Project Name:	CHERRY EMERSON
Project Number:	119066
City, ST:	ATLANTA, GEORGIA
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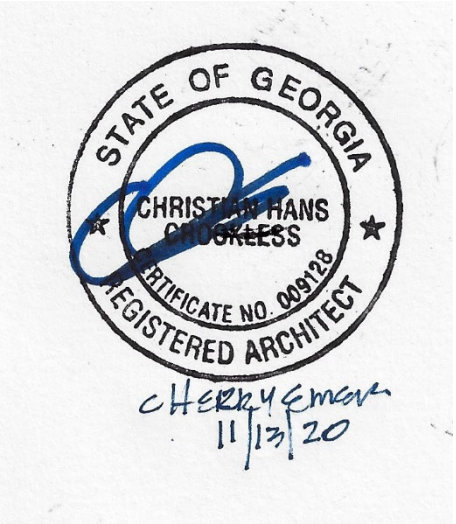

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GEORGIA INSTITUTE OF TECHNOLOGY

CHERRY EMERSON (66)
FIRE SPRINKLER SYSTEM ADDITION
NOVEMBER 9, 2020
REVISED JANUARY 8, 2021

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END OF TABLE OF CONTENTS

SECTION 01 40 00 QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

A. Quality Monitoring: Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality. Perform quality control procedures and inspections during installation.

B. Standards: Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

C. Tolerances: Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate. Comply with manufacturers' tolerances.

D. Reference Standards: For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

E. Manufacturer's Field Services: When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to perform the following as applicable, and to initiate instructions when necessary.
   1. Observe site conditions.
   2. Conditions of surfaces and installation.
   3. Quality of workmanship.
   4. Start-up of equipment.
   5. Test, adjust and balance of equipment.

F. Mock-Ups: Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes. Accepted mock-ups shall be a comparison standard for the remaining Work.

G. Removal of Mock-Ups: Where mock-up has been accepted by Architect and no longer needed, remove mock-up and clear area when directed to do so.

PART 2 PRODUCTS - Not Applicable To This Section

PART 3 EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 01 60 00 PRODUCT REQUIREMENTS

PART 4 GENERAL

4.1 SUMMARY

A. Manufactures: Provide products from one manufacturer for each type or kind as applicable. Provide secondary materials as acceptable to manufacturers of primary materials.

B. Product Selection: Provide products selected or equal approved by Architect. Products submitted for substitution shall be submitted with complete documentation, and include construction costs of substitution including related work.

C. Substitutions: Request for substitution must be in writing. Conditions for substitution include:
1. An 'or equal' phrase in the specifications.
2. Specified material cannot be coordinated with other work.
3. Specified material is not acceptable to authorities having jurisdiction.
4. Substantial advantage is offered to the Owner in terms of cost, time, or other valuable consideration.

D. Substitution Requests: Substitutions shall be submitted prior to award of contract, unless otherwise acceptable. Approval of shop drawings, product data, or samples containing substitutions is not an approval of a substitution unless an item is clearly presented as a substitution at the time of submittal.

PART 5 PRODUCTS - Not Applicable To This Section

PART 6 EXECUTION - Not Applicable To This Section

END OF SECTION

SECTION 02 14 19
SELECTIVE DEMOLITION

PART 7 GENERAL

7.1 SUMMARY

A. Provide demolition activities

7.2 SUBMITTALS

A. Schedule: Submit for approval selective demolition schedule, including schedule and methods for capping utilities to be abandoned and maintaining existing utility service.

7.3 QUALITY ASSURANCE

A. Codes and Regulations: Comply with governing codes and regulations. Use experienced workers.

7.4 PROJECT CONDITIONS

A. Occupancy: Immediate areas of work will not be occupied during selective demolition. The public, including children, may occupy adjacent areas.

B. Existing Conditions: No responsibility for buildings and structures to be demolished will be assumed by the Owner

PART 8 PRODUCTS

8.1 DEMOLITION APPLICATIONS

A. Selective Site Demolition:
1. Application: Demolition of designated site improvements including paving, curbing, site walls, and utility structures.
2. Application: Demolition of below-grade foundations and site improvements to depth to avoid conflict with new construction or site work.
3. Application: Removal of hollow items or items which could collapse.
4. Application: Salvage of designated items.
5. Application: Protection of site work and adjacent structures.
6. Application: Disconnection, capping, and removal of utilities.
7. Application: Pollution control during building demolition, including noise control.
8. Application: Removal and legal disposal of materials.
9. Protection: Designated site improvements and adjacent construction.
10. Salvage: Designated items.
11. Utilities: Interruption, capping or removal as applicable.
12. Hazardous Materials: Not present.
13. Hazardous Materials: Removed under separate prior contract.
14. Hazardous Materials: Removed as a part of this contract.

B. Selective Building Demolition:
1. Application: Selective demolition of interior partitions, systems, and building components designated to be removed.
2. Application: Selective demolition of exterior facade, structures, and components designated to be removed.
3. Application: Protection of portions of building adjacent to or affected by selective

demolition.
4. Application: Removal of abandoned utilities and wiring systems.
5. Application: Notification to Owner of schedule of shut-off of utilities which serve occupied spaces.
6. Application: Pollution control during selective demolition, including noise control.
7. Application: Removal and legal disposal of materials.
8. Protection: Designated site improvements and adjacent construction.
9. Salvage: Designated items.
10. Utilities: Interruption, capping or removal as applicable.
11. Hazardous Materials: Not present.
12. Hazardous Materials: Removed under separate prior contract.
13. Hazardous Materials: Removed as a part of this contract.

PART 9 EXECUTION

9.1 SELECTIVE DEMOLITION

A. Demolition Operations: Do not damage building elements and improvements indicated to remain. Items of salvage value, not included on schedule of salvage items to be returned to Owner, shall be removed from structure. Storage or sale of items at project site is prohibited.

B. Utilities: Locate, identify, disconnect, and seal or cap off utilities in buildings to be demolished.

C. Shoring and Bracing: Provide and maintain interior and exterior shoring and bracing.

D. Occupied Spaces: Do not close or obstruct streets, walks, drives or other occupied or used spaces or facilities without the written permission of the Owner and the authorities having jurisdiction. Do not interrupt utilities serving occupied or used facilities without the written permission of the Owner and authorities having jurisdiction. If necessary, provide temporary utilities.

E. Operations: Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.

F. Security: Provide adequate protection against accidental trespassing. Secure project after work hours.

G. Restoration: Restore finishes of patched areas.

9.2 SCHEDULE

A. Items for Protection During Demolition and Construction:
1. Site improvements, trees, and plantings
2. Adjacent construction

B. Items to be Salvaged for Reinstallation:
1. Exit Signs
2. Fire Strobes
3. Light Fixtures
4. Cameras
5. Occupancy Sensors
6. Door Hardware

C. Items to be Salvaged for Delivery to Owner:
1. Doors

D. Utilities Requiring Interruption, Capping, or Removal:
   1. Electric
   2. Heat
   3. Water
   4. Gas
   5. Sewerage
   6. Steam

END OF SECTION

SECTION 02 41 00
DEMOLITION

PART 10 GENERAL

10.1 SUMMARY

A. Provide demolition activities.

10.2 SUBMITTALS

A. Schedule: Submit for approval selective demolition schedule, including schedule and methods for capping utilities to be abandoned and maintaining existing utility service.

10.3 QUALITY ASSURANCE

A. Codes and Regulations: Comply with governing codes and regulations. Use experienced workers.

10.4 PROJECT CONDITIONS

A. Occupancy: Immediate areas of work will not be occupied during selective demolition. The public, including children, may occupy adjacent areas.

B. Existing Conditions: No responsibility for buildings and structures to be demolished will be assumed by the Owner

PART 11 PRODUCTS

11.1 DEMOLITION APPLICATIONS

A. Structure Demolition:
1. Application: Demolition of designated building structures.
2. Application: Demolition of designated site improvements including paving, curbing, site walls, and utility structures.
3. Application: Demolition of below-grade foundations and site improvements to depth to avoid conflict with new construction or site work.
4. Application: Removal of hollow items or items which could collapse.
5. Application: Salvage of designated items.
6. Application: Protection of site work and adjacent structures.
7. Application: Disconnection, capping, and removal of utilities.
8. Application: Pollution control during building demolition, including noise control.
9. Application: Removal and legal disposal of materials.
10. Protection: Designated site improvements and adjacent construction.
11. Salvage: Designated items.
12. Utilities: Interruption, capping or removal as applicable.
13. Hazardous Materials: Not present.
14. Hazardous Materials: Removed under separate prior contract.
15. Hazardous Materials: Removed as a part of this contract.

PART 12 EXECUTION

12.1 SELECTIVE DEMOLITION

A. Demolition Operations: Do not damage building elements and improvements indicated to remain. Items of salvage value, not included on schedule of salvage items to be returned to Owner, shall be removed from structure. Storage or sale of items at project site is prohibited.

B. Utilities: Locate, identify, disconnect, and seal or cap off utilities in buildings to be demolished.

C. Shoring and Bracing: Provide and maintain interior and exterior shoring and bracing.

D. Occupied Spaces: Do not close or obstruct streets, walks, drives or other occupied or used spaces or facilities without the written permission of the Owner and the authorities having jurisdiction. Do not interrupt utilities serving occupied or used facilities without the written permission of the Owner and authorities having jurisdiction. If necessary, provide temporary utilities.

E. Operations: Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.

F. Security: Provide adequate protection against accidental trespassing. Secure project after work hours.

G. Restoration: Restore finishes of patched areas.

END OF SECTION

072100 - THERMAL INSULATION

1.01 GENERAL

A. Levels of insulation should comply with the latest ASHRAE 90.1 requirements.

B. Minimum R-values are as follows

1. Roofs

a. Low slope roofs: Insulation entirely above deck: LTTR -20 (minimum). Re-roofing may dictate a lower LTTR as appropriate for site and structure. Insulation R values proposed below LTTR-20 requires approval by Georgia Tech Facilities- Design and Construction.

b. Metal building roof: R-19

2. Attic and other: R-38

3. Walls

a. Mass: R-7.6 ci

b. Metal Building: R-13

c. Steel-Framed: R-13 + R-3.8 ci

d. Wood Framed/Other: R-13

4. Floors

a. Mass: R-6.3 ci

b. Steel-Joist: R-19

c. Wood-Framed/ Other: R-19

5. Slab on Grade Floors

a. Heated: R-10 for 24 in

6. Opaque Doors

a. Swinging U-.0700

b. Non-swinging: U-1.450

7. Vertical Glazing 0-40% of Wall

a. Nonmetal framing: U-.065, SHGC 0.25

b. Metal framing: U-.060, SHGC 0.25

c. Metal framing entrance door: U-.090, SHGC 0.25

d. All other metal framing: U-.065, SHGC 0.25

14. Skylights (assemblies)

a. Glass, Class 3 with curb: U-1.17

b. Acrylic, Class 3, with curb: U-0.6

c. Without curb: U-0.69

C. The following areas of the building envelope should be sealed, caulked, gasketed or weather-stripped to minimize air leakage

1. Joints around fenestration and door frames

2. Junctions between walls and foundations, between walls at building corners, between walls and structural floor or roofs and between walls and roof or wall panels.

3. Openings at penetrations of utility services through roofs, walls and floors

4. Site built fenestration and doors

5. Building assemblies used as ducts or plenums

6. Joints, seams and penetrations of vapor retarders

7. All other openings in the building envelope

END OF SECTION

07 84 00 FIRESTOPPING

PART 13 GENERAL

13.1 SECTION INCLUDES

A. Firestopping systems including the following:
1. Fire resistive joint fire containment.
2. Fire containment for single membrane penetrations.
3. Penetrations through fire-rated vertical and horizontal assemblies.
4. Firestop sealants.
5. Firestop pillows.
6. Firestop composite sheets.
7. Firestop tapes.
8. Firestop wrap strips.
9. Firestop putty.
10. Firestop mortar.
11. Firestop sprays.
12. Through penetration firestopping.

13.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 04 21 29 - Terra Cotta Masonry.

C. Section 07 90 00 - Joint Protection.

D. Section 09 20 00 - Plaster and Gypsum Board.

E. Section 22 40 00 - Plumbing Fixtures.

F. Section 23 80 00 - Decentralized HVAC Equipment.

G. Section 26 05 00 - Common Work Results for Electrical.

H. Section 27 11 23 - Communications Cable Management and Ladder Rack.

13.3 REFERENCES

A. American National Standards Institute (ANSI):
1. ANSI/UL 263 - Fire Tests of Building Construction and Materials.
2. ANSI/UL 723 - Surface Burning Characteristics of Building Materials.
3. ANSI/UL 1479 - Standard for Fire Tests of Through-Penetration Firestops.
4. ANSI/UL 1709 - Rapid Rise Fire Tests of Protection Materials for Structural Steel.
5. ANSI/UL 2079 - Tests for Fire Resistance of Building Joint Systems.

B. ASTM International (ASTM):
1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
3. ASTM E 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
4. ASTM E 1399 - Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems.
5. ASTM E 1966 - Standard Test Method for Fire Resistive Joint Systems.

6. ASTM E 1529 - Standard Test Methods for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies.
7. ASTM E 1725 - Standard Test Methods for Fire Tests of Fire-Resistive Barrier Systems for Electrical System Components.
8. ASTM E 2307 - Fire Tests of Perimeter Fire Barrier Systems Using Intermediate Scale, Multi-Story Test Apparatus.

C. FM Global (FM) - FM4991 - Standard for Approval of Firestop Contractors.

D. International Code Congress (ICC):
1. International Building Code (IBC).
2. International Residential Code (IRC).

E. National Fire Protection Association (NFPA):
1. NFPA 70 - National Electrical Code.
2. NFPA 101 - Life Safety Code.

F. Underwriters Laboratories (UL) - UL Building Materials Directory; Through-Penetration Firestops Systems (XHEZ), Joint Systems (XHBN), Firestop Devices (XHJI), Forming Materials (XHKU), Wall Opening Protective Materials (CLIV), and Fill, Void or Cavity Materials (XHHW).

13.4 PERFORMANCE REQUIREMENTS

A. Provide systems that are listed by at least one the following:
1. Underwriters Laboratories Inc. (UL), in "Fire Resistance Directory".
2. Intertek Testing Service (Formerly known as Omega Point Laboratories), in "Directory of Listed Products."
3. Any other qualified independent testing and inspection agency that conducts periodic follow-up inspections and is acceptable to authorities having jurisdiction.

B. Provide firestop products that are flexible enough to allow for pipe vibration in a through penetration application.

C. Provide firestop sealants and sprays for construction joint applications that are flexible enough to satisfy the movement criteria per the test standards ASTM E 1399, ASTM E 1966 or ANSI/UL 2079.

D. Provide products that meet the intent of the L rating classification for the movement of smoke per ANSI/UL 1479 for through penetrations and ANSI/UL 2079 for construction joints.

E. Provide products identical to those tested and listed for classification by UL, Intertek or any other qualified independent testing agency.

F. Provide products that bear classification marking of qualified independent testing agency.

G. Where firestop systems not listed by any listing agency are required due to project conditions, submit a substitution proposal with evidence specified.

H. Use only products specifically listed for use in listed systems.

I. Provide products that are compatible with each other, with the substrates forming openings, and with the items, if any, penetrating the firestopping, under the conditions represented by this project, based on testing and field performance demonstrated by manufacturer.

J. Firestopping materials must meet and be acceptable for use by all building codes and NFPA codes cited in this section.

13.5 SUBMITTALS

A. Submit under provisions of Section 01 30 00.

B. Shop Drawings: For each firestopping system, provide the following:
1. Listing agency's detailed drawing showing opening, penetrating item(s), and firestopping materials, identified with listing agency's name and number or designation and fire rating achieved. .
2. For proposed systems that do not conform strictly to the listing, submit listing agency's drawing marked to show modifications and approved by firestop system manufacturer.

C. Product Certificates: Submit certificates of conformance signed by firestop system manufacturer certifying that materials furnished comply with requirements.

D. Product Data: Furnish manufacturer's product data sheets on each material to be used in firestop systems. Information on manufacturer's product data sheet should include:
1. Product characteristics including compliance with appropriate ASTM/UL/ANSI test standards.
2. Storage and handling requirements and recommendations.

E. Installation Instruction: Furnish manufacturer's installation instructions.

13.6 QUALITY ASSURANCE

A. General: All through-penetration firestop systems shall be installed with approved methods using materials that have been tested and classified to produce an approved assembly.

B. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of twenty five (25) years experience.

C. Installer Qualifications: Firm must be qualified by having experience, staff, and be properly trained to install the specified products, and meets the following criteria:
1. Contractor is a 3M Master Contractor.
2. Contractor is a Certified 3M Trained contractor.
3. Contractor is acceptable to manufacturer.
4. Contractor is acceptable to authority having jurisdiction.
5. Contractor has completed the manufacturer's certified product installation training.
6. Contractor must provide a list of completed projects as evidence of experience; include project name and address, owner's name and address, and architect's name and phone number.
7. Certificate: Contractor should provide certificate of qualification.

D. Codes: Where manufacturer's application procedures are in conflict with those of the code authority having jurisdiction, the more strict guidelines will prevail.

E. Pre-installation Meetings: Meetings to agree on firestop requirements, conditions, manufacturer's instructions.

13.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products until ready for installation in manufacturer's original unopened packaging, legibly marked with manufacturer's name and product identification, date of manufacture, lot number, shelf life, listing agency's classification marking, curing time, and mixing instructions if applicable.

B. Store and handle in such a manner as to prevent deterioration or damage due to moisture, temperature changes, contaminants, and other causes; follow manufacturer's instructions.

C. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

13.8 PROJECT CONDITIONS

A. Coordinate construction and cutting of openings so that each particular firestop system may be installed in accordance with its listing, including sizing, sleeves, and penetrating items.

B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install firestopping under environmental conditions outside manufacturer's absolute limits.

C. Provide ventilation as required by firestopping manufacturer, including mechanical ventilation if required.

13.9 WARRANTY

A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 14 PRODUCTS

14.1 MANUFACTURERS

A. Acceptable Manufacturer: 3M Fire Protection Products, which is located at: 3M Center Bldg. 223-2N-21; St. Paul, MN 55144-1000; Toll Free Tel: 800-328-1687; Fax: 651-737-6043; Email:request info (gwyoshida5@mmm.com); Web:http://www.3m.com/firestop

B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.

C. Single Source: To maintain control and integrity of the firestop applications a single manufacturer should be used. Specific UL or approved listing agencies systems applicable to each type of firestop condition should be supplied by one manufacturer.

14.2 SCOPE/APPLICATION

A. Provide installed firestop protects that limit the spread of fire, heat, smoke, and gasses through otherwise unprotected openings in rated assemblies, including walls, partitions, floors, roof/ceilings, and similar locations. restoring the integrity of the fire rated construction to its original fire rating.

B. Provide firestop systems listed for the specific combination of fire rated construction, type of penetrating item, annular space requirements, and fire rating, and the following criteria:
1. F-Rating: Equal to or greater than the fire-resistance rating of the assembly in which the firestopping will be installed.
2. T-Rating: In habitable areas where penetrating items are exposed to potential contact with materials on fire side(s) of rated assembly, T-rating must equal its F-rating.
3. L-Rating: L-rating of 1 cfm per linear foot (5.5 cu m/h/m) maximum at ambient temperatures.
4. Wall Penetrations: Systems must be symmetrical, with the same rating from both sides of the wall.
5. Testing: Determine ratings in accordance with ASTM E 814 or UL 1479.

C. Provide firestopping systems listed for construction gaps per the specific combination of fire-rated construction type, configuration, gap dimensions, and fire rating, and the following

criteria:

1. Fire resistance rating must be equal to or greater than that of the assembly in which it is to be installed.
2. Movement capability must be appropriate to the potential movement of the gap, demonstrated by testing in accordance with ASTM E 1399 for minimum of 500 cycles at 10 cycles per minute.
3. L-Rating: L-rating of 1 cfm per linear foot (5.5 cu m/h/m) maximum.
4. Determine ratings in accordance with UL 2079.

14.3 THROUGH PENETRATION FIRESTOP SYSTEMS

A. 3M Fire Barrier Cast-in-Place Devices: Firestopping device for use prior to a concrete pour. Adjustable height with pull tabs, straight edge design for close placement to walls and adjacent devices.
   1. Fire Resistance: For use in 1, 2, or 3 hour fire rated systems.

B. 3M Fire Barrier Ultra Plastic Pipe Device: Intumescent device for firestopping of plastic pipe and cables through rated walls and floors.
   1. Configuration: One-piece metal collar, with locking latch and bendable tabs to secure; equipped also for conventional anchoring.
   2. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

C. 3M Fire Barrier RC-1 Restricting Collar: For firestopping of plastic pipes from 4 inches (102 mm) to 10 inches (254mm) in diameter.
   1. Material: 28 gauge steel.
   2. Size: 25 foot (7.6 m) roll.

D. 3M Fire Barrier CP25WB+ Sealant: Intumescent water-based latex caulk. No-sag, fast drying, paintable, red in color.
   1. Fire Resistance: For use in 1, 2, 3 or 4 hour fire rated systems.

E. 3M Fire Barrier IC 15WB+ Sealant: Intumescent latex based sealant. No-sag, fast drying, paintable.
   1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

F. 3M FireDam 150+ Acrylic Latex Sealant: Single part, water based, acrylic latex sealant. No-sag, low-shrinkage, low VOC.
   1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

G. 3M Fire Barrier Watertight Silicone 3000 WT Sealant: Water-tight intumescent silicone sealant for filling voids in concrete gypsum, metal, plastic, wood and insulation.
   1. Fire Resistance: For use in 1, 2, 3 or 4 hour fire rated systems.

H. 3M Fire Barrier 1000 NS Silicone Sealant: Non-slump firestopping sealant for floor and wall openings.
   1. Hardness (ASTM C 661): 1000 NS: 20 - 25.
   2. Service Temperature (ASTM C 1299): -60 - 300 degrees F (-51 - 149 degrees C).
   3. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems..

I. 3M Fire Barrier 1003 SL Silicone Sealant: Self-leveling firestopping sealant for floor openings.
   1. Hardness (ASTM C 661): 1003 SL: 10 - 15.
   2. Service Temperature (ASTM C 1299): -60 - 300 degrees F (-51 - 149 degrees C).
   3. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems..

J. 3M Fire Barrier Moldable Putty+: One-part, 100 percent solids intumescent firestop.

Remains pliable, flexible and easily re-enterable. Non-toxic synthetic formula.
1. Type: Stick or Pad
2. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

K. 3M Fire Barrier Mortar: For sealing openings in concrete and masonry walls and floors. Self Leveling, non-sag, low VOC.
1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

L. 3M Fire Barrier Rated Foam FIP 1-Step: Premium two-part, easy-to-handle formulation. Dries to a flexible solid. During a fire, product maintains a tight firestop against smoke and flame.
1. Fire Resistance: For use in 1 or 2 hour fire rated systems.
2. Tested to the criteria of ASTM E 814 / UL 1479.

M. 3M Fire Barrier Self-Locking Pillow: Self-contained, intumescent firestop pillow with interlocking strips. Meets fire rating without the use of wire mesh.
1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

N. 3M Fire Barrier Pillow: Self-contained, intumescent firestop product. Meets fire rating without the use of wire mesh.
1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

O. 3M Fire Barrier CS-195+ Composite Sheet: Organic/inorganic intumescent elastomeric sheet, bonded on one side to a layer of 28 gauge galvanized steel. Other side reinforced with steel-wire mesh and covered with aluminum foil. Re-enterable.
1. Thickness: Nominal 0.3 inch (7.6 mm).
2. Thermal Expansion: 8 - 10 times original size.
3. Tensile Strength (ASTM D412): 93.6 psi (645 kPa)/489 percent.
4. Fire Resistance: For use in 1, 2, 3 or 4 hour fire rated systems.

P. 3M Interam Ultra GS Wrap Strip: Graphite based, flexible, largely inorganic, intumescent mat. For use firestopping around non-metallic piping..
1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

Q. 3M Fire Barrier FS-195+ Wrap/Strip: One-part, organic/inorganic intumescent strip with foil on one side. May be cut to fit irregular shapes.
1. Length: 24 inch (610 mm).
2. Width: 1 or 2 inches.
3. Fire Resistance: For use in 1, 2, 3 or 4 hour fire rated systems.

R. 3M Fire Barrier Pass Through Devices: One-Piece device for firestopping of cable penetrations through rated walls and floors.
1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

14.4 FIRESTOPPING FOR CONSTRUCTION GAPS

A. 3M FireDam 150+ Acrylic Latex Sealant: Single part, water based, acrylic latex sealant. Endothermic, no-sag, low-shrinkage, low VOC.
1. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

B. 3M Fire Barrier 2000+ Silicone Sealant: Elastomeric, firestopping sealant.
1. Compression/Extension Recovery: +/- 15 percent of original joint width.
2. Fire Resistance: For use in 1, 2, 3 or 4 hour fire rated systems.

C. 3M FireDam Spray 200: Water based, spray applied firestopping for use at head-of-wall, wall-to-wall, floor-to-floor and perimeter joints. Paintable, low VOC.

1. Compression/Extension Recovery: +/- 25 percent of joint width.
2. Fire Resistance: For use in 1, 2, 3 or 4 hour fire rated systems.

14.5 FIRESTOPPING FOR SINGLE MEMBRANE PENETRATIONS

A. 3M Fire Barrier Moldable Putty+: One-part, 100 percent solids intumescent firestop. Remains pliable, flexible and easily re-enterable. Non-toxic synthetic formula.
   1. Type: Pad.
   2. Fire Resistance: For use in 1, 2 or 3 hour fire rated systems.

B. 3M Endothermic Mat E-5A-4: Endothermic heat absorbing mat.
   1. Type: Mat.
   2. Fire Resistance: For use in 1 or 2 hour fire rated systems.

PART 15 EXECUTION

15.1 EXECUTION

A. Do not begin installation until substrates have been properly prepared.

B. Conduct tests according to manufacturer's written recommendations to verify that substrates are free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt and other foreign substances capable of impairing bond of firestopping.

C. Verify that items penetrating fire rated assemblies are securely attached, including sleeves, supports, hangers, and clips.

D. Verify that openings and adjacent areas are not obstructed by construction that would interfere with installation of firestopping, including ducts, piping, equipment, and other suspended construction.

E. Verify that environmental conditions are safe and suitable for installation of firestopping.

F. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

15.2 PREPARATION

A. Prepare substrates in accordance with manufacturer's instructions and recommendations.

B. Install masking and temporary coverings as required to prevent contamination or defacement of adjacent surfaces due to firestopping installation.

15.3 INSTALLATION

A. Install in strict accordance with manufacturer's detailed installation instructions and procedures.

B. Install so that openings are completely filled and material is securely adhered.

C. Where firestopping surface will be exposed to view, finish to a smooth, uniform surface flush with adjacent surfaces.

D. After installation is complete, remove combustible forming materials and accessories that are not part of the listed system.

E. Repair or replace defective installations to comply with requirements.

F. At each through penetration, attach identification labels on both sides in location where label will be visible to anyone seeking to remove penetrating items or firestopping.

G. Clean firestop materials off surfaces adjacent to openings as work progresses, using methods and cleaning materials approved in writing by firestop system manufacturer and which will not damage the surfaces being cleaned.

H. Notify authority having jurisdiction when firestopping installation is ready for inspection; obtain advance approval of anticipated inspection dates and phasing, if any, required to allow subsequent construction to proceed.

I. Do not cover firestopping with other construction until approval of authority having jurisdiction has been received.

15.4 FIELD QUALITY CONTROL

A. Owner will engage an independent testing agency to inspect installed firestopping and to prepare reports indicating whether the installed work complies with the contract documents.

B. Notify testing agency at least 7 days prior to date when firestopping installation will be ready for inspection; obtain advance approval of general schedule and phasing, if any, required to allow subsequent construction to proceed.

15.5 CLEANING AND PROTECTION

A. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. Install identification Labels for Through Penetration and Construction Joint Systems: Pressure sensitive self-adhesive vinyl labels, preprinted with the following information:
   1. The words "Warning - Through Penetration Firestop System - Do not Disturb. Notify Building Management of Any Damage."
   2. Listing agency's system number or designation.
   3. System manufacturer's name, address, and phone number.
   4. Installer's name, address, and phone number.
   5. General contractor's name, address, and phone number (if applicable).
   6. Date of installation.

END OF SECTION

07 92 00 JOINT SEALANTS

PART 16 GENERAL

1. SUMMARY

a. Related Documents:
   1) Drawings and general provisions of the Subcontract apply to this Section.
   2) Review these documents for coordination with additional requirements and information that apply to work under this Section.

b. Section Includes:
   1) Joint sealant work required for the Project and not specified elsewhere.
   2) Gunnable and pourable sealants for sealing static and dynamic joints and joints between differing materials and components.

c. Related Sections:
   1) Division 01 Section "General Requirements."
   2) Division 01 Section "Special Procedures."
   3) Division 02 Section "Lead Remediation".
   4) Division 02 Section "Asbestos Abatement."
   5) Section 0XXXX - Vapor Retarders: Sealants required in conjunction with vapor retarders.
   6) .Not Used
   7) Division 07 Section "Penetration Firestopping" for firestopping sealants.
   8) Division 09 Section "Gypsum Board" for acoustical sealant.
   9) Division 09 Section "Painting".

2. REFERENCES

a. General:
   1) The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
   2) Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
   3) Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.

b. ASTM International:
   1) ASTM C717 Standard Terminology of Building Seals and Sealants
   2) ASTM C834 Standard Specification for Latex Sealants
   3) ASTM C920 Standard Specification for Elastomeric Joint Sealants
   4) ASTM C1193 Standard Guide for Use of Joint Sealants
   5) ASTM D1056 Standard Specification for Flexible Cellular Materials—Sponge or Expanded Rubber
   6) ASTM D1667 Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam)

3. SUBMITTALS

a. Submit under provisions of Division 01 Section "General Requirements."

b. Product Data:
   1) Manufacturer’s data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
   2) Material Safety Data Sheets.

c. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

d. Samples:
   1) Exposed sealants for University's approval of colors. [Unless otherwise directed, apply samples in 6-inch runs in actual joints at the job site.]
   2) Include the following par. only if critical.
   3) Submit the following:
      a) One cartridge or one pint of each type of sealant compound required.
      b) One pint of each primer required.
      c) One foot (150 mm) of each type of back-up material.

e. Certification: Written certification that products to be installed on this Project comply with Specification requirements.

f. Test Reports: Except where product data states that primer is not required for a specific surface, provide test reports giving the results of peel adhesion (including water immersion) tests on unprimed surfaces. Use actual existing materials and finishes from this Project for test surfaces. Remove used test surfaces removed from the building and repair damaged area to match adjacent surfaces.

