14001 certified facility or equivalent)



Specifications are subject to nominal manufacturing variances. Material supply and/or manufacturing processes may necessitate specification changes without notice. This carpet is an exclusive design and may not be duplicated in any manner. Use of this design in the creation of another carpet design is also strictly prohibited. Visit shawcontract.com/testing for more information.

Corporate Headquarters +1 800 257 7429 | +1 706 532 7984 | Atlanta +1 404 853 7429 | Bangalore +9180 6759 0334 x 0335 | Beijing +86 10 6568 5881 | Chicago +1 312 467 1331 | Dubai +971 4 313 2496 | Hong Kong +852 2623 0371 | Latin America (Miami) +1 305 827 5912 | London +44 207 961 4120 | Los Angeles +1 800 233 1614 | Melbourne +1 800 556 302 | Mexico City +55 5010 7600 | Nantong +86 400 800 7429 | New York +1 212 953 7429 | San Francisco +1 415 955 1920 | Santiago +562 2431 5000 x 550 | Shanghai +86 21 5258 9799 | Singapore +65 6733 1811 | Sydney +1 800 556 302



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Division 9

Specification Section:

09 68 00-Carpet

Description of Material or System:

Broadloom Carpet-Pattern Loop

Last Updated:

4/14/2020

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 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.

Links to additional product information:

<https://www.hunterdouglas.com/window-treatments/wood-metal-bl>

meadow

| | |
|------------------------|--|
| product type: | broadloom |
| collection: | Graphic Nature |
| style number: | 60696 |
| construction: | pattern loop |
| fiber: | eco solution q® nylon |
| dye method: | 90% solution dyed / 10% yarn dyed |
| primary backing: | synthetic |
| secondary backing: | ecoworx® performance broadloom |
| protective treatments: | ssp® shaw soil protection |
| warranty: | lifetime commercial limited |

| | u.s. | metric |
|--------------------------|--------------------------|----------------------------|
| product size: | 12.00 feet | 3.66 m |
| gauge: | 1/10 inch | 39.4 per 10cm |
| stitches: | 12 per inch | 46 per 10cm |
| finished pile thickness: | 0.113 inches | 2.87 mm |
| average density: | 8920 per cu.yd. | 0.331 g/cm3 |
| kilotex: | | 12.36 kilotex |
| total thickness: | 0.305 inches | 7.75 mm |
| tufted weight: | 28.0 oz/yd2 | 949.4 gms/sqm |
| pattern repeat: | 0.406"w x 0.688"l | 1.03cm w x 1.75cm l |
| gsa approved product | true | |



recommended installation method

direct glue

coordinating products

broadloom: **pebble, glade**
 carpet tile: **prairie tile**

performance + testing

| | |
|---------------------------|---|
| antimicrobial assessment: | passes (AATCC-174) (When installed using Shaw 3600 adhesive) |
| pill test: | pass |
| radiant panel: | class I |
| nbs smoke: | less than 450 |
| electrostatic propensity: | less than 3.5 kv |
| CRI greenlabel plus: | USA (GLP9968) |

product transparency

Shaw Contract is dedicated to providing clients with a building chemistry that's safe and dependable. Working together, we will help you meet your goals as they pertain to material health. EcoWorx products with Eco Solution Q nylon are Cradle to Cradle Certified (tm) Silver and assessed for impacts on human health and the environment. This product can be recycled. When it's time to replace, we can collect and recycle it through our Environmental Guarantee.*

attributes + certifications

| | |
|---|--|
| Cradle to Cradle Certified™ | silver level (version 3.1) |
| Health Product Declaration (HPD): | per ghs sds disclosure |
| Environmental Product Declaration (EPD): | 3rd party certified in accordance with ISO14044, ISO14025 & EN15804 |
| nsf 140: | gold |
| CRI Green Label Plus (GLP): | USA (GLP9968) |
| Good Environmental Choice Australia (GECA): | certified |
| environmental guarantee*: | free pickup & delivery available north america |
| total recycled content: | 11% (post industrial 11% post consumer 0%) |
| product packaging: | 100% recyclable |
| country of origin**: | USA |

green leed contribution credit

| | |
|--|--|
| MR Credit: Building Product Disclosure and Optimization Environmental Product Declarations - Option 1. Environmental Product Declaration (EPD) | 3rd party certified in accordance with ISO14044, ISO14025 & EN15804 |
| MR Credit: Building Product Disclosure and Optimization Material Ingredients - Option 1: Material Ingredient Reporting | C2C silver level (version 3.1) |
| MR Credit: Building Product Disclosure and Optimization Material Ingredients - Option 2. Material Ingredient Optimization | C2C silver level (version 3.1) |
| MR Credit: Building Product Disclosure and Optimization Sourcing of Raw Materials - Option 2: Leadership Extraction Practices | environmental guarantee: free pickup & delivery available north america |
| EQ Credit: Low Emitting Materials Option 1. Product Category Calculations | green label plus certification: GLP9968 |

additional information

* To learn more about the recyclability of our products and our Environmental Guarantee, please visit shawcontract.com.

**Meets or exceeds all local and national regulations in country of manufacture. (Manufactured in an ISO 90001 & ISO 14001 certified facility or equivalent)



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Corporate Headquarters +1 800 257 7429 | +1 706 532 7984 | **Atlanta** +1 404 853 7429 | **Bangalore** +9180 6759 0334 x 0335 | **Beijing** +86 10 6568 5881 | **Chicago** +1 312 467 1331 | **Dubai** +971 4 313 2496 | **Hong Kong** +852 2623 0371 | **Latin America (Miami)** +1 305 827 5912 | **London** +44 207 961 4120 | **Los Angeles** +1 800 239 1614 | **Melbourne** +1 800 556 302 | **Mexico City** +55 5010 7600 | **Nantong** +86 400 800 7429 | **New York** +1 212 953 7429 | **San Francisco** +1 415 955 1920 | **Santiago** +562 2431 5000 x 550 | **Shanghai** +86 21 5258 9799 | **Singapore** +65 6733 1811 | **Sydney** +1 800 556 302

Phillips Exeter Academy Construction Standards and Guidelines

Division: 9 Finishes
Specification Section: 09 68 13 - Tile Carpeting
Description of Material or System: Modular Carpet Tile
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:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

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

Manufacturer: **Forbo**
Model: **Flotex.**

An acceptable alternate is:

Manufacturer: **J&J Flooring**
Model: **Kinetex**

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: 9 Finishes

Specification Section: 09 91 13 - Exterior Paints

Description of Material or System: Exterior Paints

Last Updated: 8/30/2022

Updated by: Heather Taylor

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer for campus paints is **Sherwin Williams**. 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: 9 Finishes

Specification Section: 09 91 23 - Interior Paints

Description of Material or System: Interior Paints

Last Updated: 8/30/2022

Updated by: Heather Taylor

| | | | | | | | | | | | | | |
|--|--|---|--------------------------------------|---|---|--|----------------------------------|---|----------------------------------|---|---------------------------------|--------------------------------|-------|
| <p>Included in this section:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Product Specifications <input checked="" type="checkbox"/> Design Guidelines <input type="checkbox"/> Design Details/Drawings <input type="checkbox"/> Supplemental Information <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____ | <p>Guideline applies:</p> <table border="0"> <tr> <td><input type="checkbox"/> Academic Buildings</td> <td><input type="checkbox"/> Dormitories</td> </tr> <tr> <td><input type="checkbox"/> Administrative</td> <td><input type="checkbox"/> Faculty Residences</td> </tr> <tr> <td><input type="checkbox"/> Athletic Facilities</td> <td><input type="checkbox"/> Support</td> </tr> <tr> <td><input checked="" type="checkbox"/> Campus Wide</td> <td><input type="checkbox"/> Utility</td> </tr> <tr> <td><input checked="" type="checkbox"/> Other</td> <td><u>As specified below</u> _____</td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td>_____</td> </tr> </table> | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | <input checked="" type="checkbox"/> Other | <u>As specified below</u> _____ | <input type="checkbox"/> Other | _____ |
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories | | | | | | | | | | | | |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences | | | | | | | | | | | | |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Other | <u>As specified below</u> _____ | | | | | | | | | | | | |
| <input type="checkbox"/> Other | _____ | | | | | | | | | | | | |

Overview of system/product/guideline:

The preferred manufacturer for campus paints is **Sherwin Williams**. No exceptions unless specifically submitted and approved by Owner.

Faculty Housing Interior Paint Colors:

Ancient Marble - SW 6162
 Hinting Blue - SW 6519
 Biscuit - SW 6112
 Dover White - SW 6385
 Teasing Peach - SW 6623
 Full Moon - SW 6679
 North Star Grey - SW 6246
 Pure White - SW 7005 (for trim)

Campus Office Interior Paint Colors:

Ancient Marble - SW 6162
 Nonchalant White - SW 6161
 Biscuit - SW 6112
 Interactive Cream - SW 6113
 Dover White - SW 6385
 Napery – SW 6386
 Pacer White - SW 6098
 Kilim Beige - SW 6106
 North Star Grey - SW 6246
 Pure White - SW 7005 (for trim)

Links to additional product information:

<https://www.sherwin-williams.com>



SCHEDULE

Interior Finishes

Interior Walls

Primer: - Multi-Purpose Zero VOC Interior/Exterior Latex Primer White

Primer: - PVA Drywall Primer & Sealer White

Alternative Primer Option

Finish: - ProMar® 200 Zero VOC Interior Latex Eg-Shel

Patch and sand any imperfections to smooth, clean surface. Prime with Sherwin-Williams Multi-Purpose Latex Primer.

Apply two coats of ProMar 200 Zero VOC Eg-Shel.

Primer: - Drywall Primer Interior Latex White

Alternative Primer Option.

Interior Trim (Wood)

Primer: - Multi-Purpose Zero VOC Interior/Exterior Latex Primer White

Finish: - SuperPaint® Interior Latex Semi-Gloss Extra White

Caulk baseboard, door casings, chair rails, and crown molding when applicable. Fill all nail holes with wood putty or spackle. Prime any new or bare wood with Sherwin-Williams Multi-Purpose Latex Primer. Apply two coats of finish using Sherwin-Williams SuperPaint Interior Semi-Gloss.

Kitchens and Baths

Finish: - ProMar® 200 Zero VOC Interior Latex Semi-Gloss Extra White

Prepare walls and trim according to standard. Apply two coats of finish using ProMar 200 Zero VOC Semi-Gloss.

Metal Surfaces

Spot Prime: - Pro Industrial Pro-Cryl® Universal Acrylic Primer

Sand any exposed surface rust. Spot prime these areas with Pro-Cryl Universal Acrylic Primer.

Finish: - DTM Acrylic Coating Semi-Gloss

Apply two coats of finish using DTM Acrylic Sem-Gloss.

Metal Handrails

Primer: - Pro Industrial Pro-Cryl® Universal Acrylic Primer

Sand any exposed surface rust. Spot prime with Pro-Cryl Universal Acrylic Primer.

Finish: - Pro Industrial Urethane Alkyd Enamel

Apply two coats of finish using Pro Industrial Urethane Alkyd Enamel.

Moresco or Calcimine Ceilings

Primer: - ProBlock® Interior Oil-Based Primer White

Finish: - ProMar® 200 Zero VOC Interior Latex Flat Extra White

Scrape all loose or peeling paint. Clean surface with damp rags and allow to dry completely. Prime with ProBlock Interior Oil Primer. Apply two coats of finish using ProMar 200 Zero VOC Flat.

Finish: - ProMar® 400 Zero VOC Interior Latex Flat Extra White

Alternative Finish Option.

Interior Wood Stain

First Coat: - Minwax



All interior wood stains should be Minwax . Color to be determined by PEA.

Interior Wood Stains

Finish: - Minwax Fast-Dry Polyurethane

After a minimum of eight hours, apply finish coat of Minwax Fast-Dry Polyurethane.

Finish: - Minwax Polycrylic Waterbased Urethane

For a low-odor, water clean-up finish apply Minwax Polycrylic Waterbased Urethane. Please note for this option, stain must dry for at least 24 hours prior to applying this finish.

Floors

Finish: - ArmorSeal® Tread-Plex 100% Acrylic Floor Coating

Prepare all floors by removing any old coatings. Surface must be clean, dull, and dry. Apply two coats of ArmorSeal Tread-Plex. This recommendation is not all-inclusive for every floor. Situations may require Sherwin-Williams to assess the situation and make alternative surface preparation and product recommendation.

Water Stains or Graffiti

Primer: - White Pigmented Shellac Primer

Prime all water stains or graffiti with White Pigmented Shellac. Topcoat following the PEA standard.

Primer: - ProBlock® Interior Oil-Based Primer

Alternative Primer Option.

Primer: - BIN Shellac Pigmented Primer Sealer

Alternative Primer Option.

Concrete

Primer: - Loxon® Concrete & Masonry Primer, Interior/Exterior Latex

Prime all interior bare concrete with Loxon Concrete and Masonry Primer. Topcoat following PEA standard.

Exterior Finishes

New Construction

Primer: - Exterior Oil-Based Wood Primer White

Finish: - Duration® Latex Gloss House & Trim Paint

Caulk all siding to door and window Turpin, clean and prepare all surfaces to be painted. Prime with Sherwin-Williams Exterior Oil-Based Primer. Apply two coats of finish using Sherwin-Williams Duration Exterior Gloss.

Previously Painted Surfaces

Primer: - Exterior Oil-Based Wood Primer White

Primer: - Prime Rx Peel Bonding Primer

Finish: - SuperPaint® Latex Gloss House & Trim Paint

Remove all peeling and flaking paint by scraping entire surface. Pressure wash and prepare all surfaces to be painted. Remove all dirt, mold, and mildew. Caulk siding to door and window trim. Prime all bare surfaces with Sherwin-Williams Exterior Oil-Based Primer. Prime entire surface with Sherwin-Williams PrimeRx Peel Bonding Primer. Apply one coat of SuperPaint Exterior Gloss.

END OF SECTION



SURFACE PREPARATION

1) Drywall (Interior)

Must be clean and dry. All nail heads must be set and spackled. Joints must be taped and covered with a joint compound. Spackled nail heads and tape joints must be sanded smooth and all dust removed prior to painting. Exterior surfaces must be spackled with exterior grade compounds.

2) Previously Coated Surfaces

Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, all surface contamination such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers must be removed to assure sound bonding to the tightly adhering old paint. Glossy surfaces of old paint films must be clean and dull before repainting. Thorough washing with an abrasive cleanser will clean and dull in one operation, or, wash thoroughly and dull by sanding. Spot prime any bare areas with an appropriate primer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system. Check for compatibility by applying a test patch of the recommended coating system, covering at least 2 to 3 square feet. Allow to dry one week before testing adhesion per ASTM D3359. If the coating system is incompatible, complete removal is required.

END OF SPECIFICATION

Phillips Exeter Academy Construction Standards and Guidelines

Division: 10 Specialties

Specification Section: 10 21 03 - Phenolic Core Toilet, Shower, and Dressing Compartments

Description of Material or System: Phenolic Core Toilet Compartments

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 preferred manufacturer for toilet, shower, and dressing compartments is Bobrick.

Manufacturer: **Bobrick**
Toilet Compartment model no.: **CGL 1186**
Toilet Compartment model name: **DuralineSeries**
(or equal)

Required features:

- Continuous privacy hinges
- Floor anchored
- Maximum height doors and panels
- Brackets: full height, continuous hinge
- Hardware & accessories: stainless steel

Links to additional product information:

<https://www.bobrick.com/>



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/02/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is the preferred specification for a Dyson restroom hand dryer

Links to additional product information:

www.dyson.com

dyson airblade V

**AB
12**

Electrical

Input voltage/Frequency: 120V-127V 60 Hz

Rated power: 1400 W

Motor type: Dyson digital motor – V4 brushless DC Motor

Motor switching rate: 6,100 per second

Motor speed: 92,000 rpm

Operating temperature range: 0°– 40°C

Heater type: None

Standby power consumption: Less than 0.5 W

Construction

Casing construction: Polycarbonate casing

Antimicrobial coating type: AB12 (Sprayed nickel) Antimicrobial additive in paint. AB12 (White) Antimicrobial molded additive

Bacterial reduction rate from external surfaces: Up to 99.9% over 24 hours

Color finish: AB12 Sprayed nickel molded plastic.

AB12 White molded plastic.

Back plate/mounting bracket construction: ABS/PBT Plastic

Exterior screw type: Anti-tamper M4 Pin-Hex

Water ingress protection to IP24

Filter

HEPA filter (Glass fiber and fleece prelayer)

Bacteria removal 99.97% at 0.3 microns

Operation

Proximity capacitive sensor. Touch free operation.

Hand dry time measurement: 12 seconds

(Measurement based on National Sanitation Foundation Protocol P335)

Operation lock-out period: 30 seconds

Airspeed at apertures: 420 mph

Operating airflow: Up to 28 l/s

Logistics

Serial number prefix: AB12 (Sprayed nickel) AR7; AB12 (White) AR6

Single unit order code: AB12 (Sprayed nickel) 25887-01;

AB12 (White) 25878-01

Net weight: AB12 6.17 lb

Packaged weight: AB12 8.81 lb

Packaged dimensions: H5.71 × W17.91 × D10.79 in

Unit barcode: AB12 (Sprayed nickel) 8799 5700 908 0;

AB12 (White) 8799 5700 907 3

Standard warranty

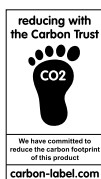
5 year parts and 5 year limited labor warranty



Product range

AB12 Sprayed Nickel

AB12 White



The Carbon Reduction Label is the registered trade mark of the Carbon Trust. The NSF logo is the registered trade mark of NSF International.

For further information please contact Dyson.
888-DYSON-AB • www.dyson.com/handdryers

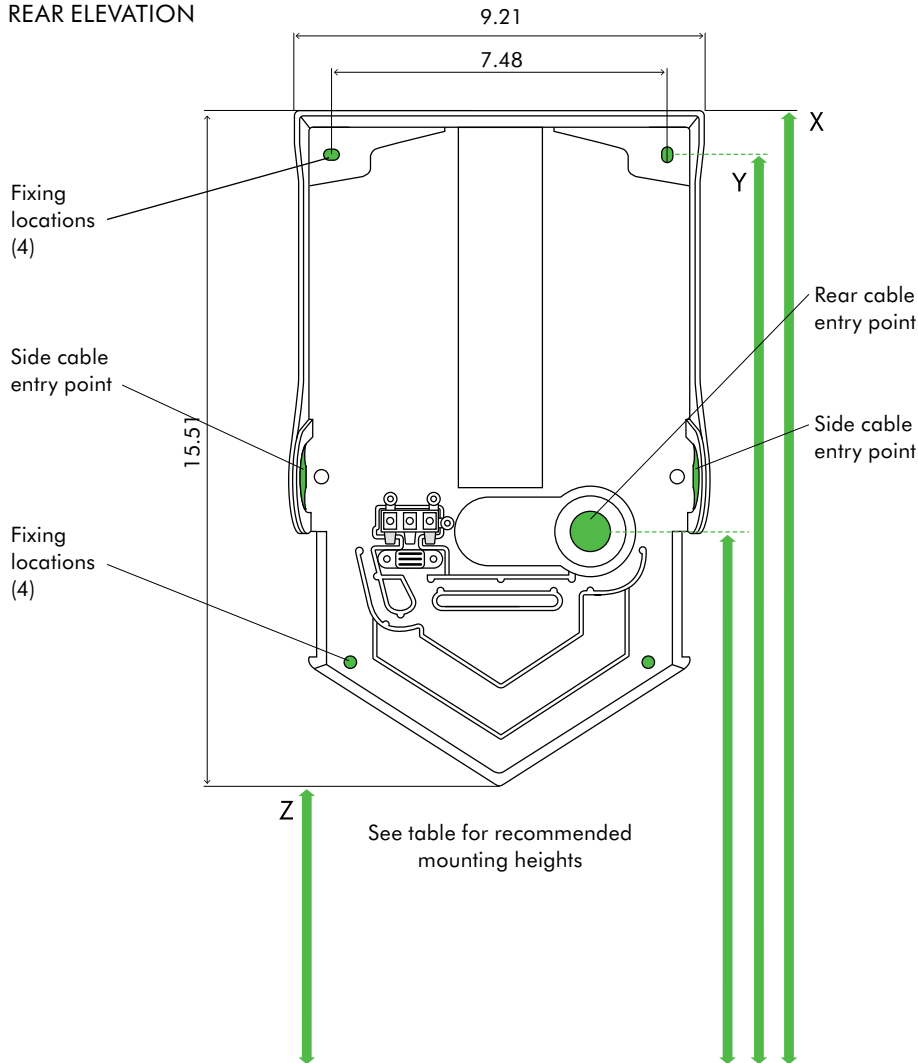
dyson airblade V

TECHNICAL SPECIFICATION

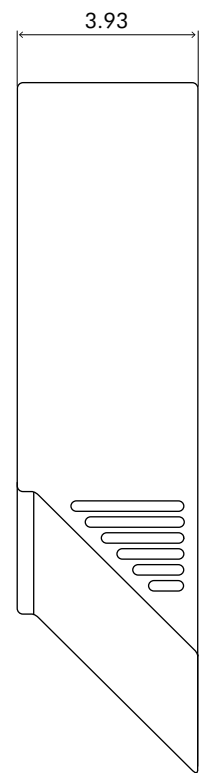
**AB
12**



REAR ELEVATION



SIDE ELEVATION



All dimensions shown in inches (+/-0.19 in)

FLOOR

Recommended installation heights from floor

| | | | |
|-------------------|------------|------------|------------|
| Male | X 52.12 in | Y 51.18 in | Z 36.61 in |
| Female | X 50.75 in | Y 49.80 in | Z 35.23 in |
| Child or disabled | X 42.28 in | Y 41.53 in | Z 26.77 in |
| Child 5-8 | X 37.48 in | Y 36.53 in | Z 21.97 in |
| Child 8-11 | X 41.42 in | Y 40.47 in | Z 25.91 in |
| Child 11-14 | X 44.57 in | Y 43.62 in | Z 29.05 in |

Machine dimensions

Height 3.93 in Width 15.51 in Depth 9.21 in

Minimum clearance

8.66 in clearance either side and 1.18 in above machine.

Cable entry point from floor

| | |
|-------------------|----------|
| Male | 42.87 in |
| Female | 41.50 in |
| Child or disabled | 30.03 in |
| Child 5-8 | 28.23 in |
| Child 8-11 | 32.17 in |
| Child 11-14 | 35.31 in |

For further information, please contact Dyson.
888-DYSON-AB • www.dyson.com/handdryers

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 10 Specialties

Specification Section: 10 28 00 - Toilet, Bath, and Laundry Accessories

Description of Material or System: Residential Shower Enclosure - ADA Compliant

Last Updated: 5/12/2022

Updated by: Annie Pleatsikas

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer for an ADA compliant residential shower enclosure is Aquatic:

Manufacturer: **Aquatic**
Model Number: **3636BFSC**

Links to additional product information:

<https://aquaticbath.com/>



Submittal Sheet

Aquatic products may be specified as Lasco Bathware.

3636BFSC

ADA Compliant

CUSTOMER: _____
 JOB NAME: _____
 PO #: _____
 QUOTE #: _____ QUANTITY: _____
 SHIP TO: _____

_____/_____/_____
 PLUMBING CONTRACTOR APPROVAL DATE

_____/_____/_____
 GENERAL CONTRACTOR APPROVAL DATE

_____/_____/_____
 ENGINEER APPROVAL DATE

_____/_____/_____
 ARCHITECT APPROVAL DATE

STANDARD FEATURES

- Code compliant when fully equipped and installed according to guidelines
- Barrier-free design
- Center drain location
- Slip resistant, textured bottom [ASTM F-462]

CONFIGURATION

- Fully equipped with seat-ADA
 - Seat location LH RH
 - Includes 1 1/4" diameter stainless steel L-shaped grab bar; white-cushioned, L-shaped fold-up seat; pressure balancing mixing valve and hand-held shower assembly, (installed opposite side of seat) per ADA guidelines

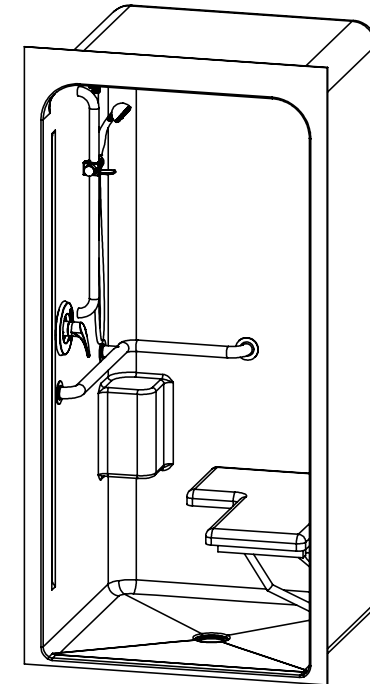
CUSTOM OPTIONS (not available if ADA configuration is selected)

- Fixture Wall LH RH Back wall
- Horizontal L-shaped grab bar
 - Stainless steel (1 1/4" dia.) LH RH
 - Powder-coated white (1 1/4" dia.) LH RH
- Hand-held shower assembly with 30" slide bar and 60" hose
- Pressure balancing mixing valve

OPTIONAL ACCESSORIES (available for all models)

- Curtain rod (Not ADA compliant)
- Shower curtain
- Vinyl flexible dam
- Removable threshold
- Brass drain
- Colors:
 - Standard White
 - Upgraded Biscuit
 - Other (contact customer service for custom color options)
- Additional accessories:

For pricing of units and additional options, reference the Aquatic Price Book.



IMPORTANT: ADA compliant showers with NO interior threshold will have water escape onto the bathroom floor. Aquatic highly recommends you take the following precautions:

1. Install only the minimum number of ADA units without an interior threshold required for each job. If possible install Aquatic's accessible models that have a 1/2" interior threshold to reduce the amount of water that escapes from the shower.
2. When installing units with NO interior threshold, install a FLOOR DRAIN to control the water that escapes onto the bathroom floor.
3. Depending on your application, you may choose to install Aquatic's vinyl flexible dam or removable threshold, which helps better retain water within the shower. However, these items may not necessarily meet ADA or other code requirements. Always confirm code compliance with your local building authority.

Int. Dim. 36 W x 36 D x 80 3/8 H
 Ext. Dim. 41 W x 37 D x 83 1/2 H
 Skirt Ht. 1 skirt, NO interior threshold
 Packaged Wt. 182 lbs. gross
 Material Premium cast acrylic
 Warranty Acrylic Finished Products — Five Years

inches

To complete your order, this document must be signed and faxed to the Aquatic Centralized Customer Service Center.

Fax (866) 544-5353 • Phone (800) 945-2726

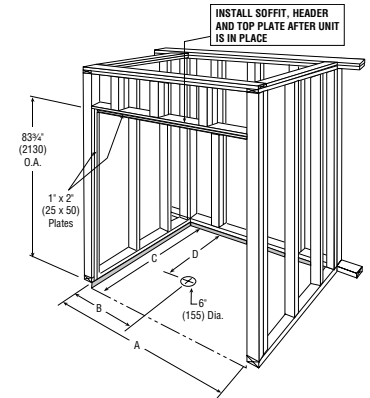


Submittal Sheet

Aquatic products may be specified as Lasco Bathware.

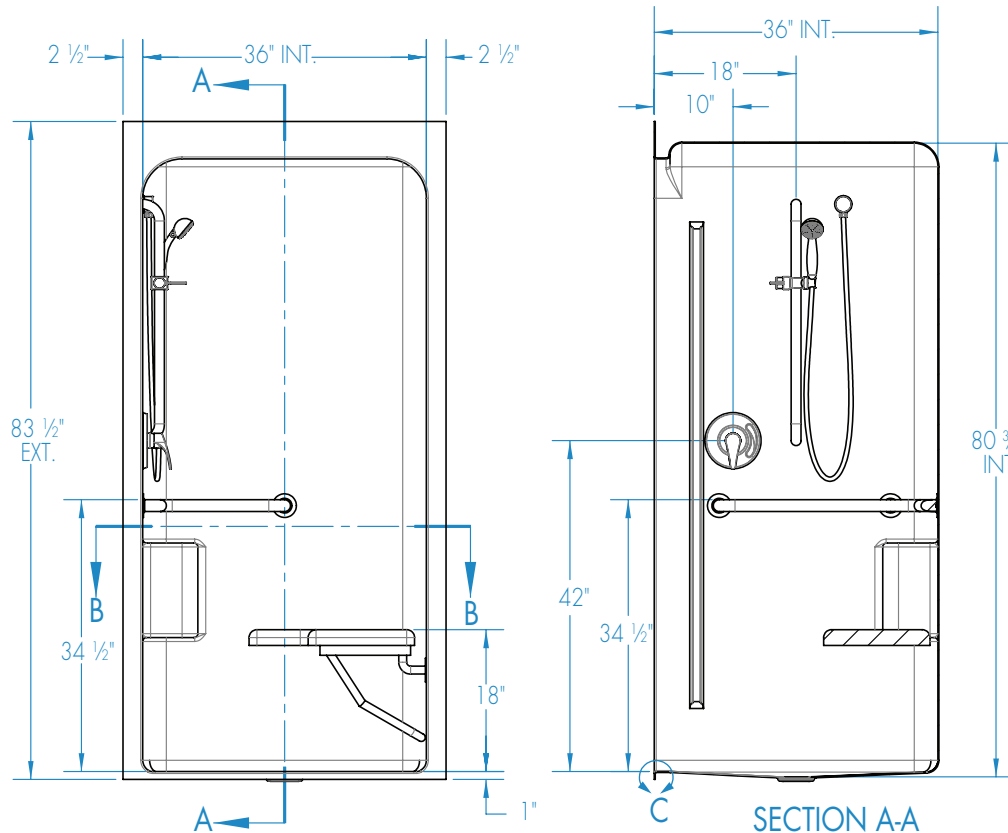
3636BFSC ADA Compliant

Please indicate changes needed.

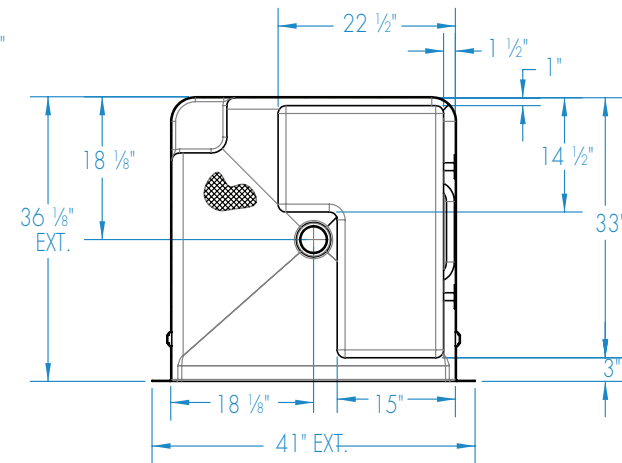


FRAMING DIMENSIONS Inches

| A | B | C | D |
|----|--------|----|----|
| 41 | 20 1/2 | 37 | 19 |



Recess or build-up required DETAIL C



Shell tolerance: +0, -3/8" All other tolerances: ±1"



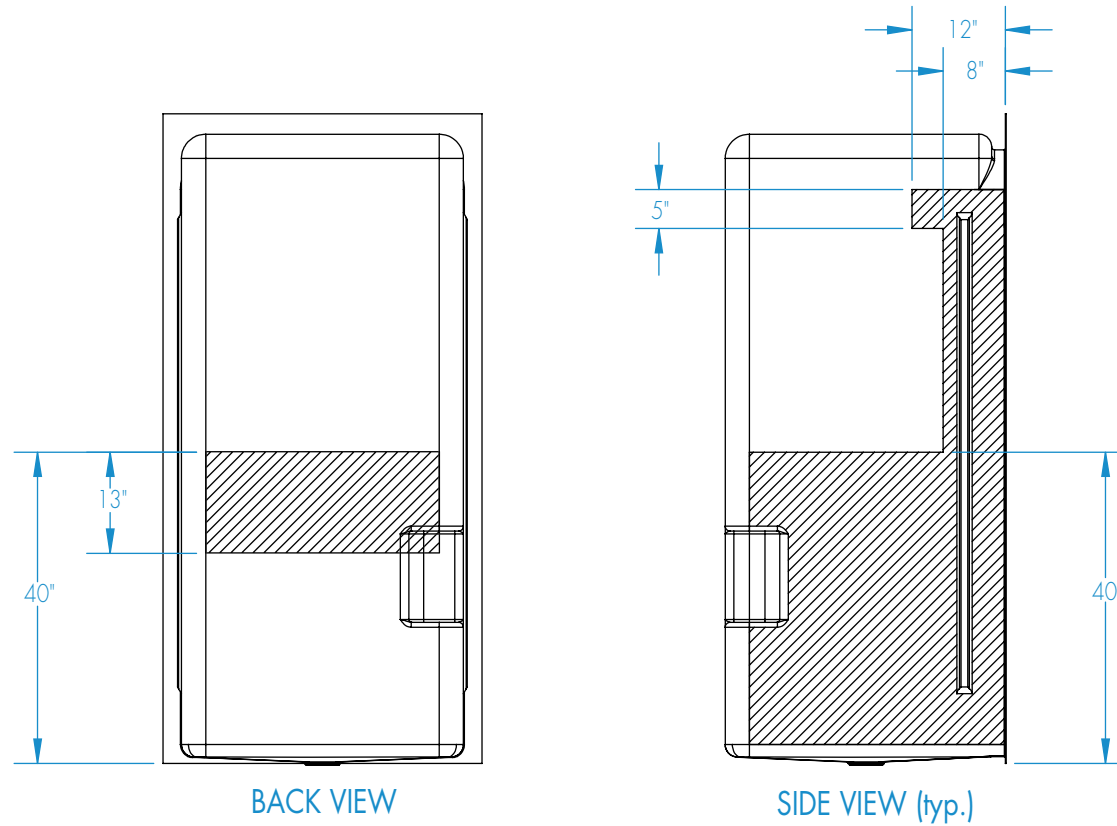
Submittal Sheet

Aquatic products may be specified as Lasco Bathware.

3636BFSC ADA Compliant

Please indicate changes needed.

Reinforcement Locations (Standard)



 = GRAB BAR REINFORCEMENT

Shell tolerance: +0, - 3/8" All other tolerances: ± 1"



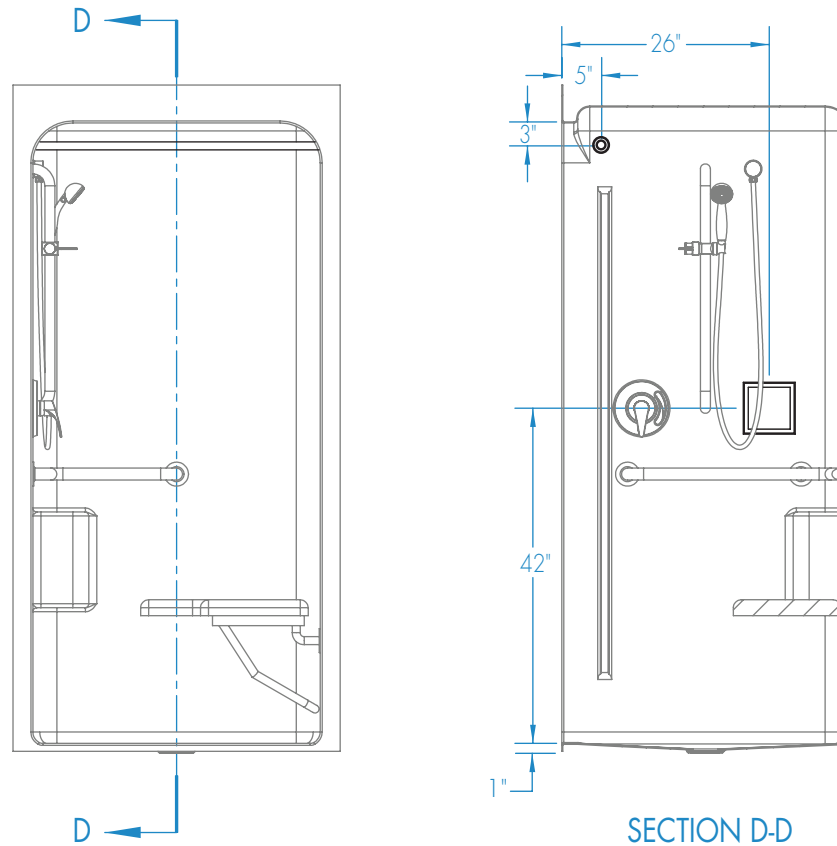
Submittal Sheet

Aquatic products may be specified as Lasco Bathware.

3636BFSC ADA Compliant

Please indicate changes needed.

Curtain Rod and Soap Dish Locations (Standard Valve Configuration)



Shell tolerance: +0, - 3/8" All other tolerances: ± 1"

Phillips Exeter Academy Construction Standards and Guidelines

Division: 10 Specialties

Specification Section: 10 28 00 - Toilet, Bath, and Laundry Accessories

Description of Material or System: Residential Shower Enclosure - Non-ADA Compliant

Last Updated: 5/12/2022

Updated by: Annie Pleatsikas

| | | |
|--|--|--|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer for an Non-ADA compliant residential shower enclosure is Aquatic:

Manufacturer: **Aquatic**

Model Number: **36AC**

Links to additional product information:

<https://aquaticbath.com/>

36AC – ACRYLIC SHOWERS

inches

36 x 36 x 84

SHOWER MODEL #36AC



FEATURES

- Decorative back wall
- Slip resistant, textured bottom
- Premium cast acrylic surface
- Face pack
- Limited 5-year warranty

OPTIONS

- Brass drain
- Dome light
- Shower door series: L533

AQUATIC ADVANTAGE

- National distribution
- 7 manufacturing facilities
- Private fleet
- Centralized customer service
- Field support

COLOR & TRIM OPTIONS

| Stock | Upgraded |
|-------|----------|
| White | Biscuit |

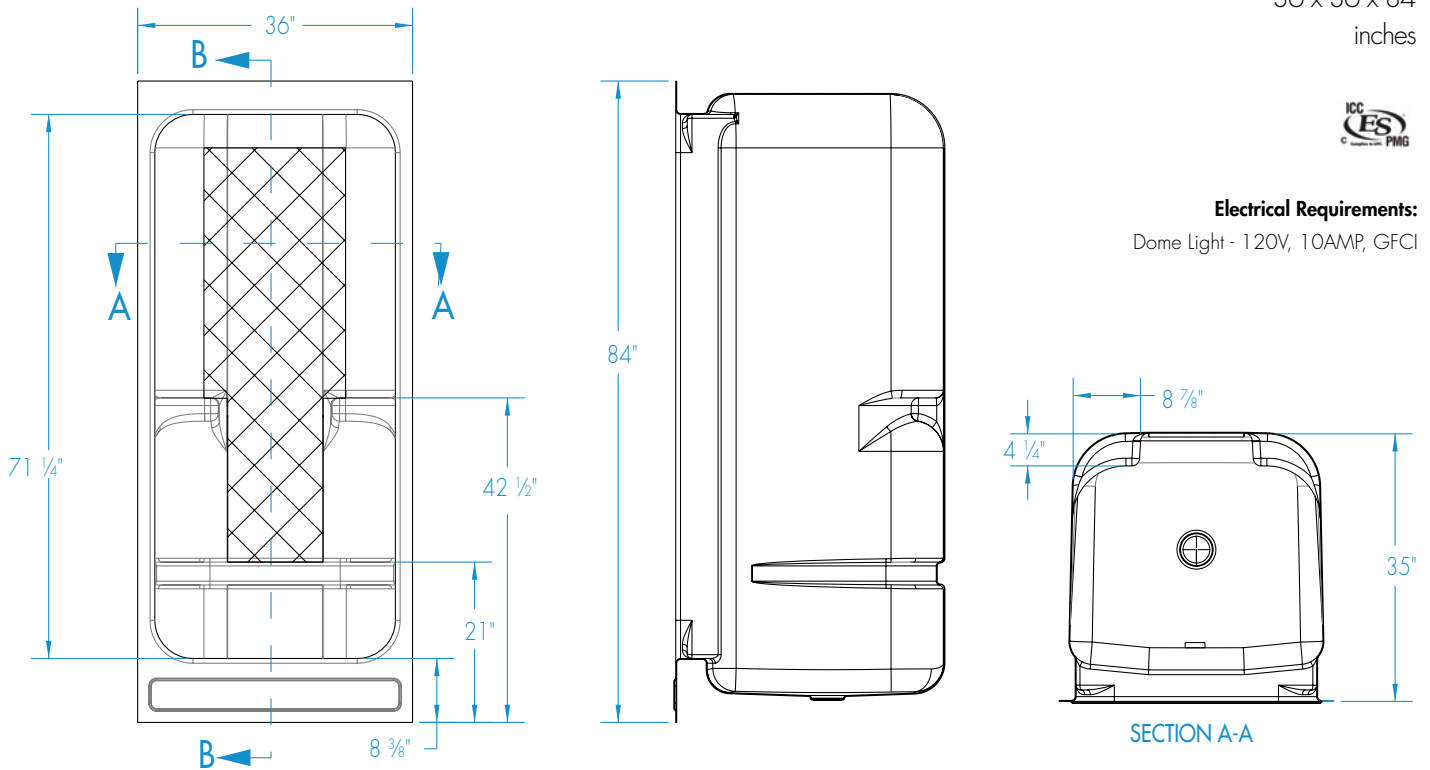


36AC

36 x 36 x 84
inches



Electrical Requirements:
Dome Light - 120V, 10AMP, GFCI



FEATURES

Dimensional Tolerance $\pm 3/8"$. Dimensions needed for site preparation should be measured from the unit. Aquatic assumes no responsibility for preparatory work.

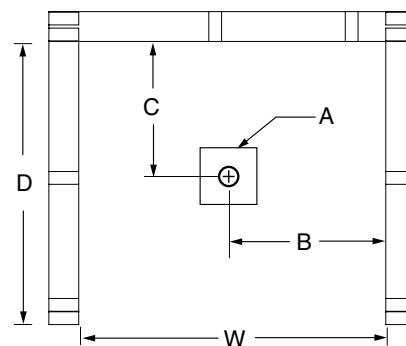
| Type and Model # | Material | Wall Finish | Pieces | Drain | Seats | Lights | Pkg. Wt. lbs |
|------------------|--------------|-------------|--------|--------|-------|----------|--------------|
| Shower #36AC | Cast Acrylic | Smooth wall | 1 | Center | - | Optional | 130 |

DIMENSIONS

| Specifications | inches |
|---------------------------------|-----------------|
| Width: Overall / Net | 36 |
| Depth: Overall / Net | 36 / 36 |
| Height: Overall / Net | 84 |
| Enclosure Opening | 31 1/2 W x 71 H |
| Skirt Height | 8 3/8 |
| Drain Rough-In (from Back Wall) | 16 1/2 |
| Drain Rough-In (from Side Wall) | 18 |
| Drain: Diameter / Clearance | 3 1/4 / 2 3/4 |

FRAMING DIMENSIONS inches

| Type | D Depth | W Width | H Height | A Box-Out | B | C |
|--------|---------|---------|----------|-----------|----|--------|
| Alcove | 37 | 36 1/8 | - | 6 x 6 | 18 | 16 1/2 |



*Refer to installation instructions for further detail. (domed models)

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 10 Specialties

Specification Section: 10 28 00 - Toilet, Bath, and Laundry Accessories

Description of Material or System: Robe Hook

Last Updated: 3/31/2022

Updated by: Curtis Boivin

| | | |
|--|--|--|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer and model for a robe hook is:

Kohler - Kumin, model number: **K-97897-CP**, in polished chrome.

Links to additional product information:

<https://www.us.kohler.com/us/>

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

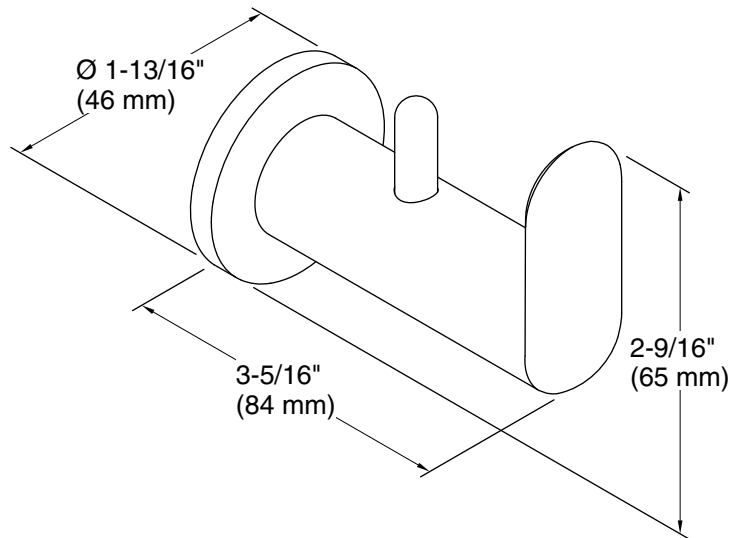
KOHLER® Faucet Lifetime Limited Warranty

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 |



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.

Phillips Exeter Academy
Construction Standards and Guidelines

Division: 10 Specialties
Specification Section: 10 28 00 - Toilet, Bath, and Laundry Accessories
Description of Material or System: Toilet Paper Holder
Last Updated: 3/24/2022
Updated by: Curtis Boivin

| | | |
|--|--|--|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:
The preferred manufacturer and model for a toilet paper holder is:

Kohler - Kumin, model number: **K-24546-CP**, in polished chrome.

Links to additional product information:
<https://www.us.kohler.com/us/>

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

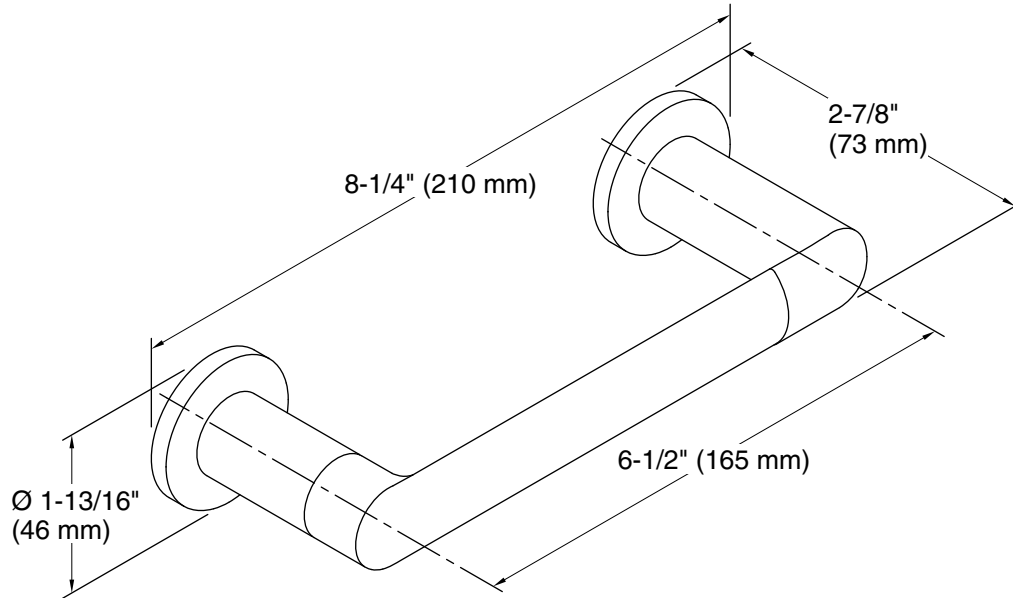
KOHLER® Faucet Lifetime Limited Warranty

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 |



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.

Phillips Exeter Academy Construction Standards and Guidelines

Division: 10 Specialties

Specification Section: 10 28 00 - Toilet, Bath, and Laundry Accessories

Description of Material or System: Towel Bar, 24"

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:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer and model for a 24" towel bar is:

Kohler - Kumin, model number: **K-24550-CP**, in polished chrome.

Links to additional product information:

<https://www.us.kohler.com/us/>

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



ADA

Codes/Standards




ADA
ICC/ANSI A117.1

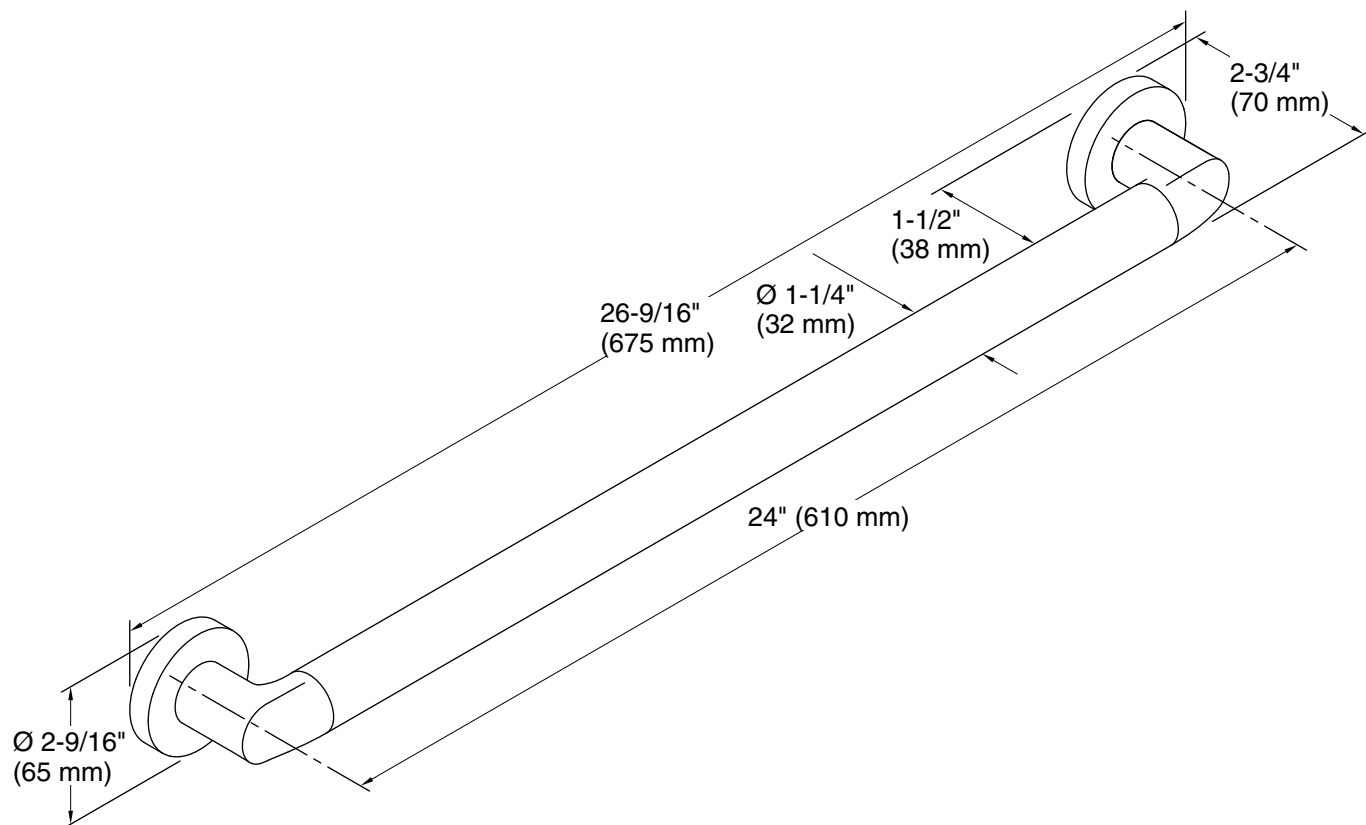
KOHLER® Faucet Lifetime Limited Warranty

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 |



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.

ADA compliant when installed to the specific requirements of these regulations.

Phillips Exeter Academy
Construction Standards and Guidelines

Division: 10 Specialties
Specification Section: 10 28 00 - Toilet, Bath, and Laundry Accessories
Description of Material or System: Towel Ring
Last Updated: 3/31/2022
Updated by: Curtis Boivin

| | | |
|--|--|--|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:
The preferred manufacturer and model for a towel ring is:

Kohler - Kumin, model number: **K-97898-CP**, in polished chrome.

Links to additional product information:
<https://www.us.kohler.com/us/>

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

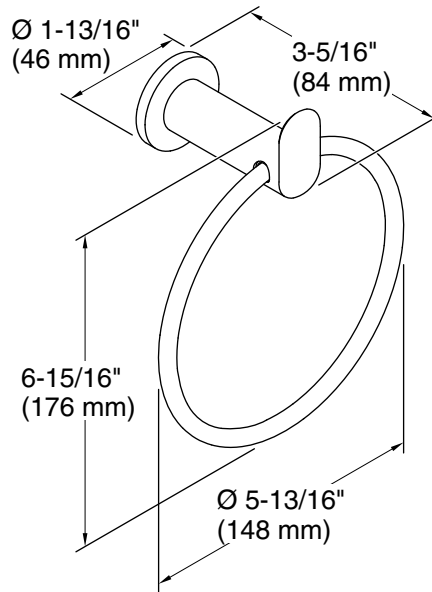
KOHLER® Faucet Lifetime Limited Warranty

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 |



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.



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/26/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
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| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Preferred vendor for louvered dryer vent caps is Seiho-SFZ or SFZC series

Links to additional product information:

<http://www.hvacquick.com>



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 1/12/2017

Updated by:

| | | | | | | | | | | | | | |
|---|---|---|---|---|--|--|----------------------------------|--------------------------------------|----------------------------------|--------------------------------------|--|--------------------------------------|--|
| <p>Included in this section:</p> <p><input checked="" type="checkbox"/> Product Specifications</p> <p><input checked="" type="checkbox"/> Design Guidelines</p> <p><input type="checkbox"/> Design Details/Drawings</p> <p><input type="checkbox"/> Supplemental Information</p> <p><input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> Other _____</p> | <p>Guideline applies:</p> <table border="0"> <tr> <td><input type="checkbox"/> Academic Buildings</td> <td><input checked="" type="checkbox"/> Dormitories</td> </tr> <tr> <td><input type="checkbox"/> Administrative</td> <td><input checked="" type="checkbox"/> Faculty Residences</td> </tr> <tr> <td><input type="checkbox"/> Athletic Facilities</td> <td><input type="checkbox"/> Support</td> </tr> <tr> <td><input type="checkbox"/> Campus Wide</td> <td><input type="checkbox"/> Utility</td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table> | <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | <input type="checkbox"/> Other _____ | | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories | | | | | | | | | | | | |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences | | | | | | | | | | | | |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | | | | | | | | | | | | |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | | | | | | | | | | | | |
| <input type="checkbox"/> Other _____ | | | | | | | | | | | | | |
| <input type="checkbox"/> Other _____ | | | | | | | | | | | | | |

Overview of system/product/guideline:

The following is the PEA Design Guideline campus Dryer Vent

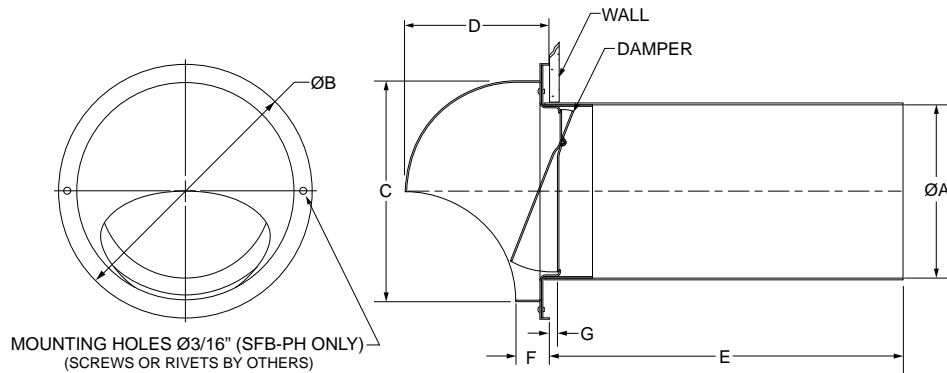
Links to additional product information:

www.seiho.com

Model: SFB-P/SFB-PH Dryer Vent

- Standard with Back-Draft Flapper Damper
- With Heavy Duty 8.6" Long Aluminum Pipe
- Large Free Area Reduces Clogging
- Ø3/16" Mounting Holes (SFB-PH)

- Material: Aluminum
- Standard Finish: Clear Anodized



| MODEL | A | B | C | D | E | F | G | FREE AREA |
|----------------|---|--------|--------|---------|-------|---|------|--------------|
| SFB 4P/SFB 4PH | 4 | 6 3/32 | 5 1/8 | 3 17/32 | 8 1/2 | 1 | 9/32 | 0.056 sq.ft. |
| SFB 6P/SFB 6PH | 6 | 8 3/32 | 7 3/32 | 4 17/32 | 8 1/2 | 1 | 9/16 | 0.140 sq.ft. |

Product information is subject to change without notice. All dimensions in inches.