4. QUALITY ASSURANCE

a. Applicator Qualifications: Company specializing in performing the work of this section [with minimum [___5_____] years [documented] experience] and approved by sealant manufacturer.

b. Regulatory Requirements:
   1) Comply with requirements of Bay Area Air Quality Management District Regulation 8-51.
      a) Keep and maintain proof of compliance with the above regulation for a period of two years after substantial completion of project, and during this period present such documents or evidence if requested by University or BAAQMD.
   2) BAAQMD Regulation 6: Particulate Matter and Visible Emissions.
   3) Perform lead- and asbestos-related work in accordance with requirements of local, state, and Federal regulations for lead and asbestos in construction, including but not limited to Title 8 CCR 1529 and Title 8 CCR 1532.1, and 29 CFR 1926.1101 and 29 CFR 1926.62.

c. Manufacturer's Instructions: Perform sealant work in accordance with manufacturer's instructions.

5. DELIVERY, STORAGE AND HANDLING

a. Delivery: Deliver sealants and related accessories to the job site in factory sealed, unopened containers bearing manufacturer's name, product designation and batch number.

b. Storage: Store in unopened containers. Follow manufacturer's recommendations for storage temperatures and shelf life (see "Submittals" above).

c. Handling: Follow manufacturer's recommendations for handling products containing toxic materials. Keep flammable material away from heat, sparks and open flame.

6. PROJECT CONDITIONS

a. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

b. Environmental Requirements:

c.

1) . if materials contain lead or settled lead dust.
   a) Lead-Related Work: Comply with requirements of Division 02 Section "Lead Remediation".
2) Asbestos: Existing [gypsum board walls and joint compound] [cementitious panels] [pipe insulation] [glazing compound] have been tested and found [not] to contain asbestos. [Test results and locations are contained in the Appendix to Division 02 Section "Asbestos Abatement".]
3) if materials contain asbestos.
   a) Do not disturb asbestos-containing materials. If asbestos-containing materials will be disturbed other than by cleaning with water and painting, advise Project Manager for resolution.
4) Contain and dispose of materials resulting from cleaning, including lead-containing materials, in accordance with LBNL procedures and applicable regulations.
5) Disposal down LBNL sanitary drains or storm drains of solvents, or water contaminated with solvents, is not permitted. Contain and dispose of such materials at legal disposal sites approved for this purpose.

7. SCHEDULING

a. Schedule sealing operations so that working joints are most likely to be normal size. Apply materials within manufacturer's recommended surface and ambient temperature ranges.

8. WARRANTY

a. Correct defective work within a 5-year period after Date of Substantial Completion.

b. Warranty: Include coverage for installed sealants and accessories that fail to achieve airtight seal, watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 17 PRODUCTS

2.01 MATERIALS

a. General:
   1) Joint sealers, primers and accessories shall be compatible with each other and non-staining to exposed materials including adjacent materials.
   2) Products having similar application and usage shall be of the same manufacturer and type.
   3) Unless otherwise specified, colors will be selected from approved manufacturer's standard range. Interior sealants to match color of adjacent materials unless indicated otherwise.
   4) Use gun consistency compounds unless otherwise required by job conditions.

b. Exterior Building Sealant: One component, ultra-low modulus, silicone-based sealant, Dow-Corning 790 or GE SilPruf LM SC2700.

c. [Vertical Sealant Joints: Polyurethane, low-modulus, one-component, non-sag, maximum Shore A Hardness of 20 (+/- 5), Sika Corporation Sikaflex -15LM or Tremco Vulkem 921.]

d. Building Sealant Joints Less than 1/4" in Width, Fillet Seals, and Adhesive: Polyurethane, one-component, non-sag, maximum Shore A Hardness of 40 (+/- 5), Sika Corporation Sikaflex -1a or Pecora Corp "Dynatrol I.

e. Structural Glazing Sealant: One component, medium modulus, silicone-based sealant, Dow-Corning 795 or GE SilPruf SC 2000.

f. Horizontal Joints Subject to Traffic Abrasion): Multi-part polyurethane, Shore A hardness of 25 to 35, Tremco THC/900, Pecora Corp. No. NR-200; or equal.

g. Sealant Type 4 (Mildew Resistant Sealant at Ceramic Tile and Plumbing Fixtures); One component silicone sealant. General Electric Co.’s “SCS1702”; Dow Corning Corp.’s “Dow Corning 786 Mildew-Resistant Silicone Sealant”; or equal.

h. Accessories:
   1) Primers, Sealers, Surface Conditioners, Solvents: As manufactured and recommended for each substrate by approved manufacturer of each sealant material used.
   2) Back-Up Materials: Preformed material of type recommended by sealant manufacturer for each sealant used. Do not use any bituminous, oily or solvent containing materials or any uncompressible materials. Size width or diameter of backing material as recommended by manufacturer each joint width.
   3) Release Materials: Polyethylene tape.
   4) Cleaning Materials: Non-staining and not otherwise injurious to exposed surfaces.

PART 18 EXECUTION

1. EXAMINATION

a. Verify that substrate surfaces an] joint openings are ready to receive work. Starting work implies acceptance of surfaces as satisfactory.

b. Verify that joint backing and release tapes are compatible with sealant.

2. PREPARATION

a. Remove loose materials and foreign matter which might impair adhesion of sealant.

b. Clean and prime joints in accordance with manufacturer's instructions.

c. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

d. Protect elements surrounding the work of this section from damage or disfiguration.

3. INSTALLATION

a. Perform installation in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

b. Perform installation in accordance with ASTM C1193.

c. Apply sealants within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

d. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer [, except where specific dimensions are indicated].

e. Install bond breaker where joint backing is not used.

f. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

g. Tool joints

h. Patch or replace defective or damaged sealants. Be responsible for damage to adjacent surfaces caused by sealant operations.

4. CLEANING

a. Clean adjacent surfaces soiled by sealing operations.

5. PROTECTION

a. Protect sealants until cured.

END OF SECTION 07 92 00

081000 DOORS

1.01 GENERAL

A. Doors and door hardware should be considered as a system and are to provide security and comply with life safety and ADA requirements.

1. All exterior doors to have electric strikes, and the main entrances doors to have card readers. All strikes shall be in the locked mode during a power failure. All doors equipped with card readers shall be programmed to be unlocked during business hours from 7:00 AM to 6:00 PM, and locked all other times. For electric strike and card reader specifications see Section 16740 of the Engineering Design Standards of this manual. Review function of all building entrance doors for security, accessibility code and life safety application. All exterior doors shall also be equipped with fire exit hardware as required by the Building Code. Under no cases shall magnetic holding devices be used.

B. Building perimeter security access costs are incorporated and funded centrally within any facility construction budget or remodeling budget as appropriate for programs/units to be housed in the facility. Some systems may be zoned as necessary for end users.

C. Review and verify all lock function types with Facilities Office. In general, provide office lock function for offices and laboratories, classroom lock function for classrooms and storeroom lock function for custodial, data, mechanical and electrical rooms.

D. All building entrance doors to close against a full-length jamb at the strike. Double doors to have a center post mullion. Doors in gang sets are preferred and should swing in parallel. Provide well designed, strong metal pull handles for exterior entrance doors. Do not provide lever handles at entrance doors as they are prone to sagging and are subject to abuse and vandalism.

E. Aluminum entrance doors such as Kawneer 500 Series Doors or equal must have 5 inch styles (minimum) to receive door mounted closer. Rails containing strikes that adjoin sidelights must be horizontally braced with an intermediate horizontal style. Width should be scaled according to height.

F. Doors to receive electric strikes and card readers to be pre-wired from strike/reader to ceiling plenum at each public entrance door group. Provide complete card reader system when required in program.

G. Wood corridor exit doors to be fitted with half mortise hinges to sustain heavy use.

H. Door sealing gaskets are required on mechanical room doors opening off of public corridors.

I. Stair doors leading to roofs are to be secured. Provide double cylinder deadbolt locks. Code variances may be a consideration especially in cases of buildings exceeding three stories. Consider code safety, building security and restricted access to roof areas.

J. Wood doors to receive transparent or solid stain grade finish are preferred to be red or white oak with plain sliced veneers. This assures that matching doors will be available for alterations. Premium Birch and Maple are acceptable stain grade veneers.

K. Primary entrance doors should be greater than 36 inches wide up to 42 inches but not greater than 8’ - 0” tall. Interior door sizes are typically 3' - 0" x 7' - 0" or match existing building standard. Interior door heights over 8 ft. are discouraged.

L. Laboratory door entrances require specific design criteria, and must be reviewed and approved by the Office of Facilities. A single door of width greater than 36 inches is preferred to paired or unequal paired doors.

087000 DOOR HARDWARE

1.01 GENERAL:

A. Hardware to comply with 2010 ADA Standards, chapter 3 – section 309.4 and Georgia Accessibility Code.

B. Mortise locksets to have all metal components.

C. Hardware finish to be US 32D Satin Stainless Steel or US 4 Brass for traditional jobs. Other finishes require prior approval. Renovation work to match existing building standard, except upgrade to ADA standards.

D. Cylinders for all locks to be equal to Best 1E74 X PAT as provided by lock hardware manufacturer. Cylinders for office, classroom and laboratory doors must accept best patented 7-pin cores, the standard established by the Georgia Tech Facilities Lock shop. Cylinders for custodial, data, mechanical and electrical rooms must accept Best standard cores.

E. Best Access Systems to develop the initial key schedule in coordination with the Georgia Tech Facilities Lock shop and building occupant representative, and give the final key schedule to the Lock shop.

F. Best Access Systems to cut keys, inscribe each key and permanent core with code of lock that identifies cylinder manufacturer's key symbol, and inscribe each key with sequential key number and the notation A "DO NOT DUPLICATE." Provide 3 keys per lock and turn over all keys, permanent cores, and permanent core control keys to the Lock shop.

G. For renovations, the Lock shop will install a maximum of five permanent cores. For more than five and for new construction, Best Access Systems will install the permanent cores.

H. Exit hardware to be equivalent to Von Duprin, series 99, Dorma series 9000 or Precision series 1100. Surface mount rim set devices latching into center post mullion. Avoid surface or flush bolts on double doors. Renovation work to match manufacturer of existing building standard.

I. Center post mullion to be equivalent to Von Duprin with stabilizer. Where removable mullions are used, provide locks.

J. All entrance doors to have a continuous hinge with matching finish and color.

K. Door closers to be equivalent to LCN #4041, Ryobi # D-3550 or D-3551 or Dorma # 8900. Mount closers on the door, not on the frame. Aluminum entrance doors to be wide stile to receive the closer. Closers for wood doors must be through-bolted.

L. For doors required to be accessible to the disabled, provide power operators by LCN, Dor-O-Matic or Horton. Automatic and power-assisted doors to comply with 2010 ADA standards, chapter 4 – section 404:

1. Full-powered automatic doors to comply with ANSI/BHMA A156.10.

2. Low-energy and power-assisted doors to comply with ANS/BHMA A156.19 (1997 or 2002 editions).

M. Contractor is to save all loose hardware parts and return these to Lock shop at project closeout.

END OF SECTION

094000 CEILINGS

1.01 ACOUSTICAL CEILINGS

A. Lay-in Acoustical Tile Ceiling System

1. Renovation Work: New acoustical tile ceiling systems installed in existing buildings shall match adjacent acoustical tile ceiling system. Verify grid and tile types with Project Manager.
2. Suspension Systems: Standard suspension is 24” x 24” x 15/16” wide intermediate duty standard white finish. In new building construction a 24” x 24” x 9/16” wide intermediate duty standard white finish may be used.
3. Ceiling Tile: Standard ceiling tile shall be 24” x 24” x 3/4” thick, white tegular edge design equal to Armstrong Ultima.
4. Special Conditions: If higher NRC and CAC requirements are required, review ceiling tile options with Design & Construction.

B. General Guidelines

1. Do not specify concealed grid systems or similar products that are difficult to access.
2. For unconditioned spaces use hot dipped galvanized or aluminum grid suspension systems. Ceiling tile to be equal to Armstrong Fine Fissured Ceramaguard with hold down clips.
3. Provide grid starting points to establish ceiling tile layout.
4. Provide dimensions for light fixtures and other critical ceiling components not centered on the ceiling tile in both directions.

END OF SECTION

09 51 00 ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.2 SUMMARY

A. Section Includes

1. Acoustical ceiling panels
2. Exposed grid suspension system
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
4. Perimeter Trim

B. Related Selections

1. Section 09 51 00 - Acoustical Ceilings
2. Section 09 51 13 - Acoustical Fabric-Faced Panel Ceilings
3. Section 09 53 00 - Acoustical Ceiling Suspension Assemblies
4. Section 09 20 00 - Plaster and Gypsum Board
5. Section 02 42 00 - Removal and Salvage of Construction Materials
6. Divisions 23 - HVAC Air Distribution
7. Division 26 - Electrical

C. Alternates

1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products that have not been approved by Addenda, the specified products shall be provided without additional compensation.

2. Submittals that do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability

2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire

3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process

4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings

6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels

7. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

8. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials

9. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material

A. Armstrong Fire Guard Products

10. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint

11. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems

12. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum

13. ASTM E 1264 Classification for Acoustical Ceiling Products

B. International Building Code

C. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality

D. NFPA 70 National Electrical Code

E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

G. International Code Council-Evaluation Services Report - Seismic Engineer Report

1. ESR 1308 - Armstrong Suspension Systems

H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report

1. 0244 - Armstrong Single Span Suspension System

I. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.1 2010

J. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings

1.4 SYSTEM DESCRIPTION

Continuous/Wall-to-Wall

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.

C. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with, or supported by the ceilings.

D. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

E. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.6 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

B. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

A. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.

B. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory

C. Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

D. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.8 PROJECT CONDITIONS

A. Space Enclosure:

Standard Ceilings: Do not install interior ceilings until space is enclosed and weatherproof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy. Building areas to receive ceilings shall be free of construction dust and debris.

HumiGuard Plus Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Products with HumiGuard Plus performance and hot dipped galvanized steel, aluminum or stainless steel suspension systems can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

HumiGuard Max Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Ceilings with HumiGuard Max performance can be installed in conditions up to 120°F (49°C) and maximum humidity exposure including outdoor applications, and other standing water applications, so long as they are installed with either SS Prelude Plus, AL Prelude Plus, or Prelude Plus Fire Guard XL suspension systems. Products with Humiguard Max performance can be installed in exterior applications, where standing water is present, or where moisture will come in direct contact with the ceiling. Only Ceramaguard with AL Prelude Plus suspension system can be installed over swimming pools.

1.10 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

1. Acoustical Panels: Sagging and warping
2. Grid System: Rusting and manufacturer's defects

B. Warranty Period:

1. Acoustical panels: One (1) year from date of substantial completion
2. Ultima: Ten (10) years from date of substantial completion
3. Grid: Ten years from date of substantial completion

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.11 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.

2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Ceiling Panels:
1. Armstrong World Industries, Inc.

B. Suspension Systems:
1. Armstrong World Industries, Inc.

C: Perimeter Systems
1. Armstrong World Industries, Inc.

2.2 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type AP

1. Surface Texture: Medium
2. Composition: Mineral Fiber
3. Color: To match existing
4. Size: 24IN x 24IN
5. Edge Profile: Please Select a Molding for interface with Please Select a Suspension Line grid.
6. Noise Reduction Coefficient(NRC): ASTM C 423; Classified with UL label on product carton 0.50.
7. Ceiling Attenuation Class (CAC) : ASTM C 1414; Classified with UL label on product carton
8. Articulation Class (AC): ASTM E 1111; Classified with UL label on product carton.
9. Flame Spread: ASTM E 1264; Class A (UL)
10. Light Reflectance White Panel: ASTM E 1477;
11. Dimensional Stability: undefined
12. Recycle Content: None
13. Acceptable Product: Armatuff, 861 as manufactured by Armstrong World Industries

2.3 METAL SUSPENSION SYSTEMS

Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.

A. Structural Classification: ASTM C 635 normal duty
B. Color: Blizzard White and match the actual color of the selected ceiling tile, unless noted otherwise.
Acceptable Product: 65 as manufactured by Armstrong World IndustriesSize for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, but not less than 12 gauge.

D. Edge Moldings and Trim:

7875 - 10ft Shadow Molding

E. Accessories

ALBERC2 - aluminum systems - 2" Aluminum Beam End Retaining Clip
BERC2 - steel - 2" Beam End Retaining Clip
BERC - Beam End Retaining Clip
SJMR15 - Seismic Joint Clip - Main Beam - 15/16" Suspensions
SJMR09 - Seismic Joint Clip - Main Beam - 9/16" Suspensions
SJCG - PeakForm Suspension - Seismic Joint Clips CT
SJCSI - Square Bulb Suspension - Seismic Joint Clip CT
ES4 - for 15/16" Prelude Expansion Sleeves
ES49 - for 9/16" Suprafine
ES76004 for 1/4" Silhouette Suspension
ES76008 - for 1/8" Silhouette Suspension
STAC - Single Tee Adapter Clip
7445 - 48" Stabilizer bar - not required when using the BERC2
7425 - 24" Stabilizer bar - not required when using the BERC2

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations. (Exception: HumiGuard Max Ceilings)

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

3.3 INSTALLATION

A. Follow manufacturer installation instructions.

B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.

C. Suspend main beam from overhead construction with hanger wires spaced 4-0 on center along the length of the main runner. Install hanger wires plumb and straight.

D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant with provide assistance to facilitate the recycle of the ceiling.

END OF SECTION

087000 Door Hardware

1.01 GENERAL:

A. Hardware to comply with 2010 ADA Standards, chapter 3 – section 309.4 and Georgia Accessibility Code.

B. Mortise locksets to have all metal components.

C. Hardware finish to be US 32D Satin Stainless Steel or US 4 Brass for traditional jobs. Other finishes require prior approval. Renovation work to match existing building standard, except upgrade to ADA standards.

D. Cylinders for all locks to be equal to Best 1E74 X PAT as provided by lock hardware manufacturer. Cylinders for office, classroom and laboratory doors must accept best patented 7-pin cores, the standard established by the Georgia Tech Facilities Lock shop. Cylinders for custodial, data, mechanical and electrical rooms must accept Best standard cores.

E. Best Access Systems to develop the initial key schedule in coordination with the Georgia Tech Facilities Lock shop and building occupant representative, and give the final key schedule to the Lock shop.

F. Best Access Systems to cut keys, inscribe each key and permanent core with code of lock that identifies cylinder manufacturer's key symbol, and inscribe each key with sequential key number and the notation A "DO NOT DUPLICATE." Provide 3 keys per lock and turn over all keys, permanent cores, and permanent core control keys to the Lock shop.

G. For renovations, the Lock shop will install a maximum of five permanent cores. For more than five and for new construction, Best Access Systems will install the permanent cores.

H. Exit hardware to be equivalent to Von Duprin, series 99, Dorma series 9000 or Precision series 1100. Surface mount rim set devices latching into center post mullion. Avoid surface or flush bolts on double doors. Renovation work to match manufacturer of existing building standard.

I. Center post mullion to be equivalent to Von Duprin with stabilizer. Where removable mullions are used, provide locks.

J. All entrance doors to have a continuous hinge with matching finish and color.

K. Door closers to be equivalent to LCN #4041, Ryobi # D-3550 or D-3551 or Dorma # 8900. Mount closers on the door, not on the frame. Aluminum entrance doors to be wide stile to receive the closer. Closers for wood doors must be through-bolted.

L. For doors required to be accessible to the disabled, provide power operators by LCN, Dor-O-Matic or Horton. Automatic and power-assisted doors to comply with 2010 ADA standards, chapter 4 – section 404:

1. Full-powered automatic doors to comply with ANSI/BHMA A156.10.

2. Low-energy and power-assisted doors to comply with ANS/BHMA A156.19 (1997 or 2002 editions).

M. Contractor is to save all loose hardware parts and return these to Lock shop at project closeout.

END OF SECTION

SECTION 09 51 00
ACOUSTICAL CEILINGS

PART 19 GENERAL

19.1 SUMMARY

A. Provide acoustical ceilings and suspension systems.

19.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.

C. Extra Stock: Submit extra stock equal to 2 percent of amount installed.

19.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Performance: Fire, structural, and seismic performance meeting requirements of building code and local authorities. Acoustical performance based on project requirements.

PART 20 PRODUCTS

20.1 MATERIALS

PART 21 EXECUTION

21.1 INSTALLATION

A. Install materials and suspension systems in accordance with manufacturer's instructions and recommendations, and ASTM C 636. Coordinate installation with location of mechanical and electrical work to ensure proper locations and anchorage.

B. Level ceiling to within 1/8 inch in 10 feet in both directions. Scribe and cut panels to fit accurately. Measure and layout to avoid less than half panel units.

C. Removal and reinstallation at existing ceilings: Remove and store materials for reuse when allowed. Handle with white gloves and avoid damaging corners and edges. Clean tiles and grid system, which have been removed. Provide additional materials to complete the work and to replace damaged existing materials. New materials shall match existing materials as approved.

D. Adjust, clean, and touch-up all system components.

SECTION 09 40 00
ACOUSTICAL CEILINGS

1.01 ACOUSTICAL CEILINGS

A. Lay-in Acoustical Tile Ceiling System

1. Renovation Work: New acoustical tile ceiling systems installed in existing buildings shall match adjacent acoustical tile ceiling system. Verify grid and tile types with Project Manager.

2. Suspension Systems: Standard suspension is 24” x 24” x 15/16” wide intermediate duty standard white finish. In new building construction a 24” x 24” x 9/16” wide intermediate duty standard white finish may be used.

3. Ceiling Tile: Standard ceiling tile shall be 24” x 24” x 3/4” thick, white tegular edge design equal to Armstrong Ultima.

4. For unconditioned spaces use hot dipped galvanized or aluminum grid suspension systems. Ceiling tile to be equal to Armstrong Fine Fissured Ceramaguard with hold down clips.

END OF SECTION

SECTION 09 91 00
PAINTING

PART 22 GENERAL

22.1 SUMMARY

A. Provide painting and surface preparation.

22.2 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.

B. Samples: Submit two representative samples of each material specified indicating visual characteristics and finish. Include range samples if variation of finish is anticipated.
1. Include manufacturers full range of color and finish options if additional selection is required.

C. Extra Stock: Submit 2 unopened gallons of each paint and color used in the project.

22.3 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Regulations: Compliance with VOC and environmental regulations.

PART 23 PRODUCTS

23.1 MATERIALS

A. Painting:
1. Manufacturer: Sherwin-Williams.
2. Application: Repainting of existing surfaces.
3. Primary Coating Type: Latex based paints.
4. Primary Coating Type: Zero VOC paints.

PART 24 EXECUTION

24.1 INSTALLATION

A. Inspect surfaces, report unsatisfactory conditions in writing; beginning work means acceptance of substrate.

B. Comply with manufacturer's instructions and recommendations for preparation, priming and coating work. Coordinate with work of other sections.

C. At existing areas to be repainted, remove blistered or peeling paint to sound substrates. Remove chalk deposits and mildew and wash all surfaces with mild detergent. Perform related minor preparation including caulk and glazing compounds. Spot prime bare areas before priming and painting as specified.

PAINT SCHEDULE

D. Gypsum Drywall Walls:
   1.
      a. PROMAR 200 Eggshell
E. Gypsum Drywall Ceilings:
   1. Gloss:
      PROMAR 200 Flat

F. Concrete Masonry Units:
   1. Gloss:
      PROMAR 200 Eggshell
G. Concrete Walls:
   1. Gloss:
      PROMAR 200 Eggshell
      Eggshell
H. Ferrous Metals:
   1. Gloss:
      Multi Surface Acrylic Semi - Gloss
I. Doors/Frames/Window Sills/Handrails -
   1. Gloss:
      Multi Surface Acrylic Semi - Gloss

END OF SECTION

09 91 23–INTERIOR PAINTING

Part 1 GENERAL

1.1 SECTION INCLUDES

A Interior paint and coatings systems including: paint, stains, transparent coatings, and opaque finishes

1.2 RELATED SECTIONS

A Section 05 05 13 - Shop Applied Coatings for Metal

B Section 06 01 40 - Architectural Woodwork Refinishing

C Section 06 05 83 - Shop Applied Wood Coatings

D Section 07 19 00 - Water Repellents

E Section 09 67 00 - Fluid Applied Flooring for Concrete

F Section 09 93 00 - Stains and Transparent Finishes

G Section 09 96 00 - High-Performance Coatings

1.3 REFERENCES

A SSPC-SP 1 - Solvent Cleaning

B SSPC-SP 2 - Hand Tool Cleaning

C SSPC-SP 3 - Power Tool Cleaning

D SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete

1.4 SUBMITTALS

A Submit under provisions of Section 01 33 00, Submittal Procedures.

B Product Data: Manufacturer's data sheets on each paint and coating product should include:

1 Product characteristics
2 Surface preparation instructions and recommendations
3 Primer requirements and finish specification
4 Storage and handling requirements and recommendations
5 Application methods
6 Clean-up Information

C Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer’s color samples available.

D Coating Maintenance Manual: upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams “Custodian Paint Maintenance Manual” report or equal. Manual shall include an Area Summary

with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 MOCK-UP

Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of painting on the project.

A Finish surfaces for verification of products, colors & sheens
B Finish area designated by Architect
C Provide samples that designate prime & finish coats
D Do not proceed with remaining work until the Architect approves the mock-up samples

1.6 DELIVERY, STORAGE, AND HANDLING

A Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:

Product name and type (description)
Application & use instructions
Surface preparation
VOC content
Environmental handling and an SDS
Batch date
Color number

B Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

C Handling: Maintain a clean, dry storage area to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

A Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

Part 2 PRODUCTS

2.1 MANUFACTURERS

A Acceptable Manufacturer:
The Sherwin-Williams Company
101 Prospect Avenue NW
Cleveland, OH 44115
Tel: (800) 321-8194
www.sherwin-williams.com

B Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 Product Requirements.

When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.2 APPLICATION/SCOPE

A Use this article to define the scope of painting if not fully defined in a Finish Schedule or on the drawings. This article must be carefully edited to reflect the surfaces actually found on the project. In some cases, it may be enough to use the first paragraph that says, in effect, "paint everything" along with a list of items not to paint, without exhaustively defining all the different surfaces and items that must be painted.

B If the project involves repainting some but not all existing painted surfaces, be sure to indicate the extent of the repainting.

C The descriptions of each system can also be used to further refine the definition of what is to be painted, stained, or clear finished.

D Surfaces to Be Coated:

Concrete: Poured, Precast, Tilt-Up, Cast-In-Place, Cement Board, Plaster
Concrete: Floors (Non-Vehicular)
Masonry: CMU - Concrete, Split Face, Scored, Smooth, etc.
Metal: Aluminum/Galvanized
Metal Ferrous: Structural Steel, Joists, Trusses, Beams, Partitions, etc.
Wood: Walls, Ceilings, Doors, Trim, etc
Drywall: Gypsum Board, and Drywall

2.3 SCHEDULE INDEX

A. CONCRETE
B. (Walls & Ceilings, Poured, Precast, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place, Plaster)
1. Latex Systems
2. Alkyd Systems (Waterbased Acrylic-Alkyd)
3. Alkyd Systems (Waterbased Urethane Modified Alkyd)
4. Concrete Stain (Water Base)
5. Texture Systems

B. CONCRETE - FLOORS (Non-Vehicular
1. Acrylic System
2. Concrete Stain (Water Base)

C. MASONRY
(CMU - Concrete, Split Face, Scored, Smooth, High/Low Density, Fluted)
1. Latex Systems
2. Alkyd Systems (Waterbased Acrylic-Alkyd)
3. Alkyd Systems (Waterbased Urethane Modified Alkyd)
4. Concrete Stain (Water Base)
5. Texture Systems

D. METAL – (Aluminum/Galvanized)
1. Latex Systems
2. Alkyd Systems (Waterbased Acrylic-Alkyd)
3. Alkyd Systems (Waterbased Urethane Modified Alkyd)
4. Waterborne Dryfall Systems

E. METAL – Ferrous

(Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron,

Sashes, Doors, Partitions)
1. Latex Systems
2. Alkyd Systems (Waterbased Acrylic-Alkyd)
3. Alkyd Systems (Waterbased Urethane Modified Alkyd)
4. Waterborne Dryfall Systems

F. WOOD
(Walls, Ceilings, Doors, Trim, Partitions, Frames)
1. Latex Systems
2. Alkyd Systems (Waterbased Acrylic-Alkyd)
3. Alkyd Systems (Waterbased Urethane Modified Alkyd)

G. DRYWALL
(Walls, Ceilings, Gypsum Board, Plaster Board, etc.)
1. Latex Systems
2. Alkyd Systems (Waterbased Acrylic-Alkyd)
3. Alkyd Systems (Waterbased Urethane Modified Alkyd)
4. Texture Systems

2.3 SCHEDULE

A. CONCRETE - (Walls & Ceilings, Poured, Precast, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place, Plaster)

1. Latex Systems

a. Gloss
1st Coat: S-W Loxon® Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar® 200 Zero VOC Latex Gloss, B21-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Gloss, B21-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
(4.0 mils wet, 1.5 mils dry per coat)

Alternate:
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Harmony® Interior Latex Semi-Gloss, B10 Series
3rd Coat: S-W Harmony® Interior Latex Semi-Gloss, B10 Series
(4 mils wet, 1.7 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series

(4.0 mils wet, 1.7 mils dry per coat)

Alternate:
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series
3rd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series
(4 mils wet, 1.7 mils dry per coat)

Microbicidal† Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Paint Shield® Interior Latex Eg-Shel, D12W00051
3rd Coat: S-W Paint Shield® Interior Latex Eg-Shel, D12W00051
(4 mils wet, 1.8 mils dry per coat)

A. CONCRETE (Walls & Ceilings, Poured, Precast, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place, Plaster) (Cont.)