JOB NAME: _____
 LOCATION: _____
 ARCHITECT: _____
 ENGINEER: _____
 CONTRACTOR: _____

SUBMITTED BY: _____

DATE: _____

**Model SFB-P/SFB-PH
Dryer Vent**

Form No.487-26

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: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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/>

1 1/4" THICKNESS

4" TOP RAIL WIDTH

LOUVER

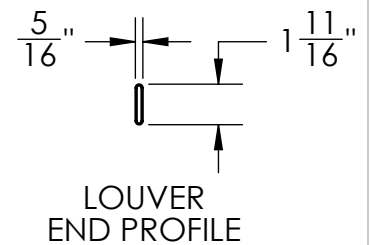
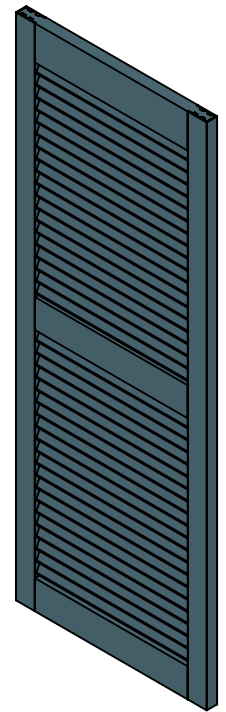
2 1/4" VERTICAL STILE WIDTH

3 3/8" MIDDLE RAIL WIDTH

3 3/8" BOTTOM RAIL WIDTH

13-1/2" TO 120"
(IN 1/8" INCREMENTS)

9" TO 36" (IN 1/8" INCREMENTS)

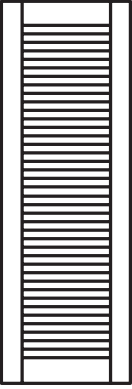
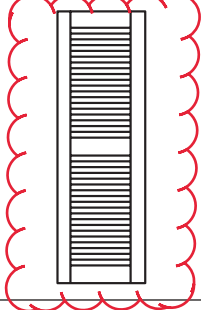
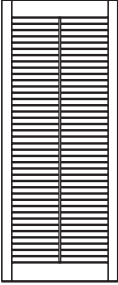
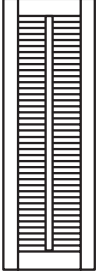
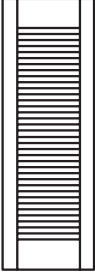

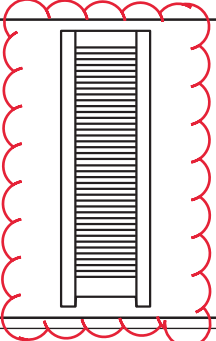
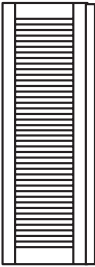
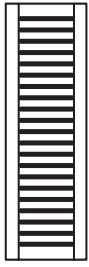


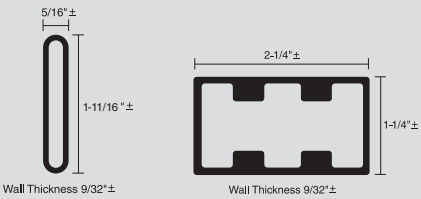
PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CUSTOMER SHUTTER COMPANY. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CUSTOMER SHUTTER COMPANY IS PROHIBITED.

| | | | | | | | |
|-------------|---------|---|------------|-----------|----------|--|--------------------------------------|
| | | DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/32 ANGULAR: MACH ±1° BEND ±1° TWO PLACE DECIMAL ±.010 THREE PLACE DECIMAL ±.005 | | NAME | DATE | | CUSTOM SHUTTER COMPANY |
| | | MATERIAL | FIBERGLASS | DRAWN | BSEGREST | | |
| | | FINISH | VARIES | CHECKED | | | LOUVERED COLONIAL (FIBERGLASS) |
| NEXT ASSY | USED ON | | | ENG APPR. | | | |
| APPLICATION | | DO NOT SCALE DRAWING | | MFG APPR. | | | |
| | | | | Q.A. | | | SIZE A DWG. NO. 100906 REV. 7 |
| | | | | COMMENTS: | | | SCALE:1:8 WEIGHT: SHEET 1 OF 1 |

Louvered Colonial

| Standard | Options Overall shutter height to include midrail 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



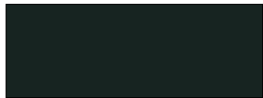
Deep Sea Blue 637



Board & Batten Red 650



Pewter 646



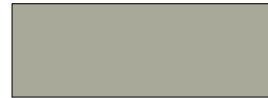
Rookwood Shutter Green 654



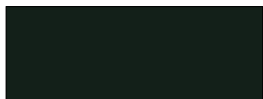
Tempest Blue 666



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 of Work:

Division 11

Specification Section:

11 12 00-PARKING CONTROL EQUIPMENT

Description of Material or System:

Parking and Campus Gates

Last Updated:

08/04/2022

Updated by:

Annie Pleatsikas

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

See attached guidelines and specs for campus gates.

Links to additional product information:

DoorKing

Traffic & Parking Control Gate

Materials

- Traffic & Parking Control Gate shall be one of the 1600 series models as manufactured by DoorKing, Inc. 120 Glasgow Avenue; Ingelwood, CA 90301; Telephone 310-645-0023; FAX 310-641-1586; www.doorking.com.
- Systems Description: The traffic and parking control gate operator shall be a microprocessor based solid-state control board operator, suitable for low-cycle applications.
- Model: Selected models shall be from the 1600 series DoorKing Access Control Solutions, with designated options for: Arm Kits, Arm length, Vehicle Loop Detectors or other optional equipment as needed.

Execution

- Traffic & Parking Control Gate shall be installed by a qualified technician with experience working on automatic gate operators.
- Equipment shall be located as indicated on the Drawings and in accordance with manufacturer's assembly and installation instructions, and mounted directly on a concrete pad, firmly secured, plumb and level.
- Wiring shall be uniform and in accordance with national electric codes and manufactures instructions.
- Systems shall be completely tested to assure that all components and accessories function in accordance with plans and specifications.

PARKING CONTROL EQUIPMENT
SECTION 11 12 00
PARKING GATE OPERATOR
DoorKing Models 1602

Display hidden notes. (Don't know how? [Click Here](#))

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnish and install a complete microprocessor based parking gate operator system, with a solid-state board to control all functions of the parking gate operator, as described herein and shown on the plans. Include all necessary boards, power supplies, loop detectors, barrier arm(s), connectors, and accessories for a complete operational system.

1.2 CONTRACT DOCUMENTS

- A. All equipment and work specified in this section shall comply, with all the General Conditions of the specifications, contract documents, and drawings as indicated.

1.3 RELATED WORK

- A. Parking control contractor shall coordinate all work with other contractors and trades where necessary.
- B. All necessary conduit, raceways and pull boxes shall be installed by the electrical contractor.
- C. Installation of the parking gate operator system shall be coordinated with the installation of other parking control related systems.

1.4 QUALITY ASSURANCE

- A. Installation shall comply with all applicable codes.
- B. All equipment shall be new, in current production, and the standard products of a manufacturer of vehicular access and parking control equipment.
- C. Manufacturer shall guarantee availability of parts, for a minimum of seven (7) years from date of shipment.
- D. If required, manufacturer shall be able to demonstrate features, functions, operating characteristics to the Owner.
- E. System shall be installed by a factory authorized contractor, with technicians specifically trained in this system.
- F. On-site maintenance and repair service shall be available locally and within four (4) hours of notification for emergency condition.

1.5 REFERENCE STANDARDS

- A. Vehicular Parking Gate Operator shall be in compliance with Underwriters Laboratories Inc. (UL) Standard for Safety - Door, Drapery, Gate, Louver and Window Operators and Systems, UL 325 Fourth Edition; and Underwriters Laboratories Inc. (UL) Standard for Safety - Tests for Safety-Related Controls Employing Solid-State Devices, UL 991 Second Edition.

- B. Vehicular Parking Gate Operator shall be tested for compliance to UL 325 and UL 991 and shall be LISTED by a Nationally Recognized Testing Laboratory (NRTL).

1.6 SUBMITTALS

- A. Provisions: Comply with Section 01 33 00 SUBMITTALS.
- B. Shall include an equipment list, data sheet(s), system description, block diagrams on equipment to be finished and electrical wiring diagrams for installation.
- C. Shall include all data necessary to evaluate design, quality, and configuration of proposed equipment and system(s).

1.7 WARRANTY

- A. Products shall include a factory warranty that equipment is free from defects in design, material, manufacturing and operation. Factory warranty period shall be for five (5) years; 60-months from date of shipment, for parts and workmanship.
- B. Manufacturer shall not be responsible for improper use, handling, or installation of the product.
- C. Installing contractor shall guarantee the equipment, wire and installation for 12-months from date of acceptance.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. The system as described herein is based on the DoorKing 1600 series vehicular parking gate operator system manufactured by DoorKing, Inc., Inglewood, California. The vehicular parking gate system specified meets requirements of the specifications and shall be considered as the acceptable Base Bid.
- B. Substitutions must meet requirements of Prior Approval, as outlined in the contract documents. Substitutions that meet prior approval requirements must be listed as alternates by addendum, and shall be shown separately on the bid forms. Consideration will be based on ability to comply with all aspects of the specifications, the desired functional operation, quality, reliability, design, size, and appearance of the equipment, and the support capabilities of the manufacturer.

2.2 SYSTEM DESCRIPTION

- A. Parking Gate Operator:
 - 1. The parking gate operator shall use a microprocessor based solid-state control board that controls all functions of the parking gate operator. The system is designed so that mechanical relays or limit switches are not required. Operators shall be rated for continuous duty for use in commercial and industrial applications.
 - 2. Power shall be transmitted to the gate arm drive shaft through harmonic acting crank and connecting arm.
 - 3. Crank, connecting arm and main shaft shall be solid steel construction and plated to avoid rusting.
 - 4. Mechanical action of the driven arm shall be such that mechanical stops or braking devices are not necessary.

5. Operator housing shall use 12-gauge G90 galvanized steel to avoid rusting and shall be painted white.
6. Operator shall be designed for either left or right-hand mount.

B. Control Circuit:

1. The parking gate operator shall use magnetic sensing to set the up and the down arm limits.
2. An adjustable timer shall be built into the control board to allow the barrier arm to automatically close.
3. Control board shall have connections for optional Gate Tracker board. Gate tracker shall record operator cycles (x100), input errors, loop detector errors, obstruction hits, and power up events. Record shall be time and date stamped.
4. Control board shall have two ports for plug in of optional loop detectors, (DoorKing, Models 9409 or 9410).
5. The control board shall have an up input memory buffer and a down memory counter for high traffic applications.
6. A dry set of relay contacts shall be available for external use, and shall be capable of working in conjunction with an up or down inductance loop.
7. The control board shall be capable of interfacing with card readers, RF transmitters, and coin and ticket machines.
8. Functions will be user programmable by DIP-switches located on the control board.
9. Control circuit shall include auto-manual toggle switch and power on-off switch.

C. Environmental Control:

1. The parking gate operator shall be pre-wired to accept optional heater and fan kits.

D. Gate Sequencing:

1. Control board shall include special inputs for sequencing the parking gate operator with slide or swing gate operators when installed in PAMS (Perimeter Access Management Solution) applications.
2. Sequencing logic shall be an integral part of the control board logic and shall not rely on external or add-on relays.

E. Electronic Reverse: The parking gate operator shall be equipped with an inherent electronic current sensor. The electronic reverse shall automatically cause a descending arm to raise if it strikes an object during the down cycle.

F. Secondary Entrapment Prevention

1. Non-contact sensors, or contact sensors, or combination thereof, shall be utilized to prevent persons from becoming entrapped in the gate system.
2. Warning signs shall be installed in accordance with manufacturer's installation instructions and UL 325 guidelines.

G. A complete operational system shall be provided.

2.3 EQUIPMENT

A. Parking Gate Operators:

1. Model 1602

- a. Low-cycle wide-lane applications.
- b. Maximum gate arm length is 28 feet.
- c. 1 horsepower continuous duty motor.
- d. Primary reduction and power transfer is provided by a double cog belt driving a 60:1 worm gear reducer running in a continuous oil bath.
- e. The operator will rotate the arm 90° in approximately 5 seconds.
- f. 38 inches high, 15 inches wide, 15.75 inches deep.
- g. Power
 - i. 115 VAC
 - ii. 230 VAC
 - iii. 460 VAC

B. Barrier Arms:

1. 3-Piece Wood Arm P/N 1602-040
 - a. 1 x 4 inch, 3-piece wishbone style arm painted white with yellow/black warning tape.
2. 3-Piece Aluminum Arm - 20 Ft. Length.
 - a. 3-inch round wishbone style aluminum arm painted white with yellow/black warning tape.
3. 3-Piece Aluminum Arm - 24 Ft. Length.
 - a. 3-inch round wishbone style aluminum arm painted white with yellow/black warning tape.
4. 3-Piece Aluminum Arm - 28 Ft. Length.
 - a. 3-inch round wishbone style aluminum arm painted white with yellow/black warning tape.

C. Optional Equipment:

1. Vehicle Loop Detectors
 - a. P/N 9410-010 Single channel detector.
 - b. P/N 9409-010 Two channel detector.
2. Non-contact sensors (photo-cells).
 - a. P/N 8080-010 Infrared thru-beam, 165 foot sensing distance.
 - b. P/N 8080-011 Photo-reflective beam, 30 foot sensing distance.
 - c. P/N 8080-030 Polarized photo-reflective beam, 35 foot sensing distance.
 - d. P/N 8080-031 Infrared thru-beam 65 foot sensing distance.
3. Contact sensors
 - a. P/N 8080-016 Single-sided sensitivity with mounting channel.
4. Environmental Control
 - a. P/N 1601-092 Heater kit.
 - b. P/N 1601-093 Fan kit.
5. Foam padding P/N 1601-260
6. Traffic Control Signal (Red/Green) P/N 1603-208
7. Manual Crank Kit P/N 1601-270
8. Gate Tracker: The vehicular slide gate operator shall have output for connection to Gate Tracker control board (P/N 2351-010). Gate Tracker shall maintain a detailed electronic record of cycles, input errors, loop detector errors, obstruction hits, and each time power is applied to the operator, time and date stamped.
9. Convenience open (battery backup) drive system.

D. A complete operational system shall be provided.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. It is preferred, but not required, that this product be installed by a qualified technician who is certified by the Institute of Door Dealer Education and Accreditation (IDEA) as a Certified Automatic Gate Operator Installer (CAGOI).
- B. Equipment shall be mounted directly to a concrete pad, firmly secured, plumb, and level.
- C. Wiring shall be uniform and in accordance with national electric codes and manufacturers instructions.
- D. All splices shall be in easily accessible junction boxes or on terminal boards.
- E. All cable runs in all junction boxes shall be tagged and identified.
- F. Coordinate all work with other effected trades and contractors.

3.2 SYSTEM INITIALIZING AND PROGRAMMING

- A. System shall be turned on and adjustment made to meet requirements of specifications and on-site conditions.
- B. System shall function as specified.

3.3 SYSTEM TEST PROCEDURES

- A. System shall be completely tested to assure that all components and accessories are hooked-up and in working order.
- B. System shall be pre-tested by contractor and certified to function in accordance with plans and specifications.
- C. System shall be tested in presence of owner's representative.

3.4 OWNER INSTRUCTIONS

- A. Installation contractor shall conduct up to (1) hour of instruction in use and operation of the system to designated owner representatives, within (30) days of acceptance.
- B. Installation contractor shall conduct up to (1) hour of technical training, in trouble shooting and service of the system, to designated owner representatives within (90) days of system acceptance.

3.5 MANUALS AND DRAWINGS

- A. Contractor shall provide owner with (2) copies of standard factory prepared operation, installation and maintenance manuals. Manuals shall include typical wiring diagrams.
- B. Contractor shall provide owner with (2) copies of any risers, layouts, and special wiring diagrams showing any changes to standard drawings, if required on project.

3.6 MAINTENANCE

- A. The manufacturer recommends periodic maintenance at three month intervals as described in the installation and maintenance manual.
- B. External reversing devices should be checked at least once a month.

END OF SECTION



1602 PARKING CONTROL BARRIER GATE OPERATOR

• COMMERCIAL • INDUSTRIAL



- Designed to control wide traffic lanes (27 feet maximum) in limited use applications
- Suitable for low-cycle applications to restricted access areas such as prisons, airport security areas or industrial sites
- Electronic limit settings
- Three-piece aluminum arms available in 20, 24 and 27 foot lengths. Three-piece wood arm available in 20 foot length only
- 5-year limited warranty



automatic p.a.m.s.
sequencing with slide and swing gates



foam padding
available for added protection

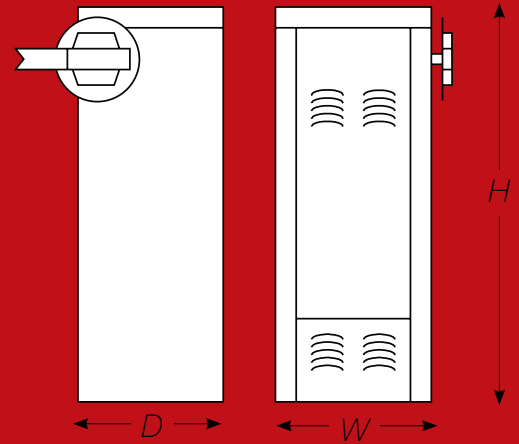


fan/heater kits
options available for extreme weather



wishbone style aluminum
arms up to 27 feet in length and wood arms up to 20 feet in length

1602 PARKING CONTROL BARRIER GATE OPERATOR



1602 1 HP

15" W x 38" H x 15" D (38.1cm W x 96.5cm H x 38.1cm D)

| | CLASS OF OPERATION | MAX ARM LENGTH | TYPE | MOTOR | INPUT | OPTIONS |
|-------------|--------------------|--|--|-------------------------------------|--|--|
| 1602 | II, III, IV | 20 Ft (6.1 m) 20 Ft (6.1 m) 24 Ft (7.3 m) 27 Ft (8.2 m) | Wood Aluminum Aluminum Aluminum | 1 HP Continuous Duty AC Motor | 115 VAC, 60 HZ, 9.7A 230 VAC, 60 HZ, 4.9A* 460 VAC, 60 HZ, 2.5A* | Convenience Open Package † Heater Kit Fan Kit |

* These operators use a step-down transformer to achieve 115 VAC operating voltage.

† Optional factory installed DC powered drive system provides an automatic method to open the gate when primary (AC) power fails.

Technical Features

Mechanical

Primary Reduction is provided by a 60:1 worm gear reduction system running in a continuous oil bath

Arm rotates 90° in approximately 5 seconds

G90 galvanized steel housing, painted white rated NEMA 4x

Fail-secure mechanical release method

Left- or right-hand mount

360° gear box rotation before the motor changes direction. This provides for smooth operation, evens wear across the entire gear-box, and increases the life span of the operator

Arm Kits

Three-piece 3" round aluminum arm available in 20, 24 and 27 foot length

Three-piece 1x3" kiln dried wood arm available in 20 foot length only

All arm kits include counter-balance weights

Electrical

Magnetic electronic limit controls

Auto-close timer 1-23 seconds

P.A.M.S. (Perimeter Access Management System) sequence with a slide or swing gate operator

Up input memory buffer

Down memory option

Multiple up commands

Port for plug-in open (up) detector

Port for plug-in reverse (down) detector

Ports for plug-in loop detectors

Programming switches

Built-in power On/Off switch

Gate Tracker™ reporting output provides operator data to access control system (DKS 1833, 1835, 1837 or 1838 only)

Miscellaneous

Environmental: 10°F to 140°F (-12°C to 62°C)

Thermostatically controlled heater kit recommended for colder environments

Shipping weight approximately 160-180 Lbs (72-81 kg)
Arm kit: 45 Lbs (20 kg)



Access Control Solutions since 1948

MEMBER:



DOORKING®, INC.

120 Glasgow Avenue, Inglewood, California 90301 U.S.A.
Tel: 310-645-0023 FAX: 310-641-1586 www.doorking.com

© 2012 All Rights Reserved. Product specifications may change without notice.
Rev.11/12

Distributed by:



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/02/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

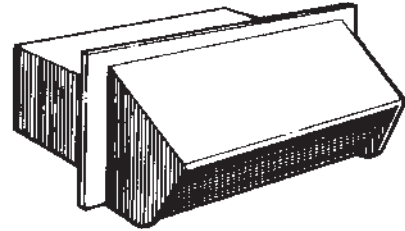
Overview of system/product/guideline:

The following is the PEA preferred model for range hoods and bath ventilation.

Links to additional product information:

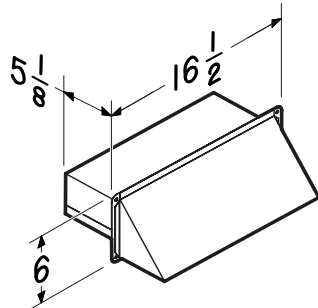
www.broan.com

WALL CAPS



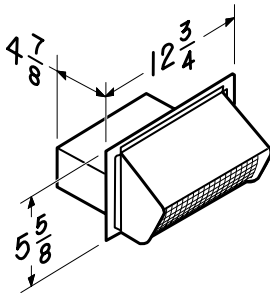
Model WC638

- For 3 1/4" x 14" duct
- Spring-loaded backdraft damper and bird screen
- 26 GA CRCQ Steel, black finish



Model 639

- For 3 1/4" x 10" duct
- Spring-loaded backdraft damper and bird screen
- 24 GA CRCQ Steel, black electrically-bonded epoxy finish
- Do not use for dryer venting

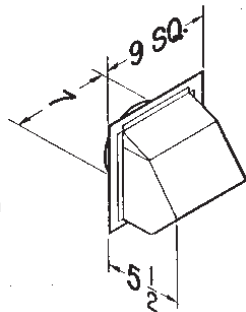


Model 649

- Same features as Model 639
- .025 Aluminum - natural finish

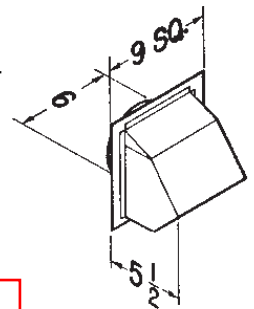
Model 647

- For 7" round duct
- Spring-loaded backdraft damper and bird screen
- .025 Aluminum - natural finish
- Do not use for dryer venting



Model 843BL

- For 6" round duct
- Spring-loaded backdraft damper and bird screen
- 22 GA CRCQ Steel, black electrically-bonded epoxy finish
- Attachment collar 1 1/4" long
- Do not use for dryer venting



Model 641

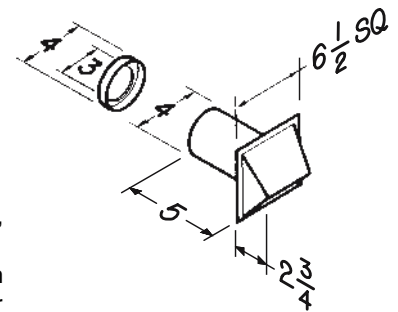
- Same features as Model 843BL
- .025 Aluminum - natural finish

Model 641FA

- Same features as Model 641
- Without backdraft damper
- Includes mesh screen
- Intended for make-up air inlet applications

Model 885BL

- For 3" or 4" round duct (4" to 3" transition included)
- Spring-loaded backdraft damper and bird screen
- 24 GA CRCQ Steel, black electrically-bonded epoxy finish
- Do not use for dryer venting



Broan-NuTone LLC Hartford, Wisconsin www.broan.com 800-558-1711

| REFERENCE | QTY. | REMARKS | Project |
|-----------|------|---------|--------------|
| | | | Location |
| | | | Architect |
| | | | Engineer |
| | | | Contractor |
| | | | Submitted by |
| | | | Date |



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Division 12

Specification Section:

12 21 00-Blinds

Description of Material or System:

Aluminum Mini Blinds

Last Updated:

08/02/2022

Updated by:

Jeff Plimpton

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input checked="" type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Hunter Douglas: Celebrity 1" Aluminum Mini Blinds. Standard cordlock and wand controls. Acceptable colors: 268 Crème de la Crème, 125 Bright White

Links to additional product information:

<https://www.hunterdouglas.com/window-treatments/wood-metal-blinds/modern-precious-metals>



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/09/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is the PEA Design Guideline for dorm rooms.

Links to additional product information:

www.friedlandshades.com

17 Industrial Drive
Cliffwood Beach, N.J. 07735
Tel. (732) 290-9800
Fax (732) 290-2933

Fabric Specifications

Superglass Matte
Superglass Moire

| | |
|---------------------------|---|
| CONSTRUCTION: | 4 PLY LAMINATED FIBERGLASS (3 PLY PVC /1 LY FIBERGLASS) |
| FINISHED WEIGHT: | TOTAL WEIGHT IS 12 OZ PER SQUARE YARD |
| OPACITY: | 100% BLACK-OUT |
| BREAKING STRENGTH: | 240 LBS WARP DIRECTION 960 LBS FILL DIRECTION |
| TEAR STRENGTH: | 1,700 GRAMS WARP DIRECTION 1,800 GRAMS FILL DIRECTION |
| FLAME RESISTANCE: | -US FEDERAL GOVT. SPEC.CCC-C0521E -NATIONAL FIRE PROTECTION ASSOC. (NFPA) NO. 701 SMALL SCALE -BOSTON FIRE DEPT. BFD 1 X-1 -CALIFORNIA FIRE MARSHAL SECTION 13115 |
| ADHESION: | PVC FILMS INSEPARABLE |
| WASH ABILITY: | MATERIAL CAN BE WASHED ON BOTH SIDES WITH MILD 5% DETERGENT SOLUTION. |
| USAGE: | ROLLER SHADE AND VERTICAL BLIND FABRICS |
| FABRIC WARRANTY: | PANTA-FLEX FABRICS ARE GUARANTEED TO BE FREE OF ANY MANUFACTURING DEFECTS FOR A PERIOD OF 5 YEARS. DURING THE 5 YEAR PERIOD PANTA-FLEX SHALL MAINTAIN ITS FLAME RESISTANCE, TOTAL WEIGHT, WASHABILITY, COLOR UNIFORMITY, AND TENSILE STRENGTH. |

Phillips Exeter Academy
Construction Standards and Guidelines

Division: 12 Furnishings
Specification Section: 12 24 13 - Roller Window Shades
Description of Material or System: Roller Window Shades
Last Updated: 8/10/2022
Updated by: Curtis Boivin

| | | | | | | | | | | | | | |
|---|---|---|--------------------------------------|---|--|--|----------------------------------|--------------------------------------|----------------------------------|---|--------------------------------|--------------------------------|-------|
| <p>Included in this section:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Product Specifications <input checked="" type="checkbox"/> Design Guidelines <input type="checkbox"/> Design Details/Drawings <input type="checkbox"/> Supplemental Information <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____ | <p>Guideline applies:</p> <table border="0"> <tr> <td><input type="checkbox"/> Academic Buildings</td> <td><input type="checkbox"/> Dormitories</td> </tr> <tr> <td><input type="checkbox"/> Administrative</td> <td><input checked="" type="checkbox"/> Faculty Residences</td> </tr> <tr> <td><input type="checkbox"/> Athletic Facilities</td> <td><input type="checkbox"/> Support</td> </tr> <tr> <td><input type="checkbox"/> Campus Wide</td> <td><input type="checkbox"/> Utility</td> </tr> <tr> <td><input checked="" type="checkbox"/> Other</td> <td><u>Faculty Dorm Apartments</u></td> </tr> <tr> <td><input type="checkbox"/> Other</td> <td>_____</td> </tr> </table> | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | <input checked="" type="checkbox"/> Other | <u>Faculty Dorm Apartments</u> | <input type="checkbox"/> Other | _____ |
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories | | | | | | | | | | | | |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences | | | | | | | | | | | | |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | | | | | | | | | | | | |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Other | <u>Faculty Dorm Apartments</u> | | | | | | | | | | | | |
| <input type="checkbox"/> Other | _____ | | | | | | | | | | | | |

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

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.

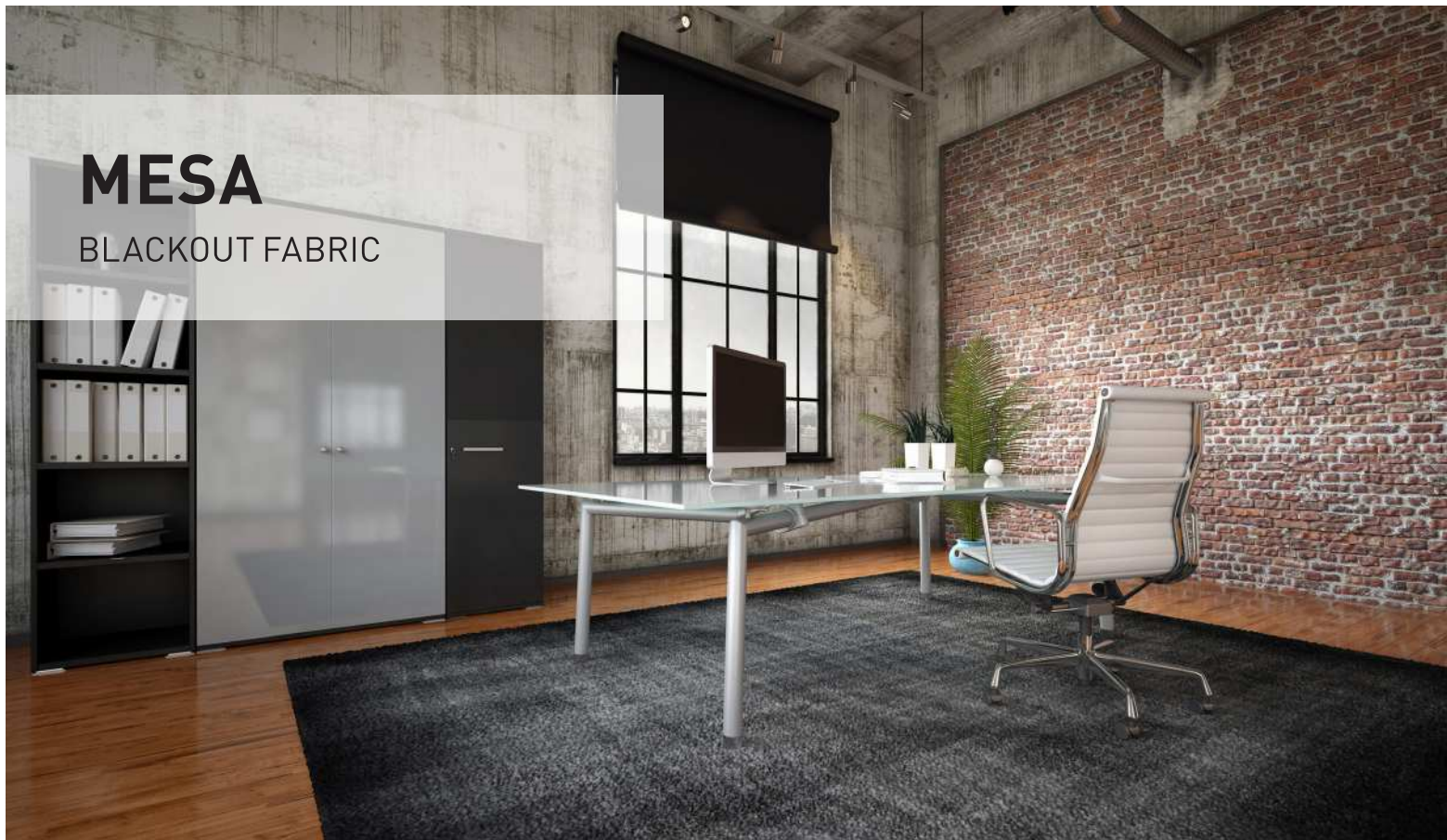
Links to additional product information:

<https://www.friedlandshades.com/>

<https://www.rolleacmeda.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

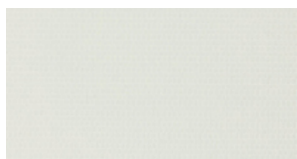
- Attractive textile appearance
- Available in 8 appealing colors
- White backing
- Acrylic foam coating
- Available in two roll widths
- Flame Retardant
- PVC-free

rolph
friedland & bros.,
inc.

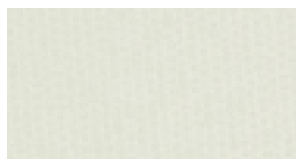
17 Industrial Drive
Cliffwood Beach, NJ
732-290-9800
www.friedlandshades.com

A durable and modern blackout, Mesa will enhance the look of any room while providing privacy.

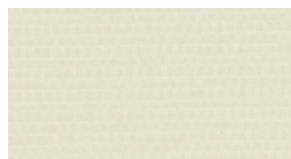
COLORS



DOVE WHITE



WHITE



PEARL



LATTE



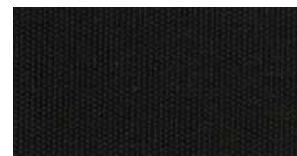
SEAL



COCOA



SLATE



BLACK

SPECIFICATIONS

| | |
|---------------------|---|
| Composition | 100% Polyester with Acrylic Backing |
| Weight | 9.43 oz/yd ² (320 g/m ²) |
| 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™ 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

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 |
| RGAL400 H | 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 |

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



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Division 12

Specification Section:

12 32 00-Manufactured Wood Casework

Description of Material or System:

Residential Kitchen Cabinets

Last Updated:

08/26/2022

Updated by:

Annie Pleatsikas

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 w/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:

www.schrock.com; www.kraftmaid.com

12 32 00 Manufactured Wood Cabinets

Used throughout campus and at residences

- A. Cabinets to comply with KCMA A161.1
- B. Face frame style cabinet construction
 - a. Face frame $\frac{3}{4}$ " x 1- $\frac{5}{8}$ " solid wood with glued mortise and tenon or doweled joints.
 - b. Cabinet end construction to be $\frac{3}{4}$ " plywood
 - i. Exposed ends to be wood veneer
 - c. Cabinet top and bottom to be $\frac{1}{2}$ " plywood rabbeted in and fastened on all sides
 - d. Back, top, and bottom rails to be $\frac{3}{4}$ " x 2- $\frac{1}{2}$ " solid wood interlocking with end panel and rabbeted to receive top and bottom panels. Back rails to be secured with glue and mechanical fasteners
 - e. Wall hung cabinet back panels to be $\frac{3}{8}$ " plywood fastened to rear edge of end panels and to top and bottom rails.
 - f. Base cabinet back panels to be $\frac{3}{16}$ " plywood fastened to rear edge of end panels and to top and bottom rails.
 - g. Front frame drawer rails to be $\frac{3}{4}$ " x 1- $\frac{1}{4}$ " solid wood mortised and fastened to face frame.
- C. Door and Drawers to be flush full overlay.
 - a. Door and drawer fronts to be $\frac{3}{4}$ " solid wood rail and stiles and $\frac{1}{4}$ " veneer face plywood center panels
 - b. Drawers fabricated with exposed fronts fastened to a subfront with mounting screws from interior.
 - i. Drawer boxes to be constructed with glued dovetail joints
 - ii. Drawer boxes to be $\frac{3}{4}$ " solid wood with $\frac{3}{16}$ " plywood bottom
 - c. Shelves to be $\frac{5}{8}$ " plywood
- D. Hardware
 - a. Pulls: surface mount decorative pulls, ladder style with flat ends. Brushed stainless finish
 - b. Hinges: Concealed European-style, self-closing hinges
 - c. 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 B05901
 - d. Door and drawer bumpers: Self-adhering, clear silicone rubber.
- E. Finish:
 - a. Door style and cabinet finishes are on a per project basis.
 - b. Cabinet finishes to be selected from manufacturer standards
 - c. Finish to be applied at factory manufacturing cabinets.

Phillips Exeter Academy Construction Standards and Guidelines

Division: 12 Furnishings
Specification Section: 12 36 00 - Solid Surfaces
Description of Material or System: Solid Surfaces
Last Updated: 8/10/2022
Updated by: Christine Van Scoy

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer for solid surfaces is Corian.

For Vanity tops campus wide:

Manufacturer: **Corian**

Color: **White with Integral Bowl**

For Kitchen counter tops in Faculty Apartments and Residences:

Manufacturer: **Corian**

Color: **Witch Hazel**

Links to additional product information:

<https://www.corian.com/>

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: 5/23/2022
Updated by: Curtis Boivin

- | | | | | | | | | | | | | | |
|---|--|--|--------------------------------------|---|---|--|----------------------------------|--------------------------------------|----------------------------------|---|---|--------------------------------|-----------------------|
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| <input checked="" type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories | | | | | | | | | | | | |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences | | | | | | | | | | | | |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | | | | | | | | | | | | |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Other | <u>To be placed under Harkness Tables</u> | | | | | | | | | | | | |
| <input type="checkbox"/> Other | <u>in classrooms.</u> | | | | | | | | | | | | |

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.

Links to additional product information:
<https://philadelphiacommercial.com/>



240 Woodland



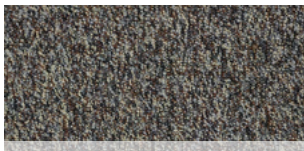
306 Cavern



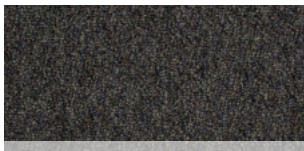
410 Torrent



420 Bridle Path



500 Granite



501 Black Diamond



505 Brazed Steel



520 Meteor Stone



710 Bedrock



770 Fruitwood



720 Riverrock



750 Burlwood



800 Salsa



875 Henna Spice

| | | |
|-------------------------|---------------------------------------|------------------------|
| 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/yd ³ | |
| Total Thickness | 0.301 in | 7.65 mm |
| Tufted Weight | 28 oz/yd ² | 949.4 g/m ² |
| 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.



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/09/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

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:

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 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:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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: 12 Furnishings
Specification Section: 12 56 43 - Dormitory Furniture
Description of Material or System: Dormitory Chair
Last Updated: 8/29/2022
Updated by: Heather Taylor

| | | |
|--|--|---|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:
The preferred specifications for dormitory wood, upholstered 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 93 00 - Site Furnishings

Description of Material or System: Site Benches

Last Updated: 8/16/2022

Updated by: Heather Taylor

| | | |
|--|---|---|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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->





Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/09/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

All campus bike racks shall be of similar type and style.

Links to additional product information:

Bike Security Racks Co., Inc.

www.bikeracks.com

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.

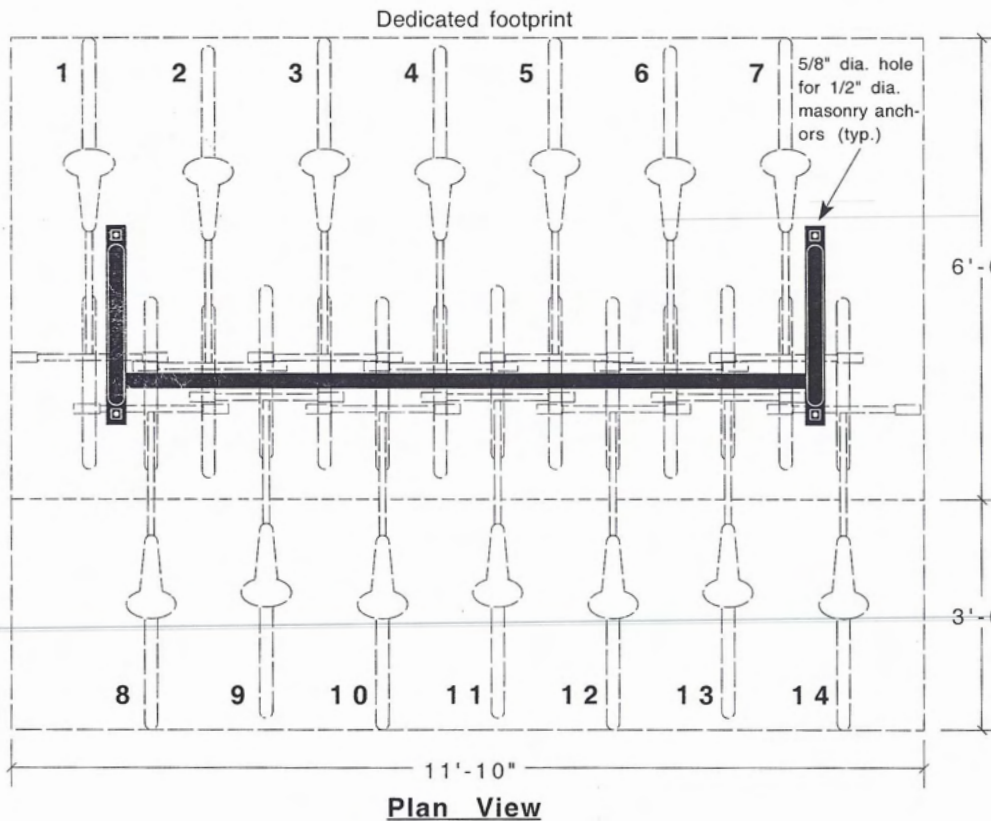
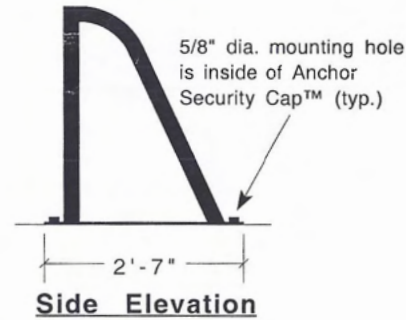
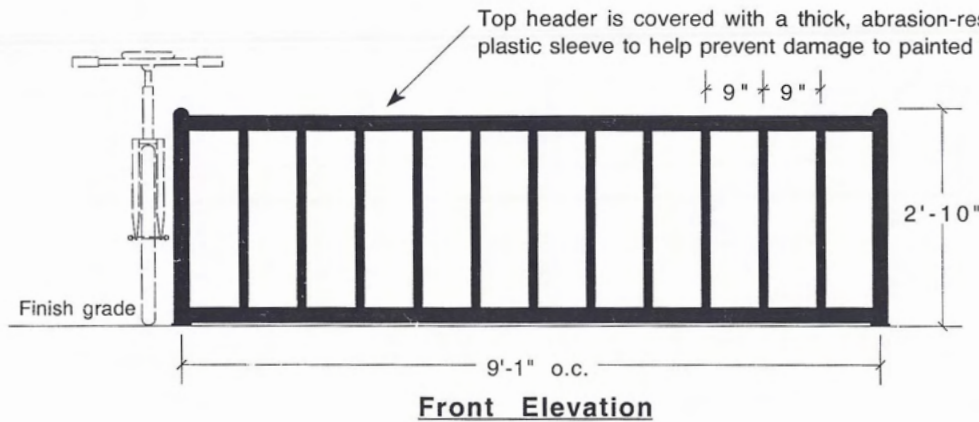
Execution

- 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



ORDERING INFORMATION

Bike-Rail™ Version 9 Bike Racks
 Surface-Mounted Models

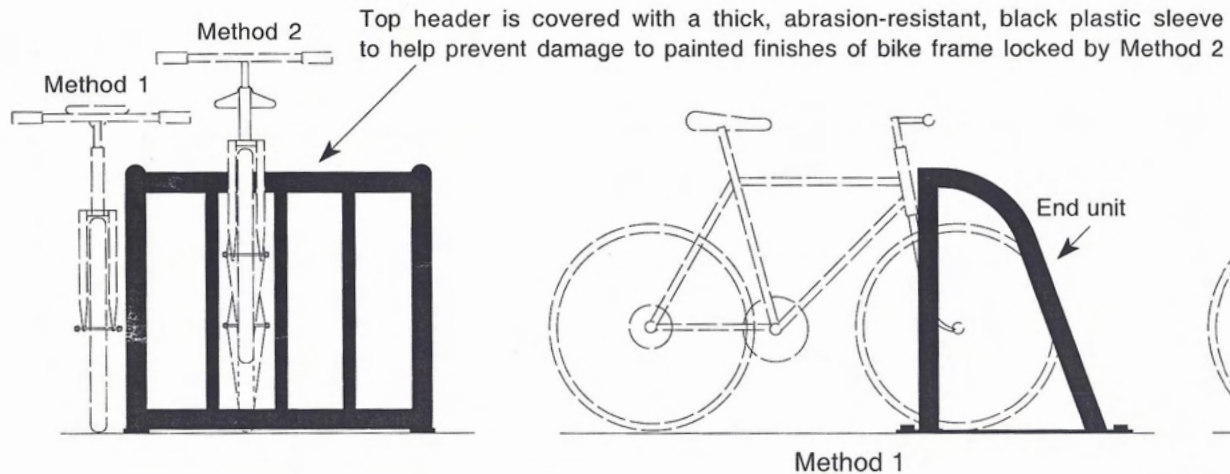
| Model # | Length | Bike Capacity | |
|---------|----------|---------------|---------|
| | | 1 side | 2 sides |
| BR- 4.9 | 3' - 1" | 3 | 6 |
| BR- 6.9 | 4' - 7" | 4 | 8 |
| BR- 8.9 | 6' - 1" | 5 | 10 |
| BR-12.9 | 9' - 1" | 7 | 14 |
| BR-16.9 | 12' - 1" | 9 | 18 |
| BR-20.9 | 15' - 1" | 11 | 22 |
| BR-24.9 | 18' - 1" | 13 | 26 |

Intermediate sizes quoted on request.

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



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



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Division 2

Specification Section:

12 93 23 - Trash and Litter Receptors

Description of Material or System:

Trash Receptacles for exterior applications

Last Updated:

08/09/22

Updated by:

Annie Pleatsikas

Included in this section:

- Product Specifications
- Design Guidelines
- Design Details/Drawings
- Supplemental Information
- Other Catalog Cutsheet
- Other _____

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Recycling bins to be used campus wide.

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.



DRAWING NUMBER | 1030 1

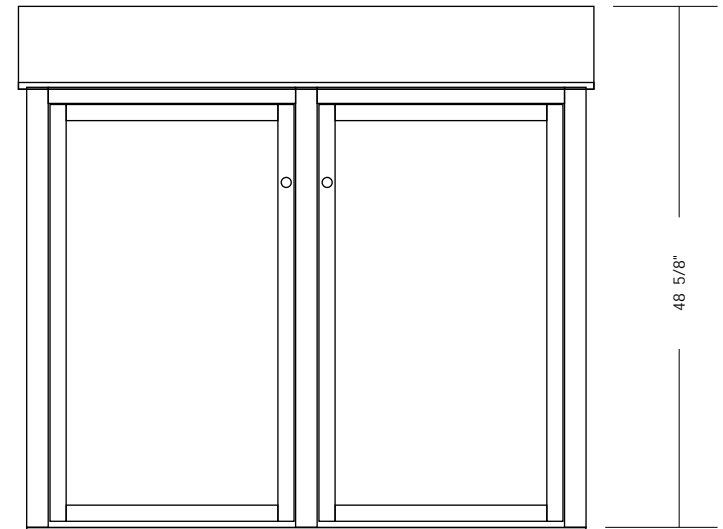
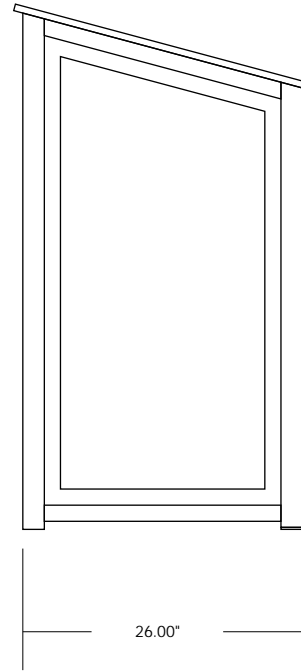
| | |
|------------------------|-----------------|
| CLIENT NAME | Phillips Exeter |
| SALES DATE | |
| PROOF DATE | 7-24-13 |
| ACCOUNT REPRESENTATIVE | CHAD |

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

26.5"

54"

49.5"

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: | | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is the PEA Design specification for faculty homes and apartment steam condensate 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

| GPM | MTX Models | | | | WPX Models | | | | | |
|------|------------|-------|-------|-------|--|-------|-------|--------|--------|-------|
| | 3/4" | 1" | 1.5" | 2" | 2" | 3" | 4" | 6" | 8" | 10" |
| 2 | <.1 | | | | | | | | | |
| 3 | 0.11 | | | | | | | | | |
| 3.5 | 0.2 | | | | <i>* PSI Drops estimated from a logarithmic curve.</i> | | | | | |
| 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

| Meter Size | Flow Rates GPM | | with Optional Outputs | | |
|------------|----------------|---------|--|---|--|
| | min | max | Reed Switch Model 840 gallons/contact | Infra-Red Transmitter Model 573 full scale frequency | Infra-Red Transmitter Model 573 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

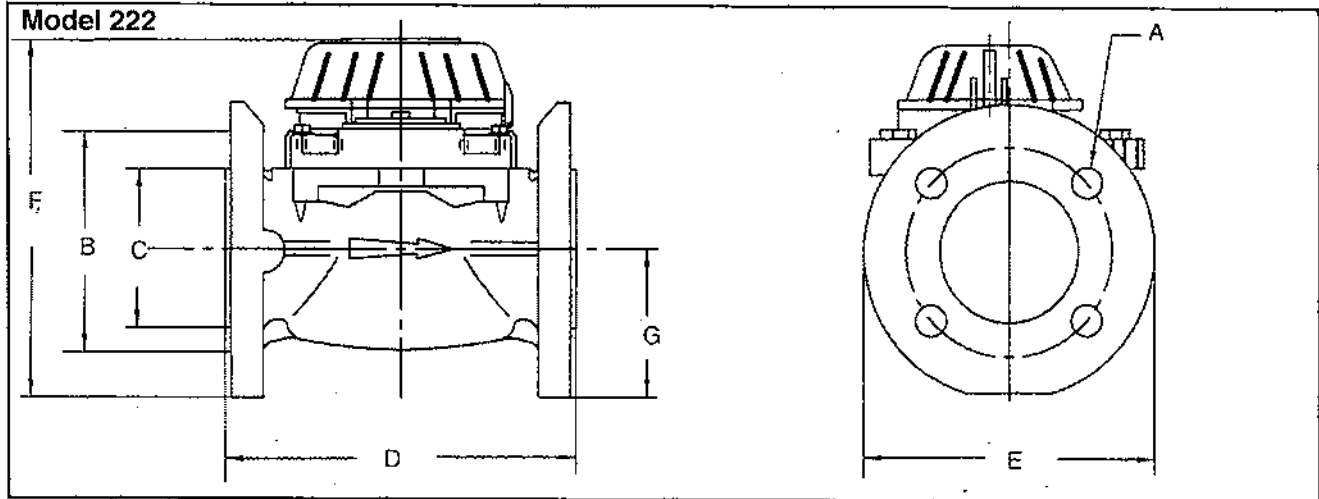


Figure 6

| 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.

| 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

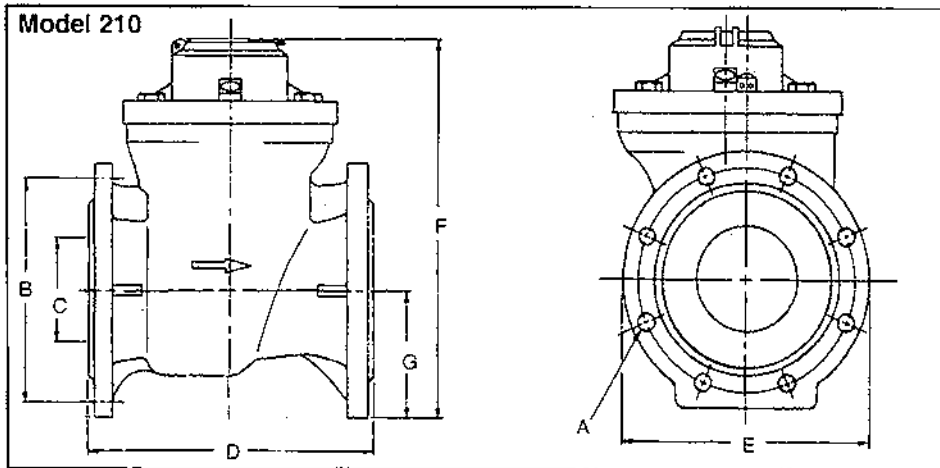


Figure 7

| 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 (449.50) |
| 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 (293.68) | 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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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=HonECCatalog&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: | Guideline applies: | |
| <input type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Supplemental Information | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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.

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

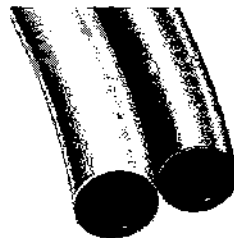
ViegaPEX Ultra provides exceptional protection against UV radiation from the sun for applications where tubing could be exposed to the outdoors for up to 6 months. ViegaPEX Ultra is also available in sizes from 3/8" to 2" for larger applications.



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



back

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 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:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input checked="" type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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

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:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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
Description of Material or System: Plumbing Fixtures
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:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input checked="" type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Preferred plumbing fixtures:

- **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.kohler.com
- www.americanstandard.com
- www.moen.com
- www.elkay.com
- www.oasisbath.com
- 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: 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:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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**

Links to additional product information:

<https://www.zurn.com/>



Z81101-XL-P

4" Centerset Faucet with Pop-up Drain

TAG _____

Architectural/Engineering Specification:

Polished chrome-plated cast brass faucet body with integral shanks, quarter turn ceramic disc cartridges and a 4" [102mm] long integral cast spout. Unit is furnished with a 2.2 GPM [8.3 L] pressure compensating aerator (complying with ANSI A112.18.1 Standard for flow), 2-1/2" [64mm] vandal-resistant color-coded metal lever handles, mounting hardware, 1/2" NPSM coupling nuts for standard lavatory risers and a 1-1/4" [32mm] pop-up drain.

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
- 1-1/4" [32mm] Pop-up Drain

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 |
| -24M | 0.35[1.3] | | ✓ | | Spray |
| -25M | 0.35[1.3] | ✓ | ✓ | | Spray |

Architectural/Engineering Approval

The information contained in this document is subject to change without notice. Please contact Zurn for most up to date information.



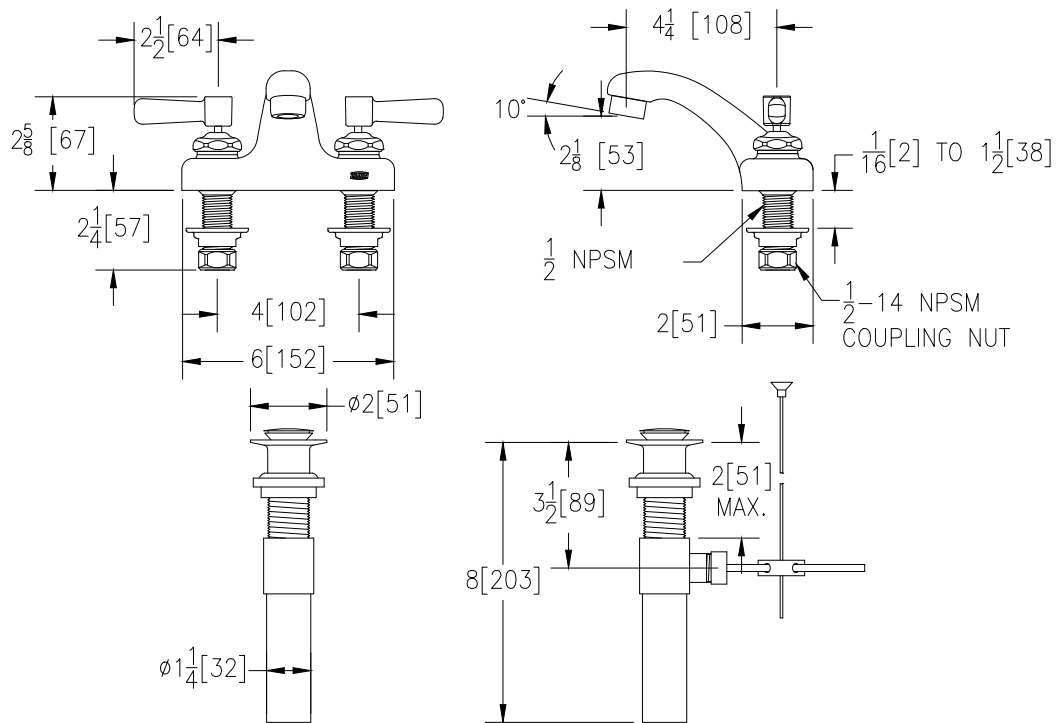


Z81101-XL-P

4" Centerset Faucet with Pop-up Drain

TAG _____

Rough-in dimensions/Overview dimensions



NOTE: All dimensions are for reference only. Do not use for pre-plumbing

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: 3/29/2022
Updated by: Kris Smith

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

For dormitories, the preferred manufacturer for adjustable height shower units is Zurn. Finish to be polished chrome.
Model number: **Z7120-SS-LH-HW**

Links to additional product information:

<https://www.zurn.com/>



TEMP-GARD SHOWER UNIT

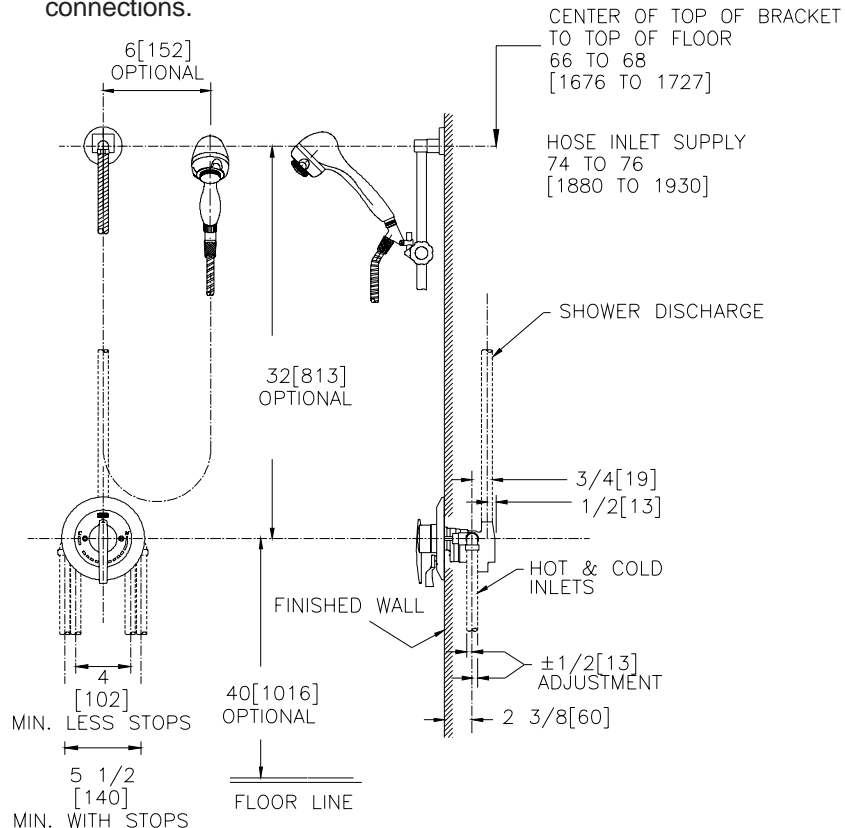
Z7120-SS-LH-HW

TAG _____



ENGINEERING SPECIFICATIONS: ZURN Z7120-SS-LH-HW

Single handle pressure balancing mixing shower unit, with single bronze stem, stainless steel balancing piston integral with stem assembly, metal lever handle, integral service stops, and brass adjustment limit stop screw in cap. Complete with double seal packing, adjustable brass packing nut, and removable brass seats; all exposed trim with polished nickel chrome plated surface. Valve supplied with hand/wall shower head, 60"[1524mm] flexible metal hose, 24"[610mm] mounting bar wall connection. The valve inlets and shower outlet are in 1/2" female copper sweat connections.