1. Latex Systems

d. Low Sheen/Low Gloss Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, Low Gloss B41-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, Low Gloss B41-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
(4 mils wet, 1.6 mils dry per coat)

e. Flat Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

Alternate:
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Harmony Interior Latex Flat, B05 Series
3rd Coat: S-W Harmony Interior Latex Flat, B05 Series
(4.0 mils wet, 1.7 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd)

a. Gloss Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series

(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

A. CONCRETE (Walls & Ceilings, Poured, Precast, Unglazed Brick, Cement Board, Tilt-Up, Cast-In-Place, Plaster)(Cont.)

3. Alkyd Systems (Waterbased Urethane Modified Alkyd)

a. Gloss Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Emerald® Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Satin Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

4. Concrete Stain (Water Base)

a. Flat Finish Solid
1st Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
2nd Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
(50-250 sq ft/gal)

b. Flat Finish Semi-Transparent
1st Coat: S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T0075
2nd Coat: S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T0075
(150-400 sq ft/gal)

5. Texture Systems

a. Eg-Shel Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W00350
3rd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W00350
(100-200 sq ft/gal)

b. Flat Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W01050
3rd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W01050
(100-200 sq ft/gal)

B. CONCRETE - FLOORS (Non-Vehicular)

1. Acrylic System

a. Satin Finish
1st Coat: S-W Porch & Floor Enamel, A32-200 Series
2nd Coat: S-W Porch & Floor Enamel, A32-200 Series
(4.0 mils wet, 1.5 mils dry per coat)

Alternate
1st Coat: S-W ConFlex™ Flexible Concrete Waterproofer, Smooth, CF14-50 Series
2nd Coat: S-W ConFlex Flexible Concrete Waterproofer, Smooth, CF14-50 Series
(10.0-12.0 mils wet per coat)
3rd Coat: SW H&C Clarishield™ Water-Based Clear Sealer, Wet Look
4th Coat: SW H&C Clarishield Water-Based Clear Sealer, Wet Look
(75-300 sq/ft per gallon)

2. Concrete Stain (Water Base)

a. Low Luster Finish Opaque
1st Coat: S-W H&C Acryla-Deck® Water-Based Solid Color 100% Acrylic Deck Coating
2nd Coat: S-W H&C Acryla-Deck Water-Based Solid Color 100% Acrylic Deck Coating
(100-300 sq/ft per gal)

C. MASONRY - (CMU - Concrete, Split Face, Scored, Smooth, High/Low Density, Fluted)

1. Latex Systems

a. Gloss
1st Coat: S-W PrepRite® Block Filler, B25W25
(75-125 sq ft/gal)
2nd Coat: S-W ProMar 200 Zero VOC Latex Gloss, B21-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Gloss, B21-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W PrepRite Block Filler, B25W25
(75-125 sq ft/gal)
2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
(4.0 mils wet, 1.5 mils dry per coat)

Alternate:
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W Harmony® Interior Latex Semi-Gloss, B10 Series
3rd Coat: S-W Harmony® Interior Latex Semi-Gloss, B10 Series
(4 mils wet, 1.7 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate
1st Coat: S-W PrepRite Block Filler, B25W25
(75-125 sq ft/gal)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate:
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series
3rd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series
(4 mils wet, 1.7 mils dry per coat)

Microbicidal† Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W Paint Shield® Interior Latex Eg-Shel, D12W00051
3rd Coat: S-W Paint Shield® Interior Latex Eg-Shel, D12W00051
(4 mils wet, 1.8 mils dry per coat)

C. MASONRY - (CMU - Concrete, Split Face, Scored, Smooth, High/Low Density, Fluted)
1. Latex Systems

d. Low Sheen/Low Gloss Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, Low Gloss B41-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, Low Gloss B41-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate
1st Coat: S-W PrepRite Block Filler, B25W25
(75-125 sq ft/gal)
2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
(4 mils wet, 1.6 mils dry per coat)

e. Flat Finish
1st Coat: S-W PrepRite Block Filler, B25W25
(75-125 sq ft/gal)
2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

Alternate:
1st Coat: S-W ConFlex Block Filler, CF01 Series

(75-100 sq ft/gal)
2nd Coat: S-W Harmony Interior Latex Flat, B05 Series
3rd Coat: S-W Harmony Interior Latex Flat, B05 Series
(4.0 mils wet, 1.7 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd)

a. Gloss Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

C. MASONRY - (CMU - Concrete, Split Face, Scored, Smooth, High/Low Density, Fluted)

3. Alkyd Systems (Waterbased Urethane Modified Alkyd)

a. Gloss Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Satin Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

4. Concrete Stain (Water Base)

a. Flat Finish Solid

1st Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
2nd Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
(50-250 sq ft/gal)

b. Flat Finish Semi-Transparent
1st Coat: S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T0075
2nd Coat: S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T0075
(150-400 sq ft/gal)

5. Texture Systems

a. Eg-Shel Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W00350
3rd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W00350
(100-200 sq ft/gal)

b. Flat Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W01050
3rd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W01050
(100-200 sq ft/gal)

D. METAL – (Aluminum/Galvanized)

1. Latex Systems

a. Gloss Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Gloss Enamel, B21-12650 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Gloss Enamel, B21-12650 Series
(4.0 mils wet, 1.4 mils dry per coat)

Alternate:
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProClassic® Waterborne Acrylic Gloss Enamel, B21-2100 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Gloss Enamel, B21-2100 Series
(4.0 mils wet, 1.5 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
(4.0 mils wet, 1.5 mils dry per coat)

Alternate:
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProClassic® Waterborne Acrylic Semi-Gloss Enamel, B31-1100 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss Enamel, B23-1100 Series
(4.0 mils wet, 1.3 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate:
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series
(4.0 mils wet, 1.7 mils dry per coat)

d. Low Sheen/Low Gloss Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

D. METAL – (Aluminum/Galvanized) (Cont.)
1. Latex Systems
d. Low Sheen/Low Gloss Finish
Alternate:
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
(4 mils wet, 1.6 mils dry per coat)

e. Flat Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd)
a. Gloss Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series

(4.0 mils wet, 1.4 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

3. Alkyd Systems (Waterbased Urethane Modified Alkyd)
a. Gloss Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

D. METAL – (Aluminum/Galvanized) (Cont.)

3. Alkyd Systems (Waterbased Urethane Modified Alkyd)(cont)
c. Satin Finish
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

4. Dryfall Waterborne Topcoats
a. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Semi-Gloss, B42W00083
2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Semi-Gloss, B42W00083
(6.0 mils wet, 2.3 mils dry per coat)

b. Eg-Shel Finish
1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Eg-Shel, B42W00082
2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Eg-Shel, B42W00082
(6.0 mils wet, 2.0 mils dry per coat)

c. Flat Finish
1st Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42-80 Series
2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42-80 Series
(6.0 mils wet, 1.5 mils dry per coat)

E. METAL - Ferrous (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron, Sashes, Doors, Partitions)

1. Latex Systems

a. Gloss Finish

1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Gloss Enamel, B21-12650 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Gloss Enamel, B21-12650 Series
(4.0 mils wet, 1.4 mils dry per coat)

Alternate:
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProClassic Waterborne Acrylic Gloss Enamel, B21-2100 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Gloss Enamel, B21-2100 Series
(4.0 mils wet, 1.5 mils dry per coat)

b. Semi-Gloss Finish

1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
(4.0 mils wet, 1.5 mils dry per coat)

Alternate:
1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer Off White, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProClassic® Waterborne Acrylic Semi-Gloss Enamel, B31-1100 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss Enamel, B23-1100 Series
(4.0 mils wet, 1.3 mils dry per coat)

E. METAL - Ferrous (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron, Sashes, Doors, Partitions)

1. Latex Systems(cont)

c. Eg-Shel Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate:
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
(4.0 mils wet, 1.7 mils dry per coat)

d. Low Sheen/Low Gloss Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate:
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series

(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
(4 mils wet, 1.6 mils dry per coat)

e. Flat Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd)
a. Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series

(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series

(4.0 mils wet, 1.4 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

E. METAL - Ferrous (Structural Steel Columns, Joists, Trusses, Beams, Miscellaneous & Ornamental Iron, Sashes, Doors, Partitions) (Cont.)

3. Alkyd Systems (Waterbased Urethane Modified Alkyd)
a. Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Satin Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

4. Dryfall Waterborne Topcoats

a. Semi-Gloss Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Semi-Gloss, B42W00083
(5.8 mils wet, 2.3 mils dry per coat)

b. Eg-Shel Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Eg-Shel, B42W00082
(6.0 mils wet, 1.9 mils dry per coat)

c. Flat Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1300 Series
(5-10 mils wet, 1.9-3.8 mils dry)
2nd Coat: S-W Pro Industrial Waterborne Acrylic Dryfall Flat, B42-80 Series
(6.0 mils wet, 1.5 mils dry per coat)

F. WOOD - (Walls, Ceilings, Doors, Trim, Partitions, Frames)

1. Latex Systems

a. High Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProClassic Waterborne Acrylic High Gloss Enamel, B21W351
3rd Coat: S-W ProClassic Waterborne Acrylic High Gloss Enamel, B21W351
(4.0 mils wet, 1.5 mils dry per coat)

b. Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Gloss, B21-12650 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Gloss, B21-12650 Series
(4.0 mils wet, 1.4 mils dry per coat)

Alternate:
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProClassic Waterborne Acrylic Gloss Enamel, B21-2100 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Gloss Enamel, B21-2100 Series
(4.0 mils wet, 1.5 mils dry per coat)

c. Semi-Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
(4.0 mils wet, 1.5 mils dry per coat)

Alternate:
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProClassic® Waterborne Acrylic Semi-Gloss Enamel, B31-1100 Series
3rd Coat: S-W ProClassic Waterborne Acrylic Semi-Gloss Enamel, B23-1100 Series
(4.0 mils wet, 1.3 mils dry per coat)

d. Eg-Shel Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate:
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-12600 Series
(4.0 mils wet, 1.7 mils dry per coat)

F. WOOD - (Walls, Ceilings, Doors, Trim, Partitions, Frames)(Cont.)
1. Latex Systems
e. Low Sheen/Low Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Low Gloss Eg-Shel, B41-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate:
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
(4 mils wet, 1.6 mils dry per coat)

f. Flat Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd)
a. Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series

3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series

(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series

3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series

(4.0 mils wet, 1.4 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

F. WOOD - (Walls, Ceilings, Doors, Trim, Partitions, Frames)(Cont.)

3. Alkyd Systems (Waterbased Urethane Modified Alkyd)

a. Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Satin Finish
1st Coat: S-W Premium Wall & Wood Latex Primer, B28W8111
(4.0 mils wet, 1.6 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

G. DRYWALL (Walls, Ceilings, Gypsum Board, Plaster Board, etc.)

1. Latex Systems

a. Gloss
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Gloss, B21-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Gloss, B21-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)

2nd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series
(4.0 mils wet, 1.5 mils dry per coat)

Alternate:
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Harmony® Interior Latex Semi-Gloss, B10 Series
3rd Coat: S-W Harmony® Interior Latex Semi-Gloss, B10 Series
(4 mils wet, 1.7 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series
(4.0 mils wet, 1.7 mils dry per coat)

1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series
3rd Coat: S-W Harmony Interior Latex Eg-Shel, B9 Series
(4 mils wet, 1.7 mils dry per coat)

Microbicidal† Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Paint Shield® Interior Latex Eg-Shel, D12W00051
3rd Coat: S-W Paint Shield® Interior Latex Eg-Shel, D12W00051
(4 mils wet, 1.8 mils dry per coat)

G. DRYWALL (Walls, Ceilings, Gypsum Board, Plaster Board, etc.)
1. Latex Systems
d. Low Sheen/Low Gloss Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, Low Gloss B41-1900 Series
3rd Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, Low Gloss B41-1900 Series
(4.0 mils wet, 1.7 mils dry per coat)

Alternate
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Low Gloss Eg-Shel, B41-2600 Series
(4 mils wet, 1.6 mils dry per coat)

e. Flat Finish

1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
3rd Coat: S-W ProMar 200 Zero VOC Latex Flat, B30-12600 Series
(4.0 mils wet, 1.4 mils dry per coat)

Alternate:
1st Coat: S-W Harmony Interior Latex Primer, B11W1500
(4.0 mils wet, 1.3 mils dry)
2nd Coat: S-W Harmony Interior Latex Flat, B05 Series
3rd Coat: S-W Harmony Interior Latex Flat, B05 Series
(4.0 mils wet, 1.7 mils dry per coat)

2. Alkyd Systems (Waterbased Acrylic-Alkyd)

a. Gloss Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Gloss, B35-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi- Gloss Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Semi-Gloss, B34-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Eg-Shel Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
3rd Coat: S-W ProMar 200 Waterbased Acrylic-Alkyd Eg-Shel, B33-8200 Series
(4.0 mils wet, 1.4 mils dry per coat)

G. DRYWALL (Walls, Ceilings, Gypsum Board, Plaster Board, etc.)

3. Alkyd Systems (Waterbased Urethane Modified Alkyd)

a. Gloss Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Satin Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

4. Texture Systems

a. Eg-Shel Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W00350
3rd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W00350
(100-200 sq ft/gal)

b. Flat Finish
1st Coat: S-W ProMar 200 Zero VOC Latex Primer, B28W2600
(4.0 mils wet, 1.0 mils dry)
2nd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W01050
3rd Coat: S-W Tuff Surface Acrylic Texture Finish, A44W01050
(100-200 sq ft/gal)

2.4 MATERIALS - GENERAL REQUIREMENTS

A Paints and Coatings - General:
1 Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such a procedure is specifically described in manufacturer's product instructions. VOCs need to be confirmed by using the products EDS sheets.

B Primers:
1 Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

2.5 ACCESSORIES

A Coating Application Accessories:
1 Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer’s specifications.

Part 3 EXECUTION

3.1 EXAMINATION

A Do not begin application of coatings until substrates have been properly examined and prepared. Notify Architect of unsatisfactory conditions before proceeding.

B If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

D Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION:

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. Removal must be done in accordance with EPA Renovation, Repair and Painting Rule and all related state and local regulations. Care should be taken to follow all state and local regulations which may be more strict than those set under the federal RRP Rule.

A Proper product selection, surface preparation and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.

B Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods.

C The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

D Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised. Mildew may be removed before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

E Methods

1 Aluminum
Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.

2 Block (Cinder and Concrete)
Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75°F, unless the manufacturer's products are designed for application prior to the 30-day period. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.

3 Concrete, SSPC-SP13 or NACE 6
This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

4 Cement Composition Siding/Panels
Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments.

5 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.

6 Galvanized Metal
Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP16 is necessary to remove these treatments.

7 Plaster
Must be allowed to dry thoroughly for at least 30 days before painting, unless the products are designed to be used in high pH environments. Room must be ventilated while drying; in cold, damp weather, rooms must be heated. Damaged areas must be repaired with an appropriate patching material. Bare plaster must be cured and hard. Textured, soft, porous, or powdery plaster should be treated with a solution of 1 pint household vinegar to 1 gallon of water. Repeat until the surface is hard, rinse with clear water and allow to dry.

8 Steel: Structural, Plate, etc.
Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.

9 Solvent Cleaning, SSPC-SP1
Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.

10 Hand Tool Cleaning, SSPC-SP2
Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.

11 Power Tool Cleaning, SSPC-SP3

Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.

12 White Metal Blast Cleaning, SSPC-SP5 or NACE 1
A White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.

13. Commercial Blast Cleaning, SSPC-SP6 or NACE 3
A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods

14 Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4
A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP 1 or other agreed upon methods.

15 Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals, SSPC-SP16
This standard covers the requirements for brush-off blast cleaning of uncoated or coated metal surfaces other than carbon steel by the use of abrasives. These requirements include visual verification of the end condition of the surface and materials and procedures necessary to achieve and verify the end condition. A brush-off blast cleaned non-ferrous metal surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, metal oxides (corrosion products), and other foreign matter. Intact, tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife.

16 Power Tool Cleaning to Bare Metal, SSPC-SP11
Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP1, Solvent Cleaning, or other agreed upon methods.

17 Near-White Blast Cleaning, SSPC-SP10 or NACE 2
A Near White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied

paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.

18 High- and Ultra-High Pressure Water Jetting for Steel and Other Hard Materials
SSPC-SP WJ-1/NACE WJ-1, Clean to Bare Substrate (WJ-1) is intended to be similar to the degree of surface cleanliness of SSPC-SP 5/NACE 1, except that stains are permitted to remain on the surface. This standard is used when the objective is to remove every trace of rust and other corrosion products, coating and mill scale.
SP WJ-2/NACE WJ-2, Very Thorough Cleaning (WJ-2) is intended to be similar to the degree of surface cleanliness of SSPC-SP 10/NACE 2, except that tightly adherent material, rather than only stains, is permitted to remain on the surface. This standard is used when the objective is to remove almost all rust and other corrosion products, coating, and mill scale.
SP WJ-3/NACE WJ-3, Thorough Cleaning (WJ-3) is intended to be similar to the degree of surface cleanliness of SSPC-SP 10/NACE 2, except that tightly adherent material, rather than only stains, is permitted to remain on the surface. This standard is used when the objective is to remove much of the rust and other corrosion products, coating, and mil scale, leaving tightly adherent thin films.

SSPC WJ-4/NACE WJ-4, Light Cleaning (WJ-4) is intended to be similar to the degree of surface cleanliness of SSPC-SP 10/NACE 2, except that tightly adherent material, rather than only stains, is permitted to remain on the surface. This standard is used when the objective is to allow as much of the tightly adherent rust and other corrosion products, coating, and mill scale to remain as possible, Discoloration of the surface may be present.

19 Water Blasting, NACE Standard RP-01-72
Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.

20 Wood
Must be clean and dry. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

3.3 INSTALLATION

A Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.

B Do not apply to wet or damp surfaces.
1 Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days.
2 Test new concrete for moisture content.
3 Wait until wood is fully dry.

C Apply coatings using methods recommended by manufacturer.

D Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.

E Apply coatings at spreading rate required to achieve the manufacturer's recommended dry film thickness.

F Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.

G Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to the application of each coat.

3.4 PROTECTION

A Protect finished coatings from damage until completion of project.

B Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION

09 93 23 INTERIOR STAINS AND TRANSPARENT FINISHES

Part 1 GENERAL

1.1 SECTION INCLUDES

A Interior stains, transparent, and semi-transparent finishes

1.2 RELATED SECTIONS

A Section 03 35 00 - Concrete Finishes

B Section 03 01 00 - Maintenance of Concrete

C Section 06 01 40 - Architectural Woodwork Refinishing

D Section 09 60 00 - Floor Treatments

E Section 09 61 19 - Concrete Floor Staining

F Section 09 67 00 - Fluid Applied Flooring for Concrete

G Section 09 9100 - Painting

H Section 09 96 00 - High-Performance Coatings

1.3 REFERENCES

A SSPC-SP 1 - Solvent Cleaning

B SSPC-SP 2 - Hand Tool Cleaning

C SSPC-SP 3 - Power Tool Cleaning

D SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete

E ASTM F1869 - Moisture Test by use of Calcium Chloride

F ASTM D4258 - Standard Practice for Cleaning Concrete

G ASTM D4259 - Standard Practice for Abrading Concrete

H ASTM D4260 - Standard Practice for Etching Concrete

I ASTM D4263 - Plastic Sheet Method for Checking Moisture in Concrete

J ICRI #310.2 - Surface Preparation of Concrete

1.4 SUBMITTALS

A. Submit under provisions of Section 01 33 00, Submittal Procedures.

B. Product Data: Manufacturer's data sheets on each paint and coating product should include:

1 Product characteristics
2 Surface preparation instructions and recommendations
3 Primer requirements and finish specification
4 Storage and handling requirements and recommendations
5 Application methods
6 Cleanup information

C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.

D. Coating Maintenance Manual: upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams “Custodian Paint Maintenance Manual” report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 MOCK-UP

Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of painting on the project.

A. Finish surfaces for verification of products, colors, & sheens
B. Finish area designated by Architect
C. Provide samples that designate prime & finish coats
D. Do not proceed with remaining work until the Architect approves the mock-up samples

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer’s name, label, and the following list of information:

1 Product name, and type (description)
2 Application & use instructions
3 Surface preparation
4 VOC content
5 Environmental handling and SDS
6 Batch date
7 Color number

B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction. Store materials in an area that is within the acceptable temperature range, per manufacturer’s instructions. Protect from freezing.

C. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

Part 2 PRODUCTS

2.1 MANUFACTURERS

A Acceptable Manufacturer:
The Sherwin-Williams Company
101 Prospect Avenue NW
Cleveland, OH 44115
Tel: (800) 321-8194
www.sherwin-williams.com

B. Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 Product Requirements.
When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.2 APPLICATIONS/SCOPE

A Use this article to define the scope of painting if not fully defined in a Finish Schedule or on the drawings. This article must be carefully edited to reflect the surfaces actually found on the project. In some cases, it may be enough to use the first paragraph that says, in effect, "paint everything" along with a list of items not to paint, without exhaustively defining all the different surfaces and items that must be painted.

B If the project involves repainting some but not all existing painted surfaces, be sure to indicate the extent of the repainting.

C The descriptions of each system can also be used to further refine the definition of what is to be painted, stained, or clear finished.

D Surfaces to Be Coated:

Masonry Interior Systems - Opaque

Masonry Interior Systems - Transparent

Masonry Interior Floors

Wood Interior Systems - Transparent

Wood Interior Systems - Semi-Transparent

Wood Interior Floors

2.3 SCHEDULE INDEX – INTERIOR STAIN &TRANSPARENT FINISHES

2.3 SCHEDULE

A Masonry Interior Systems (vertical) - Opaque

1. Acrylic System

a Solid Color Acrylic Latex

1st Coat: S-W H&C® COLORTOP™ Water-Based Solid Color Concrete Stain
2nd Coat: S-W H&C COLORTOP Water-Based Solid Color Concrete Stain
(50-300 sq ft/gal)

Alternate:
1st Coat: S-W H&C COLORTOP Water-Based Solid Color Concrete Stain 50
2nd Coat: S-W H&C COLORTOP Water-Based Solid Color Concrete Stain 50
(50-400 sq ft/gal)

B Masonry Interior Systems (vertical) - Transparent

1. Acrylic Systems

a Transparent Finish

1st Coat: S-W H&C HYDRO-DEFEND® Water-Based Concrete & Masonry Waterproofing Sealer Clear
2nd Coat: S-W H&C HYDRO-DEFEND Water-Based Concrete & Masonry Waterproofing Sealer Clear (Optitional)
(50-300 sq ft/gal)

Alternate:
1st Coat: S-W H&C CLARISHIELD® Water-Based Wet-Look Concrete Sealer
2nd Coat: S-W H&C CLARISHIELD Water-Based Wet-Look Concrete Sealer
(75-300 sq ft/gal)

C Masonry Interior Floors

1. Acrylic System

a Transparent Finish
1st Coat: S-W H&C HYDRO-DEFEND Water-Based Concrete & Masonry Waterproofing Sealer Clear
2nd Coat: S-W H&C HYDRO-DEFEND Water-Based Concrete & Masonry Waterproofing Sealer Clear (Optitional)
(200-300 sq ft/gal)

2. Acrylic System

a Transparent Finish
1st Coat: S-W H&C CLARISHIELD Water-Based Wet-Look Concrete Sealer
2nd Coat: S-W H&C CLARISHIELD Water-Based Wet-Look Concrete Sealer
(75-300 sq ft/gal)

3. Reactive Concrete Stain System (bare concrete only)

a Gloss Solventbased Sealer With Industrial Finish
1st Coat: S-W H&C INFUSION® Reactive Concrete Stain
(150-200 sq ft/gal)
2nd Coat: S-W H&C INFUSION Solvent-Based Clear Sealer
3rd Coat: S-W H&C INFUSION Solvent-Based Clear Sealer
(350-400 sq ft/gal)
4th Coat: S-W H&C INFUSION Industrial Floor Finish
5th Coat: S-W H&C INFUSION Industrial Floor Finish
(1000 sq ft/gal)

b Gloss Waterbased Sealer With Industrial Finish
1st Coat: S-W H&C INFUSION Reactive Concrete Stain
(150-200 sq ft/gal)
2nd Coat: S-W H&C INFUSION Water-Based Clear Sealer
3rd Coat: S-W H&C INFUSION Water-Based Clear Sealer
(350-400 sq ft/gal)
4th Coat: S-W H&C INFUSION Industrial Floor Finish
5th Coat: S-W H&C INFUSION Industrial Floor Finish
(1000 sq ft/gal)

c Gloss High Performance Industrial Sealer Finish
1st Coat: S-W H&C INFUSION Reactive Concrete Stain
2nd Coat: S-W H&C INFUSION Reactive Concrete Stain
(150-200 sq ft/gal)
3rd Coat: S-W H&C™ CLEARPROTECT™ 2-Part Water-Based Polyurethane
4th Coat: S-W H&C™ CLEARPROTECT™ 2-Part Water-Based Polyurethane
(350-400 sq ft/gal)

C Masonry Interior Floors (continued)

4. Non-Reactive Concrete Stain Systems (bare concrete only)

a Gloss Solventbased Finish
1st Coat: S-W H&C INFUSION Water-Based Semi-Transparent Decorative Stain
2nd Coat: S-W H&C INFUSION Water-Based Semi-Transparent Decorative Stain (150-300 sq ft/gal)
3rd Coat: S-W H&C INFUSION Solvent-Based Clear Sealer
4th Coat: S-W H&C INFUSION Solvent-Based Clear Sealer (350-400 sq ft/gal)

b Gloss Waterbased Finish
1st Coat: S-W H&C INFUSION Water-Based Semi-Transparent Decorative Stain
2nd Coat: S-W H&C INFUSION Water-Based Semi-Transparent Decorative Stain (150-300 sq ft/gal)
3rd Coat: S-W H&C INFUSION Water-Based Clear Sealer
4th Coat: S-W H&C INFUSION Water-Based Clear Sealer (350-400 sq ft/gal)

5. Dye Stain Systems (bare concrete only)

a Gloss Solventbased Finish
1st Coat: S-W H&C INFUSION Acetone Dye Stain (300-400 sq ft/gal)
2nd Coat: S-W H&C CLARISHIELD Solvent Based Gloss Concrete Sealer
3rd Coat: S-W H&C CLARISHIELD Solvent Based Gloss Concrete Sealer (75-300 sq ft/gal)

b Gloss Waterbased Finish
1st Coat: S-W H&C INFUSION Acetone Dye Stain (300-400 sq ft/gal)
2nd Coat: S-W H&C CLARISHIELD Water-Based Wet-Look Concrete Sealer
3rd Coat: S-W H&C CLARISHIELD Water-Based Wet-Look Concrete Sealer (75-300 sq ft/gal)

c Gloss High Performance Industrial Sealer Finish
1st Coat: S-W H&C INFUSION Acetone Dye Stain (300-400 sq ft/gal)
2nd Coat: S-W H&C™ CLEARPROTECT™ 2-Part Water-Based Polyurethane
3rd Coat: S-W H&C™ CLEARPROTECT™ 2-Part Water-Based Polyurethane (350-400 sq ft/gal)

6. Acrylic System: Opaque

a Solid Color Acrylic Latex
1st Coat: S-W H&C Acryla-Deck™ Water-Based Solid Color 100% Acrylic Deck Coating
2nd Coat: S-W H&C Acryla-Deck Water-Based Solid Color 100% Acrylic Deck Coating (50-300 sq ft/gal)

D Wood Interior Systems (vertical) – Clear Finish

1. Water Reducible Polyurethane

a **Clear Finish**
1st Coat: S-W Minwax® Waterbased Oil-Modified Polyurethane
2nd Coat: S-W Minwax® Waterbased Oil-Modified Polyurethane (Gloss, Semi-Gloss, Satin)

Alternate:
1st Coat: S-W Minwax Minwax Polycrylic Protective Finish
2nd Coat: S-W Minwax Minwax Polycrylic Protective Finish

(Gloss, Semi-Gloss, Satin, Matte)

2. Water Reducible Spar Urethane System

a **Clear Finish**

1st Coat: S-W Minwax Water Based Helmsman Spar Urethane
2nd Coat: S-W Minwax Water Based Helmsman Spar Urethane
(Gloss, Semi-Gloss, Satin)

3. Alkyd System

a **Clear Finish**

1st Coat: S-W Minwax Performance Series Fast-Dry Sanding Sealer
2nd Coat: S-W Minwax Performance Series Fast-Dry Oil Varnish
3rd Coat: S-W Minwax Performance Series Fast-Dry Oil Varnish
(Gloss, Satin)

4. Polyurethane System

a **Clear Finish**

1st Coat: S-W Minwax Fast Drying Polyurethane
2nd Coat: S-W Minwax Fast Drying Polyurethane
(Gloss, Semi-Gloss, Satin)

5. Spar Urethane System

a **Clear Finish**

1st Coat: S-W Minwax Indoor/Outdoor Helmsman Spar Urethane
2nd Coat: S-W Minwax Indoor/Outdoor Helmsman Spar Urethane
(Gloss, Semi-Gloss, Satin)

E Wood Interior Systems (vertical) - Semi-Transparent Stain

1. Water Reducible Polyurethane (topcoat)

a Semi-Transparent Stain

1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane
3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane
(Gloss, Semi-Gloss, Satin)

Alternate
1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax® Minwax Polycrylic Protective Finish
3rd Coat: S-W Minwax® Minwax Polycrylic Protective Finish
(Gloss, Semi-Gloss, Satin, Matte)

2. Water Reducible Spar Urethane (topcoat)

a Semi-Transparent Stain

1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Water Based Helmsman Spar Urethane
3rd Coat: S-W Minwax Water Based Helmsman Spar Urethane
(Gloss, Semi-Gloss, Satin)

3. Alkyd (topcoat)

a Semi-Transparent Stain

1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Performance Series Fast-Dry Sanding Sealer
3rd Coat: S-W Minwax Performance Series Fast-Dry Oil Varnish
4th Coat: S-W Minwax Performance Series Fast-Dry Oil Varnish
(Gloss, Satin)

4. Polyurethane (topcoat)

a Semi-Transparent Stain
1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Fast Drying Polyurethane Varnish
3rd Coat: S-W Minwax Fast Drying Polyurethane Varnish
(Gloss, Semi-Gloss, Satin)

5. Spar Urethane System (topcoat)

a Semi-Transparent Stain
1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Indoor/Outdoor Helmsman Spar Urethane
3rd Coat: S-W Minwax Indoor/Outdoor Helmsman Spar Urethane
(Gloss, Semi-Gloss, Satin)

F Wood Interior Floors-Clear Finishes

1. Water Reducible Polyurethane (topcoat, light foot traffic)

a. Clear Finish
1st Coat: S-W Minwax Waterbased Oil-Modified Polyurethane
2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane
(Gloss, Semi-Gloss, Satin)

Alternate:
1st Coat: S-W Minwax Ultimate Floor Finish
2nd Coat: S-W Minwax Ultimate Floor Finish
(Gloss, Semi-Gloss, Satin)

2. Polyurethane (topcoat)

a Clear Finish
1st Coat: S-W Minwax Fast Drying Polyurethane Varnish
2nd Coat: S-W Minwax Fast Drying Polyurethane Varnish
(Gloss, Semi-Gloss, Satin)

Alternate:
1st Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors
2nd Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors
(Gloss, Semi-Gloss, Satin)

1st Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors (350 VOC)
2nd Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors (350 VOC)
(Gloss, Semi-Gloss, Satin)

G Wood Interior Floors- Semi-Transparent Stain

1. Water Reducible Polyurethane (topcoat, light foot traffic)

a Semi-Transparent Stain

1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane
3rd Coat: S-W Minwax Waterbased Oil-Modified Polyurethane
(Gloss, Semi-Gloss, Satin)

Alternate:
1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax® Ultimate Floor Finish
3rd Coat: S-W Minwax Ultimate Floor Finish
(Gloss, Semi-Gloss, Satin)

2. Polyurethane (topcoat)

a Semi-Transparent Stain

1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Fast Drying Polyurethane
3rd Coat: S-W Minwax Fast Drying Polyurethane
(Gloss, Semi-Gloss, Satin)

Alternate:
1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors
3rd Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors
(Gloss, Semi-Gloss, Satin)

1st Coat: S-W Minwax Performance Series Tintable Wood Stain 250 VOC (Optional)
Or S-W Minwax Performance Series Tintable Wood Stain 550 VOC (Optional)
2nd Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors (350 VOC)
3rd Coat: S-W Minwax Super Fast-Drying Polyurethane for Floors (350 VOC)
(Gloss, Semi-Gloss, Satin)

2.4 MATERIALS - GENERAL REQUIREMENTS

A Paints and Coatings - General:
1 Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
2 For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.