Note: All dimensions are for reference only. Do not use for pre-plumbing

OPTIONS (Check/specify appropriate options) Use with Z7000 prefix

STANDARDS

| Suffix | Description |
|----------|--|
| ___ -BC | Back Connections (1/2") (For 90° Installations), Shipped as Loose Adaptors, to be Installed in the Field |
| ___ -CC | Conversion Cover Plate |
| ___ -DT | Dial Thermometer |
| ___ -IP | 1/2" Female Threaded Connections, Shipped as Loose Adaptors, to be Installed in the Field |
| ___ -MT | Metal Cover, Escutcheon & Stem Handle |
| ___ -QD | Quick Disconnect In-line hose connector |
| ___ -RC | Reverse Connections (For Back-to-Back Installations) |
| ___ -SC | Pair of Dual Spring Check Valves |
| ___ -STH | ABS Chrome Plated Handle with Screw and Button |
| ___ -VB | In-Line Vacuum Breaker |
| ___ | Handwall options see Z7000-HW |

Tested to meet the following standards for valves and plumbing fittings:
 ASSE Standard No. 1016
 Meets or Exceeds ASME A112.18.1/CSA B125.1
 Meets or Exceeds ANSI A117.1M standard for physically handicapped



ZURN INDUSTRIES, LLC ♦ COMMERCIAL BRASS OPERATION ♦ 2640 SOUTH WORK STREET ♦ FALCONER NY 14733

Phone: 1-716-665-1132 ♦ Fax: 1-716-665-1135 ♦ 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: 22 Plumbing
Specification Section: 22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System: Shower Unit - Fixed Height
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 fixed height shower units is Zurn. Finish to be polished chrome.
Model number: **Z7121-SS-LH**

Links to additional product information:

<https://www.zurn.com/>



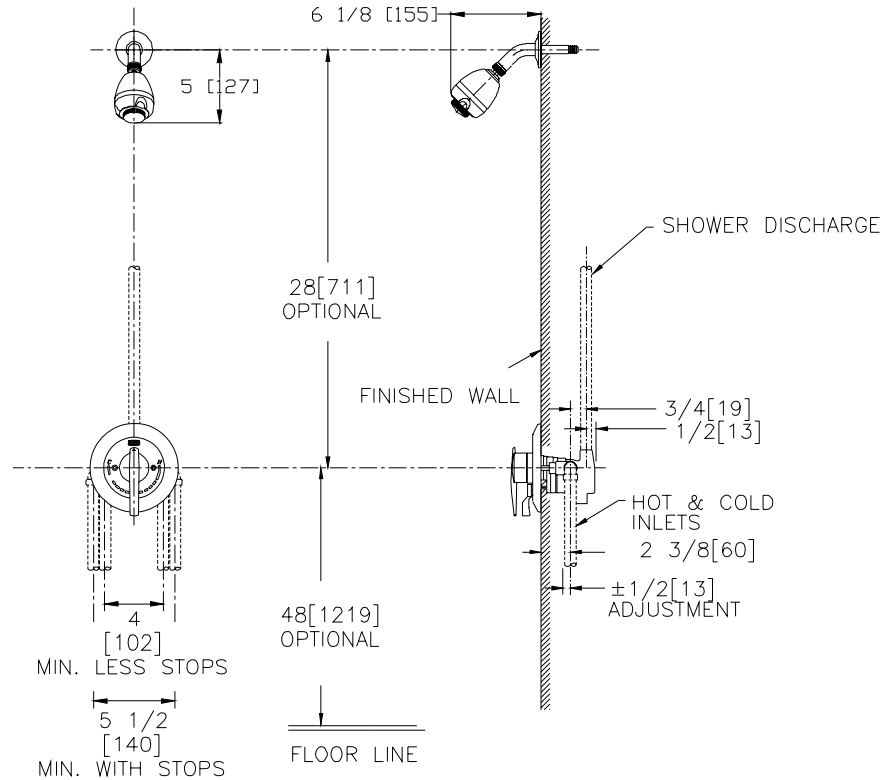
TEMP-GARD SHOWER UNIT

Z7121-SS-LH

TAG

ENGINEERING SPECIFICATIONS: ZURN Z7121-SS-LH

Single handle pressure balancing mixing shower unit with volume control, single bronze stem, stainless steel balancing piston integral with stem assembly, metal lever handle, integral service stops, and brass adjustment limit stop screw in cap. Complete with double seal packing, adjustable brass packing nut, and removable brass seats; all exposed trim with polished nickel chrome plated surface. Valve supplied with standard shower head, arm and flange. The hot and cold inlets and shower outlet are in 1/2" female copper sweat connections.



Note: All dimensions are for reference only. Do not use for pre-plumbing

OPTIONS (Check/specify appropriate options) Use with Z7000 prefix

STANDARDS

| Suffix | Description |
|----------|--|
| ___ -BC | Back Connections (1/2") (For 90° Installations), Shipped as Loose Adaptors, to be Installed in the Field |
| ___ -CC | Conversion Cover Plate |
| ___ -DT | Dial Thermometer |
| ___ -IP | 1/2" Female Threaded Connections, Shipped as Loose Adaptors, to be Installed in the Field |
| ___ -MT | Metal Cover, Escutcheon & Stem Handle |
| ___ -RC | Reverse Connections (For Back-to-Back Installations) |
| ___ -SC | Pair of Dual Spring Check Valves |
| ___ -STH | ABS Chrome Plated Handle with Screw and Button |
| ___ -WF | Wall Mounting Flange For Fiberglass or Panel Wall Installation |

Tested to meet the following standards for valves and plumbing fittings:
 ASSE Standard No. 1016
 CSA Standard B125-M89
 Shower heads meet ANSI A112.18.1
 Meets or Exceeds ANSI A117.1M standard for physically handicapped



ZURN INDUSTRIES, LLC ♦ COMMERCIAL BRASS OPERATION ♦ 2640 SOUTH WORK STREET ♦ FALCONER NY 14733

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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:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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



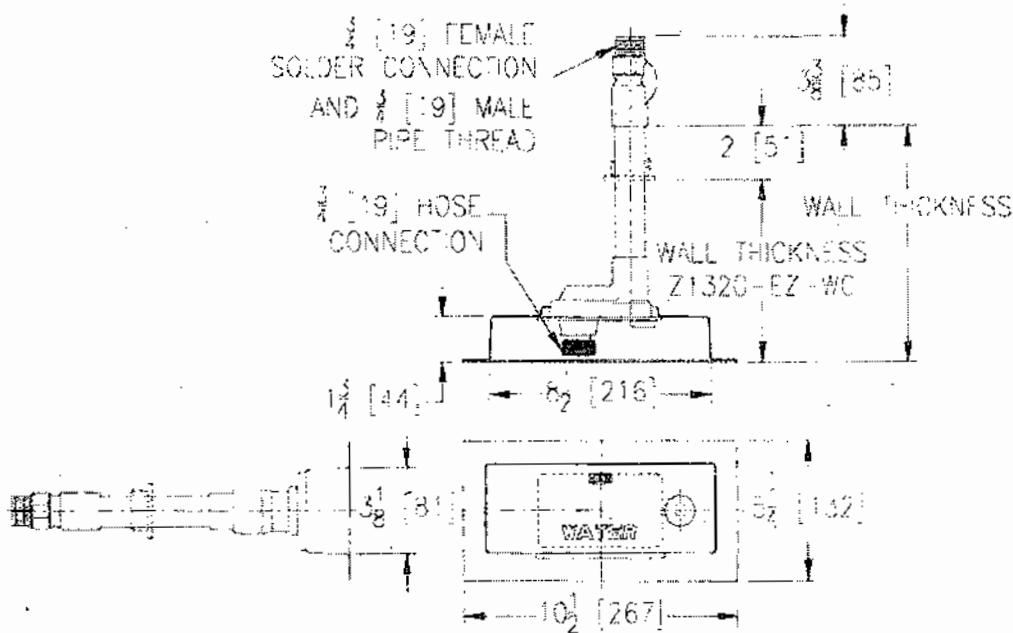
Z1320-EZ

SPECIFICATION SHEET

ECOLOTRON CERAMIC DISC WALL HYDRANT Encased, Non-Freeze, Anti-Siphon, Automatic Draining

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 Ecolotron "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.



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 |

| | | |
|----------------|----------------------|-----------------|
| REV. C | DATE: 10/22/10 | C.N. NO. 111935 |
| DWG. NO. 82548 | PRODUCT NO. Z1320-EZ | |

When ordering replacement cartridge assembly specify QM

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:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

For faculty bathrooms, single-handle faucets are the preferred style.

Note: For all new renovations 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**

Links to additional product information:

<https://www.us.kohler.com/us/>

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

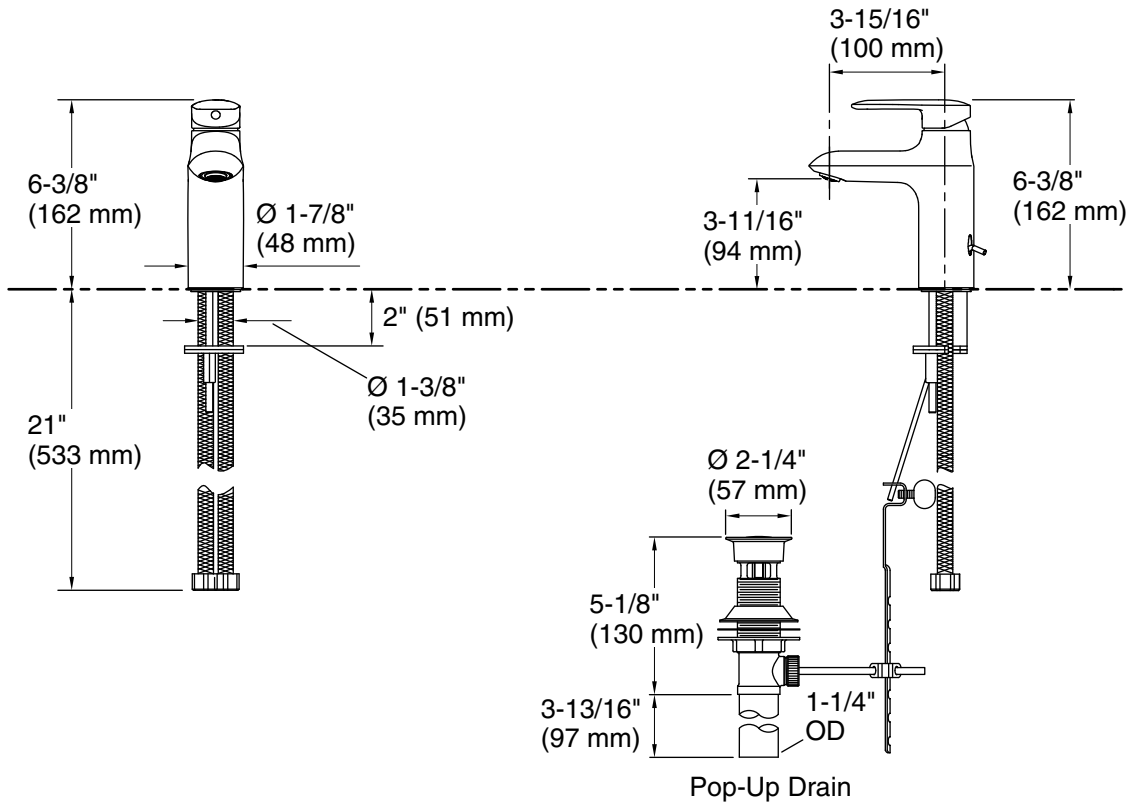
See website for detailed warranty information.

Available Colors/Finishes

Color tiles intended for reference only.

| Color | Code | Description |
|-------|------|-------------|
|-------|------|-------------|

| | | |
|---|----|-----------------|
|  | CP | Polished Chrome |
|---|----|-----------------|



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:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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**

Links to additional product information:

<https://www.us.kohler.com/us/>

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)



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 |

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:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Preferred vendors for Electronic faucets are Kohler and American Standard.

Links to additional product information:

www.kohler.com
www.americanstandard.com

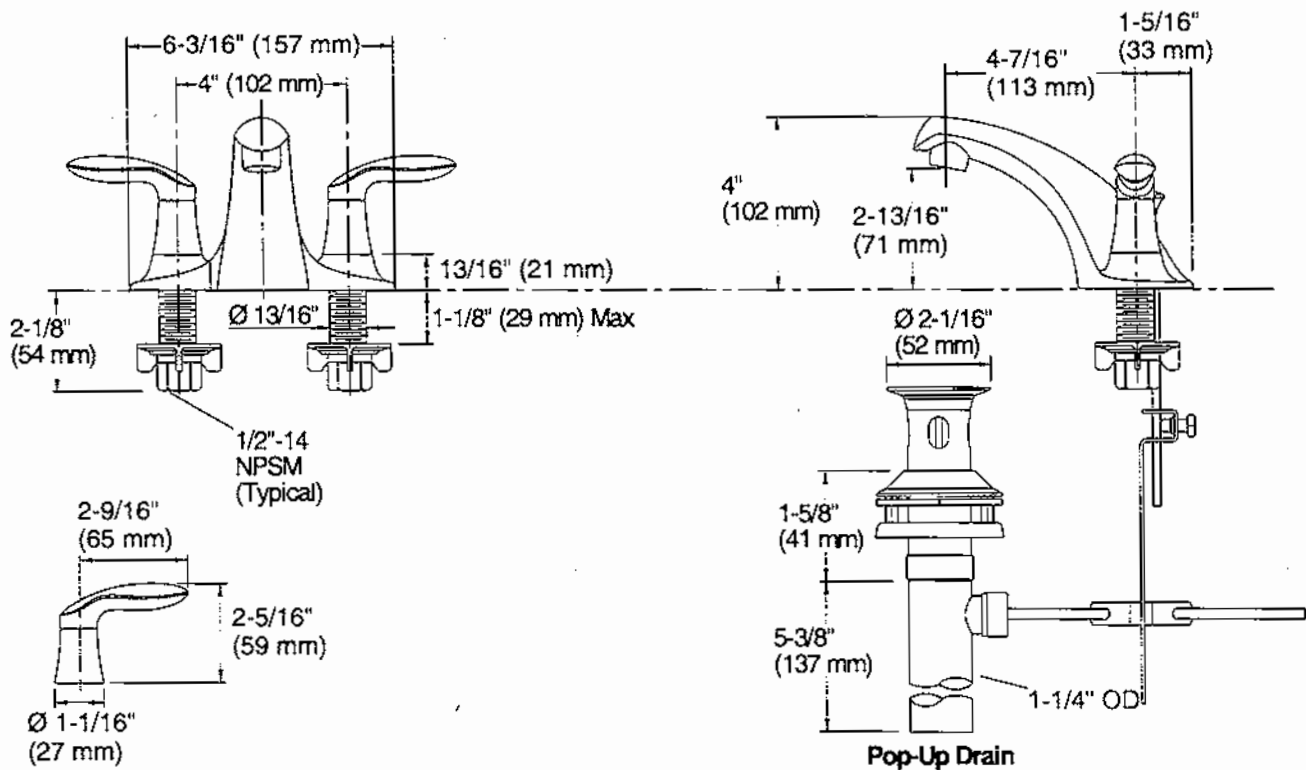
Phillips Exeter Academy
Construction Standards and Guidelines

Division: 22 Plumbing
Specification Section: 22 40 00 - Plumbing Fixtures and Equipment
Description of Material or System: Bathtub and Shower Faucet
Last Updated: 3/21/2022
Updated by: Curtis Boivin

- | | | |
|--|--|--|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:
The preferred manufacturer for faculty bathtub and shower faucets is Kohler in a polished chrome finish.
Preferred models:
K-T15601-4-CP (Coralais) and
K-TS98006-4G-CP (July)

Links to additional product information:
<https://www.us.kohler.com/us/>



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.

Features

- Premium construction ensures durability and reliability
- 4-7/8" (124 mm) diverter spout with NPT connection
- Reversible 1/2" quarter-turn washerless ceramic disc valves
- Lever handles
- Includes showerhead with arm and flange

Required Accessories

K-304/K-P304 Series Rite-Temp[®] Valves



Codes/Standards

ASME A112.18.1/CSA B125.1

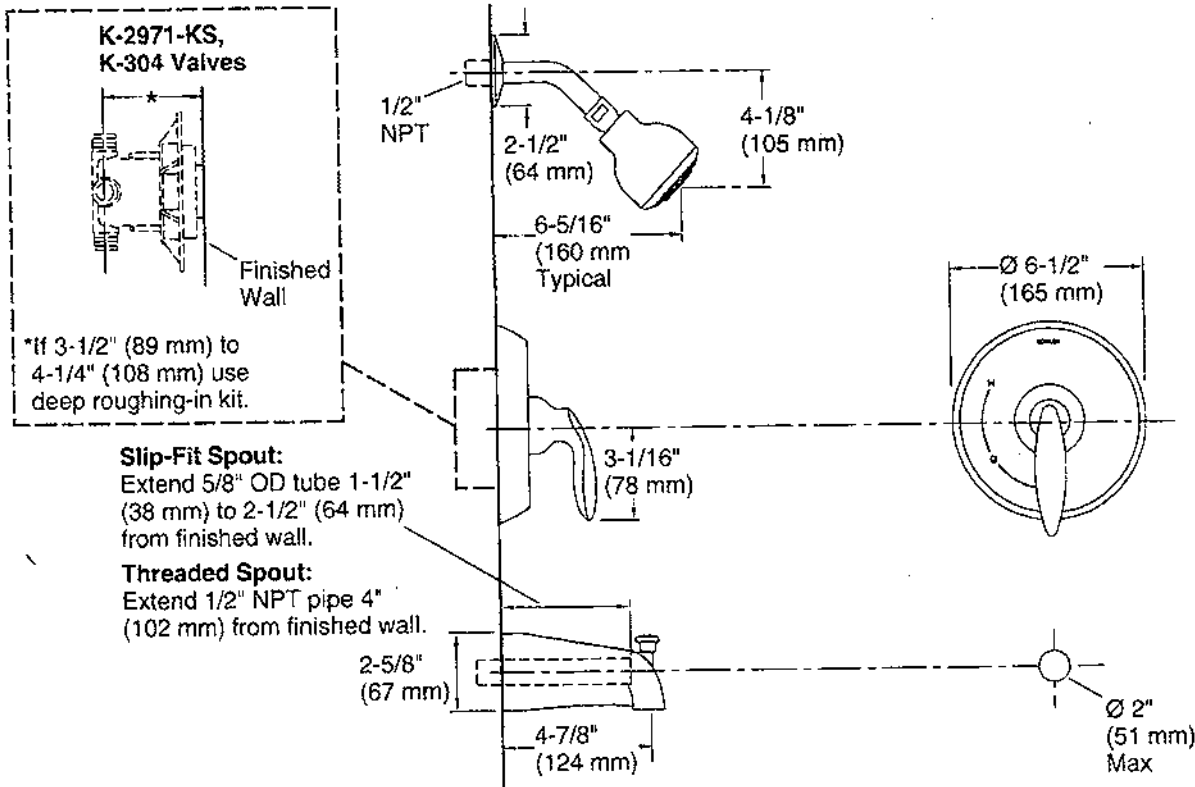
ASSE 1016

DOE - Energy Policy Act 1992

EPA WaterSense[®]

California Energy Commission (CEC)

See website for detailed warranty information.



Technical Information

All product dimensions are nominal.

Showerhead:

Rated maximum flow: 2.5 gal/min (9.5 l/min).
Pressure: 80 psi (5.5 bar)

Notes

Install this product according to the installation guide.

NOTICE: Risk of product damage. Long screws, for installing trim, can damage the K-2971-KS valve. Consult the trim installation guide to verify if the thin wall installation kit (88526) is needed.

Avoid cross-flow conditions. Do not install a shut-off device on either valve outlet.

Cap the shower outlet if deck-mount spout, diverter, or handshower is connected to the spout outlet.

Install straight pipe or tube drop of 7" (178 mm) to 18" (457 mm) with single elbow between the valve and wall-mount spout.

Features

- Pressure-balancing diaphragm technology maintains outlet temperature within +/-3°F during water pressure fluctuations.
- Antiscald protection.
- Single handle controls both on/off activation and temperature settings.
- Includes faceplate with ADA-compliant metal level handle.
- Includes diverter bath spout with 1/2" copper slip-fit connection.
- Includes single-function 1.75 gpm (6.6 lpm) showerhead.
- MasterClean™ sprayface features an easy-to-clean surface that withstands mineral buildup.
- Coordinates with July faucets, accessories, and showering components to complete your bathroom.

Material

- Premium material construction for durability and reliability.
- KOHLER finishes resist corrosion and tarnishing.

Installation

- Trim only; requires valve to complete installation (sold separately).

Water Conservation & Rebates

- This product can help a building earn Water Efficiency points in LEED® Green Building Rating System.

Required Products/Accessories

K-304/K-P304 Series Rite-Temp® Valves

or

K-8304/K-P8304 Series Rite-Temp® Valve & Cartridge Kits

or

K-8300/K-P8300 Series Rite-Temp® Valve Body Rough-ins

K-8305/K-P8305 Series Rite-Temp® Cartridges

or

K-2971-KS 3/4" Pressure-balancing Valve

Adapters, Rough-in and Extension Kits

1007937

Range: 3-1/2" (89 mm) -
4-1/4" (108 mm)

Optional Products/Accessories

K-10350 Deep rough-in kit

K-10351 Test cap for K-8300 Series valve bodies

Included Components

Additional Components:

Shower arm and flange



Codes/Standards

ASME A112.18.1/CSA B125.1

DOE - Energy Policy Act 1992

EPA WaterSense®

California Energy Commission (CEC)

KOHLER® Faucet Lifetime Limited Warranty

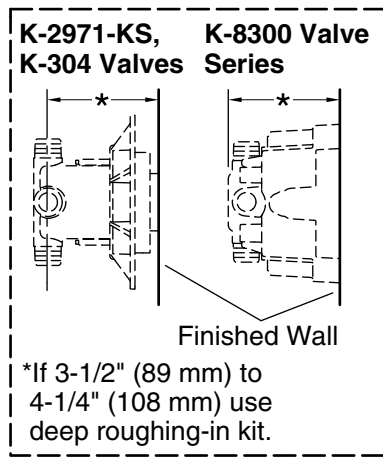
See website for detailed warranty information.

Available Colors/Finishes

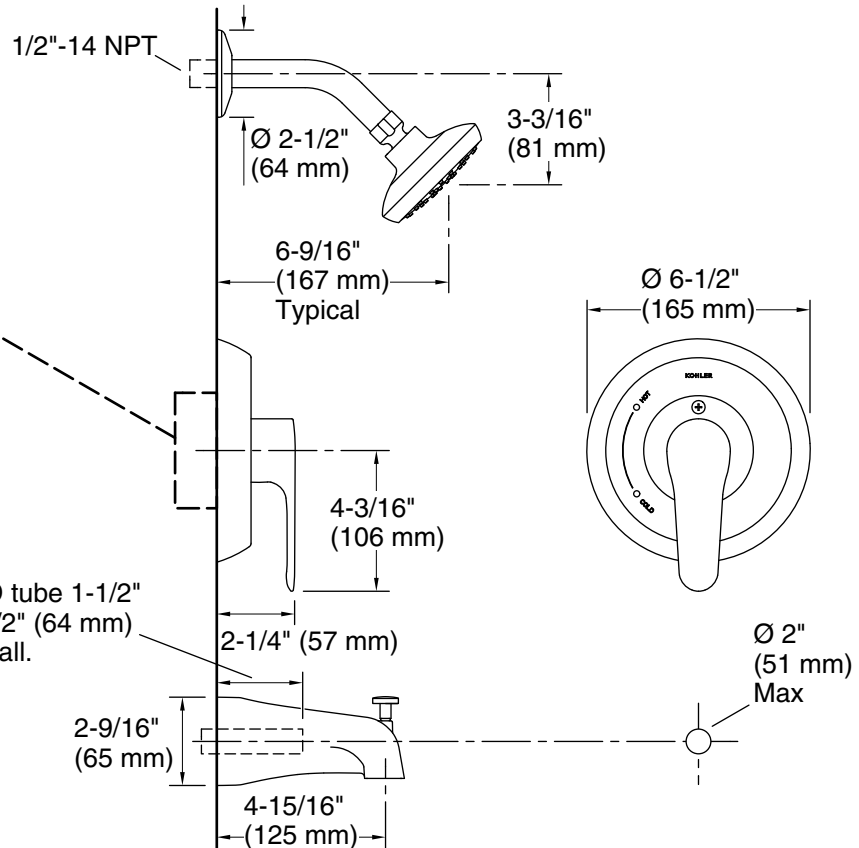
Color tiles intended for reference only.

Color Code Description

| | | |
|--|----|-----------------|
| | CP | Polished Chrome |
|--|----|-----------------|



Slip-fit Spout:
 Extend 5/8" OD tube 1-1/2" (38 mm) to 2-1/2" (64 mm) from finished wall.



Technical Information

All product dimensions are nominal.

Drain included: No

Showerhead/Body Spray:

Rated maximum flow: 1.75 gal/min (6.6 l/min)

Pressure: 80 psi (5.5 bar)

Notes

For use with automatic compensating valves rated at 1.5 gal/min (5.7 l/min) or less.

Install this product according to the installation instructions.

Install straight pipe or tube drop of 7" (178 mm) to 18" (457 mm) with single elbow between the valve and the wall-mount spout.

NOTICE: Risk of product damage. Long screws, for installing trim, can damage the K-2971-KS valve. Consult the trim installation guide to verify if the thin wall installation kit (88526) is needed.



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/24/2022

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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:

<http://oasisbath.com/tubs-showers/>
<https://aquaticbath.com/showers/all-products>

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:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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)

Links to additional product information:

<https://www.us.kohler.com/us/>

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

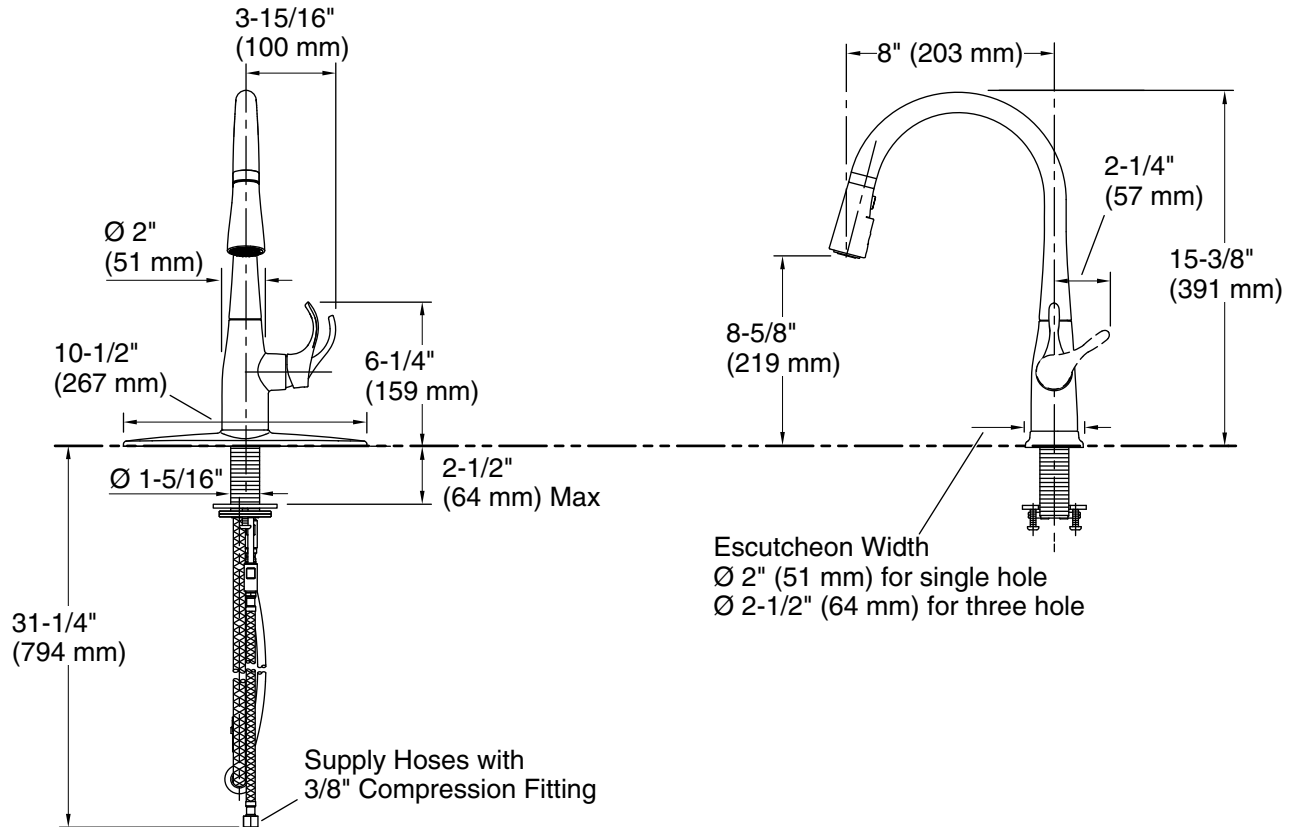
KOHLER® Faucet Lifetime Limited Warranty

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 |



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.