B Primers:
1 Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
2 The execution of backpriming of woodwork is usually specified in the woodwork section, although the materials may be specified here.

2.5 ACCESSORIES:

A Coating Application Accessories:

1 Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

PART 3 EXECUTIONTION

3.1 EXAMINATION

A Do not begin application of coatings until substrates have been properly examined and prepared. Notify Architect of unsatisfactory conditions before proceeding.

B If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

D Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. Removal must be done in accordance with EPA Renovation, Repair and Painting Rule and all related state and local regulations. Care should be taken to follow all state and local regulations which may be more strict than those set under the federal RRP Rule.

A Proper product selection, surface preparation, and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.

B Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods.

C The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

D Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised.

Mildew may be removed before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

E Surface Preparation

1 Wood—Interior

All finishing lumber and flooring must be stored in dry, warm rooms to prevent absorption of moisture, shrinkage, and roughening of the wood. All surfaces must be sanded smooth, with the grain, never across it. Surface blemishes must be corrected and the area cleaned of dust before coating. Patching compounds will generally be visible through clear coatings.

2 Bare Concrete:

New concrete must be cured at least 30 days at 75°F. If the concrete feels like 120-grit sandpaper, the pores are open enough for this product to bond properly with the substrate. If the surface does not have this texture, etch the surface (unless acid staining). Rough textured concrete does not need to be etched. Do not etch painted surfaces. Prepared concrete should have a pH between 6 and 9. Not adequately degreasing, etching, or allowing the substrate to dry completely will result in poor adhesion.

3 Slip Resistance:

Some surfaces such as inclined driveways, garages, steps, patios, etc., may require a slip resistant additive for safety. Add H&C SharkGrip® Slip Resistant Additive to the final coat applied following label directions. This product should not be used in place of a non-skid finish.

3.3 INSTALLATION

A Testing: Due to the wide variety of substrates, preparation methods, application methods and environments, one should test the product in an inconspicuous spot for adhesion and compatibility prior to full-scale application.

B Apply all coatings and materials with manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendation.

C Do not apply to wet or damp surfaces.

1.Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days.
2.Test new concrete for moisture content.
3.Wait until wood is fully dry

D Apply coatings using methods recommended by manufacturer.

E Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.

F Apply coatings at spreading rate required to achieve the manufacturer's recommended dry film thickness.

G Regardless of number of coats specified, apply as many coats as necessary for complete hide and uniform appearance.

H Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to the application of each coat.

3.4 PROTECTION

A Protect finished coatings from damage until completion of project.

B Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION

09 91 13 EXTERIOR COMMERCIAL PAINTS AND COATINGS

Part 1 GENERAL

1.1 SECTION INCLUDES

A Exterior paint and coating systems

1.2 RELATED SECTIONS

A Section 05 05 13 - Shop Applied Coatings for Metal

B Section 06 01 40 - Architectural Woodwork Refinishing

C Section 06 05 83 - Shop Applied Wood Coatings

D Section 07 19 00 - Water Repellents

E Section 09 67 00 - Fluid Applied Flooring for Concrete

F Section 09 93 00 - Stains and Transparent Finishes

G Section 09 96 00 - High-Performance Coatings

1.3 REFERENCES

A SSPC-SP 1 - Solvent Cleaning

B SSPC-SP 2 - Hand Tool Cleaning

C SSPC-SP 3 - Power Tool Cleaning

D SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete

1.4 SUBMITTALS

A Submit under provisions of Section 01 33 00, Submittal Procedures.

B Product Data: Manufacturer's data sheets on each paint and coating product should include:

1 Product characteristics
2 Surface preparation instructions and recommendations
3 Primer requirements and finish specification
4 Storage and handling requirements and recommendations
5 Application methods
6 Clean-up Information

C Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.

D Coating Maintenance Manual: upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams “Custodian Paint Maintenance Manual” report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 MOCK-UP

Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of painting on the project.

A. Finish surfaces for verification of products, colors, & sheens.
B. Finish area designated by Architect.
C. Provide samples that designate prime & finish coats.
D. Do not proceed with remaining work until the Architect approves the mock-up samples.

1.6 DELIVERY, STORAGE, AND HANDLING

A Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer’s name, label, and the following list of information:

1 Product name, and type (description)
2 Application & use instructions
3 Surface preparation
4 VOC content
5 Environmental handling and SDS
6 Batch date
7 Color number

B Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
Store materials in an area that is within the acceptable temperature range, per manufacturer’s instructions. Protect from freezing.

C Handling: Maintain a clean, dry storage area to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.

Part 2 PRODUCTS

2.1 MANUFACTURERS

A Acceptable Manufacturer:
The Sherwin-Williams Company
101 Prospect Avenue NW
Cleveland, OH 44115
Tel: (800) 321-8194
www.sherwin-williams.com

B Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 Product Requirements.
When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

2.2 APPLICATIONS/SCOPE

A Use this article to define the scope of painting if not fully defined in a Finish Schedule or on the drawings. This article must be carefully edited to reflect the surfaces actually found on the project. In some cases, it may be enough to use the first paragraph that says, in effect, "paint everything" along with a list of items not to paint, without exhaustively defining all the different surfaces and items that must be painted.

B If the project involves repainting some but not all existing painted surfaces, be sure to indicate the extent of the repainting.

C The descriptions of each system can also be used to further refine the definition of what is to be painted, stained, or clear finished.

D Surfaces to Be Coated:

Concrete: Cementitious Siding, Flexboard, Transite, and Shingles (Non-Roof)
Masonry: Concrete Masonry Units, Cinder or Concrete Block
Concrete: Concrete Floors, Patios, Porches, Steps & Platforms (Non-Vehicular)
Metal: Aluminum/Galvanized
Metal Ferrous: Misc. Iron, Ornamental Iron
Wood: Decks, Floors, and Platforms (Non-Vehicular)
Wood: Siding, Trim, Shutters, Sash, and Misc. Hardboard
Architectural PVC, Plastic, Fiberglass
Vinyl: Siding, EIFS, Synthetic Stucco
Drywall: Gypsum Board, and Exterior Drywall

2.3 SCHEDULE INDEX - EXTERIOR SURFACES (NORMAL EXPOSURE)

2.3 SCHEDULE

A. CONCRETE - (Cementitious Siding, Flexboard, Transite Board, Shingles (Non-Roof), Common Brick, Stucco, Tilt-up, Precast, and Poured-in-place Cement)

1. Latex Systems

a. Gloss Finish

1st Coat: S-W Loxon® Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 dry)
2nd Coat: S-W A-100® Exterior Latex Gloss, A8 Series
3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 dry)
2nd Coat: S-W Resilience® Latex Gloss, K44 Series
3rd Coat: S-W Resilience Latex Gloss, K44 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Satin Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 dry)
2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series
3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series
(4.0 mils wet, 1.5 mils dry per coat)

Early Moisture Resistant Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Resilience Latex Satin, K43 Series
3rd Coat: S-W Resilience Latex Satin, K43 Series
(4.0 mils wet, 1.6 mils dry per coat)

c. Low Sheen Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 dry)
2nd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
3rd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
(4.0 mils wet, 1.5 mils dry per coat)

d. Flat Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series
3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series
(4.0 mils wet, 1.4 mils dry per coat)

Self-Cleaning Acrylic Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Loxon Self-Cleaning Acrylic, LX13 Series
3rd Coat: S-W Loxon Self-Cleaning Acrylic, LX13 Series
(5.0-7.0 mils wet, 2.1-2.9 mils dry per coat)

A. CONCRETE - (Cementitious Siding, Flexboard, Transite Board, Shingles (Non-Roof), Common Brick, Stucco, Tilt-up, Precast, and Poured-in-place Cement) (Cont.)

1. Latex Systems

d. Flat Finish (cont.)

Early Moisture Resistant Finish

1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W Resilience Latex Flat, K42 Series
3rd Coat: S-W Resilience Latex Flat, K42 Series
(4.0 mils wet, 1.6 mils dry per coat)

High Build Coating

1st Coat: S-W Loxon XP™, LX11 Series
(14.0-18.0 mils wet; 6.5-8.4 mils dry per coat)

2. Elastomeric Systems (Not Including; Cementitious Siding, Flexboard, Transite Board, Shingles (Non-Roof))

a. Flat Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11 Series
3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11 Series
(13.0-16.0 mils wet, 6-7.5 mils dry per coat)

Alternate:

1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ConFlex SherLastic® Elastomeric Coating, CF16 Series
3rd Coat: S-W ConFlex SherLastic Elastomeric Coating, CF16 Series
(10.0-14.0 mils wet,4.0-6.0 mils dry per coat)

3. Textured Elastomeric Systems

a. Textured Finish
1st Coat: S-W Loxon Concrete & Masonry Primer, LX02 Series
(8.0 mils wet, 3.2 mils dry)
2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11 Series
(13.0-16.0 mils wet, 6-7.5 mils dry per coat)
3rd Coat: S-W ConFlex XL Textured Elastomeric High Build Coating, CF12 Series
(Fine, Medium, Extra Coarse) (70-80 sq ft/gal)

Alternate:

1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ConFlex SherLastic Elastomeric Coating, CF16 Series
3rd Coat: S-W ConFlex SherLastic Elastomeric Coating, CF16 Series
(10.0-14.0 mils wet,4.0-6.0 mils dry per coat)

A. CONCRETE - (Cementitious Siding, Flexboard, Transite Board, Shingles (Non-Roof), Common Brick, Stucco, Tilt-up, Precast, and Poured-in-place Cement) (Cont.)

4. Textured & Smooth Systems

a. Textured (Waterbased Finish)
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series (50-100 sq ft/gal)
2nd Coat: S-W ConFlex UltraCrete™ Texture Coating, CF17 Series (Fine, Medium, Extra Coarse) (50-80 sq ft/gal)

b. Textured (Solvent Based Finish)
1st Coat: S-W ConFlex UltraCrete Solvent Borne Texture Coating, CF18 Series (Smooth) (100-160 sq ft/gal)
2nd Coat: S-W ConFlex UltraCrete Solvent Borne Texture Coating, CF18 Series (Smooth, Fine, Medium) (50-80 sq ft/gal)

c. Smooth (Waterbased Finish)
1st Coat: S-W Loxon XP, LX11 Series
2nd Coat: S-W Loxon XP, LX11 Series
(14.0-18 mils wet, 6.5-8.4 mils dry per coat) 2nd coat optional

5. Stain Systems

a. Solid Color Waterborne Finish
1st Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
2nd Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
(50-250 sq/ft gal)

Alternate:
1st Coat: S-W H&C® COLORTOP™ Water-Based Solid Color Concrete Stain
2nd Coat: S-W H&C COLORTOP Water-Based Solid Color Concrete Stain
(50-300 sq ft/gal)

b. Semi-Transparent Waterborne Finish
1st Coat: S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T Series
2nd Coat:S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T Series
(150-400 sq ft/gal)

6. Clear Water Repellent

a. Clear Waterborne
1st Coat: S-W ConFlex Water Repellent 7% Siloxane, CF31 Series
2nd Coat: S-W ConFlex Water Repellant 7% Siloxane, CF31 Series
(25-200 sq ft/ gal)

b. Clear Solventborne
1st Coat: S-W Loxon 40% Silane Water Repellent, LX31T Series
2nd Coat: S-W Loxon 40% Silane Water Repellent, LX31T Series
(25-175 sq ft/ gal)

B. MASONRY (Concrete Masonry Units, Cinder or Concrete Block)

1. Latex Systems

a. Gloss Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W Resilience Latex Gloss, K44 Series
3rd Coat: S-W Resilience Latex Gloss, K44 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W Solo® Acrylic Semi-Gloss, A76 Series
3rd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
(4.0 mils wet, 1.5 mils dry per coat)

c. Satin Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series
3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series
(4.0 mils wet, 1.5 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W Resilience Latex Satin, K43 Series
3rd Coat: S-W Resilience Latex Satin, K43 Series
(4.0 mils wet, 1.6 mils dry per coat)

d. Low Sheen Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
3rd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
(4.0 mils wet, 1.5 mils dry per coat)

e. Flat Finish
1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series
3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series
(4.0 mils wet, 1.4 mils dry per coat)

Self-Cleaning Acrylic Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)

2nd Coat: S-W Loxon Self-Cleaning Acrylic, LX13 Series
3rd Coat: S-W Loxon Self-Cleaning Acrylic, LX13 Series
(5.0-7.0 mils wet, 2.1-2.9 mils dry per coat)

B. MASONRY (Concrete Masonry Units, Cinder or Concrete Block) (Cont.)

1. Latex Systems

e. Flat Finish (cont.)

Early Moisture Resistant Finish

1st Coat: S-W ConFlex Block Filler, CF01 Series
(75-100 sq ft/gal)
2nd Coat: S-W Resilience Latex Flat, K42 Series
3rd Coat: S-W Resilience Latex Flat, K42 Series
(4.0 mils wet, 1.6 mils dry per coat)

High Build Coating

1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W Loxon XP, LX11 Series
(14.0-18.0 mils wet, 6.5-8.4 mils dry)

2. Elastomeric Systems

a. Flat Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11 Series
3rd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11 Series
(13.0-16.0 mils wet, 6-7.5 mils dry per coat)

Alternate:

1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ConFlex Sherlastic Elastomeric Coating, CF16 Series
3rd Coat: S-W ConFlex Sherlastic Elastomeric Coating, CF16 Series
(10.0-14.0 mils wet,4.0-6.0 mils dry per coat)

3. Textured Elastomeric System

a. Textured Finish
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ConFlex XL Elastomeric High Build Coating, CF11 Series
(13.0-16.0 mils wet, 6-7.5 mils dry per coat)
3rd Coat: S-W ConFlex XL Textured Elastomeric High Build Coating, CF12 Series
(Fine, Medium, Extra Coarse) (70-80 sq ft/gal)

4. Textured & Smooth Masonry Systems

a. Textured (Water Based Finish)
1st Coat: S-W Loxon Acrylic Block Surfacer, LX01 Series
(50-100 sq ft/gal)
2nd Coat: S-W ConFlex UltraCrete Textured Coating, CF17 Series
(Fine, Medium, Extra Coarse) (50-80 sq ft/gal)

b. Textured Finish (Solvent Based)
1st Coat: S-W ConFlex UltraCrete Solvent Borne Texture Coating, CF18 Series
(Smooth) (100-160 sq ft/gal)
2nd Coat: S-W ConFlex UltraCrete Solvent Borne Texture Coating, CF18 Series
(Smooth, Fine, Medium) (50-80 sq ft/gal)

c. Smooth (Water Based Finish)
1st Coat: S-W Loxon XP, LX11 Series
2nd Coat: S-W Loxon XP, LX11 Series
(14.0-18 mils wet, 6.5-8.4 mils dry per coat) 2nd coat optional

B. MASONRY (Concrete Masonry Units, Cinder or Concrete Block) (Cont.)
5. Stain Systems
a. Solid Color Waterborne Finish
1st Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
2nd Coat: S-W Loxon Vertical Concrete Stain, LX31W Series
(50-250 sq ft/gal)

b. Semi-Transparent Waterborne Finish
1st Coat: S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T Series
2nd Coat:S-W Loxon Vertical Semi-Transparent Concrete Stain, LX31T Series
(150-400 sq ft/gal)

6. Clear Water Repellant
a. Clear
1st Coat: S-W ConFlex Water Repellant 7% Siloxane, CF31 Series
2nd Coat: S-W ConFlex Water Repellant 7% Siloxane, CF31 Series
(25-200 sq ft/gal)

b. Clear Solventborne
1st Coat: S-W Loxon 40% Silane Water Repellent, LX31T Series
2nd Coat: S-W Loxon 40% Silane Water Repellent, LX31T Series
(25-175 sq ft/ gal)

C. CONCRETE - (Concrete Floors, Patios, Porches, Steps & Platforms, (Non-Vehicular))
1. Acrylic Water-Based Systems
a. Gloss Finish
1st Coat: S-W ConFlex Flexible Concrete Waterproofer, Smooth, CF14 Series
2nd Coat: S-W ConFlex Flexible Concrete Waterproofer, Smooth, CF14 Series
(10.0-12.0 mils wet per coat)
3rd Coat: SW H&C Clarishield™ Water-Based Clear Sealer, Wet Look
4th Coat: SW H&C Clarishield Water-Based Clear Sealer, Wet Look
(200 sq/ft per gallon)

b. Satin Finish
1st Coat: S-W Porch & Floor Enamel, A32 Series
2nd Coat: S-W Porch & Floor Enamel, A32 Series
(4.0 mils wet; 1.5 mils dry per coat)

c. Low Luster Finish
1st Coat: S-W ConFlex Flexible Concrete Waterproofer, Smooth, CF14 Series
2nd Coat: S-W ConFlex Flexible Concrete Waterproofer, Smooth, CF14 Series
(10.0-12.0 mils wet per coat)
3rd Coat: SW H&C UltraPaver™ Water-Based Paver Sealer, Natural or Gloss
4th Coat: SW H&C UltraPaver Water-Based Paver Sealer, Natural or Gloss
(100-150 sq ft/gal)

d. Flat Finish
1st Coat: S-W ConFlex Flexible Concrete Waterproofer, Smooth, CF14 Series
2nd Coat: S-W ConFlex Flexible Concrete Waterproofer, Smooth, CF14 Series

(10.0-12.0 mils wet per coat)

2. Solid Color Stain

a. Low Luster Finish
1st Coat: S-W H&C Acryla-Deck™ Water-Based Solid Color 100% Acrylic Deck Coating
2nd Coat: S-W H&C Acryla-Deck Water-Based Solid Color 100% Acrylic Deck Coating
(50-300 sq ft/gal)

D. METAL – (Aluminum/Galvanized)

1. Latex Systems

a. Gloss Finish
1st Coat: S-W A-100 Exterior Latex Gloss, A8 Series
2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W Resilience Latex Gloss, K44 Series
2nd Coat: S-W Resilience Latex Gloss, K44 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
2nd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
(4.0 mils wet, 1.5 mils dry per coat)

c. Satin Finish
1st Coat: S-W A-100 Exterior Latex Satin, A82 Series
2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series
(4.0 mils wet, 1.5 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W Resilience Latex Satin, K43 Series
2nd Coat: S-W Resilience Latex Satin, K43 Series
(4.0 mils wet, 1.6 mils dry per coat)

d. Low Sheen Finish
1st Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
2nd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
(4.0 mils wet, 1.5 mils dry per coat)

e. Flat Finish
1st Coat: S-W A-100 Exterior Latex Flat, A6 Series
2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W Resilience Latex Flat, K42 Series
2nd Coat: S-W Resilience Latex Flat, K42 Series
(4.0 mils wet, 1.6 mils dry per coat)

D. METAL – (Aluminum/Galvanized) (Cont.)

2. Alkyd Systems (Waterbased Urethane Modified Alkyd)

a. Gloss Finish

1st Coat: S-W Pro Industrial™ Pro-Cryl® Universal Primer, B66-1310 Series
(5.0 mils wet, 1.9 mils dry)
2nd Coat: S-W Emerald® Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5.0 mils wet, 1.9 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

c. Satin Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5.0 mils wet, 1.9 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

E. METAL Ferrous - (Structural Steel, Beams, Miscellaneous & Ornamental Iron, Sashes, Doors, Partitions, Trim)

1. Latex Systems

a. Gloss Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5.0 mils wet, 2.0 mils dry)
2nd Coat: S-W Solo Acrylic Gloss, A77 Series
3rd Coat: S-W Solo Acrylic Gloss, A77 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Semi-Gloss Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5.0 mils wet, 2.0 mils dry)
2nd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
3rd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
(4.0 mils wet, 1.5 mils dry per coat)

2. Alkyd Systems (Waterbased Urethane Modified Alkyd)

a. Gloss Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5.0 mils wet, 1.9 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Gloss, K39-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

b. Semi-Gloss Finish

1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5.0 mils wet, 1.9 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series

(4.0 mils wet, 1.4 mils dry per coat)

c. Satin Finish
1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series
(5.0 mils wet, 1.9 mils dry)
2nd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
3rd Coat: S-W Emerald Urethane Trim Enamel Satin, K37-750 Series
(4.0 mils wet, 1.4 mils dry per coat)

F. WOOD – (Decks, Floors, Platforms, (Non-Vehicular))

1. Acrylic System

a. Satin Floor Finish
1st Coat: S-W Porch & Floor Enamel, A32 Series
2nd Coat: S-W Porch & Floor Enamel, A32 Series
(4.0 mils wet, 1.5 mils dry per coat)

2. Stain Systems

a. Solid Color Acrylic Latex (Waterborne)
1st Coat: S-W SuperDeck® Exterior Waterborne Solid Color Deck Stain,
2nd Coat: S-W SuperDeck Exterior Waterborne Solid Color Deck Stain,
SD7-150 Series (200-400 sq ft/gal)

b. Semi-Solid Stain (Waterborne)
1st Coat: S-W SuperDeck Exterior Waterborne Semi-Solid Stain, SD5T15
2nd Coat: S-W SuperDeck Exterior Waterborne Semi-Solid Stain, SD5T15
(100-350 sq ft/gal)

c. Semi-Transparent Stain (Waterborne)
1st Coat: S-W SuperDeck Exterior Waterborne Semi-Transparent Stain, SD3T25
2nd Coat: S-W SuperDeck Exterior Waterborne Semi-Transparent Stain, SD3T25
(100-350 sq ft/gal)

d. Semi-Transparent Stain (Oil-Based)
1st Coat: S-W SuperDeck Exterior Oil-Based Semi-Transparent Stain, SD4C125
(100-350 sq ft/gal)

e. Transparent Stain
1st Coat: S-W SuperDeck Exterior Oil-Based Transparent Stain, SD2 Series
(150-300 sq ft/gal)

f. Clear Stain
1st Coat: S-W SuperDeck Exterior Waterborne Clear Sealer, SD1T100
2nd Coat: S-W SuperDeck Exterior Waterborne Clear Sealer, SD1T100
(150-300 sq ft/gal)

G. WOOD - (Siding, Trim, Shutters, Sashes, Misc., Hardboard-Bare/Primed)

1. Latex Systems

a. Gloss Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Resilience Latex Gloss, K44 Series
3rd Coat: S-W Resilience Latex Gloss, K44 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
3rd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
(4.0 mils wet, 1.5 mils dry per coat)

c. Satin Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series
3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series
(4.0 mils wet, 1.5 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Resilience Latex Satin, K43 Series
3rd Coat: S-W Resilience Latex Satin, K43 Series
(4.0 mils wet, 1.6 mils dry per coat)

d. Low Sheen Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
3rd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
(4.0 mils wet, 1.5 mils dry per coat)

e. Flat Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series
3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W Exterior Latex Wood Primer, B42W8041
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Resilience Latex Flat, K42 Series
3rd Coat: S-W Resilience Latex Flat, K42 Series
(4.0 mils wet, 1.6 mils dry per coat)

G. WOOD - (Siding, Trim, Shutters, Sashes, Misc., Hardboard-Bare/Primed)(Cont.)
2. Stain - Water Reducible Systems
a. Solid Color
1st Coat: S-W WoodScapes® Solid Color Stain, A15 Series
2nd Coat: S-W WoodScapes Solid Color Stain, A15 Series
(200-400 sq ft/gal)

Alternate:
1st Coat: S-W ProMar® Solid Color Stain, A16 Series
2nd Coat: S-W ProMar Solid Color Stain, A16 Series
(200-400 sq ft/gal)

b. Semi-Transparent
1st Coat: S-W WoodScapes Semi-Transparent Stain, A15T5
2nd Coat: S-W WoodScapes Semi-Transparent Stain, A15T5
(100-350 sq ft/gal)

Semi-Transparent - Satin Finish
1st Coat: S-W SuperDeck Log Home & Deck Stain, SD8T200
2nd Coat: S-W SuperDeck Log Home & Deck Stain, SD8T200
(100-350 sq ft/gal)

H. ARCHITECTURAL PVC, PLASTIC, FIBERGLASS
(due to the variety of substrates, check for compatibility)

1. Latex Systems

a. Gloss Finish
1st Coat: Extreme Bond™ Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: Extreme Bond Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W Resilience Latex Gloss, K44 Series
3rd Coat: S-W Resilience Latex Gloss, K44 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Semi-Gloss
1st Coat: Extreme Bond Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
3rd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
(4.0 mils wet, 1.5 mils dry per coat)

c. Satin Finish
1st Coat: Extreme Bond Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series
3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series
(4.0 mils wet, 1.5 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: Extreme Bond Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W Resilience Latex Satin, K43 Series
3rd Coat: S-W Resilience Latex Satin, K43 Series
(4.0 mils wet, 1.6 mils dry per coat)

d. Low Sheen Finish
1st Coat: Extreme Bond Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
3rd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
(4.0 mils wet, 1.5 mils dry per coat)

e. Flat Finish
1st Coat: Extreme Bond Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series
3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: Extreme Bond Interior/Exterior Bonding Primer, B51W150
(3.1 mils wet, .9 mils dry)
2nd Coat: S-W Resilience Latex Flat, K42 Series
3rd Coat: S-W Resilience Latex Flat, K42 Series
(4.0 mils wet, 1.6 mils dry per coat)

I. VINYL SIDING*, EIFS, SYNTHETIC STUCCO

1. Latex Systems

a. Gloss Finish
1st Coat: S-W A-100 Exterior Latex Gloss, A8 Series
2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
(4.0 mils wet, 1.4 mils dry per coat)

VinylSafe™ Early Moisture Resistant Finish
1st Coat: S-W Resilience Latex Gloss, K44 Series
2nd Coat: S-W Resilience Latex Gloss, K44 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Semi-Gloss Finish
1st Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
2nd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
(4.0 mils wet, 1.5 mils dry per coat)

c. Satin Finish
1st Coat: S-W A-100 Exterior Latex Satin, A82 Series
2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series
(4.0 mils wet, 1.5 mils dry per coat)

VinylSafe Early Moisture Resistant Finish
1st Coat: S-W Resilience Latex Satin, K43 Series
2nd Coat: S-W Resilience Latex Satin, K43 Series
(4.0 mils wet, 1.6 mils dry per coat)

d. Low Sheen Finish
1st Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
2nd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
(4.0 mils wet, 1.5 mils dry per coat)

e. Flat Finish
1st Coat: S-W A-100 Exterior Latex Flat, A6 Series

2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series
(4.0 mils wet, 1.4 mils dry per coat)

VinylSafe Early Moisture Resistant Finish
1st Coat: S-W Resilience Latex Flat, K42 Series
2nd Coat: S-W Resilience Latex Flat, K42 Series
(4.0 mils wet, 1.6 mils dry per coat)

J. DRYWALL - (Gypsum Board, Exterior Drywall)

1. Latex Systems

a. Gloss Finish
1st Coat: S-W PrepRite® ProBlock® Interior/Exterior Latex Primer, B51-600 Series
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
3rd Coat: S-W A-100 Exterior Latex Gloss, A8 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer, B51-600 Series
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Resilience Latex Gloss, K44 Series
3rd Coat: S-W Resilience Latex Gloss, K44 Series
(4.0 mils wet, 1.6 mils dry per coat)

b. Semi-Gloss
1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer, B51-600 Series
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
3rd Coat: S-W Solo Acrylic Semi-Gloss, A76 Series
(4.0 mils wet, 1.5 mils dry per coat)

c. Satin Finish
1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer, B51-600 Series
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Satin, A82 Series
3rd Coat: S-W A-100 Exterior Latex Satin, A82 Series
(4.0 mils wet, 1.5 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer, B51-600 Series
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Resilience Latex Satin, K43 Series
3rd Coat: S-W Resilience Latex Satin, K43 Series
(4.0 mils wet, 1.6 mils dry per coat)

d. Low Sheen Finish
1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer, B51-600 Series
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
3rd Coat: S-W A-100 Exterior Latex Low Sheen, A12 Series
(4.0 mils wet, 1.5 mils dry per coat)

e. Flat Finish
1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer, B51-600 Series

(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W A-100 Exterior Latex Flat, A6 Series
3rd Coat: S-W A-100 Exterior Latex Flat, A6 Series
(4.0 mils wet, 1.4 mils dry per coat)

Early Moisture Resistant Finish
1st Coat: S-W PrepRite ProBlock Interior/Exterior Latex Primer, B51-600 Series
(4.0 mils wet, 1.4 mils dry)
2nd Coat: S-W Resilience Latex Flat, K42 Series
3rd Coat: S-W Resilience Latex Flat, K42 Series
(4.0 mils wet, 1.6 mils dry per coat)

2.4 MATERIALS - GENERAL REQUIREMENTS

A Paints and Coatings - General:
1 Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such a procedure is specifically described in manufacturer's product instructions. VOCs need to be confirmed by using the products EDS sheets.

B Primers:
1 Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

2.5 ACCESSORIES:

A Coating Application Accessories:
1 Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required per manufacturer’s specifications.

Part 3 EXECUTION

3.1 EXAMINATION

A Do not begin application of coatings until substrates have been properly examined and prepared. Notify Architect of unsatisfactory conditions before proceeding.

B If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C Proceed with work only after conditions have been corrected, and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

D Previously Painted Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION:

WARNING! Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority. Removal must be done in accordance with EPA Renovation, Repair and Painting Rule and all related state and local regulations. Care should be taken to follow all state and local regulations which may be more strict than those set under the federal RRP Rule.