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

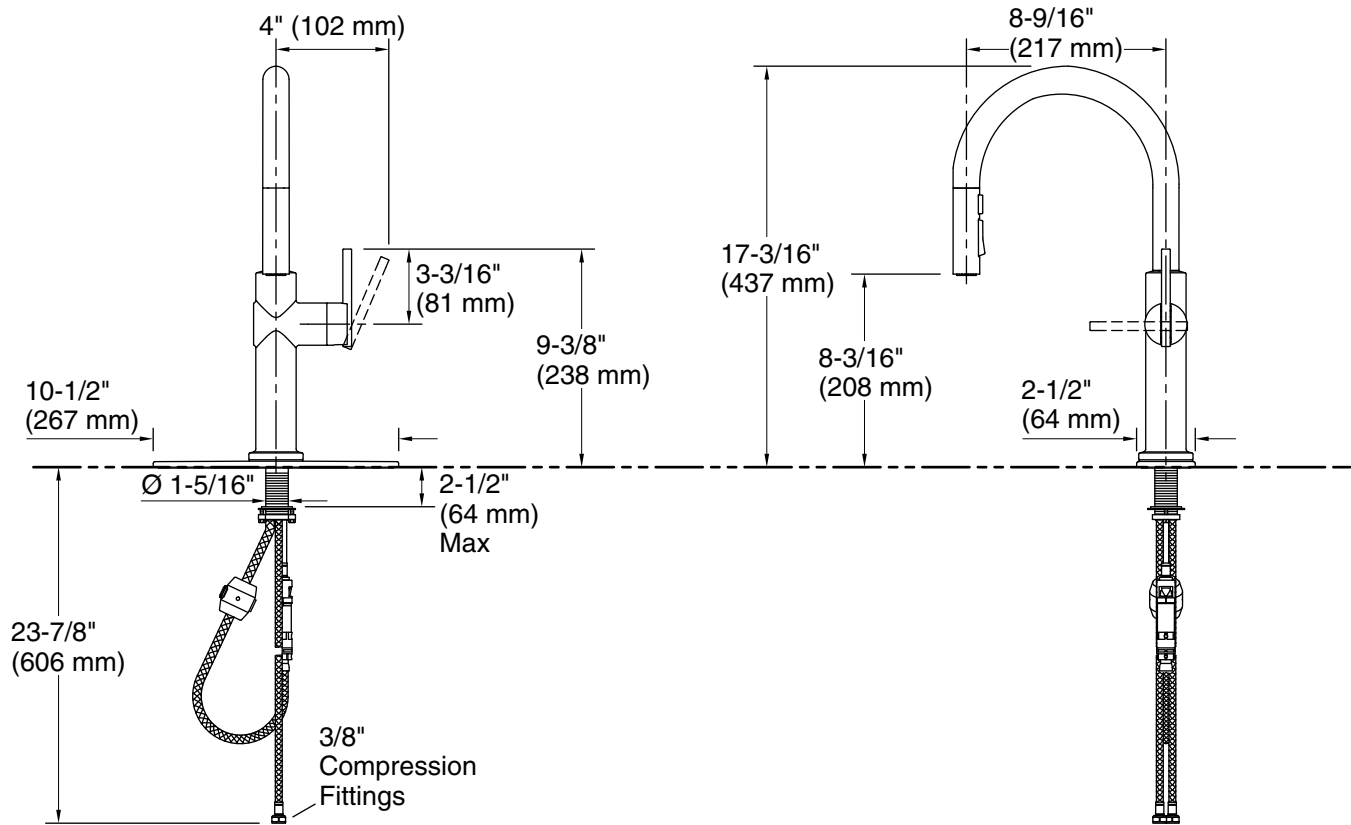
KOHLER® Faucet Lifetime Limited Warranty

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 |



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: 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: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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>

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

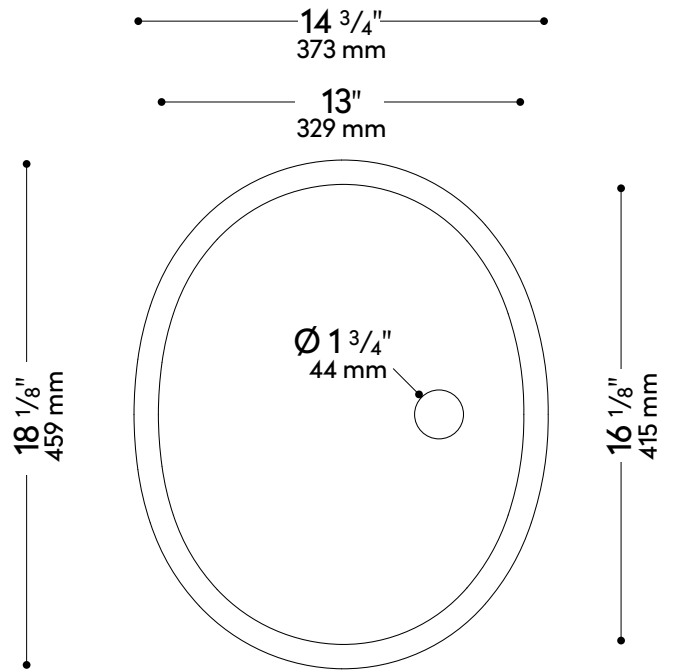
| Length | Width | Depth | Area |
|------------|--------|--------|-------------------------|
| 16 1/8 in. | 13 in. | 5 in. | 172.64 in. ² |
| 415 mm | 329 mm | 127 mm | 1114 cm ² |

Measurements rounded to nearest 1/8" or mm

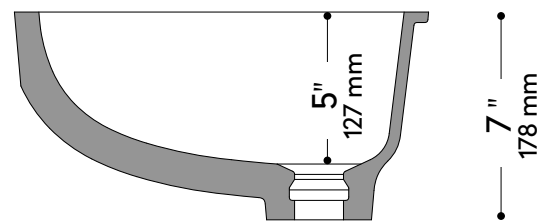
810P Front Overflow and No Overflow models have slightly different dimensions post 6/2021 (in this bulletin). For details please see technical drawings.



TOP VIEW



SIDE CROSS SECTION



DRAIN

All drain holes in sinks are nominally 1 3/4" 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.

PLEASE VISIT OUR WEB SITE: WWW.CORIAN.COM OR CONTACT YOUR CORIAN® REPRESENTATIVE FOR MORE INFORMATION ABOUT CORIAN® DESIGN

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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 cm²) 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

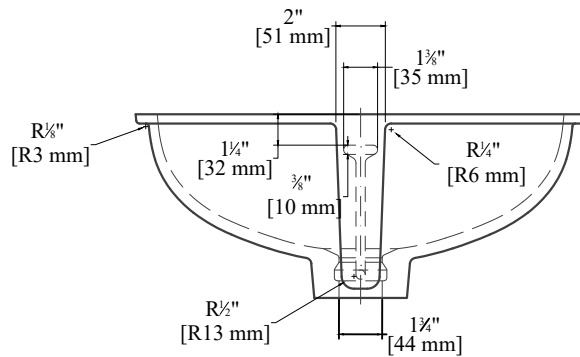
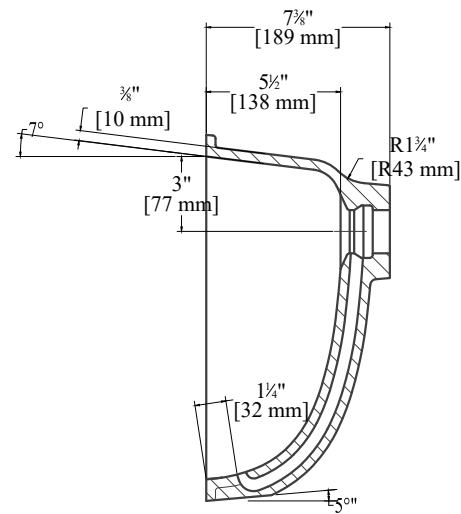
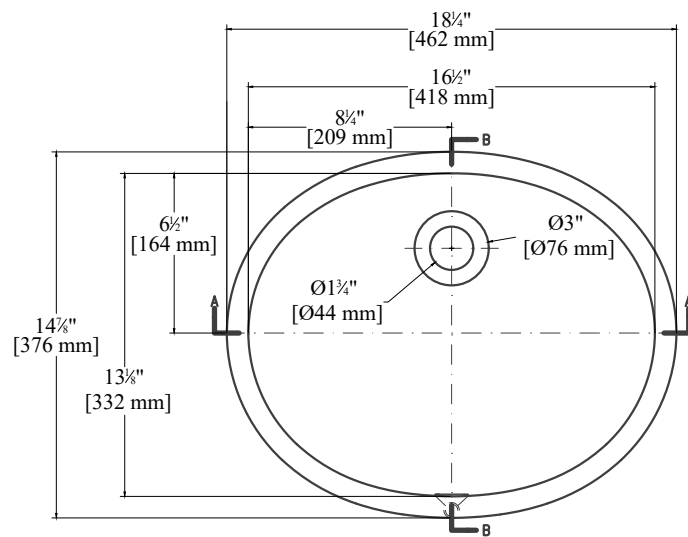
This lavatory can be installed such that it is compliant for ADA clearances.

WARRANTY

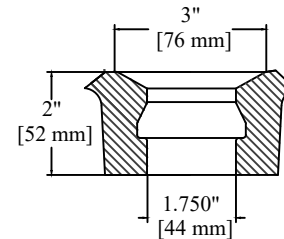
DuPont offers limited commercial and residential warranties.

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).



Drain Detail (2x)



Corian® Design

K-30002

Model: 810P

Type: Lav

© E. I. du Pont de Nemours and Company 2018

Collection: Accessible

Date: 10/2018

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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: 3/22/2022

Updated by: Kris Smith

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input checked="" type="checkbox"/> Athletic Facilities | <input checked="" type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer for exposed flush valves is Zurn.

Preferred Zurn models:

For Water Closets: **Z6000AV**

For Urinals: **Z6003AV**

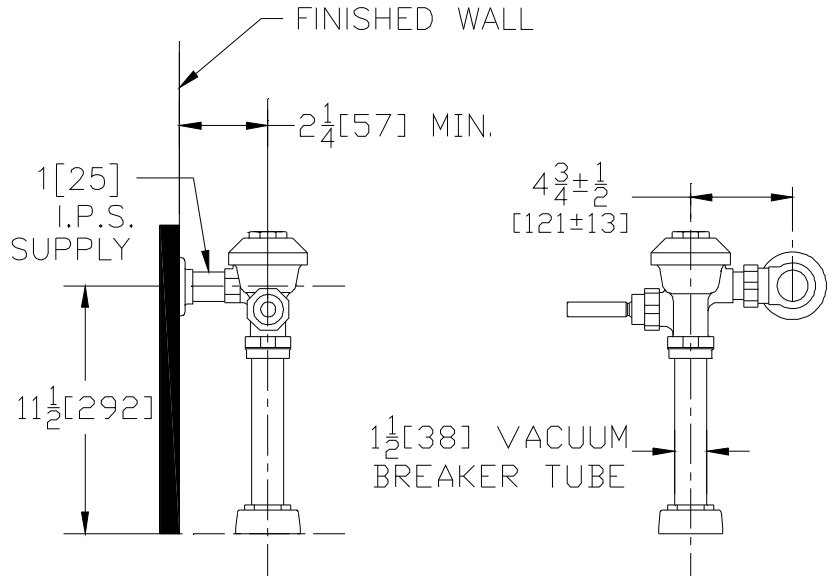
Links to additional product information:

<https://www.zurn.com/>



Z6000AV

Exposed Flush Valve for Water Closets



Flow Options

- ONE* 1.1 gpf High Efficiency Flush
- HET* 1.28 gpf High Efficiency Flush
- WS1 1.6 gpf Low Consumption Flush
- Standard 3.5 gpf
- FF 4.5 gpf Full Flush

Suffix Options (Check/Specify Appropriate Options)

- _____ -BG BioCareHandle
- _____ -H Handle on Front of Flush Valve
- _____ -L 1" [25] Metal Push Button
- _____ -L3 3" [76] Metal Push Button
- _____ -YJ Split Ring Pipe Support
- _____ -YK Solid Ring Pipe Support
- _____ -YO Bumper on Angle Stop
- _____ Other

ENGINEERING SPECIFICATION: ZURN Z6000AV AquaVantage® 'AV' Exposed Closet Flush Valve

- Exposed, quiet diaphragm-type, chrome plated flushometer valve with a polished exterior. Complete with Zurn's AquaVantage® TPE, chloramine resistant, dual seal diaphragm with a clog resistant, triple filtered by-pass. The valve is ADA compliant with a non-hold open and no leak handle feature, high back pressure vacuum breaker, one piece hex coupling nut, adjustable tailpiece, spud coupling and flange for top spud connection. Control stop has internal siphon-guard protection, vandal resistant stop cap, sweat solder kit, and a cast wall flange with set screw. Internal seals are made of chloramine resistant materials.

Architectural/Engineering Approval

The information contained in this document is subject to change without notice.



*This product should be used with a WaterSense labeled counterpart with a compatible flush volume to ensure that the entire system meets the requirements for water efficiency and performance.

ZURN INDUSTRIES, LLC. ♦ COMMERCIAL BRASS OPERATION ♦ 5900 ELWIN BUCHANAN DRIVE ♦ SANFORD NC 27330

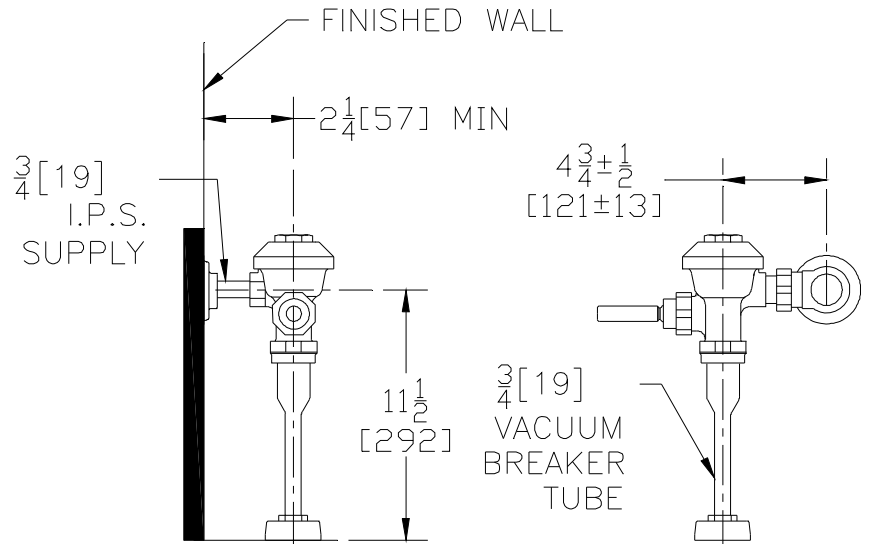
Phone: 1-800-997-3876 ♦ Fax: 919-775-3541 ♦ World Wide Web: www.zurn.com

In Canada: ZURN INDUSTRIES LIMITED ♦ 7900 Goreway Drive Unit 10 ♦ Brampton, Ontario L6T5W6 ♦ Phone: 905-405-8272 Fax: 905-405-1292



Z6003AV

Exposed Flush Valve for 3/4" Urinals



Flow Options

- ULF* 0.125 gpf Ultra Low Flow
- EWS* 0.5 gpf High Efficiency Flush
- WS1 1.0 gpf Low Consumption Flush

Suffix Options (Check/Specify Appropriate Options)

- BG BioCare Handle
- D1 1" Supply
- H Handle on Front of Flush Valve
- L 1" [25] Metal Push Button
- L3 3" [76] Metal Push Button
- YJ Split Ring Pipe Support
- YK Solid Ring Pipe Support
- Other

ENGINEERING SPECIFICATION: ZURN Z6003AV AquaVantage® 'AV' Exposed Urinal Flush Valve-

Exposed, quiet diaphragm-type, chrome plated flushometer valve with a polished exterior. Complete with Zurn's AquaVantage® TPE, chloramine resistant, dual seal diaphragm with a clog resistant, triple filtered by-pass. The valve is ADA compliant with a non-hold open and no leak handle feature, high back pressure vacuum breaker, one piece hex coupling nut, adjustable tailpiece, spud coupling and flange for top spud connection. Control stop has internal siphon-guard protection, vandal resistant stop cap, sweat solder kit, and a cast wall flange with set screw. Internal seals are made of chloramine resistant materials.



*This product should be used with a WaterSense labeled counterpart with a compatible flush volume to ensure that the entire system meets the requirements for water efficiency and performance.

Architectural/Engineering Approval

The information contained in this document is subject to change without notice.

ZURN INDUSTRIES, LLC. ♦ COMMERCIAL BRASS OPERATION ♦ 5900 ELWIN BUCHANAN DRIVE ♦ SANFORD NC 27330

Phone: 1-800-997-3876 ♦ Fax: 919-775-3541 ♦ World Wide Web: www.zurn.com

In Canada: ZURN INDUSTRIES LIMITED ♦ 7900 Goreway Drive Unit 10 ♦ Brampton, Ontario L6T5W6 ♦ Phone: 905-405-8272 Fax: 905-405-1292

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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 Taylor models:

HTHB-HAC8BLPV-NF (Bi-Level ADA Cooler, Non-Filtered Refrigerated Platinum Vinyl)

HTHB-HAC8SS-NF (Single ADA Cooler, Non-Filtered Refrigerated Stainless Steel)

Links to additional product information:

<https://www.halseytaylor.com/us/en/coolers-and-fountains.html>

<https://www.elkay.com/us/en.html>

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.



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) |  |

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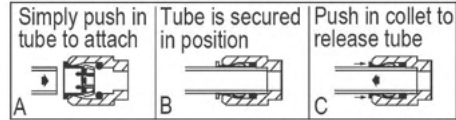
IMPORTANT! INSTALLER PLEASE NOTE :

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.

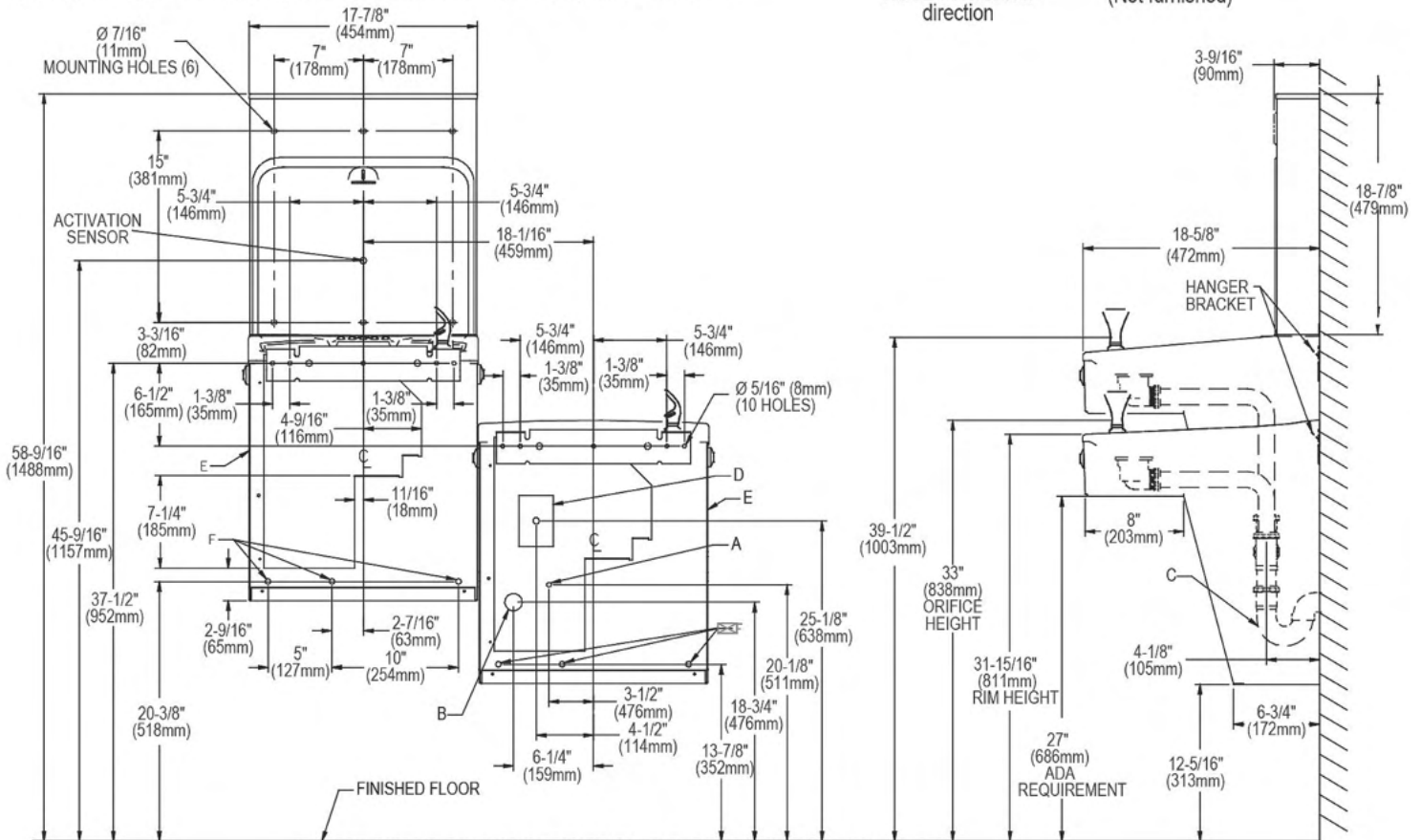
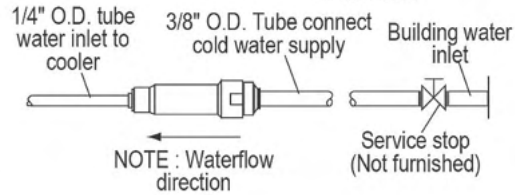
NOTICE

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. 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



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.

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SPECIFICATIONS

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.

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.



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 \(PDF\)](#)




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SPECIFICATIONS

Model HTHB-HAC8SS-NF

- 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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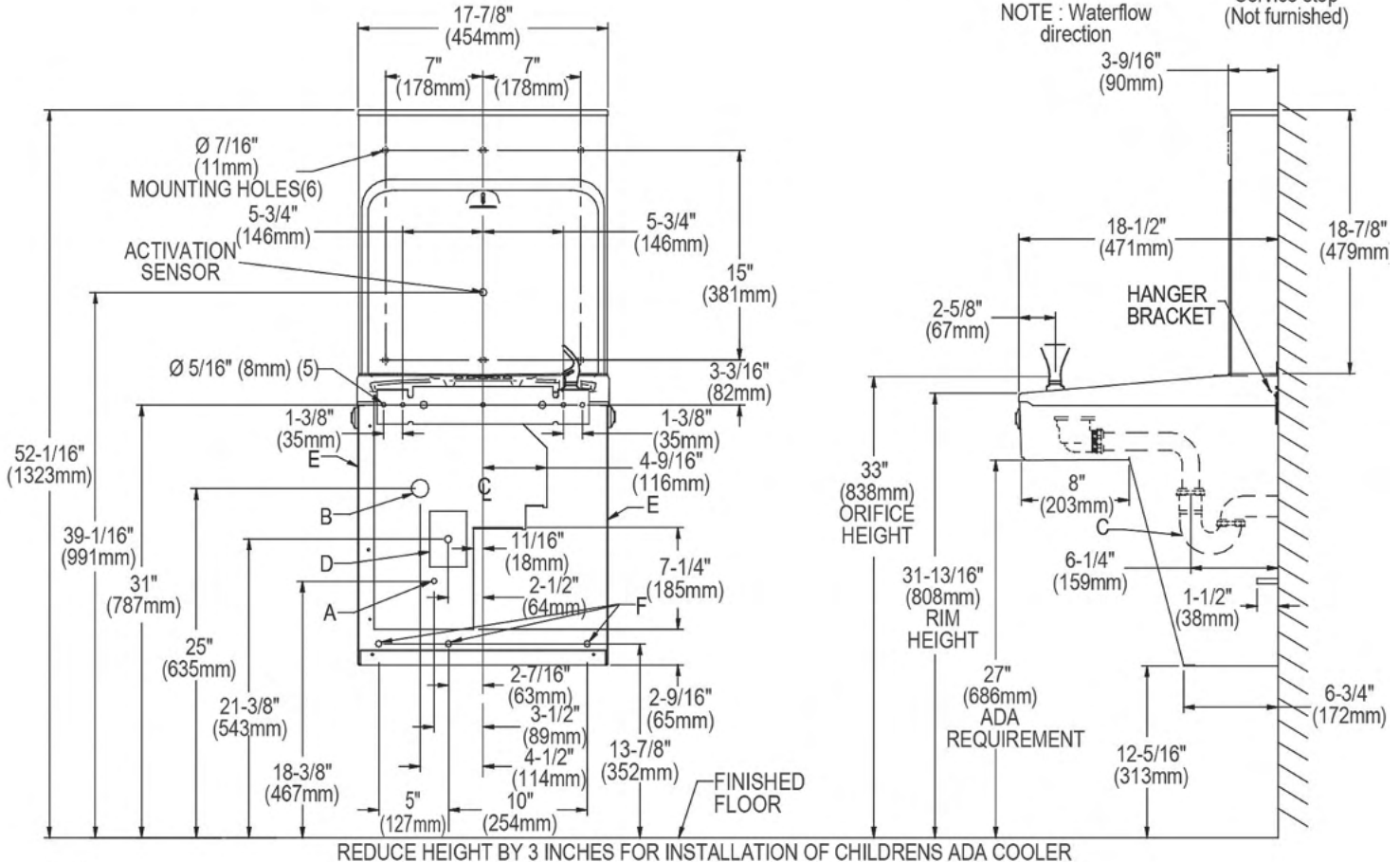
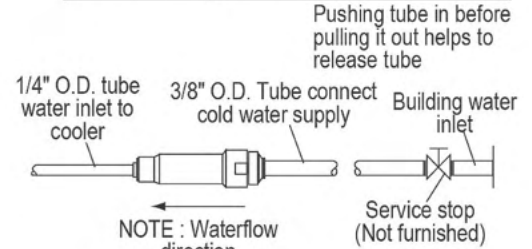
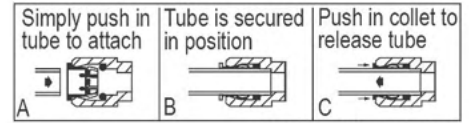
**IMPORTANT!
INSTALLER PLEASE NOTE :**

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.

OPERATION OF QUICK CONNECT FITTINGS



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 (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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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.

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

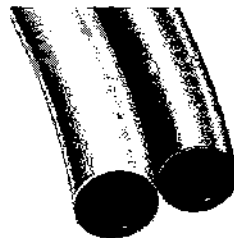
ViegaPEX Ultra provides exceptional protection against UV radiation from the sun for applications where tubing could be exposed to the outdoors for up to 6 months. ViegaPEX Ultra is also available in sizes from 3/8" to 2" for larger applications.