A Proper product selection, surface preparation, and application affect coating performance. Coating integrity and service life will be reduced because of improperly prepared surfaces. Selection and implementation of proper surface preparation ensures coating adhesion to the substrate and prolongs the service life of the coating system.

B Selection of the proper method of surface preparation depends on the substrate, the environment, and the expected service life of the coating system. Economics, surface contamination, and the effect on the substrate will also influence the selection of surface preparation methods.

C The surface must be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

D Prior to attempting to remove mildew, it is always recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions may be advised.

Mildew may be removed before painting by washing with a solution of 1 part liquid bleach and 3 parts water. Apply the solution and scrub the mildewed area. Allow the solution to remain on the surface for 10 minutes. Rinse thoroughly with water and allow the surface to dry before painting. Wear protective eyewear, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.

E No exterior painting should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50°F, unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface and material temperatures must be 50°F or higher to use low temperature products.

F Methods:

1 Aluminum
Remove all oil, grease, dirt, oxide and other foreign material by cleaning per SSPC-SP1, Solvent Cleaning.

2 Block (Cinder and Concrete)
Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75°F, unless the manufacturer's products are designed for application prior to the 30-day period. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to

prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.

3 Concrete, SSPC-SP13 or NACE 6
This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

4 Cement Composition Siding/Panels
Remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or checked paint should be scraped and sanded to a sound surface. Pressure clean, if needed, with a minimum of 2100 psi pressure to remove all dirt, dust, grease, oil, loose particles, laitance, foreign material, and peeling or defective coatings. Allow the surface to dry thoroughly. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments.

5. Drywall—Exterior
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.

6 Exterior Composition Board (Hardboard)
Some composition boards may exude a waxy material that must be removed with a solvent prior to coating. Whether factory primed or unprimed, exterior composition board siding (hardboard) must be cleaned thoroughly and primed with an alkyd primer.

7 Galvanized Metal
Clean per SSPC-SP1 using detergent and water or a degreasing cleaner to remove greases and oils. Apply a test area, priming as required. Allow the coating to dry at least one week before testing. If adhesion is poor, Brush Blast per SSPC-SP16 is necessary to remove these treatments.

8 Steel: Structural, Plate, etc.
Should be cleaned by one or more of the surface preparations described below. These methods are used throughout the world for describing methods for cleaning structural steel. Visual standards are available through the Society of Protective Coatings. A brief description of these standards together with numbers by which they can be specified follow.

9 Solvent Cleaning, SSPC-SP1
Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds, and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over additional areas in the cleaning process. Be sure to allow adequate ventilation.

10 Hand Tool Cleaning, SSPC-SP2
Hand Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before hand tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.

11 Power Tool Cleaning, SSPC-SP3
Power Tool Cleaning removes all loose mill scale, loose rust, and other detrimental foreign matter. It is not intended that adherent mill scale, rust, and paint be removed by this process. Before power tool cleaning, remove visible oil, grease, soluble welding residues, and salts by the methods outlined in SSPC-SP1.

12 White Metal Blast Cleaning, SSPC-SP5 or NACE 1
A White Metal Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.

13 Commercial Blast Cleaning, SSPC-SP6 or NACE 3
A Commercial Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 33 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.

14 Brush-Off Blast Cleaning, SSPC-SP7 or NACE 4
A Brush-Off Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose paint. Tightly adherent mill scale, rust, and paint may remain on the surface. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP 1 or other agreed upon methods.

15 Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals, SSPC-SP16
This standard covers the requirements for brush-off blast cleaning of uncoated or coated metal surfaces other than carbon steel by the use of abrasives. These requirements include visual verification of the end condition of the surface and materials and procedures necessary to achieve and verify the end condition. A brush-off blast cleaned non-ferrous metal surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, metal oxides (corrosion products), and other foreign matter. Intact, tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife.

16 Power Tool Cleaning to Bare Metal, SSPC-SP11
Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP1, Solvent Cleaning, or other agreed upon methods.

17 Near-White Blast Cleaning, SSPC-SP10 or NACE 2
A Near White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods.

18 Water Blasting, NACE Standard RP-01-72
Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.

19 Stucco
Must be clean and free of any loose stucco. If recommended procedures for applying stucco are followed, and normal drying conditions prevail, the surface may be painted in 30 days. The pH of the surface should be between 6 and 9, unless the products are designed to be used in high pH environments such as Loxon.

20 Wood—Exterior
Must be clean and dry. Knots and pitch streaks must be scraped, sanded, and spot primed before a full priming coat is applied. Patch all nail holes and imperfections with a wood filler or putty and sand smooth.

21 Vinyl Siding, Architectural Plastics & Fiberglass
Vinyl or other PVC, plastic building products Clean the surface thoroughly by scrubbing with warm, soapy water. Rinse thoroughly, prime with appropriate white primer. Do not paint vinyl with any color darker than the original color. Do not paint vinyl with a color having a Light Reflective Value (LRV) of less than 56 unless VinylSafe® Colors are used. If VinylSafe® Colors are not used and darker colors lower than an LRV of 56 are, the vinyl may warp. Follow all painting guidelines of the vinyl manufacturer when painting. Only paint properly installed vinyl siding. Deviating from the manufacturer's painting guidelines may cause the warranty to be voided.

3.3 INSTALLATION

A Apply all coatings and materials with the manufacturer’s specifications in mind. Mix and thin coatings according to manufacturer’s recommendation.

B Do not apply to wet or damp surfaces.

1 Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer’s procedures to apply appropriate coatings prior to 30 days.
2 Test new concrete for moisture content.
3 Wait until wood is fully dry after rain or morning fog or dew.

C Apply coatings using methods recommended by manufacturer.

D Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.

E Apply coatings at spreading rate required to achieve the manufacturer’s recommended dry film thickness.

F Regardless of number of coats specified, apply as many coats as necessary for complete hide.

G Exterior Woodwork: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 2 weeks.

H Inspection: The coated surface must be inspected and approved by the Architect or Engineer just prior to the application of each coat.

3.4 PROTECTION

A Protect finished coatings from damage until completion of project.

B Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION

096000 Flooring

1.01 GENERAL:
A. Flooring to comply with 2010 ADA standards, chapter3.

B. Corridors, offices and classrooms to be finished with the following carpet, which should comply with the VOC standards in Section 015721 and 2010 ADA standards, chapter 3 –Section 302.2. A palette of materials must be presented to the campus interior designer before presenting to the client.
1.Broadloom Carpet Products:
a. Level loop or multi-level loop

b. Solution-dyed nylon fiber type 6 or 6.6 is preferred

c. Install carpet direct glue down
2.Carpet Tile Products:
a. Level loop or multi-level loop

b. Solution-dyed nylon fiber type 6 or 6.6 is preferred

c. Releasable glue system should be specified. Direct glue down not acceptable.

B. Rubber wall base to be continuous roll 4" cove base or straight base is preferred. Selection must be approved by the campus interior designer in the Office of Facilities.

C. Transition strips to be rubber. Do not specify metal.

D. Kitchens and wet utility (custodial) areas to be finished with quarry tile, heavy duty seamless flooring or high-performance architectural coating (epoxy resin).

E. Mechanical, electrical and data communication rooms to be finished with high performance architectural coating and may be a lower cost alternative for some wet utility areas where quarry tile flooring is specified.

F. Toilet and rest rooms to be finished with porcelain or ceramic tile on the floor, base and full height on wet walls (showers, etc.). Provide one floor drain in each room.

G. Laboratories to be finished with heavy duty high quality seamless flooring, integral base is preferred if applicable. Base to be continuous roll 4" cove base.

H. Dry utility areas (closets, storerooms, file rooms, etc.) to be finished with sealed Concrete. Base to be continuous roll 4" cove base.

I. Hard flooring systems (such as terrazzo) or high-quality seamless flooring may be considered for main lobbies, atriums or where appropriate. Prior approval by the Office of Facilities is required.

J. Stairs, including fire exit stairs, may be finished with premium grade rubber treads. Compatible sheet rubber flooring may be used on landings. Risers may be painted. Products should be easily maintained with a drycloth/mop.

K. Raised computer room access floors must be clean and dust free under the access floor system. Specify a clear concrete sealer on concrete floors under access floors.

L. See Section 015721 for VOC requirements.

END OF SECTION

SECTION 21 1313 - WET PIPE SPRINKLER SYSTEMS

PART 1 - GENERAL

1.1 REFERENCES

A. The publications listed below form a part of this specification section to the extent referenced. The publications are referred to within the text by the basic designation only. Use the latest edition, unless noted otherwise.

B. ASME INTERNATIONAL (ASME)

1.	ASME B16.1	Gray Iron Pipe Flanges and Flanged Fittings; Classes 25, 125 and 250
2.	ASME B16.3	Malleable Iron Threaded Fittings, Classes 150 and 300
3.	ASME B16.4	Gray Iron Threaded Fittings; Classes 125 and 250

C. ASTM INTERNATIONAL (ASTM)

1.	ASTM A135	Standard Specification for Electric-Resistance-Welded Steel Pipe
2.	ASTM A183	Standard Specification for Carbon Steel Track Bolts and Nuts
3.	ASTM A47	Standard Specification for Ferritic Malleable Iron Castings
4.	ASTM A53	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
5.	ASTM A536	Standard Specification for Ductile-Iron Castings
6.	ASTM A795	Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use

D. FM GLOBAL (FM)

1.	FM APP GUIDE	Approval Guide http://www.approvalguide.com/
2.	FM 1637	Flexible Sprinkler Hose with Fittings

E. MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

1.	MSS SP-71	Gray-Iron Swing Check Valves, Flanged and Threaded Ends

F. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

1.	NFPA 13	(2019) Standard for the Installation of Sprinkler Systems
2.	NFPA 14	(2019) Standard for the Installation of Standpipe and Hose Systems
3.	NFPA 170	(2018) Standard for Fire Safety and Emergency Symbols
4.	NFPA 1963	(2019) Standard for Fire Hose Connections
5.	NFPA 24	(2019) Standard for the Installation of Private Fire Service Mains and Their Appurtenances

G. UNDERWRITERS LABORATORIES (UL)

6.	UL 193	Alarm Valves for Fire-Protection Service
7.	UL 199	Automatic Sprinklers for Fire-Protection Service
8.	UL 203	Pipe Hanger Equipment for Fire Protection Service
9.	UL 213	Standard for Rubber Gasketed Fittings for Fire-Protection Service
10.	UL 2443	Standard for Flexible Sprinkler Hose with Fittings for Fire Protection Service
11.	UL 262	Standard for Gate Valves for Fire-Protection Service

12.	UL 393	Standard for Indicating Pressure Gauges for Fire-Protection Service
13.	UL 405	Fire Department Connection Devices
14.	UL 668	Hose Valves for Fire-Protection Service
15.	UL 789	Standard Indicator Posts for Fire-Protection Service
16.	UL Fire Prot Dir	http://productspec.ul.com/index.php

1.2 NOTICE TO BIDDERS

A. Before submittal of bid, examine all drawings, specification, addenda, alternatives, special conditions, and all other bidding documents of all sections of this project, verifying all governing conditions at the site, and become fully informed as to the extent and character of the work required, as well as its relation to other work in the building. Submittal of a bid is an agreement to all requirements of the contract documents and no consideration will be granted for any claimed misunderstanding thereof.

B. Submittal of a bid is deemed a representation by the bidder that he is qualified in all respects to properly perform the work for which he is bidding and has experience with similar work. Bidders are deemed to be aware, on the basis of their background and experience, of materials which may be required in the discharge of their responsibilities, even though unspecified.

1.3 SYSTEM DESCRIPTION

A. Provide new wet pipe sprinkler system in areas indicated on the drawings. The sprinkler system must provide fire sprinkler protection for the entire building. A dedicated manual wet standpipe system consisting of dedicated standpipe risers in all the stairs will be provided. The system must be designed and installed in accordance with NFPA 13 and NFPA 14. Pipe sizes which are not indicated on the drawings must be determined by hydraulic calculation. The contractor must design any portions of the sprinkler system that are not indicated on the drawings or specified herein, including locating and sizing sprinklers, piping, and equipment. The design of the sprinkler system must be based on hydraulic calculations, and the other provisions specified herein.

B. Hydraulic Design: The system must be hydraulically designed to discharge a minimum density as indicated on the drawings. Hydraulic calculations must be in accordance with NFPA 13. A 10-pound per square inch safety margin must be included at the point of connection to the city water main.

C. Basis for Calculations: A waterflow test was performed on September 30, 2020 at Georgia Tech near the Cherry Emerson building by Jacobs Engineering Group, Inc. and resulted in a static pressure of 120 psi with a residual pressure of 110 psi while flowing 2,226 gpm. The fire sprinkler subcontractor must perform an additional fire hydrant flow test within 6 months prior to shop drawings submittal. The results must be included with the hydraulic calculations. The hydraulic calculations must be based on the lower residual pressure at the design flow. Hydraulic calculations must be based upon the Hazen-Williams formula with a "C" value of 120 for steel piping, 100 for underground unlined cast-iron or ductile-iron piping, and 150 for underground plastic piping.

D. Sprinkler Coverage: Sprinklers must be uniformly spaced on branch lines. Coverage per sprinkler must be in accordance with NFPA 13. Provide sprinklers below all ducts and similar fixed obstructions over 4 feet 0 inches wide and as required due to obstructions located within 18 inches of sprinklers; coordinate with HVAC drawings.

1.4 SUBMITTALS

A. Submit one hard copy and an electronic copy in pdf format of the following, no later than 21 days prior to the start of system installation, in accordance with the General Conditions of the Contract. Drawings, unless noted otherwise, must be no smaller than the Contract Drawings.

1. Shop Drawings: Detail drawings conforming to the requirements prescribed in NFPA 13 and NFPA 170. Drawings must include plan and elevation views which establish that the equipment will fit the allotted spaces with clearance for installation and maintenance. Each set of drawings must include the following:

    a. A descriptive index with drawings listed in sequence by number. A legend sheet identifying device symbols, nomenclature, and conventions used in the package.
    b. CAD-developed floor plans drawn to a scale not less than 1/8-inch equals 1-foot clearly showing locations of sprinklers, piping, risers, hangers, hydraulic nodes and other details required to clearly describe the proposed arrangement.
    c. Riser layout drawings drawn to a scale of not less than ½-inch equals 1-foot to show details of each system component, clearances between each other and from other equipment and construction in the room.
    d. Details of each type of pipe hanger and related components.
    e. Shop drawings and calculations must be prepared by a qualified NICET Level III (or IV) Technician.

2. Hydraulic calculations must be as outlined in NFPA 13 except that calculations must be performed by computer using software intended specifically for fire protection system design using the design data shown on the drawings. Calculations must be based on the water supply data provided in the specification section or the contractor's test results, whichever is most restrictive. Calculations must substantiate that the design area used in the calculations is the most demanding hydraulically. Water supply curves and system requirements must be plotted on semi-logarithmic graph paper so as to present a summary of the complete hydraulic calculation. A summary sheet listing sprinklers in the design area and their respective hydraulic reference points, elevations, calculated discharge pressures and calculated flows must be provided. Elevations of hydraulic reference points (nodes) must be indicated. Documentation must identify each pipe individually and the nodes connected thereto. The diameter, length, flow, velocity, friction loss, number and type of fittings, total friction loss in the pipe, equivalent pipe length and Hazen-Williams coefficient must be indicated for each pipe. For gridded systems, calculations must show peaking of demand area friction loss to verify that the hydraulically most demanding area is being used.

3. Product Data: Annotated catalog data showing manufacturer's name, model, and catalog number for all equipment and components, with data highlighted to indicate model, size, options, etc. proposed for installation. In addition, a complete equipment list with equipment description, model number, and quantity must be provided. This must include the following:

    a. Pipe, fittings, and mechanical couplings
    b. Valves, including gate, check, and globe
    c. Pipe hangers and supports
    d. Waterflow and tamper switches
    e. Sprinklers
    f. Fire hose valve
    g. Pressure relief valves
    h. Automatic air vents
    i. Fire caulking
    j. Miscellaneous equipment (such as spare sprinkler cabinet, signs, etc.)

4. Installers Qualifications: Qualifications must be approved, prior to submittal of any other data or drawings, to substantiate that the proposed installer is regularly engaged in the installation of the type and complexity of the fire protection system included in this project. Documentation must identify the location of three systems recently installed by the proposed installer which are comparable to the system specified. Contractor must certify that each system has performed

satisfactorily, in the manner intended, for a period of not less than 6 months. Submit copy of license to perform work in the local jurisdiction and submit certification for the personnel working on the project as detailed in 1.5 QUALITY ASSURANCE.

5. Test Reports: "Contractor's Material and Test Certificate for Aboveground Piping" as outlined in NFPA 13.

6. As-Built Drawings: Furnish one hard copy and one set of CD or DVD discs containing CAD based drawings, in the latest version of AutoCAD and DXF format, and pdf of as-built drawings and schematics. A separate set of approved submittal drawings of the overall system, marked-up to indicate as-built conditions, must be maintained on site. These drawings must be maintained in a current condition at all times, and must be made available for review immediately upon request during normal working hours. Variations from approved drawings, for whatever reason, including those occasioned by modifications, change orders, optional materials, and/or required for coordination between trades must be indicated in sufficient detail to accurately reflect the as-built conditions. These drawings must be submitted within 14 calendar days after the final acceptance test of the system.

7. Operation and Maintenance Data: Furnish one hard copy and one set of CD or DVD discs of manuals in loose-leaf binder format and grouped by technical sections consisting of manufacturer's brochures, schematics, printed instructions, general operating procedures, and safety precautions. Manuals must be submitted and approved prior to on-site training. The Manual must include the following documents and information at a minimum:

   a. A general description of the design and operation of the system(s).
   b. Specific open/close settings for all adjustable valves.
   c. Comply with "Records" Section of NFPA 25.
   d. A copy of the as-built design drawings in 11 x 17-inch format, folded neatly within the binder.
   e. All applicable product installation sheets annotated as necessary.
   f. Step-by-step procedures required for system startup, operation, and shutdown, including the sequence or sequences of operation of the overall fire protection system and a separate description for each major subsystem.
   g. The manufacturer's name, model number, service manual, parts list, and complete description of equipment and their basic operating features.
   h. Maintenance manual listing routine maintenance procedures, possible breakdowns and repairs, troubleshooting guide, and system warranty information.
   i. Routine maintenance checklist. The routine maintenance checklist must be arranged in columnar format. The first column must list all installed devices, the second column must state the maintenance activity or state no maintenance required, the third column must state the frequency of the maintenance activity, and the fourth column for additional comments or reference.

8. Training Documentation: Provide in manual format, operating instructions, maintenance procedures, and training data for the training courses. The operations training must familiarize the Owner's designated personnel with proper operation of the installed system. The maintenance training course must provide the Owner's designated personnel adequate knowledge required to diagnose, repair, maintain, and expand functions inherent to the system.

1.5 QUALITY ASSURANCE

A. Qualifications - Contractor: The contractor must be a licensed contractor in possession of a valid sprinkler contractor's license. The contractor must have a minimum of 3 years of experience in the installation of automatic sprinkler systems in similar facilities.

B. Qualifications - Design Services: Shop (working) drawings and calculations must be prepared under the direction of and signed by a qualified registered professional engineer or a NICET Level III (minimum) in water-based systems. For the purposes of meeting this requirement, a qualified engineer is defined as an individual meeting one of the following conditions:

1. A registered professional engineer having passed the NCEES examination in fire protection engineering.

2. Registered professional engineer with verification of experience and at least 5 years of current experience in the design of the fire protection and detection systems.

C. Qualifications - Supervisor: A NICET Level III (minimum) in water-based systems must supervise the installation of the fire sprinkler system.

D. Qualifications - Installer: Fire sprinkler installer with a minimum of 2 years of experience must be permitted to assist in the installation of fire sprinkler systems.

E. Qualifications - Test Personnel: Fire sprinkler technicians with a minimum of 8 years of experience must be utilized to test and certify the installation of the fire sprinkler system. The fire sprinkler technicians testing the equipment must be factory-trained in the installation, adjustment, testing, and operation of the equipment specified herein and on the drawings.

1.6 REGULATORY REQUIREMENTS

A. All system components must be listed or approved for their intended use and must be compatible with the system and its components. Where the terms "listed" or "approved" appear in this specification section, they mean UL-listed (UL Fire Prot Dir), FM-approved (FM App Guide), or listed by a nationally recognized testing laboratory (NRTL). The omission of these terms under the description of any item of equipment described must not be construed as waiving the requirement for listing or approval. All listings or approvals must be based on an existing ANSI or UL published standard.

B. Compliance with referenced standards is mandatory. In the event of a conflict between specific provisions of this specification section and applicable standards, this specification section must govern.

C. The fire protection installation and the installing contractor must comply fully with all city, county, and state law, ordinances and regulations applicable to fire protection installations.

D. Should any change in plans or specification be required to comply with governmental regulations, the contractor must notify the Engineer at the time of submitting his bid.

E. Secure and pay for necessary approvals, permits, inspections, etc., and deliver the official records of the granting of permits to the Owner's Representative without additional cost to the Owner.

1.7 VERIFYING ACTUAL FIELD CONDITIONS

A. Before commencing work, examine all adjoining work on which the contractor's work is in any way dependent for perfect workmanship according to the intent of this specification section, and report to the Owner's Representative any condition which prevents performance of first class work. No "waiver of

responsibility" for incomplete, inadequate or defective adjoining work will be considered unless notice has been filed before submittal of a proposal.

B. The contractor must become familiar with all details of the work, verify all dimensions in the field, and must advise the Owner's Representative of any discrepancy before performing the work.

1.8 COORDINATION OF TRADES

A. The contract documents are not intended to serve as coordinated construction drawings showing all minor adjustments in locations required for a fully coordinated installation that respects the work of all trades.

B. Piping offsets, fittings, and any other accessories required must be furnished as required to provide a complete installation and to eliminate interference with other construction. Sprinklers must be installed over and under ducts, piping and platforms when such equipment can negatively affect or disrupt the sprinkler discharge pattern and coverage.

C. Wherever the contractor's work interconnects with work of other contractors, the contractor must coordinate his work with other contractors to ensure that all contractors have the information necessary so that they may properly install all necessary connections and equipment. Identify all work items needing access (dampers, etc.) concealed above hung ceilings by permanent colored pins/tabs in the ceiling directly below the item.

D. Provide required supports and hangers for piping, conduit, and equipment, so that loading will not exceed allowable loadings of structure. Submittal of a bid must be deemed a representation that the contractor submitting such bid has ascertained allowable loadings and has included in his estimates the costs associated in furnishing required supports.

E. Field drilling and cutting of holes in structural decks, roofs, walls, etc. required for work under this section must be coordinated through various trades in their respective materials. All such drilling, cutting, and reinforcing costs must be borne by the contractor.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect equipment delivered and placed in storage from the weather, humidity, and temperature variation, dirt and dust, and other contaminants in accordance with manufacturer's instructions.

B. All pipes must either be capped or plugged until installation.

C. Coordinate the storage arrangement and location with the Owner's Representative.

D. Delivery and store products in shipping containers/boxes, with labeling in place.

E. Provide temporary weather protection for cast-iron and steel valves and fittings.

1.10 WASTE REMOVAL

A. At the conclusion of each day's work, clean up and stockpile on site all waste, debris, and trash, which may have accumulated during the day as a result of work by the contractor and of his presence on the job.

B. Sidewalks and streets adjoining the property must be kept broom clean and free of waste, debris, trash, and obstructions of any kind caused by work of the contractor, which will affect the condition and safety of streets, walks, utilities and property.

1.11 SPARE PARTS

A. Repair Service/Replacement Parts: During warranty period, the service technician must be on-site within 24 hours after notification. All repairs must be completed within 24 hours of arrival on-site.

B. The contractor must provide spare sprinklers, sprinkler wrench and sprinkler cabinet in accordance with NFPA 13.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Standard Products: Material and equipment must be the standard products of a manufacturer, where possible, and not a combination of manufacturers for any particular classification of materials. Materials and equipment must be the standard products of a manufacturer regularly engaged in the manufacture of the products for at least 2 years prior to bid opening. All materials and equipment supplied must be new, first quality and the manufacturer's best type and latest model capable of complying with all requirements of this specification section and must have been in continuous production and in continuous service in commercial applications for at least one-year. Obsolete equipment must not be used.

B. Nameplates: Major components of equipment must have the manufacturer's name, model or serial number, and date of installation provided on a nameplate. Nameplates must be etched metal or plastic, permanently attached by screws to panels or adjacent walls.

2.2 UNDEGROUND PIPING SYSTEMS

A. Pipe: Pipe must comply with NFPA 24. Minimum pipe size must be 6 inches. Piping more than 5 feet outside the building walls must comply with Section 31 11 00 WATER UTILITY DISTRIBUTION PIPING. A continuous section of welded stainless-steel fire water service piping from a point outside the building perimeter to a flanged fitting at least 1-foot above the finished floor within the building is acceptable.

B. Fittings and Gaskets: Fittings must be ductile-iron conforming to AWWA C110/A21.10 with cement mortar lining conforming to AWWA C104/A21.4. Gaskets must be suitable in design and size for the pipe with which such gaskets are to be used. Gaskets for ductile-iron pipe joints must conform to AWWA C111/A21.11.

C. Gate Valve and Indicator Posts: Installation must comply with NFPA 24. Gate valves for use with indicator post must conform to UL 262. Indicator posts must conform to UL 789. Provide each indicator post with one coat of primer and two coats of red enamel paint.

D. Valve Boxes: Except where indicator posts are provided for each buried valve, provide a cast-iron, ductile-iron, or plastic valve box of a suitable size. Plastic boxes must be constructed of acrylonitrile-butadiene-styrene (ABS) or inorganic fiber-reinforced black polyolefin. Provide cast-iron, ductile-iron, or plastic cover for valve box with the word "WATER" cast on the cover. The minimum box shaft diameter must be 5.25 inches. Coat cast-iron and ductile-iron boxes with bituminous paint applied to a minimum dry-film thickness of 10 mils.

E. Buried Utility Warning and Identification Tape: Provide detectable aluminum foil plastic backed tape or detectable magnet plastic tape manufactured specifically for warning and identification of buried piping. Tape must be detectable by an electronic detection instrument. Provide tape 3 inches minimum in width, color coded for the utility involved with warning and identification imprinted in bold block letters continuously and repeatedly over the entire tape length. Warning and identification must read "CAUTION BURIED WATER PIPING BELOW" or similar wording. Use permanent code and letter coloring unaffected by moisture and other substances contained in trench backfill material.

2.3 ABOVEGROUND PIPING SYSTEMS

A. Steel Pipe: Pipe must be standard weight conforming to ASTM A795, ASTM A53, or ASTM A135. Piping less than 2-inch in diameter must be minimum schedule 40 and joined by threaded fittings. Piping 2 inches and greater must be minimum schedule 10 and joined by threaded, grooved, or flanged fittings. Piping used for the dedicated standpipe system must be 4 inches minimum. Piping in which threads or grooves are cut must have a corrosion resistance ratio (CRR) of 1.00 or greater after threads or grooves are cut. Pipe must be marked as to the brand or name of the manufacturer, kind of pipe and the ASTM designation in accordance with the "Product Marking" provisions of the ASTM standard.

B. Grooved Fittings and Couplings: Grooved fittings, couplings and bolts must be provided by the same manufacturer. Fittings and couplings must be malleable iron complying with ASTM A47 or ductile-iron complying with ASTM A536. Couplings must be of the rigid type except that flexible type will be provided where flexible joints are specifically required by NFPA 13. Couplings and gaskets for fittings must be by the fitting manufacturer. Coupling gaskets must be Grade E (EPDM) approved for fire protection service. Gaskets must be the flush type that fills the entire cavity between the coupling and the pipe. Nuts and bolts must be heat-treated steel conforming to ASTM A183 and must be cadmium plated or zinc electroplated. Plain-end fittings with mechanical couplings, fittings which require drilling a hole in the pipe, and fittings which use steel gripping devices to bite into the pipe, must not be used. Comply with UL 213.

C. Non-Grooved Fittings: Non-grooved fittings must be threaded or flanged. Threaded fittings must be cast-iron conforming to ASME B16.4, malleable iron conforming to ASME B16.3, or ductile-iron conforming to ASTM A536. Fittings into which sprinklers, drop nipples or riser nipples (sprigs) are screwed must be threaded type. Plain-end fittings with mechanical couplings, fittings which require drilling a hole in the pipe, and fittings which use steel gripping devices to bite into the pipe, must not be used.

D. Flanges and Gaskets: Flanges must conform to NFPA 13 and ASME B16.1. Flanges must be the type that are welded or threaded to the pipe. Flanges which are bolted to grooved pipe must not be permitted. Gaskets must be full face type EPDM or other approved material.

E. Flexible Sprinkler Hose: The use of flexible sprinkler hose is not permitted.

F. Pipe Hangers: Hangers must be listed or approved and be of the type suitable for the application, construction and size pipe involved. Comply with UL 203. Earthquake bracing must be listed.

G. Control Valve: Manually operated sprinkler control valve and gate valve must be outside stem and yoke (OS&Y) type or butterfly type and must be listed or approved.

H. Check Valve: Check valve 2 inches and larger must be listed or approved. Check valves 4 inches and larger must be of the swing type with flanged cast-iron body and flanged inspection plate, must have a clear waterway, and must meet the requirements of MSS SP-71, for Type 3 or 4.

I. Hose Valves: Valves must comply with UL 668 and must have a minimum rating of 300 pounds per square inch. Valves must be non-rising stem, all bronze, with 2 1/2-inch American National Standard Fire Hose

Screw Thread (NH) male outlet in accordance with NFPA 1963. Hose valves must be equipped with lugged cap with drip drain, cap gasket and chain. Valve finish must be polished brass.

2.4 ALARM INITIATING AND SUPERVISORY DEVICES

A. Sprinkler Waterflow Indicator Switch, Vane Type: Switch must be vane type with cast aluminum housing. The device must sense water movements and be capable of detecting a sustained flow of 10 gallons per minute or greater. The device must contain a retard device adjustable from 0 to 90 seconds to reduce the possibility of false alarms caused by transient flow surges. The switch must be tamper-resistant and contain two SPDT (Form C) contacts arranged to transfer upon removal of the housing cover and must be equipped with a silicone rubber gasket to assure positive water seal and a dustproof cover and gasket to seal the mechanism from dirt and moisture.