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



back

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 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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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**

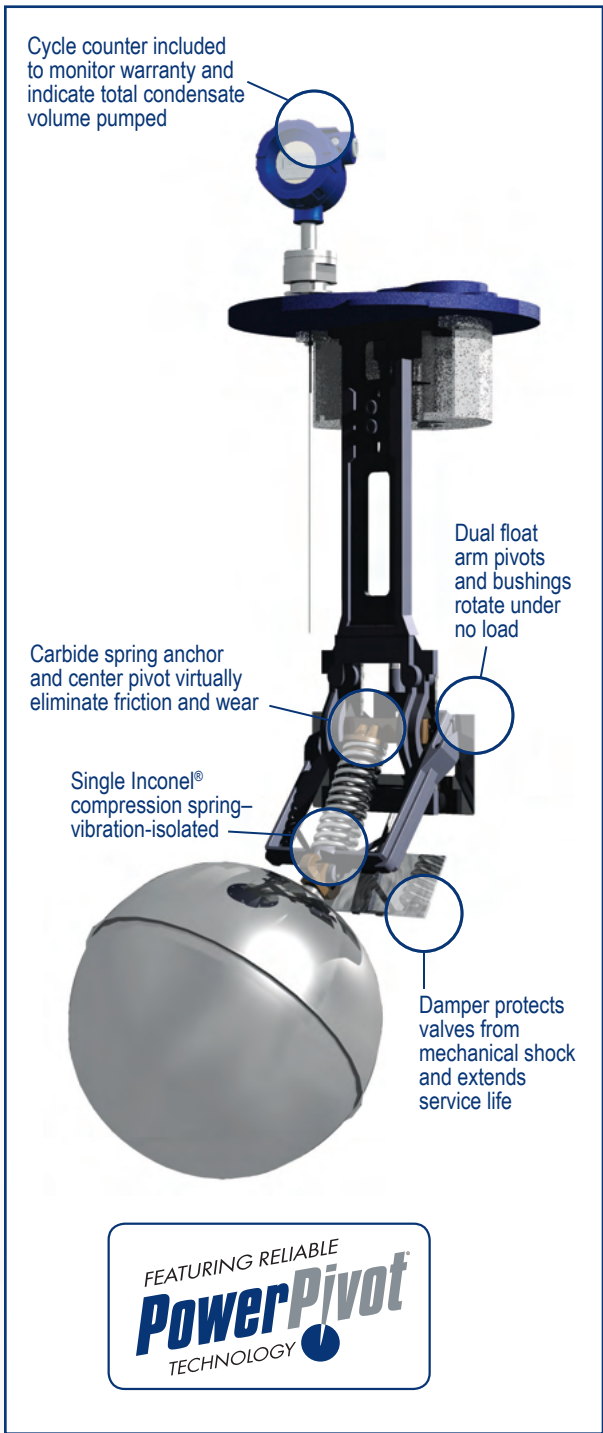
Links to additional product information:

<https://lesliecontrols.com/>

<https://www.spiraxsarco.com/>



Condensate Pump



Help for Ailing Condensate Systems!

- Unmatched, standard 3x5 three million cycles or five-year warranty
- Lifetime spring warranty
- Full warranty coverage to 200 psi operation



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 this 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.



Spirax Sarco, Inc.
1150 Northpoint Blvd., Blythewood, SC 29016
T 1-800-883-4411
spiraxsarco.com/global/us

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 23 Heating, Ventilating, and Air Conditioning (HVAC)

Specification Section: 23 34 00 HVAC 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:

- | | |
|---|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 (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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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**



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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is the PEA Design Guideline for Building Automation Systems.

Links to additional product information:

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

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- 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

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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.

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- 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

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- 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

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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:

Description of Material or System: Lighting Color Standards

Last Updated: 9/1/2022

Updated by: Heather Taylor

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 – 5000K (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 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 preferred . 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 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:

- | | |
|---|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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:

- | | |
|---|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer for the time clock system is **Intermatic** Astronomical timer for local control of exterior lighting. Larger control systems: Nlight Eclipse 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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 Transformers

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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 36 00 - Transfer Switches
Description of Material or System: Transfer 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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

PEA campus preferred transfer switches are:
Schneider Asco. Size and type determined per project.

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 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 preferred . 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 27 10 - Electricity Metering

Description of Material or System: Metering

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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Perferred campus metering manufacturer is **Schneider Electric**. Metering typed determined by project design. **PM800 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 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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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 of Work:

Specification Section:

Description of Material or System:

Last Updated: 08/25/2022

Updated by:

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 are Hubbell and Leviton

Links to additional product information:

www.hubbell.com or www.leviton.com

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:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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>

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 26 Lighting

Specification Section: 26 51 00 - Interior Lighting

Description of Material or System: Recessed downlight

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:

- | | |
|--|--|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input checked="" type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input checked="" type="checkbox"/> Other Faculty Apartments | _____ |
| <input type="checkbox"/> Other _____ | _____ |

Overview of system/product/guideline:

The following is the preferred specification for recessed cans remodel or new construction for Faculty Housing or apartments.

Manufacturer: **Acuity Brands - Juno PODZ**
Color Temperature: **2700K**

Links to additional product information:

<https://www.acuitybrands.com/products/detail/1697225/juno/>

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: 9/1/2022

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:

Upper cabinets in residential kitchens should have a flush “bottom” – with a perimeter trim to conceal continuous under cabinet lighting that is mounted at the front of the cabinet and designed to direct light toward the backsplash and counter. Basis of design light is:

Manufacturer: **Tech Lighting**
Model: **Essence 45**
Specifications: 2700K; Dimmable.

Similar covered LED tape light in channel with frosted acrylic lens may be considered if it meets the requirements.

Links to additional product information:

<https://www.techlighting.com/Products/Fixtures/ESSENCE-Fixtures/45-Degree>

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 Fixture

Last Updated: 9/1/2022

Updated by: Heather Taylor

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

In new construction or where possible in renovated spaces – concealed wiring is required. Where not possible or no new ceilings are being installed, inconspicuous wire mold – to a surface mounted light fixture. Length and number of fixtures depend on configuration of the room, but typical single rooms would get a 6' surface linear direct fixture.

Manufacturer: **Lux Illuminaire**

Product: **EOS=3.0-S-D-750-6-30K-8-UNV-S1-W-T/B/D**

Specifications: 7.25 W/FT; 750 Lumens /FT; 3000K; Extruded Aluminum Construction, Steel Reflector, 3000K, CRI 80, Universal voltage driver, (0-10 V) Dimming to 1% White Finish, Coordinate mounting with architectural reflected ceiling plans, snap-in Extruded frosted acrylic lens.

Links to additional product information:

<https://www.luxilluminaire.com/eos-30-family>

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: 9/1/2022

Updated by: Heather Taylor

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input checked="" type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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: Engineered Products Co.
Name: Motion Sensing Luminaire
Model Number: EPCO #16540

Specifications: 7 W; 519 Lumens, 3000K; 120 V, 7W, CRI 80+; Plastic housing, frosted acrylic diffuser, 3 operating modes, - where no switching is indicated, provide occupancy sensing mode, non-dimming, white housing, 5-yr warranty, energy star rated product.

Links to additional product information:

<https://www.engproducts.com/products/lighting/utility-lighting/small-space-luminaires/small-space-led-luminaire-motion-sensor>

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 26 Electrical

Specification Section: 26 51 00 - Interior Lighting

Description of Material or System: Classroom Lighting

Last Updated: 9/1/2022

Updated by: Heather Taylor

| | | |
|--|--|---|
| Included in this section: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input checked="" type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Classroom lighting shall be designed to fit within the architecture and context of the specific building. Lighting has changed dramatically over the last few years and continues to do so. In general classroom lighting shall be on a project by project basis. The most recent classroom lighting installed in the new dorm (2022) – includes the following lights:

Linear Pendant Lights:

Manufacturer: **LUX Illuminaire**
Model: **EOS=3.0-P-D-750-6-8-30K-6-UNV-S1-W-T/B/D - -42QS10**

Specifications: 7.25 W/FT; 750 Lumens /FT; 3000K; 120 V, 44 per fixture; Extruded Aluminum Construction, Steel Reflector, 3000K, CRI 80, Universal voltage driver, (0-10 V) Dimming to 1% White Finish, Aircraft cable suspension; Finish matched canopy.

Coordinate mounting with architectural reflected ceiling plans.

Links to additional product information:

<https://www.luxilluminaire.com/eos-30-family>

Phillips Exeter Academy

Construction Standards and Guidelines

Division: 26 Electrical

Specification Section: 26 56 00 - Exterior Lighting

Description of Material or System: Parking lot Lighting RSX

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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

PEA campus parking lot lighting manufacturer is **Acuity Brands**, the **RSX** product family with **Nlight controls** and Night time friendly. RSX type and pole height determined by design.

Links to additional product information:

<https://www.acuitybrands.com/products/family/rsx>

<https://www.acuitybrands.com/products/detail/885168/lithonia-lighting/rsx1-led-area-luminaire/up-to-17000-lumens>

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: 7/26/2022
Updated by: Jason Palmer

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

PEA campus walkway lighting: **Acuitybrands** Model: Holophane **Arlington** Utility, night time friendly and night controls. Type and size based on project scope

Links to additional product information:

<https://www.acuitybrands.com/products/detail/1312499/holophane/aucl2-lantern/arlington-led-post-top-full-cut-off-lighting>

https://img.acuitybrands.com/public-assets/catalog/1312499/aucl2.pdf?abl_version=04%2f08%2f2022+19:14:24&DOC_Type=SPEC_SHEET

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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

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: 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: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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

PRESENTED BY:



PELMAC INDUSTRIES
INCORPORATED
www.pelmac.com (800) 244-5916



VERSATILE SUPERVISED AND UNSUPERVISED OPERATION

When programmed for supervised operation, the keypad occupies its own unique device address on the keypad data bus.

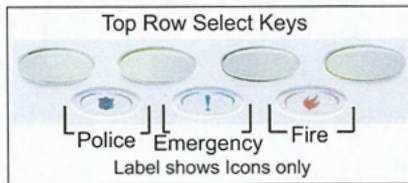
Unsupervised operation allows you to install an unlimited number of keypads set to the same device address. Increasing the number of keypads allows maximum system operating flexibility.

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

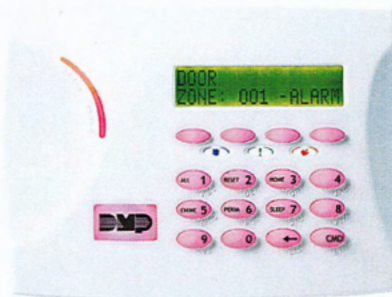
Keypad shortcut keys are provided to simplify operation and allow the user to more quickly arm, check in, monitor, exit, or reset the system. One-button arming creates the simplest keypad available. Use the one-button shortcut keys for common functions, or use the ATM style menu for advanced functions, whichever method meets the user’s needs or level of expertise with the system.

END-USER CONTROL

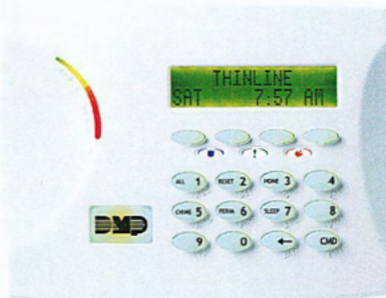
Each of the Thinline Series keypads provides a simple User Options menu for adjusting brightness, speaker tone, and volume.

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.

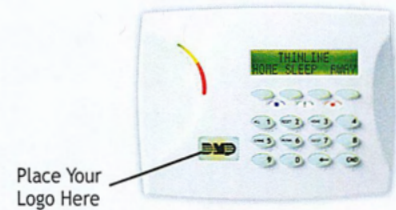
REQUEST-TO-EXIT (REX)

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 backlit 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 |

THINLINE™ KEYPADS

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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Global Components 8 of 17



DMP Adds a Whole New Dimension to Wireless—



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.

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

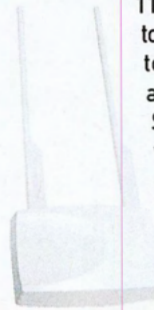
376L DC Plug-in Power Supply (1100R only)
1100RBAT Rechargeable Battery (1100R only)

PATENTS

U.S. Patent No. 7,239,236

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.

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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Intrusion | Fire | Access | Network | Cellular

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Designed, Engineered & Manufactured
in Springfield, Missouri



DMP Smart Devices Ensure Message Acknowledgement

Providing Double the System Security

Two-Way Supervised Wireless from DMP delivers unparalleled flexibility and simplicity without sacrificing power.

- Built-in device testing
- 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 from DMP gets the job done faster with less effort.

DMP 1100 SERIES WIRELESS TRANSMITTERS

SYSTEM FEATURES

- Two-Way supervised communication
- Built-in Survey LED visually confirms communications
- Extended range and battery life
- 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

TRANSMITTER FEATURES

- Internal case tamper for added security
- Programmable from panel keypad or via Remote Link™
- Selectable communication test intervals
- User-replaceable 3.0V Lithium batteries

1100 SERIES TRANSMITTERS

- 1101/1102/1103/1106 Universal Transmitters
- 1107 Micro Window Transmitter
- 1114 Four-Zone Expander
- 1115 Temperature & Flood Detector
- 1116 Relay Output
- 1117 LED Annunciator

- 1118
- 1119
- 1121
- 1126R
- 1127C/1127W
- 1129
- 1131
- 1135
- 1137
- 1139
- 1141
- 1142/1142BC
- 1144 Series
- 1148
- 9060/9063
- 9800

- Remote Indicator Light
- Door Sounder
- PIR Motion Detector
- Ceiling PIR Motion Detectors
- Wall Mount PIR Motion Detectors
- Glassbreak Detector
- Recessed Contact
- Siren, 110 dB
- Emergency Light
- Bill Trap
- Wall Button
- Two-Button Panic Transmitters
- Key Fob Transmitters
- Personal Pendant
- Thinline Series Keypad
- Touchscreen Series Keypad

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. The spread spectrum technology enables the system to use any of numerous channels within the 905-925MHz band and to dynamically hop from frequency to frequency.



TWO-WAY COMMUNICATION

DMP wireless receivers supervise for transmitters that go missing. With Two-Way communication, each wireless transmitter communicates with the receiver using supervision messages. Each transmitter can be programmed for no supervision or a 3, 60, or 240 minute window providing flexibility and allowing increased security for those applications that require shorter supervision times.

When the receiver does not receive any supervision messages from the transmitter for the programmed window of time, the receiver reports the zone or output as missing to the panel for display and reporting to the Central Station.

The on-board LED on all 1100 Series Transmitters provides built-in survey capability to allow for single-person installations, eliminating the requirement for an external survey kit.

EXTENDED BATTERY LIFE

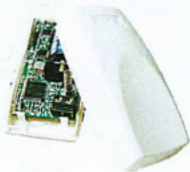
Programming each wireless device with a specific communication test interval eliminates wasteful, repetitive signaling. By eliminating multiple rounds of repetitive signals, Two-Way communication extends battery life.

SIMPLE PROGRAMMING

No special equipment is needed to program the system! Assign wireless transmitters to zones or outputs during panel programming with Remote Link™ or from the keypad.

1101 UNIVERSAL TRANSMITTER

The Model 1101 Universal Transmitter provides Internal and External contacts that may be used at the same time to yield TWO individual reporting zones from one transmitter. This functionality makes the 1101 perfect for applications where a door and window (or any type of N/O or N/C contact) are in close proximity.



1102 UNIVERSAL TRANSMITTER

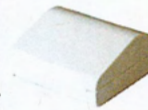
Model 1102 Universal Transmitter provides the same look and reliability of the 1101 without an internal contact. Simply connect any Normally Open or Normally Closed contact to the 1102 Transmitter two-wire terminal block.

1103 UNIVERSAL TRANSMITTER

Model 1103 Universal Transmitter is typically used in commercial fire or burglary door/window applications. It offers the same look and features as the 1101 transmitter, with the addition of a 470k end-of-line resistor and wall tamper switch.

1106 UNIVERSAL TRANSMITTER

The 1106 Universal Transmitter is less than half the size of 1101/1102 series, providing for more mounting options and more discrete placement. This 2-input transmitter is typically used for door/window applications. The internal and external contacts can be programmed to operate at the same time, providing two independent zones from one transmitter.



1107 MICRO WINDOW TRANSMITTER

This low-profile transmitter is typically used for window applications. It contains a single reed switch that detects a magnet mounted on the window. The 1107 provides survey capability to allow one person to confirm transmitter communication with the receiver before installation. A 3V coin cell battery powers the transmitter.



1114 FOUR-ZONE EXPANDER

The 1114 Four-Zone Expander increases the number of reporting zones available on DMP panels. The four zones can be used with burglary and non-powered devices.



1115 TEMPERATURE & FLOOD DETECTOR

The 1115 can be programmed with up to four zones and serve as a temperature sensor, flood detector, or both simultaneously. The 1115 has an internal temperature sensor that can detect cold, hot, or warm temperature ranges. When combined with a T280R Temperature Sensor Probe, the 1115 can monitor refrigerated or freezing temperatures. The 1115 may also be combined with a 470PB Water Sensor Probe to monitor flood conditions.

1116 RELAY OUTPUT

The 1116 Relay Output provides a Form C (SPDT) dry relay contact rated for 1 Amp @ 30 VDC. Program the 1116 with a slow or fast response time to fit your application.

1117 LED ANNUNCIATOR

The 1117 LED Annunciator provides one remote LED that can be used to visually notify the user about conditions such as armed area annunciation, ambush alarm, burglary alarm, exit timer, entry timer, schedules, or communication failure.



1118 REMOTE INDICATOR LIGHT

The 1118 Remote Indicator Light provides one remote LED indicator for XR100 and XR500 Series Panels that visually indicates when a panic alarm has been activated. Install in a break room, storage area, or anywhere not visible to the teller line or lobby where a notification LED could be used.

1119 WIRELESS SOUNDER

This single-zone sounder serves as both a burglary and audible alert device, sending a signal to the panel while creating an audible tone. In retail/commercial applications, it provides a lower-cost alternative to sounders available as an add-on with crash bars. Connecting the zone input to a door contact allows it to trigger the sounder immediately.



1121 PIR MOTION DETECTOR

The Model 1121 PIR (Passive Infrared) Motion Detector with Pet Immunity is suitable for most residential applications. With a generous coverage area of 90° 50' X 50', the 1121 is a favorite among security professionals.



1126 SERIES PIR MOTION DETECTORS

The 1126 Series PIR Motion Detectors are compact wireless motion sensors. Offering a 360°, Spot, Curtain, or Wide Angle version makes the 1126 Series flexible for a variety of ceiling mount applications. To save battery life, select YES for Disarm Disable in Zone Programming. This allows the 1126 PIR to be disabled for Night and Exit type zones while the area is disarmed.

1127 WALL-MOUNT PIR MOTION DETECTORS

The 1127C curtain PIR covers a 50-foot detection area using a Fresnel lens. The 1127W wide-angle PIR covers a 36-foot by 84-degree angle area using a Fresnel lens, with pet immunity up to 40 pounds. Both versions exhibit excellent R.F.I. and noise immunity, and include Disarm Disable.

1129 GLASSBREAK DETECTOR

Designed to detect the shattering of framed glass mounted in an outside wall, this sensor is also suitable for armor-coated glass. The 360° microphone can detect through blinds and light drapes within a 12' range and also recognizes the "quiet break" favored by experienced intruders.

Ideal where hardwired acoustic sensors are impractical, the 1129 incorporates Pattern Recognition Technology™ to ignore most false alarm sounds.

1131 RECESSED CONTACT

The 1131 Wireless Recessed Contact provides concealed protection for doors, windows, or any other application needing a discreet contact. The 1131 transmits Normal, Alarm, and Low Battery conditions.



1135 SIREN

The 1135 Wireless Siren makes it possible to quickly and easily place one or more sirens as part of an installation. With both residential and commercial end users, this battery powered siren is an easy, add-on sale to customers who want the extra security provided by locating sirens in several interior locations. The 1135 includes a cover tamper and survey LED, and comes with batteries. The 1135 has a volume of 110 dB.



1137 EMERGENCY LIGHT

The 1137 Emergency light activates when an alarm is triggered or any other panel output programming. This wireless LED light can be used for indoor path lighting or alarm notification.

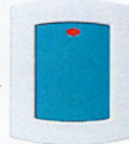
1139 BILL TRAP

Designed to provide a silent alarm option for cash drawer operators, the 1139 holds a trapped bill below a stack of bills. When the trapped bill is removed, a panic alarm is sent to the receiver.



1141 WALL BUTTON

The 1141 Wall Button is a one-button wireless transmitter designed to be wall-mounted. When pressed, a message is sent to the panel. The 1141 also provides an LED that can be programmed to provide visual indication that a signal has been transmitted. The wall button can be used as a panic button, and when programmed in output options as a garage door, light switch, door release, arming or disarming button.



1142 & 1142BC TWO-BUTTON HOLD-UP TRANSMITTER

The Model 1142 and 1142BC Two-Button Hold-up transmitters are typically used as a panic alarm, but with a little imagination this transmitter can be used for a multitude of applications.

The optional belt clip offers mobile protection. Permanently mount the 1142 in an under-the counter location with the included screws for UL installations.



KEY FOB TRANSMITTERS

The 1144 Series Key Fob transmitters are portable, water resistant, and designed to be clipped to a keychain or lanyard. The key fob LED provides visual acknowledgement when a button is pressed and responds to each separate operation with specific color-coded LED status displays.

- 1144-4 4-button
- 1144-2 2-button
- 1144-1 1-button
- 1144-D Dual-button



1144 KEY FOBs WITH BUILT-IN PROX

The 1144-1P and 1144-2P are wireless key fob transmitters that includes a built-in proximity credential for access control. This accessory now meets two requirements - controlling the system for such functions as arming, disarming or panic, as well as being able to arm or disarm via an alarm system or as an access control credential.



1148 PERSONAL PENDANT

The 1148 Personal Pendant is a one-button, wireless emergency transmitter designed to be worn as a wristband or on a break-away lanyard. The 1148 is programmed as a wireless zone and can be used to activate an emergency alarm at the receiver. The 1148 features a permanently sealed, water-resistant design.

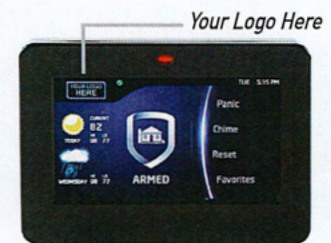


9000 SERIES KEYPAD

The 9060 and 9063 Wireless Keypads are fully functioning, supervised keypads that provide installation flexibility. These full-feature keypads include four 2-button panic keys and an internal speaker. The backlit keyboard is easy to read, and both the keyboard and logo turn Red in alarm conditions, providing a visual alert. Both Keypads have a 32-character display, and can be programmed with a 16-character home or business name. The 9063 keypad also includes a built-in proximity reader for codeless arming and disarming.

9800 SERIES WIRELESS TOUCHSCREEN KEYPAD

The 9800 Wireless Touchscreen Keypads are fully functioning, supervised keypads that provide installation flexibility and touchscreen control for all keypad functions. Slim profile in stylish gloss black or white finish with a 5 inch, full-color display.



1100 Series Transmitters

1101/1102/1103 TRANSMITTER SPECIFICATIONS

| | |
|-------------------------|--------------------------|
| Battery Life Expectancy | 5 years |
| Dimensions | |
| Transmitter Case | 3.3" L x 1.6" W x 1.2" H |
| Mounting Bracket | 2.5" L x 1.3" W x 0.1" H |
| (1101/1102 only) | |
| Magnet Housing | 1.5" L x 0.5" W x 0.7" H |

1106 TRANSMITTER SPECIFICATIONS

| | |
|---------------------------|-----------------------------|
| Battery Life Expectancy | 5 years |
| Dimensions | |
| Transmitter Case | 1.79" L x 1.69" W x 0.84" H |
| Standard Magnet Housing | 1.35" L x 0.38" W x 0.43" H |
| Commercial Magnet Housing | 2.25" L x 0.38" W x 0.34" H |

1107 TRANSMITTER SPECIFICATIONS

| | |
|---------------------------|-----------------------------|
| Battery Life Expectancy | 2 years |
| Dimensions | |
| Transmitter Case | 2 5/8" L x 1" W x 5/16" H |
| Standard Magnet Housing | 2 1/8" L x 3/8" W x 5/16" H |
| Commercial Magnet Housing | 2 1/8" L x 3/8" W x 5/16" H |

1114/1116/1117/1118 SPECIFICATIONS

| | |
|-------------------------|---------------------------|
| Battery Life Expectancy | |
| 1114 | 3 years |
| 1116/1117/1118 | 5 years (Slow Response) |
| Dimensions | 4.65" L x 3.1" W x 1.4" H |

1115 SPECIFICATIONS

| | |
|-------------------------|--------------------------|
| Battery Life Expectancy | 3 years |
| Dimensions | 3.3" L x 1.6" W x 1.2" H |

1119 SPECIFICATIONS

| | |
|-------------------------|------------------------------|
| Battery Life Expectancy | 2 1/2 Years (Slow Response) |
| | 3 Months (Fast Response) |
| Dimensions | 4.5" L x 4.375" W x 1.375" H |

1121 PIR SPECIFICATIONS

| | |
|-------------------------|---------------------------|
| Battery Life Expectancy | 3 years |
| Dimensions | 4.8" L X 2.5" W X 1.45" H |
| Detection Range | 90° 50 x 50 feet |
| Mounting Height | 4.9 to 8.2 feet |

1126 SERIES PIR SPECIFICATIONS

| | |
|-------------------------|-----------------|
| Battery Life Expectancy | 3 years |
| Dimensions | 4.0" DIA x 2" H |
| Mounting Height | 6.5 to 18 feet |

1127 SERIES WALL-MOUNT PIR SPECIFICATIONS

| | |
|-------------------------|----------------------------|
| Battery Life Expectancy | 5 to 7 years |
| Dimensions | 2.7" W x 1.77" D x 4.33" H |
| Mounting Height | 8 feet |

COMPATIBILITY

XTL, XT, and XR Series Panels

ACCESSORIES

| | |
|---------|---|
| CR123 | 3.0V Lithium Battery |
| CR2430 | 3.0V Lithium Sony® Battery (1144 series only) |
| CR2450 | 3.0V Coin Cell Lithium Battery (1139 only) |
| CR12600 | 3.0V Lithium Battery (1131 only) |
| CR17450 | 3.0V Lithium Battery Pack (1126 Series only) |
| 371-500 | 12 VDC Plug-in Power Supply (9060/9063 only) |
| 376 | DC Plug-in Power Supply (1114-1118 only) |
| 378 | Barrel Connector with Cord (1114-1118 only) |
| 699 | Keypad Deskstand (9060/9063 only) |
| 777 | Protective Keypad Cover (9060/9063 only) |
| 9000BAT | Replacement Standby Battery (9060/9063 only) |
| 9800BAT | Replacement Standby Battery (9862 only) |

1129 GLASSBREAK SPECIFICATIONS

| | |
|-------------------------|-----------------------------|
| Battery Life Expectancy | 3 years |
| Dimensions | 4.25" L x 3.15" W x 1.75" H |
| Microphone | Omnidirectional Electret |

1131 SPECIFICATIONS

| | |
|-------------------------|---------------------|
| Battery Life Expectancy | 5 years |
| Dimensions | |
| Housing | 4.175" L X .55" DIA |
| Magnet Housing | 0.7" L X .55" DIA |

1135/1135DB SIREN SPECIFICATIONS

| | |
|-------------------------|---------------------------|
| Battery Life Expectancy | 3 Years |
| Dimensions | 4.5" L x 4.5" W x 1.25" H |

1137 SPECIFICATIONS

| | |
|-------------------------|------------------------|
| Battery Life Expectancy | 2 years |
| Dimensions | 3" H x 2.5" W x .75" D |

1139 BILL TRAP SPECIFICATIONS

| | |
|-------------------------|-------------------------------|
| Battery Life Expectancy | 1 year using 2 batteries |
| Dimensions | 5.375" H x 2.625" W x .625" D |

1141 WALL BUTTON SPECIFICATIONS

| | |
|-------------------------|--------------------------|
| Battery Life Expectancy | 4 years |
| Dimensions | 3.3" L x 1.6" W x 1.2" H |

1142/1142BC TRANSMITTER SPECIFICATIONS

| | |
|-------------------------|--------------------------|
| Battery Life Expectancy | 5 years |
| Dimensions | |
| Transmitter Case | 3.3" L x 1.6" W x 1.2" H |
| Belt Clip | 1.9" L x 0.9" W x 0.3" H |

1144 SERIES KEY FOB SPECIFICATIONS

| | |
|-------------------------|-----------------------------|
| Battery Life Expectancy | 2 years |
| Dimensions (non-prox) | 1.98" H x 1.53" W x 0.5" D |
| Dimensions (with prox) | 1.98" H x 1.53" W x 0.55" D |

1148 PERSONAL PENDANT SPECIFICATIONS

| | |
|--------------|--------------------------|
| Dimensions | 3.3" L x 1.6" W x 1.2" H |
| Battery Life | Approx. 2.5 to 3 years |
| | Non-removable |

WIRELESS KEYPADS

9060/9063 THINLINE KEYPAD SPECIFICATIONS

| | |
|----------------------|-------------------------|
| Standby Battery Time | 24 Hours |
| Dimensions | 7" W x 5.25" H x 0.5" D |

9862 TOUCHSCREEN KEYPAD SPECIFICATIONS

| | |
|----------------------|----------------------------|
| Standby Battery Time | 12 Hours |
| Dimensions | 5.8" W x 4.135" H x 0.6" D |

PATENTS

U.S. Patent No. 7,239,236

CERTIFICATIONS

California State Fire Marshal (CSFM)
FCC Part 15
Industry Canada

For additional approval information, access www.dmp.com and select Compliance.