B. Valve Supervisory (Tamper) Switch: Switch must be suitable for mounting to the type of control valve to be supervised open. The switch must be tamper-resistant and contain two sets of SPDT (Form C) contacts arranged to transfer upon removal of the housing cover or closure of the valve of more than two rotations of the valve stem.

2.5 SPRINKLERS

A. Sprinklers must comply with UL 199 and NFPA 13. Sprinklers with internal O-rings must not be used. Sprinklers must be used in accordance with their listed coverage limitations.

B. Areas with Finished Ceilings: Pendent or sidewall sprinkler, recessed, quick-response, glass bulb, white finish (unless noted otherwise), ordinary temperature unless ambient temperatures require a higher temperature rating, minimum k-factor of 5.6 or 8.0, as indicated on the drawings.

C. Areas without Finished Ceilings: Upright, pendent, or sidewall sprinkler, standard-response, glass bulb, brass finish, ordinary temperature unless ambient temperatures require a higher temperature rating, minimum k-factor of 5.6 or 8.0, as indicated on the drawings.

D. Sprinklers must be of the same manufacturer and same temperature characteristics throughout any single room or area, but not necessarily throughout the entire building.

E. Freezers: Dry pendent type sprinklers must be provided for coolers/freezers with a minimum temperature maintained below 40-degrees Fahrenheit. The dry barrel length must be selected based upon the minimum temperature of the cooler/freezer.

2.6 ACCESSORIES

A. Sprinkler Cabinet: Spare sprinklers must be provided in accordance with NFPA 13 and must be packed in suitable metal or plastic cabinet. Spare sprinklers must be representative of, and in proportion to, the number of each type and temperature rating of the sprinklers installed. At least one wrench of each type required must be provided. A list of the required spare sprinklers must be provided in the cabinet.

B. Pipe Escutcheon: Escutcheons must be polished chromium-plated alloy, or polished chromium-plated copper alloy. Escutcheons must be either one-piece or split-pattern, held in place by internal spring tension or set screw.

C. Sprinkler Escutcheon: Escutcheons must be white finish unless otherwise noted. Escutcheons must be either one-piece or split-pattern, held in place by internal spring tension or set screw.

D. Sprinkler Guard: Guards must be a steel wire cage designed to encase the sprinkler and protect it from mechanical damage and must be listed for use with the sprinkler model.

E. Identification Sign:

1. Furnish and install properly lettered and approved metal or plastic signs to each control valve, alarm device, inspector's test valve, drain valve, and alarm bypass valve. Each sign must indicate the normal valve position as well as the portion of the system that the valve serves. Valve identification signs must be minimum 6 inches wide x 2 inches high with enamel baked finish on minimum 18 gage steel or 0.024-inch aluminum with red letters on a white background or white letters on a red background. Wording of sign must include, but not be limited to "main drain", "auxiliary drain", "inspector's test", "alarm test", "alarm line", and similar wording as required to identify operational components.

2. Permanently affix metallic hydraulic design date nameplates complying with NFPA 13 to the riser of each system. Hydraulic information must be permanently engraved on the nameplate. The use of permanent marker only is not acceptable.

3. Provide a laminated 8.5-inch by 11-inch diagram, hung on each riser, showing the floor area protected by that riser.

2.7 SPECIALTY SPRINKLER FITTINGS

A. Drop-Nipple Fittings: Adjustable drop nipples are not permitted.

B. Sprinkler, Drain and Alarm/Inspector's Test Fittings: Cast-iron or ductile-iron body; with threaded inlet and outlet, test valve, and orifice and sight glass.

C. Sprinkler, Branch Line Fittings: Brass body; with threaded inlet and capped drain outlet and threaded outlet for sprinkler.

2.8 PRESSURE GAUGES

A. Pressure gauges must be UL-listed (UL 393), liquid-filled, 3 1/2-inch to 4 1/2-inch diameter dial with dial range of 0 to 250 pounds per square inch gauge.

PART 3 - EXECUTION

3.1 ABOVEGROUND PIPING INSTALLATION

A. Piping: Group piping at common elevations where practical. Route piping in an orderly manner, plumb and parallel to the building structure where practical and as indicated on the approved drawings.

B. Piping in Exposed Areas: Exposed piping must be installed so as not to diminish exit access widths, corridors, or equipment access. Exposed horizontal piping, including drain piping, must be installed to provide maximum headroom.

C. Fittings: Use approved fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes. Install unions adjacent to each valve in pipes 2 inches and smaller. Unions are not required on flanged devices or in piping installations using grooved fittings. Install flanges or flange adapters on non-grooved valves, apparatus, and equipment having 2 1/2-inch and larger connections.

D. Pendent Sprinklers: Drop nipples to pendent sprinklers must consist of minimum 1-inch pipe with a reducing coupling into which the sprinkler must be threaded. Where sprinklers are installed below suspended or dropped ceilings, drop nipples must be cut such that the sprinkler ceiling plates or escutcheons are of a uniform depth throughout the finished spaces. The outlet of the reducing coupling must not extend more than 1-inch below the underside of the ceiling. On pendent sprinklers installed below suspended or dropped ceilings, the distance from the sprinkler deflector to the underside of the ceiling must not exceed 4 inches. Recessed pendent sprinklers must be installed such that the distance from the sprinkler deflector to the underside of the ceiling does not exceed the manufacturer's listed range and shall be of uniform depth throughout the finished area.

1. All sprinklers in suspended ceilings must be center of tile (+/- 2 inches) and uniform within a compartment/room.

E. Sidewall Sprinklers: The distance from the sprinkler deflector to the underside of the ceiling must not less than 4 inches. The maximum distance from the sprinkler deflector to the underside of the ceiling must not exceed either 6 inches or the distance indicated in the specific product listing, whichever is larger.

F. Upright Sprinklers: Riser nipples or "sprigs" to upright sprinklers must contain no fittings between the branch line tee and the reducing coupling at the sprinkler. Riser nipples exceeding 30 inches in length must be individually supported.

G. Install specialty sprinkler fittings according to manufacturer's written instructions.

H. Pipe Joints: Pipe joints must conform to NFPA 13, except as modified herein. Not more than four threads must show after joint is made up. Welded joints must be permitted, only if welding operations are performed as required by NFPA 13 at the contractor's fabrication shop, not at the project construction site. Flanged joints must be provided where indicated or required by NFPA 13. Grooved pipe and fittings must be prepared in accordance with the manufacturer's latest published specification according to pipe material, wall thickness and size. Grooved couplings, fittings, and grooving tools must be products of the same manufacturer. The diameter of grooves made in the field must be measured using a "go/no-go" gauge, vernier or dial caliper, narrow-land micrometer, or other method specifically approved by the coupling manufacturer for the intended application. Groove width and dimension of groove from end of pipe must be measured and recorded for each change in grooving tool setup to verify compliance with coupling manufacturer's tolerances. Grooved joints must not be used in concealed locations, such as behind solid walls or ceilings, unless an access panel is provided for inspecting, servicing, or adjusting the joint.

I. Reducers: Reductions in pipe sizes must be made with one-piece tapered reducing fittings. The use of grooved-end or rubber-gasketed reducing couplings will not be permitted. When standard fittings of the required size are not manufactured, single bushings of the face type will be permitted. Where used, face bushings must be installed with the outer face flush with the face of the fitting opening being reduced. Bushings must not be used in elbow fittings, in more than one outlet of a tee, in more than two outlets of a cross, or where the reduction in size is less than 1/2-inch.

J. Pipe Penetrations: Cutting structural members for pipe-hanger fastenings will not be permitted. Pipes that must penetrate concrete or masonry walls or concrete floors must be core-drilled or provided with pipe sleeves. Each sleeve must be schedule 40 galvanized steel, ductile-iron, or cast-iron pipe and must extend through its respective wall or floor and be cut flush with each wall surface. Sleeves or holes must provide minimum 2-inch clearance between the pipe and the sleeve/hole for pipe 4 inches and larger. The space between the sleeve and the pipe must be firmly packed with mineral wool insulation. Where pipes penetrate fire walls, fire partitions, or floors, pipes must be firestopped with a listed or approved through-penetration firestopping assembly. In penetrations that ae not fire-rated or not a floor

penetration, the space between the sleeve and the pipe must be sealed at both ends with plastic waterproof cement that will dry to a firm but pliable mass or with a mechanically adjustable segmented elastomer seal.

K. Escutcheons: Escutcheons must be provided for pipe penetration of ceilings and walls. Escutcheons must be securely fastened to the pipe at surfaces through which piping passes.

L. Inspector's Test Connection: Unless otherwise indicated, test connection must consist of 1-inch pipe connected to the system riser; a test valve located approximately 7 feet above the floor; a sight glass assembly; a smooth bore brass outlet equivalent to the smallest orifice sprinkler used in the system; and painted metal identification sign affixed to the valve with the words "Inspector's Test". The discharge orifice must be located outside the building wall, no more than 18 inches above finished grade and directed so as not to cause damage to adjacent construction or landscaping or cross egress paths during full flow discharge.

M. Drains: Main drain piping must be provided to discharge at a safe point outside the building, no more than 18 inches above finished grade and directed so as not to cause damage to adjacent construction or landscaping or cross egress paths during full flow discharge. Auxiliary drains must be provided as required by NFPA 13. Concrete splash blocks must be provided at all drains not terminating on a concrete surface.

N. Hangers and Supports: Comply with NFPA 13 for hanger materials and installation.

O. Identification Signs: Signs must be affixed to each control valve, inspector test valve, main drain, auxiliary drain, test valve, and similar valves as appropriate or as required by NFPA 13. Hydraulic design data nameplates must be permanently marked and permanently affixed to each sprinkler riser as specified in NFPA 13.

P. Sprinkler guards must be provided on all sprinkles subject to mechanical damage or located with their deflector 7 feet above the finished floor or lower.

Q. Relief Valves and Air Vents: Provide per NFPA 13.

3.2 LABELING AND IDENTIFICATION

A. Manufacturers pipe labeling must be visible.

B. Identify all bulk feed, cross mains, primary and secondary mains at maximum 20-foot intervals with white stenciled or adhesive pipe labels, readable from floor level.

3.3 ELECTRICAL WORK

A. Alarm signal wiring connected to the building fire alarm control system must be made by the fire alarm subcontractor.

3.4 PROTECTIVE PAINTING

A. Provide protective painting as herein specified.

1. Metal surfaces must first be thoroughly wire brushed and cleaned of all dirt, rust, grease, or other foreign matter before priming coat is applied.

2. Paint all sprinkler piping exposed to view, except for stainless-steel piping, to match the interior finish.

B. Clean up all equipment and leave in condition for finish painting before acceptance.

C. Provide a heavy field coat of black asphaltum paint on all steel pipe, cradles, vibration isolating mounts, and the like, that will be encased or partially encased in building construction, set in cement or fill, before items are built into the general construction.

3.5 PRELIMINARY TESTS

A. The system including the aboveground piping and system components, must be tested to ensure that equipment and components function as intended. The aboveground interior piping systems and attached appurtenances subjected to system working pressure must be tested in accordance with NFPA 13. Upon completion of specified tests, complete certificates as specified in paragraph SUBMITTALS.

B. Aboveground Piping.

1. Hydrostatic Test: Aboveground piping must be hydrostatically tested in accordance with NFPA 13 at not less than 200 psi or 50 psi in excess of maximum system operating pressure and must maintain that pressure without loss for 2 hours. There must be no drop in gauge pressure or visible leakage when the system is subjected to the hydrostatic test. The test pressure must be read from a gauge located at the low elevation point of the system or portion being tested.

2. Backflow Preventer Full Forward Flow Test: Each backflow prevention assembly must be tested at system flow demand, including all applicable hose streams, as specified in NFPA 13. Provide all equipment and instruments necessary to conduct a complete forward flow test, including 2.5-inch diameter hoses, playpipe nozzles (or similar), calibrated pressure gauges, pitot tube gauge, plus all necessary supports to safely secure hoses and nozzles during the test. At the system demand flow, the pressure readings and pressure drop (friction) across the assembly must be recorded. Provide a metal placard on the backflow prevention assembly that lists the pressure readings both upstream and downstream of the assembly, total pressure drop, and the system test flow rate. The pressure must be compared to the manufacturer's data.

3. Alarm Devices: Each alarm switch must be tested by flowing water through the inspector's test connection. Each water operated alarm device must be tested to verify proper operation.

4. Main Drain Flow Test: Following flushing of the underground piping, a main drain test must be made to verify the adequacy of the water supply. Static and residual pressures must be recorded on the certificate specified in paragraph SUBMITTALS. In addition, a main drain test must be conducted each time after a main control valve is shut and opened.

3.6 FINAL TEST

A. The system will be considered ready for acceptance testing only after the following have been accomplished.

1. Preliminary tests have been made and deficiencies corrected.

2. Testing reports have been submitted and approved.

B. Final acceptance testing must be coordinated and performed by the contractor, in the presence of the Owner's Representative. In order to assure attendance of the necessary representatives, each representative scheduled to witness the test must be provided a minimum of 5 working days' notification of the proposed test date by the contractor. The test must not be conducted until all parties agree on

the scheduled test date. The contractor must provide all the necessary personnel and equipment to conduct the tests.

C. The final acceptance test must be a repeat of preliminary tests and must include operation of control valves and flowing of the inspector's test connections to verify operation of associated waterflow alarm switches. After operation of control valves has been completed, the main drain test must be repeated to assure that control valves are in the open position. In addition, the contractor must have available copies of as-built drawings and certificates of tests previously conducted. The installation must not be considered accepted until identified discrepancies have been corrected and test documentation is properly completed and received. The contractor must correct system failures and other deficiencies identified during testing and must retest portions of the system affected by the required corrections.

D. Upon satisfactory completion of the tests, the contractor must leave the system in proper working order.

E. Warranty: Except as otherwise expressly provided in the contract documents, the contractor must guarantee all work to be free of all defects of workmanship and materials for a period of 1-year after final acceptance of the work by the Owner's Representative. Include service directory with telephone numbers for 24-hour emergency service.

3.7 TRAINING

A. Instructor: Include in the project the services of an instructor, who has received specific training from the manufacturer for the training of other persons regarding the inspection, testing, and maintenance of the system provided. The instructor must train the employees designated by the Owner, in the care, adjustment, maintenance, and operation of the fire sprinkler system. Each instructor must be thoroughly familiar with all parts of this installation. The instructor must be trained in operating theory as well as in practical O&M work. Submit the instructor's information and qualifications included training history prior to training.

B. Required Instruction Time: Provide 8 hours of instruction after final acceptance of the system. The instruction must be given during regular working hours on such dates and times as selected by the Owner's Representative. The instruction may be divided into two or more periods at the discretion of the Owner's Representative. The training must allow for rescheduling for unforeseen maintenance and/or fire department responses.

END OF SECTION

KEY	USE	LOC	SPCS	AREA(FICM)
	CORR	9	9	3,960
	F LAV	1	1	174
	M LAV	2	2	309
	STAIR	3	3	522
TOT		15	15	4,966

FLOORING:
VCT ARMSTRONG STANDARD EXCELON

VCT-1: Z1915 CHARCOAL

VCT-2: Z1910 CLASSIC BLACK

VCT-3: 51874 GRAYED BLUE

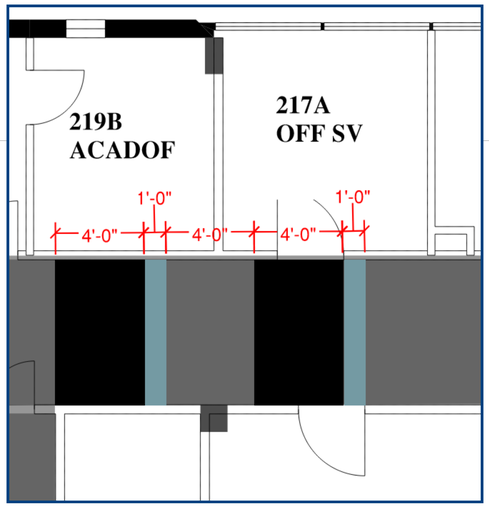
RUBBER BASE: JOHNSONITE 40 BLACK, 6" ROLL GOODS

STAIR LANDINGS: VCT-2 CLASSIC BLACK
STAIR TREADS: FORBO MARMOLEUM 2939 BLACK FRESCO WITH GRIT TAPE AT FRONT EDGE

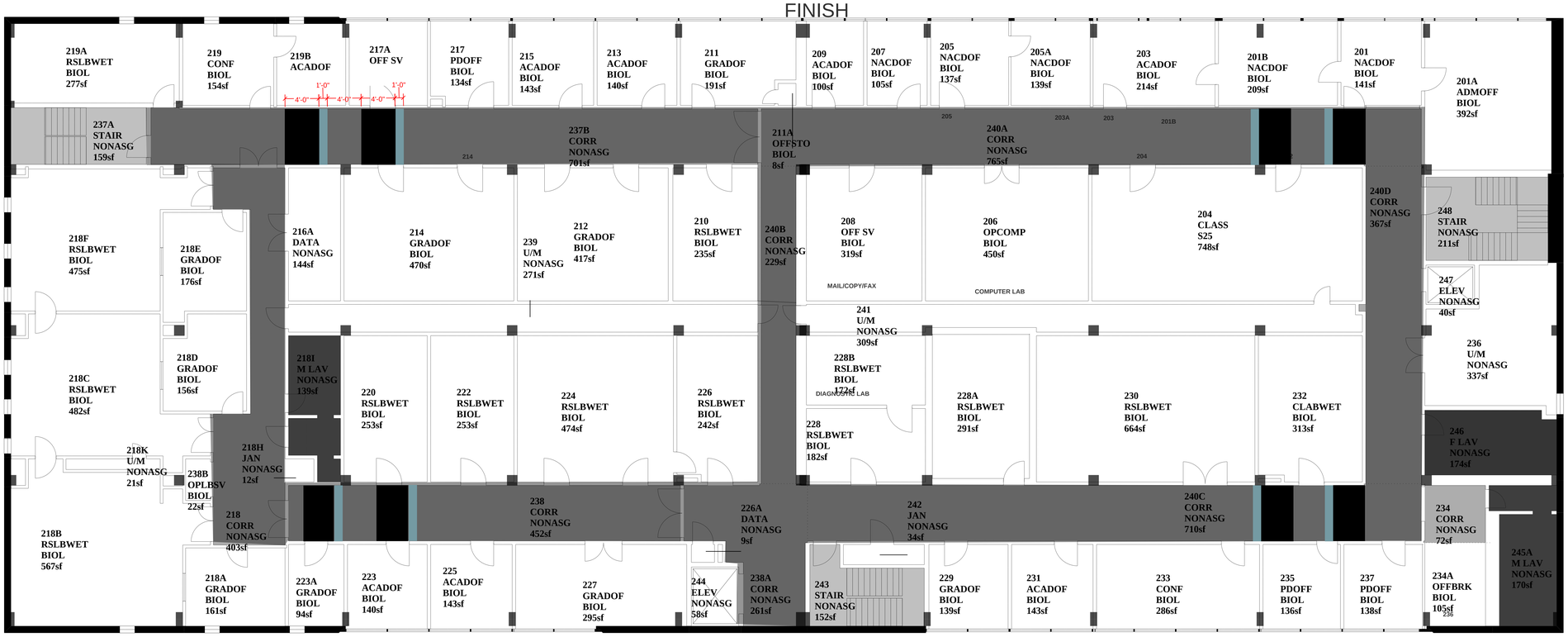
ALL CORRIDOR FLOORS TO FOLLOW DIAGRAM INDICATED BELOW

PAINT:
TYPICAL WALLS: SHERWIN WILLIAMS SW7636 ORIGAMI WHITE, EGGSHELL FINISH

DOOR FRAMES, STAIR COMPONENTS--STEEL RAILINGS, STRINGERS AND RISERS: SHERWIN WILLIAMS SW9163 TIN LIZZIE, SEMIGLOSS FINISH



TYPICAL PATTERN DIMENSIONS
REPEAT ONCE AT EACH CORNER



ROOM CODE
Room Number:
Room Usage:
Floor Area:

SCALE: 1/8" = 1'-0"

0 5 10 20 40

GEORGIA TECH | CHERRY EMERSON
COMMON CORRIDOR FINISHES AND FLOOR PATTERN
6 NOVEMBER 2019

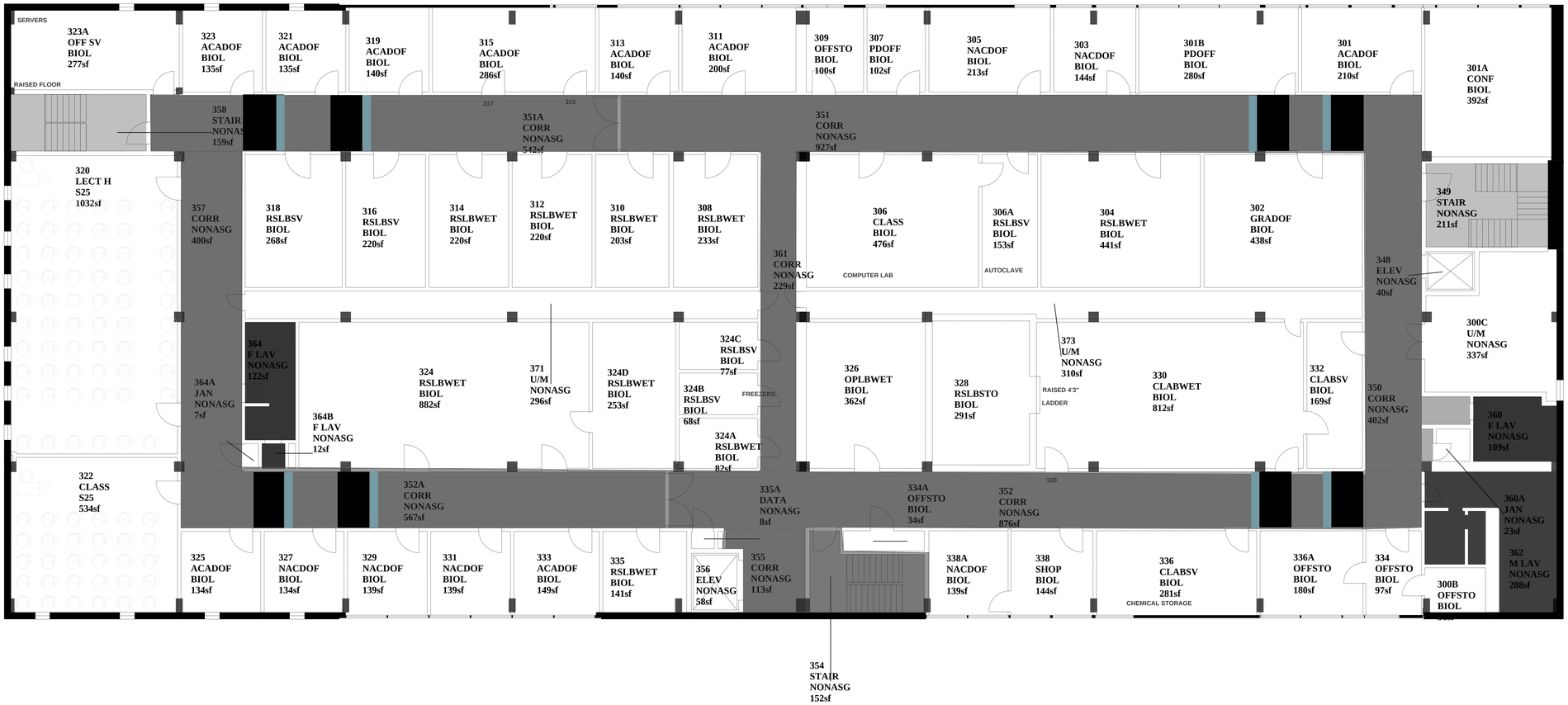
NORTH

revisions:
03/96 MKN
05/99 JCH
02/02 JCH
04/03 JCH
07/08 JCH
08/09 JCH
06/11 JCH
12/15 JCH

GEORGIA INSTITUTE OF TECHNOLOGY

building name:	CHERRY EMERSON ADN	building number:	066A
file name:	066A.2	CAD version:	INSITE CAD 2.44

KEY	USE	LOC	SPCS	AREA(FICM)
	CORR	8	8	4,055
	F LAV	3	3	243
	M LAV	1	1	288
	STAIR	3	3	522
TOT		15	15	5,108



ROOM CODE
Room Number:
Room Usage:
Floor Area:

SCALE: 1/8" = 1'-0"

0 5 10 20 40

NORTH

revisions:
- 03/96 MKN
- 05/99 JCH
- 07/00 JCH
- 03/12 JCH

GEORGIA INSTITUTE OF TECHNOLOGY

building name:	CHERRY EMERSON ADN	building number:	066A
file name:	066A.3	CAD version:	INSITE CAD 2.44

Speedy Courier
Ticket #133421

STRUCTOR GROUP
Build Smarter.

Submittal Cover Sheet

19-6003

GT Brown Diggle Lab

Southern Door

Door Stain Sample

#08-210-001

Submittal Review

- ☐ Approved
- ☐ Not Subject to Review
- ☑ Approved as Noted
- ☐ No Action Required
- ☐ Revise/Resubmit
- ☐ Rejected/Resubmit
- ☐ Approved as Noted/Resubmit

This review is only for general conformance with the design concept and the information given in the Contract Documents. Corrections or comments made on the Shop Drawings during the review do not relieve the Contractor from compliance with the requirements of the Plans and Specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. The Contractor is responsible for dimensions to be confirmed and correlated at the jobsite, and information that pertains solely to the fabrication process.

By cwesa Date Oct 28, 2019

Flad Architects

** *Exact match per Mil ticket on existing doors we are to match.*

Please return one (1) sample to Structor Group when approved

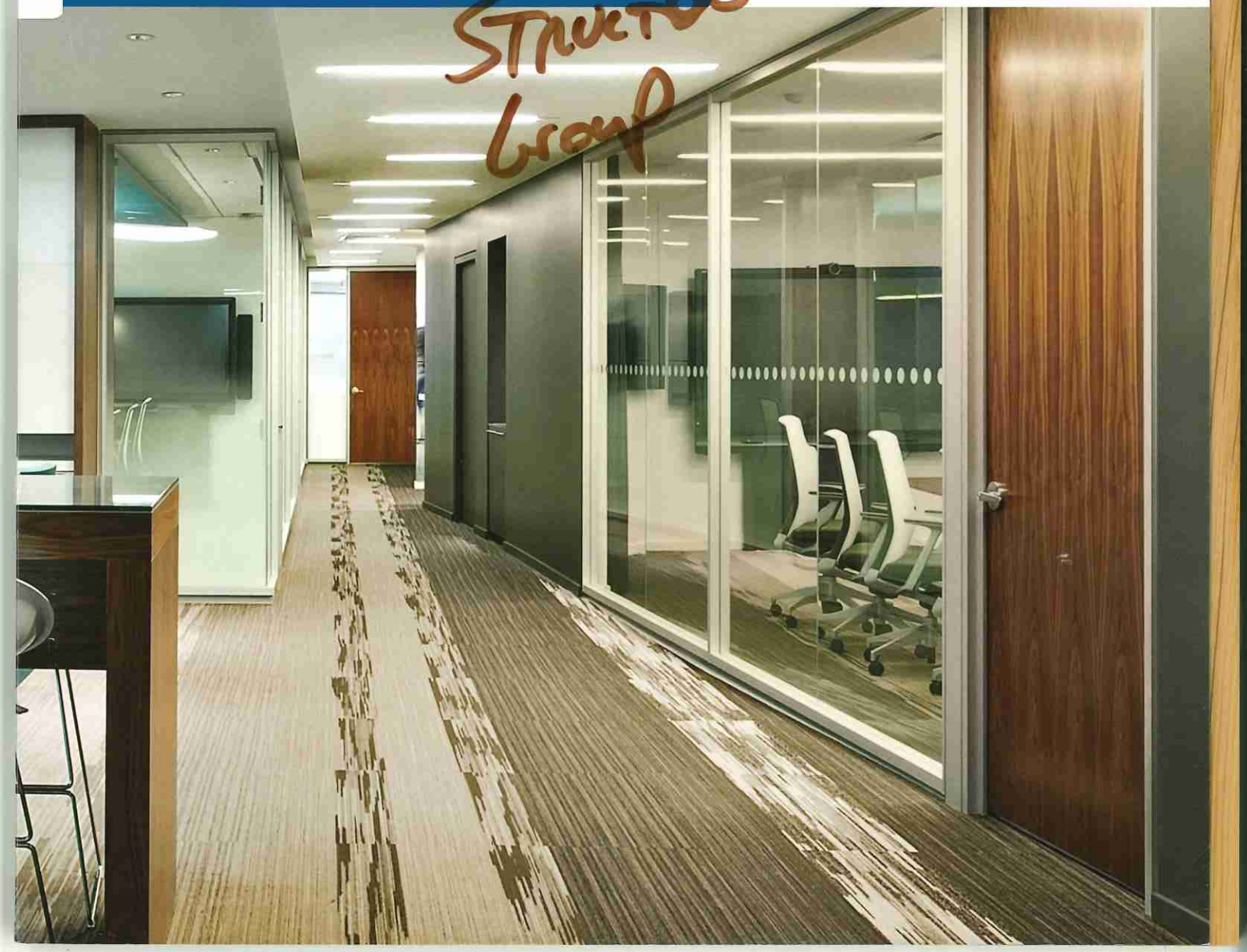
Architect / Engineer	Structor Group
Flad Architects 999 Peachtree Street Suite 1200 Atlanta, GA 30309	This shop drawing has been reviewed by STRUCTOR GROUP Build Smarter. and approved with respect to the means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incidental thereto. STRUCTOR GROUP Build Smarter. also warrants that this shop drawing complies with contract documents and comprises no variation thereto.
ATTN: Geoffrey Maulion #678-490-0356	By: Marlene Carroll / Jeff Smith Date: 10.25.19

ASPIRO™ SERIES | MARSHFIELD-ALGOMA™

Factory Finish Veneer Sample with Enviroclad® UV Coating

SHAPING BETTER ENVIRONMENTS™

MASONITE ARCHITECTURAL



ASPIRO™ SERIES | MARSHFIELD-ALGOMA™

Factory Finish Veneer Sample with Enviroclad® UV Coating

ARCHITECTURAL DOOR SOLUTIONS

Create world-class environments that inspire. Spaces that are frequently visited but rarely forgotten. The Aspiro Series embodies the highest aesthetic and performance qualities and are ideal for use in spaces that will create the most impactful experience. The Aspiro Series features a lifetime warranty.

Wood is a natural material with varying character, color and grain pattern, even in veneers taken from the same tree. This sample represents the typical appearance of the requested wood species, cut and color, but doors included in your order could be lighter or darker. Prior to final approval, consult with your Masonite Architectural representative on the range of appearance.

Aspiro Series Select Wood Veneer doors are available in a variety of options. Not all combinations of species, cut and color are part of our standard offering. Contact your Masonite Architectural representative to request a custom order.

AVAILABLE SPECIES

- [ ] Red Oak
- [x] White Oak
- [ ] White Maple
- [ ] White Birch
- [ ] Natural Birch
- [ ] Cherry
- [ ] African Mahogany

Special Flitch # _____

AVAILABLE CUT

Standard

- [ ] Flat Cut
- [x] Plain Sliced
- [ ] Rotary

Custom

- [ ] Quarter Sliced
- [ ] Rift
- [ ] Other _____

AVAILABLE FINISH

- [ ] Bourbon
- [ ] Cane
- [ ] Caramel
- [ ] Cinnamon
- [x] Clear
- [ ] Cocoa Bean
- [ ] Espresso
- [ ] Honey
- [ ] Nutmeg
- [ ] Rolled Oats
- [ ] Saffron
- [ ] Stout
- [ ] Toast

_____ Custom Color

Due to the nature of wood, natural variation of color and grain will occur. Sliced or rotary natural birch faces may be all heartwood, all sapwood or a combination of heartwood and sapwood within each face. Cherry and mahogany vary widely in color.

This sample is not intended to conclusively illustrate the color variation of this species. If color variation in the veneer is a primary concern, a flitch or lot should be selected and specified. **Consult with your Masonite Architectural representative for details.**

ENSURE VENEER DOOR FACINGS MATCH SPEC 08 1416 2.04

Approved by **Approval date**

This sample expires six months from this date: DEC – 2018

MASONITE ARCHITECTURAL

MASONITE®
ARCHITECTURAL

Masonite Architectural
201 N Franklin Street, Suite 300
Tampa, FL 33602
877.332.4484
masonitearchitectural.com

Printed in the United States

MA_SAMP-3005_v1

NATIONAL GUARD PRODUCTS

Low Profile Lite Kit for 1-3/4" Thick Doors and 3/16", 1/4" or 5/16" Glass

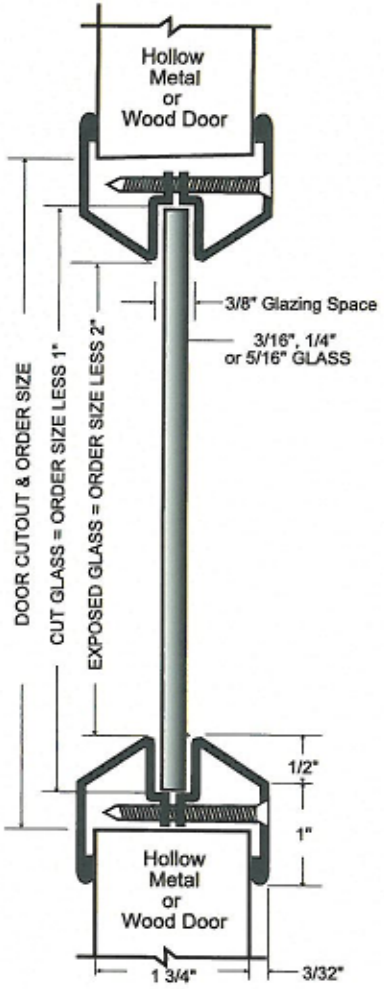
L-FRA100

10C

Materials & Finishes
- 18 ga. cold rolled steel
- Mitered and welded corners
- Welded reinforcing clips at corners
- Counter-sunk mounting screw-holes
- #8 x 1-3/4" Phillips head SMS
- Available in uneven and fractional sizes
- Gray Primer (GPZ) powder coat finish

Available Options
- Powder coat color options - see color chart on www.ngp.com
- Torx Security Screws
- Galvanneal - A40 Steel
- Zinc electro-plating
- Glass & Glazing tape
- Lead lining - .030" thick

Project:
Submitted by:
Date:
Notes:

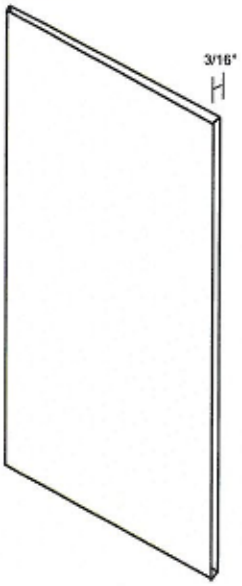


4985 East Raines Road, Memphis, TN 38118 • 800-647-7874

National Guard Products, Inc.
Phone: 800-647-7874
Fax: 800-255-7874
www.ngp.com
orders@ngp.com

Pyran® Platinum F

Fire-Protective Safety Glass Ceramic



- 3/16" (5mm) thick glass ceramic
- Heavy duty 7 mil durable safety film
- Neutral coloration - clear and wireless
- Advanced manufacturing process eliminates the need for surface polishing
- Etched with UL classification on each piece
- 10 year Manufacturer Warranty
- Weight: 2.5 lbs./sq. ft.
- STC 31 rating

Fire-rating information:

- Certified by UL to ANSI/UL9, ANSI/UL10B, ANSI/UL10C, CAN/ULC-S104, ULC CAN4-S106 with closed cell PVC foam glazing tape like NGP GT-116, GT-118, or GT132
- IBC applicable edition may limit maximum size allowable

Rating	Application	Max. Visible Glass Area (Sq. Inches)	Max. Width Visible Glass	Max. Height Visible Glass
20, 45, 60, 90 Minute	Doors* (non-temp rise)	2,736	36"	76"
20, 45, 60, 90 Minute	Side-lites, Borrowed lites, Transom lites	3,422	76"	76"
180 Minutes	Doors* including temp-rise	100	12"	33"

*with fire-rated glass Lite kit

Impact Safety Rating Information:

Meets ANSI Z97.1, Class A

Meets CPSC 16CFR 1201 (Category I and II)

Complies with IBC requirements for use in doors, side-lites, transom lites and borrowed lites

SOUTHERN GF COMPANY

COMMERCIAL-DOORS-FRAMES-HARDWARE

Since 1912

Georgia Tech.
Cherry Emerson Ratcliff Lab Renovation
310 Ferst Drive NW
Atlanta, Ga. 30332

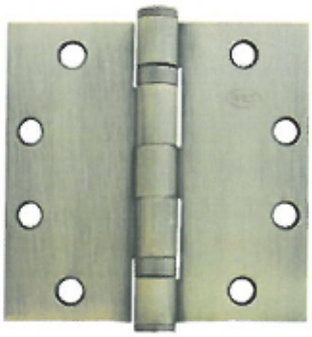
Hardware Set #1 ✓

Door# 330
8. Ives hinges 5BB1 4.5 x 4.5 652.
1. Ives flush bolt set FB51P 630.
1. Ives dust proof strike DP2 626.
1. Schlage L9070HD 06A 626 Classroom lock less core.
1. Ives wall stop WS406/407CCV 630.
1. LCN closer 4040XP REG 689.
2. Kick plates 8400 10" x 2" LDW B-CS 630.
1. Zero 188SBK PSA gasketing.
1. Zero 8150SBK PSA meeting edge seal.

Hardware Set #2
Door# 201B
4. Ives hinges 5BB1 4.5 x 4.5 652.
1. Schlage L9070HD 06A 626 Classroom lock less core.
1. LCN closer 4040XP SCUSH 689.
1. Kick plate 8400 10" x 2" LDW B-CS 630.
2. Zero 188SBK PSA gasketing.

Hardware Set #3
Door# 201A
4. Ives hinges 5BB1 4.5 x 4.5 652.
1. Schlage L9010 06A 626 passage set.
~~1. Ives wall stop WS406/407CCV 630.~~
1. LCN closer 4040XP EDA 689.
1. Kick plate 8400 10" x 2" LDW B-CS 630.
1. Zero 188SBK PSA gasketing.

PROVIDE ***IVES FS436 FLOOR STOP*** FOR THESE (2) DOORS



5BB1 5 Knuckle, ball bearing full mortise hinge

- Recommended for medium weight doors (<150 lbs)
- Recommended for medium frequency usage (<400 cycles per day)
- Made with two ball bearing assemblies
- Recommended for use with a door closer
- Packed with fasteners for hollow metal and wood doors
  12-24 x 1/2 UFPHMS, 12 x 1 1/4 FPHWS
  10-24 x 1/2 UFPHMS, 10 x 1 FPHWS (3.5x3.5 hinge size only)

Certifications

- Certified to ANSI/BHMA A156.1 for performance standards
- Meets ANSI/BHMA 156.7 for template hinge dimensions
- UL Classified for windstorm rated assemblies - R37965
- UL Listed, 3 hour fire doors

Material substrate

- Made from brass, 1040 steel, or 304 series stainless steel

Options

- NRP .....Non-removable pin
- HT.....Hospital tip
- SH.....Security stud - comes standard with NRP
- RC-1/4, RC-5/8...Rounded corners
- SEC .....Security fasteners - pin-in-socket
- TW4 .....Four wire
- TW4M .....Four wire with monitor
- TW8 .....Eight wire
- TW8M .....Eight wire with monitor
- MON .....Monitor (not available on 3.5X3.5)

Dimensions

Height x Width	Size (mm)	Gauge
3.5 x 3.5	89 x 89	0.123
4 x 4	102 x 102	0.130
4.5 x 4	114 x 102	0.134
4.5 x 4.5	114 x 114	0.134
5 x 4.5	127 x 114	0.146
5 x 5	127 x 127	0.146

Refer to General Hinge Information page to determine proper hinge for application

5BB1 Finishes

BHMA	Description	Substrate	Finish
600	Primer paint	Steel	USP
605	Bright brass	Brass	US3
606	Satin brass	Brass	US4
610	Satin bronze	Brass	US10
613	Oil rubbed bronze	Brass	US10B
614	Oxidized bronze	Brass	US10A
616	Blackened bronze	Brass	US11
619	Satin nickel	Brass	US15
622	Matte black	Brass	B-BLK
625	Bright chrome	Brass	US26
626	Satin chrome	Brass	US26D
643e/716	Aged bronze	Brass	B-643e/716
629	Bright stainless	Stainless steel	US32
630	Satin stainless	Stainless steel	US32D
631	Matte black	Steel	F-BLK
632	Bright brass	Steel	US3
633	Satin brass	Steel	US4
639	Satin bronze	Steel	US10
640	Oil rubbed bronze	Steel	US10B
641	Oxidized bronze	Steel	US10A
643	Blackened bronze	Steel	US11
646	Satin nickel	Steel	US15
651	Bright chrome	Steel	US26
652	Satin chrome	Steel	US26D
643e/716	Aged bronze	Steel	F-643e/716

For other colors, consult factory.

Meets ANSI A156.3 Type 27.
UL Listed 3 Hour Fire Doors 8'0" x 10'0"

FB51P Top and Bottom Bolts (Pair)

- Constant Latching—inactive door remains latched until the active door is opened, releasing the automatic bottom bolt and then the top bolt can be manually released. Inactive door will relatch automatically when closed.
- Low Actuation Forces.
- Fits standard ANSI A115.4 Door and Frame Preparations.
- Non-handed.
- 3/4" bolt throw with a 7/8" vertical adjustment.
- 3/4" backset
- Standard Rod Length is 12", which is measured from the center of the flush bolt body to the bolt tip. Optional rod lengths available for top bolt only on non-fire rated openings—18", 24", 36" and 48".

DP1 or DP2 optional dust proof strike available, see page C11.

FB51T Top Bolt Only

Meets ANSI A156.3 Type 27.
UL Listed 3 Hour Fire Doors 8'0" x 10'0"

FB52 Top Bolt with Auxiliary Fire Latch

- FB52 Model with Auxiliary Fire Latch eliminates the bottom bolt and is UL Listed for Fire Doors.

FB53 Top Bolt with Auxiliary Fire Latch & Retrofit Plate

- FB53 Model with Auxiliary Fire Latch eliminates the bottom bolt and includes a retrofit plate to cover existing bottom bolt prep. UL Listed for Fire Doors.

Dimensions

Body Size: 1" Wide x 6-3/4" Long x 2" Deep

Guide Size: 1" Wide x 1-27/32" Long x 11/16" High x 3/32" Thick

Strike Size: 15/16" Wide x 2-1/4" Long x 1/16" Thick

Rub Plate Size: 1-1/4" Wide x 1-11/16" Long x 3/64" Thick

Auxiliary Fire Latch Size: 1" Wide x 1-3/4" Long x 3-1/4" Deep

Retrofit Plate Size: 1" Wide x 6-3/4" Long x 3/32" Thick

Finishes

Ives Number	US3	US4	US10	US10B	US32	US32D
BHMA	605	606	612	613	629	630

DP1

DP2

Meets Meets ANSI/BHMA 156.16, L14011.

DP1
DP2 Dust Proof Strikes

- Designed for use with the bottom bolt of all flush bolts.
- Spring-loaded plunger returns to floor or threshold level anytime flush bolt is retracted, eliminating need to clean standard floor strikes.
- Strike hole is 3/4" Diameter and 1-1/8" Deep

Dimensions

DP1 Face Plate: 1-7/16" Diameter
DP2 Face Plate: 1-5/8" W x 3-1/2" L x 1/8" Thick
Body: 1-3/16" Diameter x 1-7/8" Deep

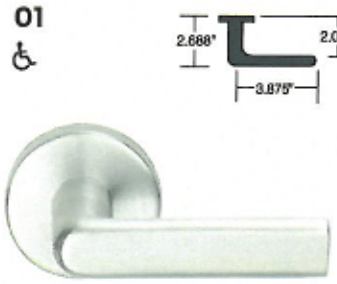
Finishes

Ives Number	US3	US4	US10	US10B	US26	US26D
BHMA	605	606	612	613	625	626

The Standard Collection

The Standard Collection levers can be paired with exit devices and locks from our trusted Schlage and Von Duprin brands. And, they are built to the same exacting standards. Our Standard Collection levers offer a more traditional style that is appropriate for use in a number of commercial applications.

01



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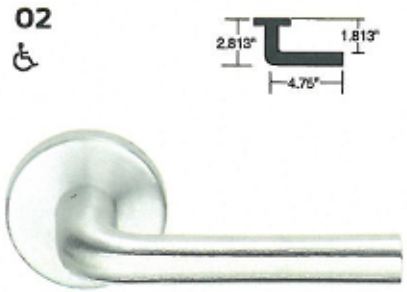

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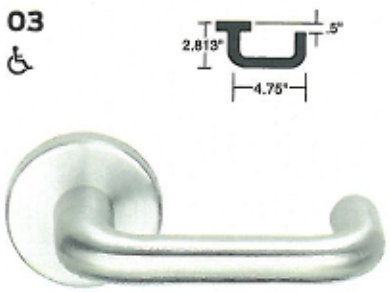

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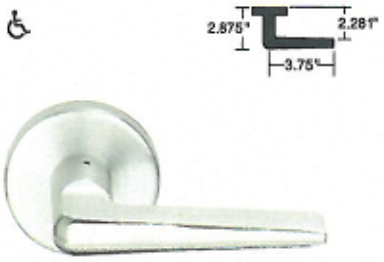

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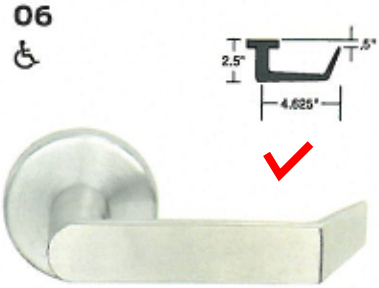

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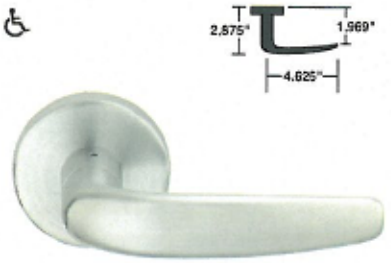

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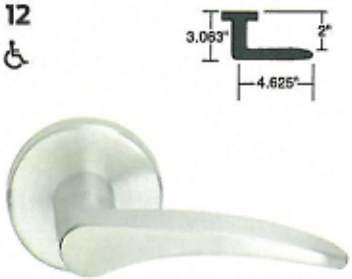

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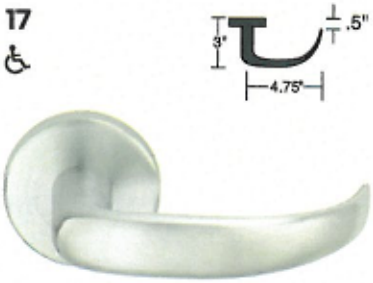

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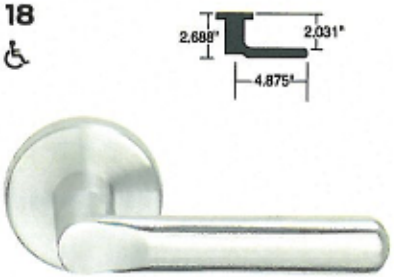
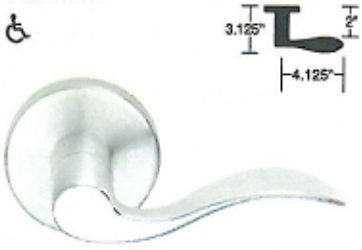
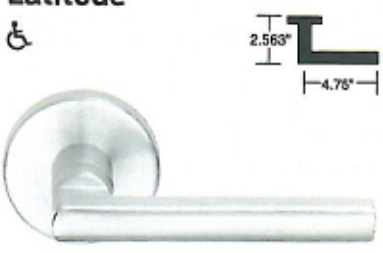


Accent



Asti

Latitude



Note: Levers shown with Schlage L Series mortise "A" rose. Knobs shown with rose that is unavailable in the L Series. Additional rose and escutcheon designs available.

Escutcheons and roses

Three escutcheons and five roses are available to help to match the design and performance needed for your application.

Escutcheons

L full face
Specify by adding 'L' after lever design.
Material: Cold-forged brass, bronze or stainless steel
Finishes: 605, 606, 609, 612, 613, 619, 622, 625, 626, 629, 630, 643e
Size: 8" x 1 3/4" x 7/16"
(203 mm x 44 mm x 11 mm)

L concealed
Specify by adding 'C' suffix to function and by adding 'L' after lever design.
Material: Cold-forged brass, bronze or stainless steel
Finishes: 605, 606, 609, 612, 613, 619, 622, 625, 626, 629, 630, 643e
Size: 8" x 1 3/4" x 7/16"
(203 mm x 44 mm x 11 mm)

N full face
Specify by adding 'N' after lever design.
Material: Heavy wrought reinforced brass, bronze or stainless steel
Finishes: 605, 606, 609, 612, 613, 619, 622, 625, 626, 629, 630, 643e
Size: 8" x 2 9/16" x 7/16"
(203 mm x 65 mm x 11 mm)

Roses

A rose
2 1/8" (54 mm) diameter
Available for use on L Series knob and lever designs. Specify by adding 'A' after lever design
Finishes: 605, 606, 609, 612, 613, 619, 622, 625, 626, 629, 630, 643e

B rose
2 9/16" (65 mm) diameter
Available for use on L Series knob and lever designs. Specify by adding 'B' after lever design.
Finishes: 605, 606, 609, 612, 613, 619, 622, 625, 626, 629, 630, 643e

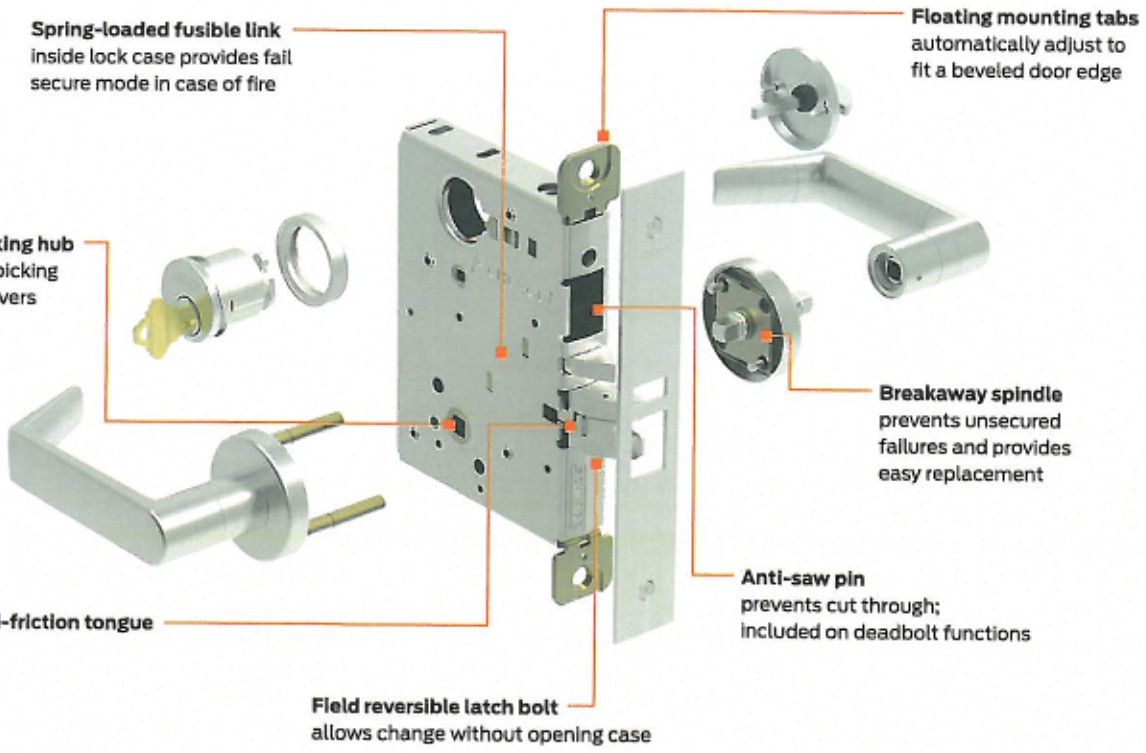
C rose
2 5/8" (66 mm) diameter
Available for use on L Series knob and lever designs. Specify by adding 'C' after lever design.
Finishes: 605, 606, 609, 619, 622, 625, 626, 629, 630, 643e

AVA rose
2 5/8" (66 mm) diameter
Available for use on ACC lever, other levers upon request.
Finishes: 605, 606, 609, 619, 622, 625, 626, 643e

MER rose
2 5/8" (66 mm) diameter
Available for use on MER lever, other levers upon request.
Finishes: 605, 606, 609, 619, 622, 625, 626, 643e

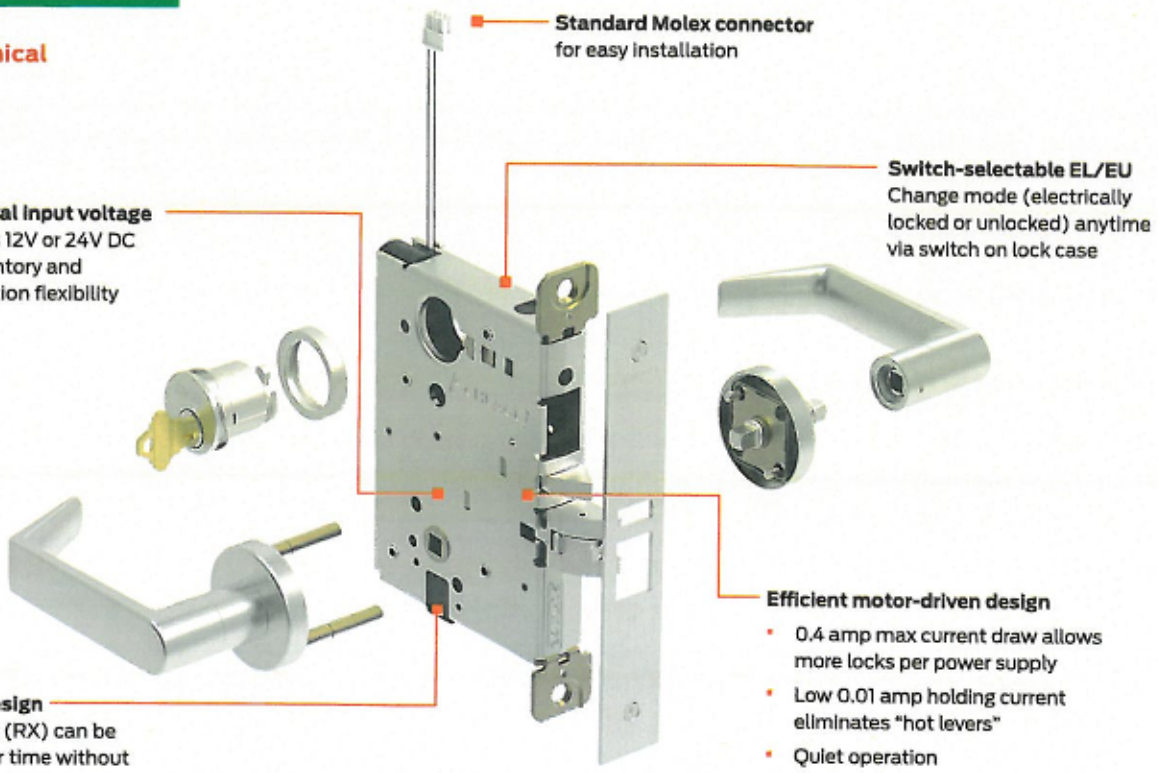
A detailed look...

L mechanical



L wired electrified

All mechanical features +



Non-keyed functions

Schlage	ANSI
L9010	**F01**

Passage latch

- Latchbolt retracted by lever/knob from either side at all times
- Inside lever always free for immediate egress

Schlage	ANSI
L9025	**F31**

Exit lock

- No outside trim
- Inside lever always free for immediate egress

Schlage	ANSI
L9040 **LV9040**	**F22**

Bath/bedroom privacy lock

- Latchbolt retracted by lever/knob from either side unless outside lever is locked by inside thumbturn
- Actuating inside lever or closing door unlocks outside lever
- To unlock from outside remove emergency button, insert emergency thumbturn in access hole and rotate
- Inside lever always free for immediate egress

Schlage	ANSI
L9044 **LV9044**	**–**

Privacy with coin turn outside

- Latchbolt retracted by lever/knob from either side unless outside lever is locked by inside thumbturn or outside coin turn
- Actuating inside lever, closing door, or rotating outside coin turn unlocks outside lever

Schlage	ANSI
L9440 **LV9440**	**F19**

Privacy with deadbolt

- Latchbolt retracted by lever/knob from either side
- Deadbolt actuated by inside thumbturn
- Throwing deadbolt locks outside knob/lever
- Inside lever retracts both deadbolt and latchbolt and unlocks outside lever
- To unlock from outside remove emergency button, insert emergency thumbturn in access hole and rotate
- Inside lever always free for immediate egress

Schlage	ANSI
L9444 **LV9444**	**–**

Privacy with deadbolt and coin turn outside

- Latchbolt retracted by lever/knob from either side
- Deadbolt actuated by inside thumbturn or outside coin turn
- Throwing deadbolt locks outside knob/lever
- Inside lever retracts both deadbolt and latchbolt and unlocks outside lever
- Rotating coin turn retracts deadbolt and unlocks outside lever
- Inside lever always free for immediate egress

Single cylinder non-deadbolt functions

Schlage	ANSI
L9026	–

Exit lock with cylinder

- No outside trim
- Outside cylinder retracts latchbolt
- Inside lever always free for immediate egress
- Auxiliary latch deadlocks latchbolt when door is locked

Schlage	ANSI
L9050 LV9050	F04

Office and inner entry lock

- Latchbolt retracted by lever/knob from either side unless outside lever is locked by key or thumbturn
- With outside locked, latchbolt retracted by key or inside lever
- Outside lever locked until unlocked by thumbturn or key
- Auxiliary latch deadlocks latchbolt when door is closed
- Inside lever always free for immediate egress

Schlage	ANSI
L9056 LV9056	–

L9050 with automatic unlocking

- Latchbolt retracted by lever/knob from either side unless outside lever is locked by key or thumbturn
- With outside locked, latchbolt retracted by key or inside lever
- Outside lever locked until unlocked by thumbturn or key
- Auxiliary latch deadlocks latchbolt when door is closed
- Inside lever always free for immediate egress

Schlage	ANSI
L9070 LV9070	F05

Classroom lock

- Latchbolt retracted by lever/knob from either side unless outside lever is locked by key
- Unlocked from outside by key
- Auxiliary latch deadlocks latchbolt when door is closed
- Inside lever always free for immediate egress

Schlage	ANSI
L9076 LV9076	F06

Classroom holdback lock

- Latchbolt retracted by lever/knob from either side unless outside lever is locked by key
- When locked, latchbolt retracted by key or inside lever
- Auxiliary latch deadlocks latchbolt when door is closed
- Holdback feature activated by turning inside lever/knob and rotating key 360°
- Inside lever always free for immediate egress

Schlage	ANSI
L9080 LV9080	F07

Storeroom lock

- Latchbolt retracted by lever/knob inside or key outside
- Outside lever/knob is always inoperable
- Auxiliary latch deadlocks latchbolt when door is closed
- Inside lever always free for immediate egress

Single cylinder deadbolt functions

Schlage	ANSI
L9453 LV9453	F20

Entrance lock

- Latchbolt retracted by lever/knob from either side unless outside locked by 20° thumbturn rotation
- Deadbolt actuation through 90° thumbturn rotation
- When locked, outside key or inside lever/knob retracts both deadbolt and latchbolt
- Outside lever/knob locked until thumbturn is restored to vertical position
- Throwing deadbolt locks outside lever/knob
- Auxiliary latch deadlocks latchbolt when door is closed
- Inside lever always free for immediate egress

WS406CVX & WS407CVX

WS406/407CVX (Convex) wall bumpers
WS406/407CCV (Concave) wall bumpers

- Constructed in sturdy yet economical wrought base of brass or stainless steel construction
- Feature concealed tamper-proof mounting
- Shipped factory preassembled backplate to reduce installation cost
- Easy installation by inserting screwdriver through small hole in rubber
- WS406/407CVX – convex rubber bumper, packed with fasteners for drywall/wood applications
- WS406/407CCV – concave rubber bumper which avoids damage to locks with projecting buttons, packed with fasteners for drywall/wood applications

Certifications

- WS406/407CVX Meets ANSI/BHMA 156.16, L22201 for brass and L52201 for stainless steel
- WS406/407CCV Meets ANSI/BHMA 156.16, L22251 for brass and L52251 for stainless steel

Material substrate

- Made from brass and stainless steel

Dimensions

- Base diameter: 2-1/2"
- Base thickness: 3/8"
- Overall projection: 1"

Finishes - Brass

BHMA	Description	Substrate	Finish
605	Bright brass	Brass	US3
606	Satin brass	Brass	US4
609	Blackened brass	Brass	US5
612	Satin bronze	Brass	US10
613	Oil rubbed bronze	Brass	US10B
619	Satin nickel	Brass	US15
622	Matte black	Brass	BLK
625	Bright chrome	Brass	US26
626	Satin chrome	Brass	US26D
---	Aged bronze	Brass	643e/716

Finishes - Stainless steel

BHMA	Description	Substrate	Finish
630	Stainless steel	Stainless steel	US32D

For other colors, consult factory.