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Designed, Engineered & Manufactured
in Springfield, Missouri

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: | Guideline applies: | |
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| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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



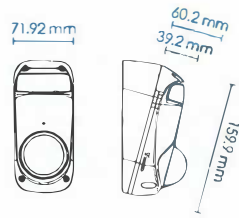
With 180° IR

Technical Specifications

| | | | |
|-------------------------------|--|-----------------------------|---|
| Model | CC8371-HV | Effective Range | 5 meters |
| System Information | | Network | |
| CPU | Multimedia SoC (System-on-Chip) | Users | Live viewing for up to 10 clients |
| Flash | 128MB | Protocols | IPv4, IPv6, TCP/IP, HTTP, HTTPS, UPnP, RTPSP/ RTP/RTCP, IGMP, SMTP, FTP, DHCP, NTP, DNS, DDNS, PPPoE, CoS, QoS, SNMP, 802.1X, SSL/TLS, ARP, NTCIP, CIFS/SMB |
| RAM | 256MB | 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. |
| Camera Features | | ONVIF | Supported, specification available at www.onvif.org |
| Image Sensor | 1/2.8" Progressive CMOS | Intelligent Video | |
| Maximum Resolution | 2048x1536 (3MP) | Video Motion Detection | Five-window video motion detection |
| Lens Type | Fixed-focal | Alarm and Event | |
| Focal Length | f = 1.45 mm | Alarm Triggers | Motion detection, manual trigger, periodical trigger, system boot, recording notification, camera tampering detection, audio detection |
| Aperture | F2.2 | Alarm Events | Event notification using HTTP, SMTP, FTP, NAS server and MicroSD Card File upload via HTTP, SMTP, FTP, NAS server and MicroSD card |
| Field of View | 180° (horizontal) 120° (vertical) 180° (diagonal) | General | |
| Shutter Time | 1/5 sec. to 1/32,000 sec. | Connectors | RJ-45 for Network/PoE connection |
| WDR Technology | WDR Pro | LED Indicator | System power and status indicator |
| Day/Night | Removable IR-cut filter for day & night function | Power Input | IEEE 802.3af PoE Class 0 |
| Minimum Illumination | <0.07 Lux @ F2.2 (Color) <0.001 Lux @ F2.2 (B/W) | Power Consumption | Max. 11.3 W |
| Tilt Range | ±25° | Dimensions | 159.9 x 71.92 x 60.2 mm (Dome to rear panel), 39.2 mm (Flat to rear panel) |
| Pan/Tilt/Zoom Functionalities | ePTZ: 48x digital zoom (4x on IE plug-in, 12x built-in) | Weight | 492 g |
| IR Illuminators | Built-in IR illuminators, effective up to 15 meters with Smart IR | Casing | IP66, IK10 |
| On-board Storage | Slot type: MicroSD/SDHC/SDXC card slot Seamless Recording | Safety Certifications | CE, LVD, FCC Class B, VCCI, C-Tick, UL |
| Video | | Operating Temperature | Starting Temperature: -10°C ~ 50°C (14°F ~ 122°F) Working Temperature: -20°C ~ 50°C (-4°F ~ 122°F) |
| Compression | H.264 & MJPEG | Humidity | 90% |
| Maximum Frame Rate | 30 fps @ 2048x1536 | Warranty | 24 months |
| Maximum Streams | 3 simultaneous streams | System Requirements | |
| S/N Ratio | 59.2 dB | Operating System | Microsoft Windows 8/7 |
| Dynamic Range | 100 dB | Web Browser | Internet Explorer 10/11 |
| Video Streaming | Adjustable resolution, quality and bitrate; Smart Stream II | Other Players | VLC: 1.1.11 or above Quicktime: 7 or above |
| 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 | Included Accessories | |
| Audio | | Others | Quick installation guide, warranty card, mounting bracket, tilt bracket, screw pack |
| Audio Capability | One-way Audio | | |
| Compression | G.711, G.726 | | |
| Interface | Built-in Microphone | | |

Technical Specifications

Dimensions



PRESENTED BY:



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INCORPORATED
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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: | Guideline applies: | |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input checked="" type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ | |

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/>



S 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

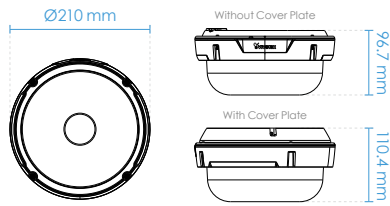
Technical Specifications

| | |
|-------------------------------|--|
| 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 output *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

Phillips Exeter Academy
Construction Standards and Guidelines

Division: 28 Electronic Surveillance
Specification Section: 28 23 00 - Video Surveillance
Description of Material or System: 360 Fisheye Network Camera
Last Updated: 5/6/2022
Updated by: Paul Gravel

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| Included in this section: | | Guideline applies: | |
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| <input type="checkbox"/> Design Guidelines | | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Design Details/Drawings | | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input type="checkbox"/> Supplemental Information | | <input type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | | <input checked="" type="checkbox"/> Other | <u>ONLY IN THOMPSON FIELDHOUSE</u> |
| <input type="checkbox"/> Other _____ | | <input type="checkbox"/> | <u>GARAGE</u> |

Overview of system/product/guideline:
 The preferred manufacturer for a 360 Fisheye Network surveillance camera for the **Thompson Fieldhouse Garage** is Vivotek. Model number is determined on a per project basis.

Manufacturer: **Vivotek**
 Model Number: **FE8181V, FE8391V, FE9382-EHV**

Links to additional product information:
<https://www.vivotek.com/>



FE8181V
FE8391V
FE9382-EHV
Fisheye Network Camera

Pendant Mount



| Item | Number | Description |
|--------|--------|----------------------------------|
| AM-114 | 1 | Pendant Head |
| AM-116 | 1 | Pendant Pipe (20 cm) (1.5" PS11) |
| AM-117 | 1 | Pendant Pipe (40 cm) (1.5" PS11) |
| AM-520 | 1 | Mounting Adapter |

* AM-116 and AM-117 Pendant Pipes can be connected together multiple times to extend length of pendant mount as required by installation.
* To mount outdoor fisheye camera to AM-520, please use the inbox plate included with the fisheye camera.



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 4/7/2016

UPDATE PENDING

Updated by:

9/1/2022

Included in this section:

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

Guideline applies:

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| <input checked="" type="checkbox"/> Campus Wide | <input checked="" type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The following is the PEA Design Guideline for Fire Alarm Systems.

Links to additional product information:

Phillips Exeter Academy Design and Construction Standards

Fire Alarm System

January 10, 2014

UPDATE
PENDING
09/01/2022

Approved Vendors

- Mircom
- Simplex

General

- Contractor shall provide a one year system warranty covering parts and labor.
- Provide a wireless transceiver for alarm transmission from the monitored location to the existing campus central “Keltron” Model-RF778F wireless transceiver/receiver with a minimum of 8-ea. programmable zones.
- Provide a wireless radio interior system interface, supporting hardware and all programming necessary to tie fire alarm system in to existing campus emergency notification system manufactured by American Signal.
- Locate the annunciator panel at main entrance/exit if main fire alarm control panel is mounted elsewhere.
- All devices/peripherals: must be same Brand as Main System. (Mircom or Simplex; no substitutes).

All power supply and fire alarm circuit conductor wiring shall be new solid or stranded copper conductors on all initiating device circuits and in raceway whenever possible; all circuits shall be identified and marked as per NFPA-760.30

Faculty Apartments

- Provide smoke detector with sounder bases in each sleeping room to provide a (minimum of 75 DB @ pillow) as per code.
- Provide CO / Smoke Detector with sounder base within 3' outside sleeping room doors.
- All smoke detectors in sleeping rooms and 3' outside of sleeping rooms will sound if one smoke detector is activated.
- Provide pull stations at each exit.
- Provide audible annunciation with speaker strobes as required by code.
- Provide rate of rise heat detectors in kitchens and also in living room if equipped with a fireplace.
- All pull stations, heat detectors, and smoke detectors when activated will set off “General Alarm” for building and will notify Campus Safety and Fire Department.
- A building “General Alarm” will activate speaker strobes and sounder bases in faculty apartment.
- Speaker strobes and smoke detectors for faculty apartments shall be on their own circuit.

Student Rooms

- Provide smoke detectors with sounder base in each student room.
- All pull stations, heat detectors, and smoke detectors when activated will set off “General Alarm” for building and will notify Campus Safety and Fire Department.
- ADA accessible and hearing impaired rooms are provided with system connected 177 candela strobe and system connected smoke detector with sounder-base. A

Phillips Exeter Academy Design and Construction Standards

Fire Alarm System

January 10, 2014

control module is provided to actuate the 177 candela strobe in the room upon room smoke detector actuation.

Corridors / Common Areas/Bathrooms

- All detection/initiation devices are system connected and will activate a “General Alarm” within the entire building.
- Speaker strobe units are located as required by code.

General Programming

- Audible annunciation through speaker strobes during a “General Alarm” shall state the following pre-recorded message:
 - **“Attention please. There has been a report of an emergency. Proceed calmly to the nearest exit and leave the building immediately. Do not use the elevators. Use stairwells where necessary. All handicap occupants shall use the building evacuation plan.”**
- Provide a second alarm test switch labeled “Campus Safety Fire Drill – Bypass of Faculty Apt Horn/Strobe” that will only activate devices in the student areas.
- Bypass switches for Elevators, Door Mags , Horn Strobes, Duct Detectors; Dampers; Every floors Pulls / Smokes, Fire Drill Switch (up to a total of 12 Bypasses)

Closeout

- Manufacturer shall supply to the electrical contractor a complete set of engineering documents depicting the following information, the cost of which shall be included in the base price:
 - Complete riser diagrams showing overall system wiring.
 - FACP internal card locations with wire termination points shown.
 - Battery calculations showing standby and alarm current draws for a TRUE indication of the required 60 hour calculation.
 - Architectural prints with just fire alarm equipment and devices using vendor symbology to include address, loop number, and NAC wiring circuit and termination points on the architectural drawings. These should be provided on a per section basis and by floor.
 - A complete table showing all addressable devices, recommended labeling of devices, and proper switch settings for desired address contained on the drawings.
 - Depiction of wiring with recommended cable chart and point to point wiring layout between all devices.
 - All above items shall be performed on AutoCAD on a version compatible with Owner and supplied to the Owner.
 -

End of Section

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, Smoke/Carbon Dioxide, Heat detectors Local
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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

The preferred manufacturer is **Kidde**. No substitutes.

Smoke detector: **I12010S**
Smoke CO: **I12010SCO**
Heat detector: **HD135F**

Links to additional product information:

<https://www.kidde.com/home-safety/en/us/>

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

| | | | | | | | | | | | | | |
|--|---|---|--------------------------------------|---|---|--|----------------------------------|---|----------------------------------|--------------------------------------|--|--------------------------------------|--|
| <p>Included in this section:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Product Specifications <input type="checkbox"/> Design Guidelines <input type="checkbox"/> Design Details/Drawings <input type="checkbox"/> Supplemental Information <input type="checkbox"/> Other _____ <input type="checkbox"/> Other _____ | <p>Guideline applies:</p> <table border="0"> <tr> <td><input type="checkbox"/> Academic Buildings</td> <td><input type="checkbox"/> Dormitories</td> </tr> <tr> <td><input type="checkbox"/> Administrative</td> <td><input type="checkbox"/> Faculty Residences</td> </tr> <tr> <td><input type="checkbox"/> Athletic Facilities</td> <td><input type="checkbox"/> Support</td> </tr> <tr> <td><input checked="" type="checkbox"/> Campus Wide</td> <td><input type="checkbox"/> Utility</td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table> | <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories | <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences | <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | <input type="checkbox"/> Other _____ | | <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories | | | | | | | | | | | | |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences | | | | | | | | | | | | |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility | | | | | | | | | | | | |
| <input type="checkbox"/> Other _____ | | | | | | | | | | | | | |
| <input type="checkbox"/> Other _____ | | | | | | | | | | | | | |

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: 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: 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:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

PEA campus preferred 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 of Work:

Division 32

Specification Section:

32 14 13 - Precast Concrete Pavers

Description of Material or System:

Concrete Pavers

Last Updated:

7/21/2017

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:

The following is the preferred specification for concrete pavers campus wide.

Links to additional product information:

www.unilock.com

HOLLANDSTONE™

A versatile paver with a wide range of color options

With its wide range of colors, Hollandstone is a favorite for many because of the design flexibility it provides. Available in one size this paver can be laid in various patterns.



COLORS



ALMOND GROVE



CHARCOAL

← Preferred Color



GRANITE



RED



RUSTIC RED



SIERRA



Preferred
Color



TERRA COTTA

SHAPES & SIZES



4X8 8CM
20 CM X 10 CM X 8 CM
7.75" X 4" X 3.25"

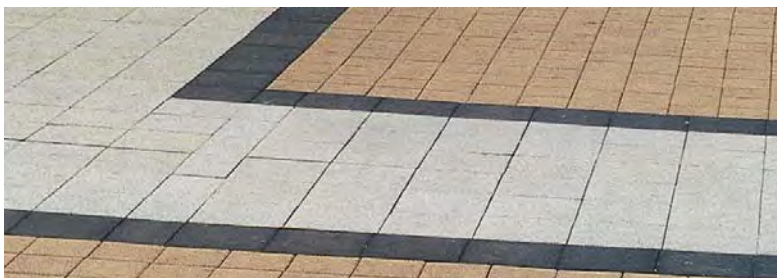


4X8 6CM
20 CM X 10 CM X 6 CM
7.75" X 4" X 2.25"

DESIGN COMBINATIONS

The finishing touches to your project lies in the exceptional borders and accents that you incorporate into your landscape features. Looking for more options the pictures featured on the right? Create your own design combinations by clicking the button below!

Create Your Own





FEATURES

Applications



Borders & Accents



Commercial Vehicular



Pedestrian

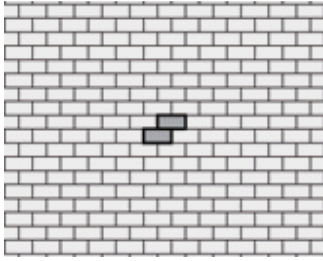


Residential Vehicular

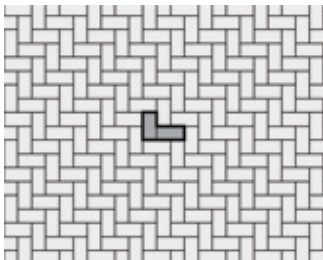
Surface Texture

Standard

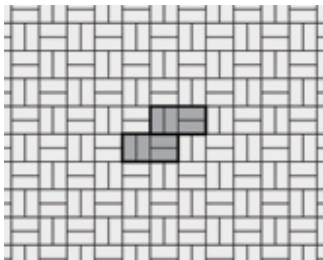
PATTERNS



Hollandstone B - 6cm
4x8 6cm (100%)

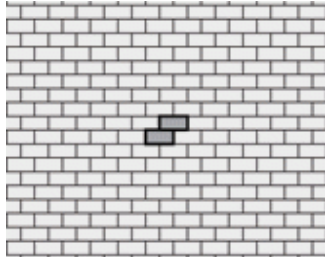


Hollandstone C - 6cm
4x8 6cm (100%)



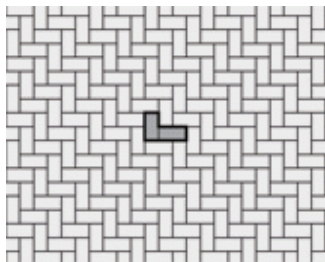
Hollandstone D - 6cm
4x8 6cm (100%)





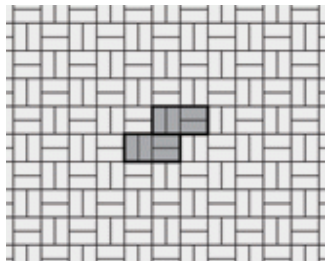
Hollandstone B - 8cm

4x8 8cm (100%)



Hollandstone C - 8cm

4x8 8cm (100%)



Hollandstone D - 8cm

4x8 8cm (100%)

PACKAGING

| | Unit Thickness | Sq. Ft. Bndl. | Ln Ft Bndl. Soldier | Sq Ft Ln Ft Soldier | Units Sq. Ft. | Lbs Bndl. | Lbs Sec. | Units Bndl. |
|---------|-------------------|------------------|------------------------|------------------------|------------------|--------------|-------------|----------------|
| 4x8 8cm | 8 | 82.5 | 124.02 | 0.67 | 4.58 | 2944 | 491 | 378.01 |
| 4x8 6cm | 6 | 106.4 | 159.45 | 0.67 | 4.57 | 2789 | 465 | 486 |

IMPORTANT INFORMATION

Hollandstone is a very popular value paver. The simple lines and patterns make it easy to work with. Add a special look to Hollandstone by incorporating Unigranite or Series 3000 banding and insets.

Base Requirement & Bedding Course – standard paver base specification.

Handling and Installation– A protective pad is required when doing the final paver compaction. Both herringbone and inear patterns are common.

Jointing Material and Joint Stabilization

- Good: ordinary dry joint sand
 - Best: Any Polymeric Sand or ordinary dry joint sand stabilized by a water-based or solvent-based joint sand stabilizer sealer. Important: squeegee water from surface during polymeric sand activation to prevent a white residue from forming.

Special Note: Use Alliance Gator Max Polymeric Sand (overlays)

Sealers

- Product may be sealed but it is not absolutely required
- Unilock Unicare, Surebond, BP Pro and Techniseal sealers can be used.
- Select type for desired aesthetics.
- Product must be cleaned before sealing

Cleaners – Any paver cleaner may be used for color restoration or general cleaning. Follow manufacturer's dilution rates and application procedures.

i All measurements are nominal

Colors, product data, and availability are subject to change without notice. Please confirm all details with your local Unilock Dealer or call 1-800-UNILOCK (1-800-864-5625) for availability in your area. The colors shown should only be used as a guide. Final color selections should always be made from actual samples.

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: 8/16/2022
Updated by: Christine Van Scoy

Included in this section:

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

Guideline applies:

- | | |
|--|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input checked="" type="checkbox"/> Other Site _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

See attached guidelines and specifications for campus lawns.

Links to additional product information:

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.

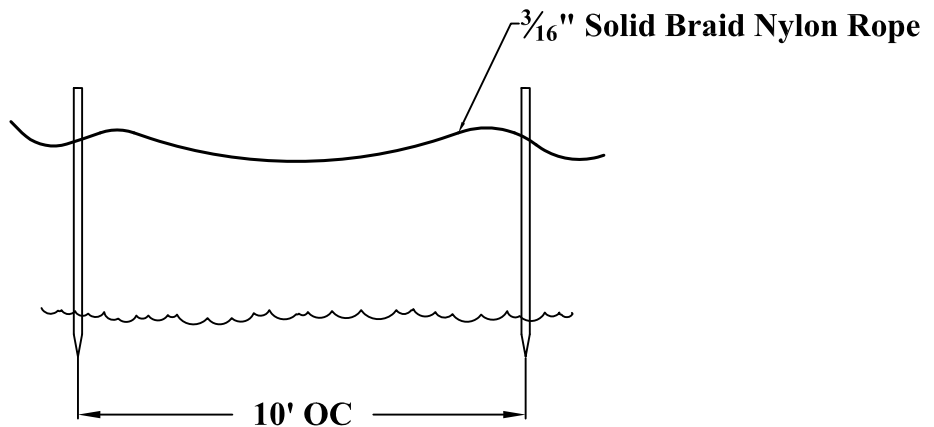
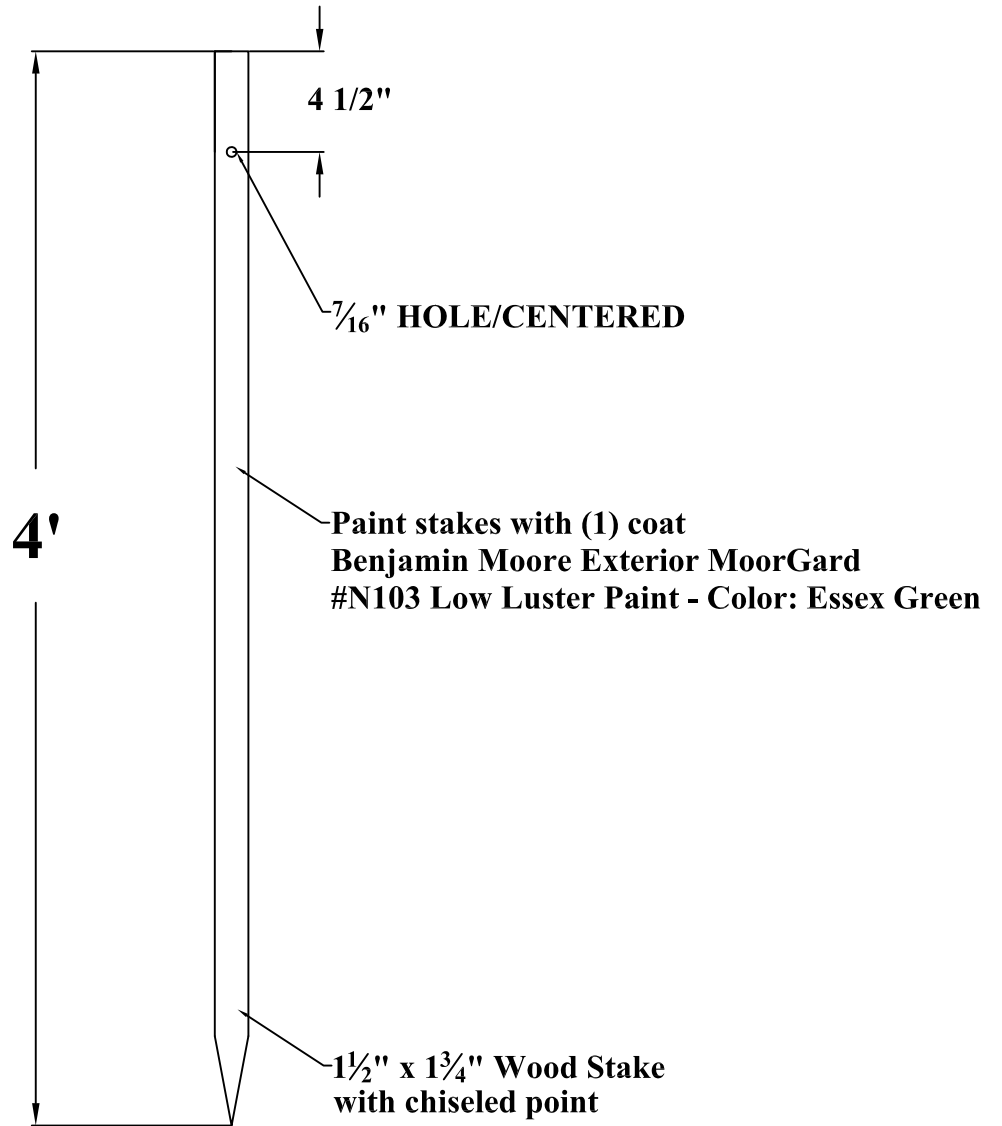
- Rope for fence shall be a (3/16") solid braid nylon rope; Color: White.

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 reseeded.
- Upon acceptance of established lawns, the Contractor shall remove Site Protection Fence and provide materials to the Phillips Exeter Academy Grounds Department.

SITE PROTECTION FENCE





Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 4/7/2016

Updated by:

Included in this section:

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

Guideline applies:

- | | |
|---|---|
| <input type="checkbox"/> Academic Buildings | <input type="checkbox"/> Dormitories |
| <input type="checkbox"/> Administrative | <input type="checkbox"/> Faculty Residences |
| <input type="checkbox"/> Athletic Facilities | <input type="checkbox"/> Support |
| <input checked="" type="checkbox"/> Campus Wide | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Other _____ | |
| <input type="checkbox"/> Other _____ | |

Overview of system/product/guideline:

Attached is the sod blend for replacement and new sod installations on campus.

Links to additional product information:

Supplier:
Maine Turf Company
439 Fish Street
Fryeburg, ME 04037

207-697-3555
Rep: Douglas Albert



Phillips Exeter Academy Construction Standards and Guidelines

Division of Work:

Specification Section:

Description of Material or System:

Last Updated: 8/3/2017

Updated by:

| | |
|--|---|
| Included in this section: | Guideline applies: |
| <input checked="" type="checkbox"/> Product Specifications | <input type="checkbox"/> Academic Buildings |
| <input type="checkbox"/> Design Guidelines | <input type="checkbox"/> Administrative |
| <input type="checkbox"/> Design Details/Drawings | <input type="checkbox"/> Athletic Facilities |
| <input checked="" type="checkbox"/> Supplemental Information | <input checked="" type="checkbox"/> Campus Wide |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ |
| | <input type="checkbox"/> Dormitories |
| | <input type="checkbox"/> Faculty Residences |
| | <input type="checkbox"/> Support |
| | <input type="checkbox"/> Utility |

Overview of system/product/guideline:

The following is the preferred specification for aluminum landscape edging.

Links to additional product information:

WWW.PERMALOC.COM



PERMALOC
CLEANLINE XL
ALUMINUM LANDSCAPE EDGING

PERMALOC CORPORATION, 13505 BARRY STREET HOLLAND, MI, 49424
(800) 356-9660 PHONE: (616) 399-9600 fax: (616) 399-9770 WWW.PERMALOC.COM

ARCHITECT NOTE: CHECK OFF APPLICABLE SIZE & FINISH DESIRED

SIZE:

- | | | |
|---|----------------------------|---|
| <input type="checkbox"/> 3/16" X 5" (4.8MM X 127MM), w/ 0.3" (7.62MM) EXPOSED TOP LIP | 0.116" (2.95MM) THICK WALL | <input type="checkbox"/> MF <input type="checkbox"/> BL |
| <input type="checkbox"/> 3/16" X 6" (4.8MM X 152MM), w/ 0.3" (7.62MM) EXPOSED TOP LIP | 0.116" (2.95MM) THICK WALL | <input type="checkbox"/> MF <input type="checkbox"/> BL |
| <input type="checkbox"/> 3/16" X 8" (4.8MM X 203MM), w/ 0.3" (7.62MM) EXPOSED TOP LIP | 0.116" (2.95MM) THICK WALL | <input type="checkbox"/> MF <input type="checkbox"/> BL |
| <input type="checkbox"/> 3/16" X 12" (4.8MM X 305MM), w/ 0.3" (7.62MM) EXPOSED TOP LIP | 0.116" (2.95MM) THICK WALL | <input type="checkbox"/> MF <input type="checkbox"/> BL |

All dimensions are nominal and may have some variance

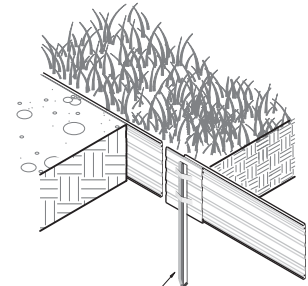
****PRE-MANUFACTURED CORNERS AVAILABLE UPON REQUEST****

FINISH LEGEND:

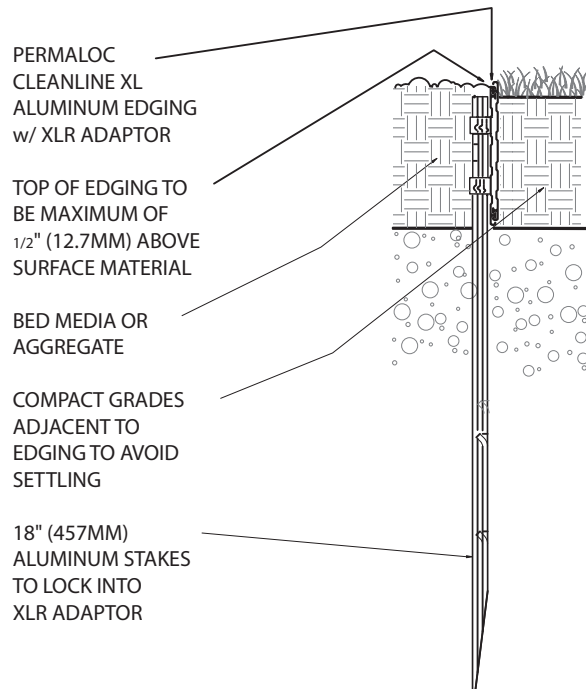
(MF) MILL FINISH-NATURAL ALUMINUM
(BL) BLACK DURAFLEX-MEETS AAMA 2603

NOTES:

1. INSTALL PER MANUFACTURER'S "INSTALLATION GUIDELINES"
2. 8'-0" (2.44 M) SECTIONS TO INCLUDE (3) 18" (457 MM) ALUMINUM STAKES AND (3) XLR ADAPTORS
3. 16'-0" (4.88 M) SECTIONS TO INCLUDE (5) 18" (457 MM) ALUMINUM STAKES AND (3) XLR ADAPTORS
4. CORNERS - CUT BASE EDGING UP HALFWAY AND FORM A CONTINUOUS CORNER.
5. PERMALOC CLEANLINE XL AS MANUFACTURED BY PERMALOC CORPORATION, HOLLAND MI. (800) 356-9660, (616) 399-9600
6. CONTRACTOR'S NOTE: FOR PRODUCT AND PURCHASING INFORMATION VISIT:WWW.PERMALOC.COM



STAKE
ISOMETRIC VIEW
NTS



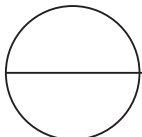
PERMALOC
CLEANLINE XL
ALUMINUM EDGING
w/ XLR ADAPTOR

TOP OF EDGING TO
BE MAXIMUM OF
1/2" (12.7MM) ABOVE
SURFACE MATERIAL

BED MEDIA OR
AGGREGATE

COMPACT GRADES
ADJACENT TO
EDGING TO AVOID
SETTLING

18" (457MM)
ALUMINUM STAKES
TO LOCK INTO
XLR ADAPTOR



ALUMINUM LANDSCAPE BED EDGING

SCALE: 3"=1'-0"