411R-W Wall bumper - adhesive

- Adhesive-backed wall door stop for use on clean, smooth, flat surfaces only
- Non-marring white rubber
- Concave design permits knob to strike stop without damaging or engaging lock mechanism

Material substrate

- Made from rubber

Dimensions

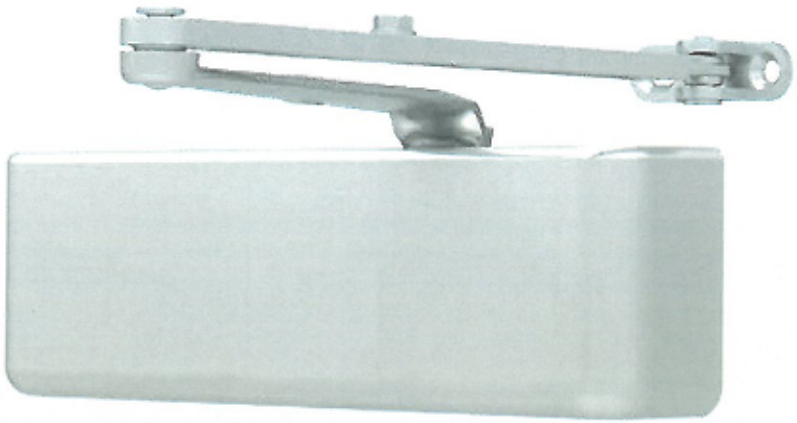
- Base diameter: 1-7/8"
- Base thickness: 3/8"
- Overall projection: 1-1/16"

Finishes

BHMA	Description	Substrate	Finish
---	White	Rubber	R-W

4040XP Series

Features



The 4040XP is LCN's most durable and flexible heavy duty closer designed for institutional and other demanding high traffic applications.

Certifications	Grade 1 - ANSI A156.4, UL 10C, ADA, 100 Hour Salt Spray, Meets BAA - Buy American Act
Body Construction	▪ Cast Iron Body ▪ Full Complement Bearings ▪ 1-1/2" Diameter Piston ▪ 3/4" Diameter Double Heat Treated Pinion Journal
Fluid	All Weather Liquid X Fluid
Handing	Non-Handed
Templating	Peel-n-Stick templates - 2-1/4" x 5" Mounting Hole Pattern
Size	Adjustable Spring Size 1-6, Includes Patented Green Dial
Warranty	30 years

Cover	▪ Plastic, Standard ▪ Metal, Optional
Fasteners	Self Reaming and Tapping Screws (SRT)
Mounting	Hinge (Pull Side), Top Jamb (Push Side), Parallel Arm (Push Side)
Arms	Regular Arm
Finishes/Colors/ Powder Coat	▪ Aluminum (689) ▪ Statuary Bronze (690) ▪ Light Bronze (691) ▪ Black (693) ▪ Dark Bronze (695) ▪ Brass (696) ▪ Custom colors optional ▪ Optional SRI primer - powder coat only ▪ Optional plated finishes

Special Templates | Customized installation templates or products may be available to solve unusual applications. Contact LCN Product Support for assistance.

MOUNTING					FINISH		COVER		CYLINDER					*ARM FUNCTION							
HINGE (PULL) SIDE	TOP JAMB (PULL)	TOP JAMB (PUSH)	PARALLEL ARM	STOP FACE	POWDER COAT	PLATED	PLASTIC	METAL	NON-HANDED	NON-SIZED	ACCESSIBILITY	DELAYED ACTION***	AVB**	REGULAR (DOUBLE)	STANDARD (SINGLE)	HOLD-OPEN	FUSIBLE LINK	EDA/HEDA	CUSH/HCUSH	SCUSH/SHCUSH	DOUBLE EGRESS
●	○	●	●	○	●	●	●	●	●	●	♿	●	○	120°	○	120°	○	180°	110°	110°	○

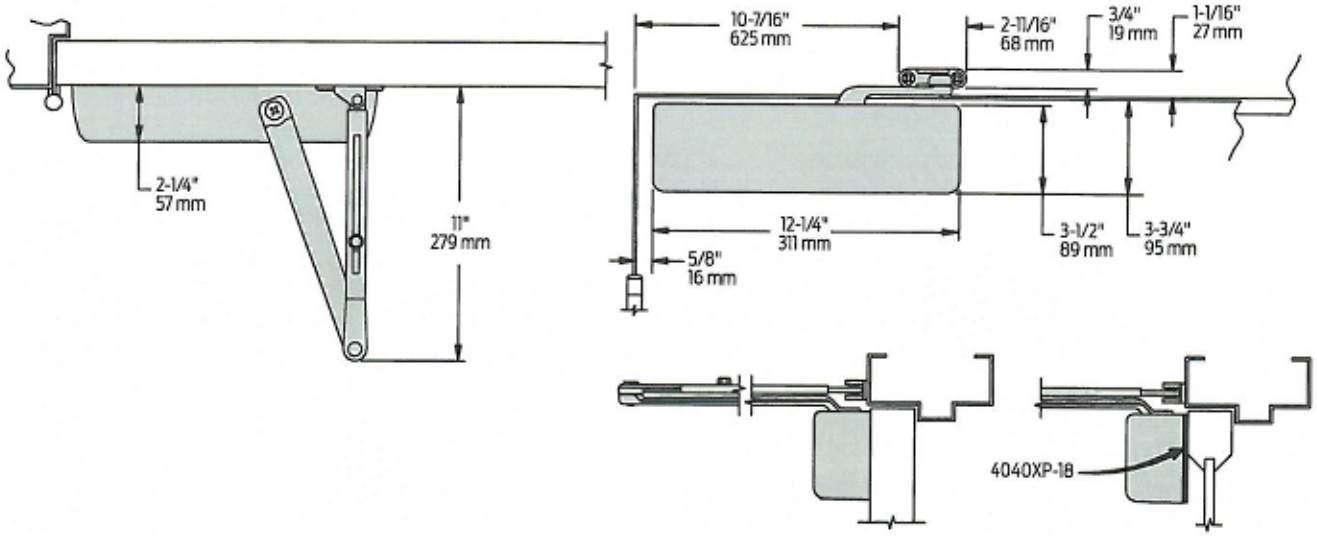
● AVAILABLE
○ NOT AVAILABLE

♿ *Closer available with less than 5.0 lbs. opening force on 36" door.*
* *Maximum opening/hold-open point with standard template.*
** *Advanced Variable Backcheck.*
*** *Delay feature incorporates standard 4040 cylinder (not XP).*

4040XP Series

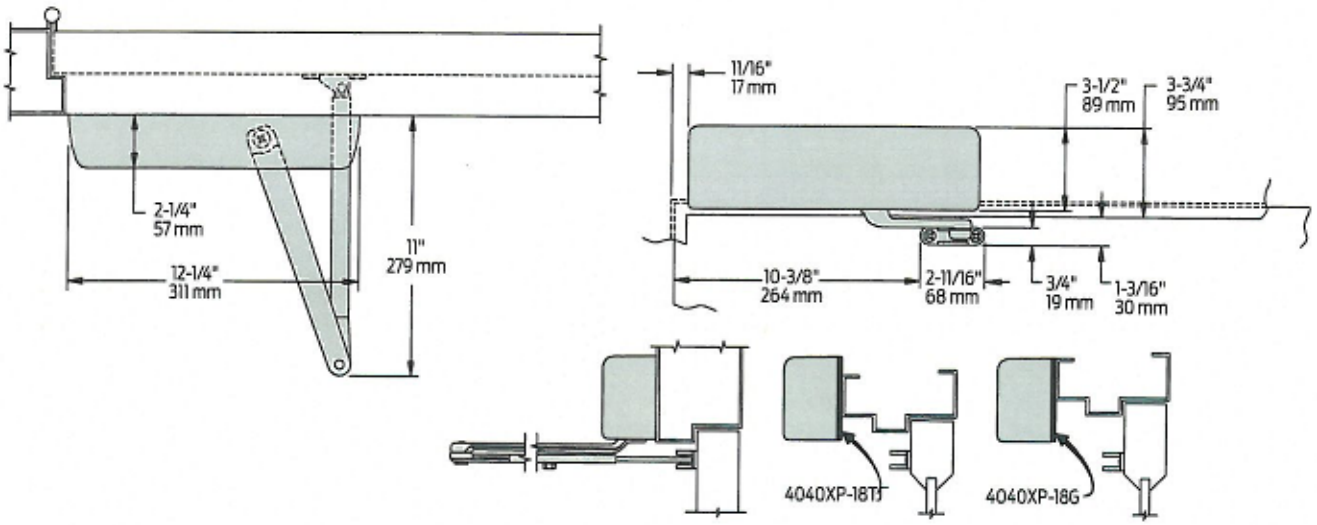
Mounting details

Hinge (Pull Side) Mounting



Butt Hinges	▪ Should not exceed 5″ (127 mm) in width
Auxiliary Stop	▪ Recommended at hold-open point or where a door cannot swing beyond 120°
Reveal	▪ Should not exceed 3/4″ (19 mm) for regular arm or hold-open arm
Top Rail	▪ Less than 3-3/4″ (95 mm) requires PLATE, 4040XP-18. Plate requires 2″ (51 mm) minimum
Clearance	▪ 2-3/8″ (60 mm) behind door required for 90° installation
Delayed Action	▪ Incorporates standard 4041 cylinder, without XP cylinder ▪ Delays closing from 120° to 70° ▪ Delay time adjustable up to approximately 1 minute
Maximum Opening	▪ Templating allows up to 120°. ▪ Hold-open points 90° up to 120° with hold-open arm.

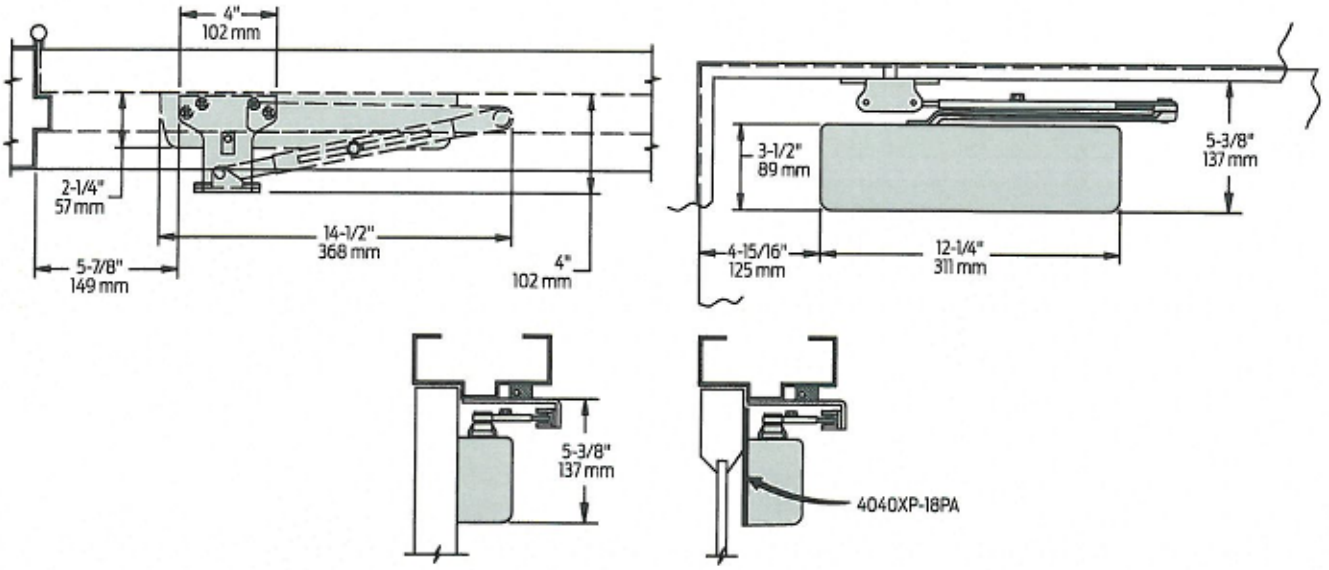
Top Jamb (Push Side) Mounting



Butt Hinges	Should not exceed 5″ (127 mm) in width		
Auxiliary Stop	Recommended at hold-open point or where a door cannot swing beyond 120°		
Reveal	Arm Type	Reveal	Max Opening
	Regular Arm	2-9/16″	Up to 120°
	Long	4-13/16″	Up to 120°
	Hold-Open	2-9/16″	Up to 120°
	Long Hold-Open Arm	8″	Up to 120°
Top Rail	▪ Requires 1-1/4″ (32 mm) minimum ▪ 2-1/4″ (57 mm) minimum with closer on PLATE, 4040XP-18TJ ▪ 3″ (76 mm) minimum with closer on PLATE, 4040XP-18G		
Head Frame	▪ Less than 3-1/2″ (89 mm) requires PLATE, 4040XP-18TJ ▪ With flush ceiling, use PLATE, 4040XP-18G. Either plate requires 1-3/4″ (44 mm) minimum		
Maximum Opening	▪ Templating allows up to 120°. ▪ Hold-open points 85° up to 120° with hold-open arm.		
Delayed Action	▪ Incorporates standard 4041 cylinder, without XP cylinder ▪ Delays closing from 120° to 70° ▪ Delay time adjustable up to approximately 1 minute		

Mounting details

Parallel Arm (Push Side) Mounting

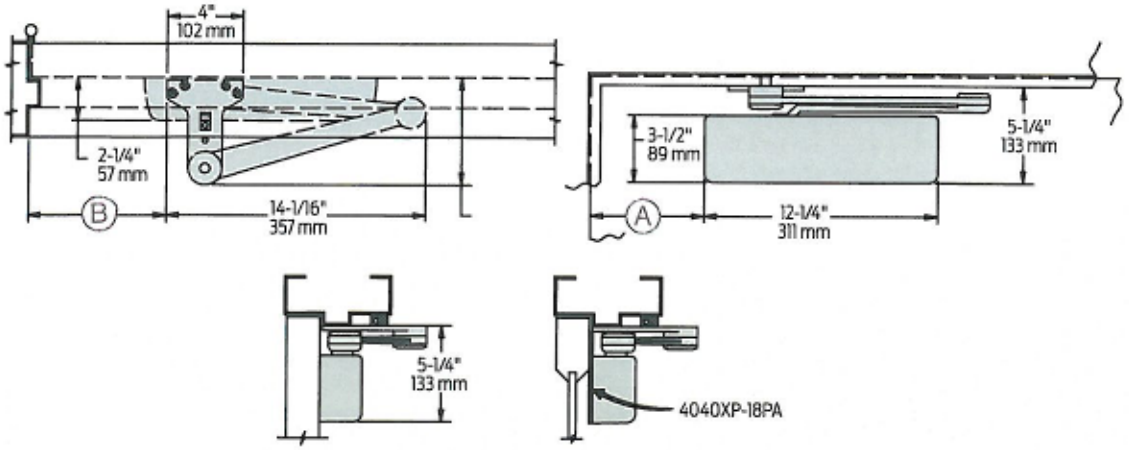


Butt Hinges	Should not exceed 5″ (127 mm) in width
Auxiliary Stop	Recommended at hold-open point, where the door cannot swing 180°, or where CUSH-N-STOP arm is not used
Reveal	Should not exceed 7/32″ (6 mm)
Top Rail	Less than 5-3/8″ (137 mm) measured from the stop requires PLATE, 4040XP-18PA. Plate requires 2″ (51 mm) minimum from the stop
Head Frame	Flush or rabetted requires PA SHOE ADAPTER, 4040XP-419
Stop Width	Minimum 1″ (25 mm). CUSH arm requires minimum 1-1/2″ (38 mm)
Blade Stop	Clearance requires 1/2″ (13mm) BLADE STOP SPACER, 4040XP-61.
Clearance	▪ 4040XP-62PA shoe is 4″ (102 mm) from door face. ▪ EDA shoe projects 5-1/2″ (140 mm) from door face. ▪ CUSH shoe projects 6″ (152 mm) from door face
Delayed Action	▪ Incorporates standard 4041 cylinder, without XP cylinder ▪ Delays closing from 120° to 70°. ▪ Delay time adjustable up to approximately 1 minute.
Maximum Opening	▪ 180° opening/hold-open points with all except CUSH arms ▪ 110° opening/hold-open with CUSH arms

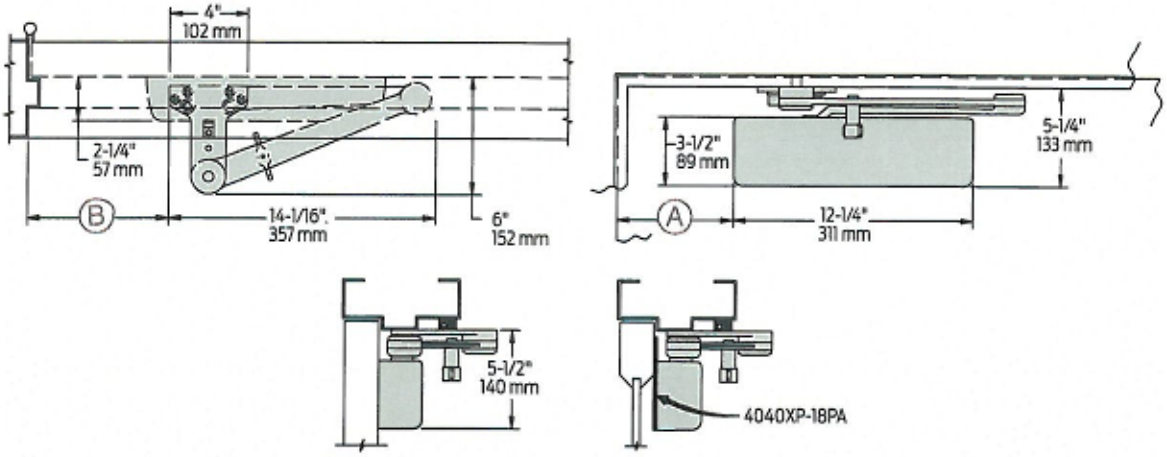
Notes:

- *Optional mounting requires PA SHOE, 4040XP-62PA for regular or HOLD-OPEN arms*
- *Add prefix "P" to closer description (eg. P4040XP)*
- *P4040XP closer includes 4040XP-201 FIFTH HOLE SPACER to support PA SHOE*

EDA mount



CUSH mount



Clearance	4040XP-62EDA is 5-1/2" (140 mm) from door face. 6" (152 mm) for CUSH	
Head Frame	Flush or rabetted requires CUSH FLUSH PANEL ADAPTER, 4040XP-419	
CUSH ARM	Requires SHOE SUPPORT, 4040XP-30 for fifth screw anchorage where reveal is less than 3-1/16" (78 mm)	
Delayed Action	▪ Incorporates standard 4041 cylinder, without XP cylinder. ▪ Delays closing from maximum opening to ; 115° with 180° template, 95° with 110° template, 85° with 100° template, 75° with 90° template. Delay time adjustable up to approximately 1 minute.	
Maximum Opening	EDA arm can be templated for points at:	CUSH arms can be templated for opening/hold-open point at:
	110°: A = 6-3/8" (162 mm) B = 7-3/4" (197 mm)	85°: A = 7-15/16" (202 mm) B = 9-1/8" (232 mm)
	or 180°: A = 2-7/8" (73 mm) B = 4-1/4" (108 mm)	90°: A = 7-3/16" (183 mm) B = 8-1/2" (216 mm)
	Hold-open points up to maximum opening with HEDA arm	100°: A = 6-1/16" (154 mm) B = 7-1/4" (184 mm)
		or 110°: A = 5-1/16" (129 mm) B = 6-3/8" (162 mm)

Notes:

- *4040XP Series closers ordered with EDA or CUSH arms include 4040XP-201 FIFTH HOLE SPACER to support the shoe*
- *Spring Cush stop points are approximately 5° more than templated stop point*
- *Hold open at templated stop points*

Cylinders

4040XP-3071
Cast Iron Cylinder Assembly

- Non-handed
- Heavy duty

4041-3071 DEL
Cast Iron Cylinder Assembly

- Used for delayed action closing
- Non-handed
- Heavy duty

Covers

4040XP-72
Plastic Cover

- Includes 4040XP-54 snap-on cover clip
- Non-handed
- Standard

4040XP-72MC
Metal Cover

- Handed
- Required for plated finishes and custom powder coat finishes
- Optional

Installation Accessories

4040XP-18
Plate

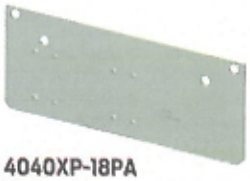
- Required for hinge side mount where top rail is less than 3-3/4" (95 mm)
- Requires minimum 2" (51 mm) minimum top rail

4040XP-18G
Plate

- Locates top jamb mounted closer flush with top of head frame face in flush ceiling condition
- Requires 1-3/4" (44 mm) minimum head frame

4040XP-18TJ
Plate

- Centers top jamb mounted closer vertically on head frame where face is less than 3-1/2" (89 mm). Plate requires 1-3/4" (44 mm) minimum head frame



4040XP-18PA
Plate

- Required for parallel arm mounting where top rail is less than 5-1/2" (140 mm), measured from the stop
- Requires 2" (51 mm) minimum top rail

4040XP-62PA
PA Shoe

- Required for parallel arm mounting

Arms

4040XP-3077
Regular Arm

- Non-handed
- Mounts pull side or top jamb with shallow reveal P4041 closer includes PA SHOE, 4040XP-62PA required for parallel arm mounting

4040XP-3077L
Long Arm

- Non-handed
- Includes LONG ROD AND SHOE, 4040XP-79LR for top jamb mount
- Optional

4040XP-3077ELR
Extra Long Arm

- Non-handed
- Includes EXTRA LONG ROD AND SHOE, 4040XP-79ELR for top jamb mount with deep reveal
- Optional

4040XP-3049
Hold-Open Arm

- Non-handed
- Mounts pull side or top jamb with shallow reveal, hold-open adjustable shoe
- 4040XP closer includes 4040XP-62PA shoe required for parallel arm mounting
- Optional

4040XP-3049L
Long Hold-Open Arm

- Non-handed
- Includes LONG HEAD AND TUBE, 4040XP-3048L for top jamb mount
- Optional

4040XP-3077EDA
Extra Duty Arm

- Non-handed
- Features forged, solid steel main and forearm for potentially abusive installations
- Optional

4040XP-3049EDA
Hold-Open Extra Duty Arm

- Handed
- Parallel arm features forged, solid steel main and forearm for potentially abusive installations
- Hold-open function is adjusted at the shoe
- Optional

4040XP-3077EDA/62G
Extra Duty Arm with 62G

- Non-handed
- Features forged, solid steel main and forearm for potentially abusive installations
- 62G shoe provides additional blade stop clearance
- Optional

4040XP-3049EDA/62G
Hold-Open Extra Duty Arm with 62G

- Handed
- Features forged, solid steel main and forearm for potentially abusive installations
- 62G shoe provides additional blade stop clearance. Hold-open function is adjusted at the shoe
- Optional

4040XP-3077CNS
Cush-N-Stop® Arm

- Non-handed
- Features solid forged steel main arm and forearm with stop in soffit shoe.
- Optional

4040XP-3049CNS
HCUSH Arm

- Non-handed
- Hold-open function with templated stop/hold-open points
- Handle controls hold-open function
- Optional

4040XP-3077SCNS
Spring CUSH Arm

- Non-handed
- For abusive applications features solid forged steel main arm and forearm with spring loaded stop in the soffit shoe
- Optional

4040XP-3049SCNS
Spring HCUSH Arm

- Non-handed
- For abusive applications features solid forged steel main arm and forearm with spring loaded stop in the soffit shoe
- Handle controls hold-open function
- Optional

Installation Accessories cont.

4040XP-30
CUSH Shoe Support

- Provides anchorage for fifth screw used with CUSH arms, where reveal is less than 3-1/16" (78 mm)
- Optional

4040XP-61
Blade Stop Spacer

- Required to lower parallel arm shoe to clear 1/2" (13 mm) blade stop
- Optional

4040XP-419
PA Flush Panel Adapter

- Provides horizontal mounting surface for parallel arm shoe on single rabetted or flush frame
- Optional

4040XP-62A
Auxiliary Shoe

- Requires a top rail of 7" (178 mm)
- Shoe replaces -62PA for parallel arm mounting of regular arm with overhead holder/stop
- Optional

4040XP-54
Snap-On Cover Clip

- Used to secure 4040XP-72 Plastic Cover to cylinder body

How-to-order 4040XP Series closers

1. Select finish

☐ Standard Powder Coat _____
Aluminum, Dark Bronze, Statuary, Light Bronze, Black, Brass.

Closer will be shipped with:
- Standard cylinder
- Standard cover
- Regular arm
- Self-reaming and tapping screws

unless options listed below are selected.

Closer options

Cylinder
☐ Delayed Action (4041 DEL)

Cover
☐ Metal (specify right or left hand) (MC)

Finish
☐ Custom Powder Coat (RAL) _____
(handed metal cover required)
☐ Plated Finish, US _____
(handed metal cover required)
☐ SRI primer (use with powder coat finishes only)

Arm
☐ Regular (REG)
☐ Regular w/62PA (Rw/PA)
☐ Regular w/62A (R/62A)
☐ Long (LONG)
☐ Extra Long (XLONG)
☐ Hold-Open (H)
☐ Hold-Open w/62PA (Hw/PA)
☐ Long Hold-Open (HLONG)
☐ Extra Duty Arm (EDA)
☐ Extra Duty Arm with 62G (EDA/62G)
☐ Hold Open Extra Duty Arm (HEDA) (Handed)
☐ Hold Open Extra Duty Arm with 62 (HEDA/62G) (Handed)
☐ Cush-N-Stop (CUSH)
☐ HCush-N-Stop (HCUSH)
☐ Spring Cush (SCUSH)
☐ Spring HCush (SHCUSH)

Optional Screw Packs
☐ TB* w/Self-Reaming and Tapping (TBSRT)
☐ Wood & Machine Screw (WMS)
☐ TB*, Wood & Machine Screw (TBWMS)
☐ TORX Machine Screw (TORX)
☐ TB* & TORX Machine Screw (TBTRX)
* Specify door thickness if other than 1-3/4".

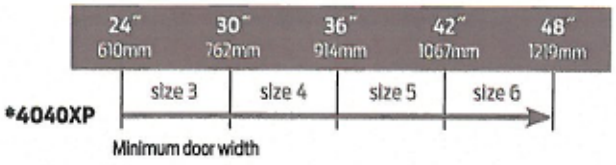
Installation Accessories
☐ Plate, 4040XP-18
☐ Plate, 4040XP-18TJ
☐ Plate, 4040XP-18G
☐ Plate, 4040XP-18PA
☐ CUSH Shoe Support, 4040XP-30
☐ Blade Stop Spacer, 4040XP-61
☐ Auxiliary Shoe, 4040XP-62A
☐ PA Flush Panel Adapter, 4040XP-419

Special Template
☐ ST-_____

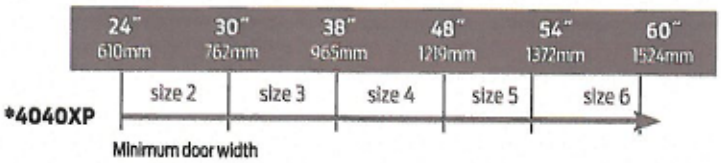
Table of sizes

- 4040XP cylinders are adjustable from size 1 through size 6 and is shipped set to size 3
- Closing power of 4040XP Series closers may be adjusted 50%

Exterior (and vestibule) door width



Interior door width



→ Indicates recommended range of door width for closer size. * *Adjustable Size 1 thru 6.*

Reduced opening force 4040XP Series closers

CAUTION ! Any manual door closer, including those certified by BHMA to conform to ANSI Standard A156.4, that is selected, installed and adjusted based on ADA or other reduced opening force requirements may not provide sufficient power to reliably close and latch a door.

Refer to POWER OPERATORS section for information on systems that meet reduced opening force requirements without effecting closing power.

	DOOR WIDTH	36"	42"	48"
	8.5* lbs.	4040XP	4040XP	4040XP
	5.0* lbs.	4040XP	4040XP	4040XP

* *Maximum opening force.*

FOR RATED DOORS

8400 Commercial protection plates
8402 UL Commercial protection plates

- Door protection plates are available in .050" thick brass, stainless steel or aluminum; and 1/8" thick high impact polyethylene in clear or black.
- All plates, metal and plastic, come standard with four beveled edges and countersunk mounting holes (B-CS).
- Protection plates must be ordered in 1/2" increments. Available in other sizes, consult customer service
- *For 8402 UL Plates, UL mark appears in upper right corner. Not available on plastic protection plates.*

Certifications

- Meets ANSI A156.6 for J301
- UL protection plates certified to UL10C

Mounting

- Standard mounting package, 16 per pack
  - #6 X 5/8 oval head screws
- Optional TEK/TORX package, specify TK-TX
  - #6 X 5/8 Self-drilling, Self-tapping screws
  - #6 X 5/8 Torx screws

Finishes

- Aluminum 5005 Series, Brass C26800 Series, Stainless Steel 300 Series, Plastic

BHMA	Description	Substrate	Finish	Max sizes
605	Bright Brass	Brass	US3	24"X48"
606	Satin Brass	Brass	US4	24"X48"
612	Satin Bronze	Brass	US10	24"X48"
613	Oil rubbed Bronze	Brass	US10B	36"X48"
619	Satin Nickel	Brass	US15	24"X48"
625	Bright Chrome	Brass	US26	36"X48"
626	Satin Chrome	Brass	US26D	24"X48"
628	Satin Aluminium	Aluminium	US28	48"X48"
629	Bright Stainless Steel	Stainless Steel	US32	48"X48"
630	Satin Stainless Steel	Stainless Steel	US32D	48"X48"
654	Satin Stainless Steel	Stainless Steel	US32D	48"X48"
BLK	Matte black	Stainless Steel	BLK	24"X48"
P-BLK	Black	Plastic	P-BLK	48"X48"
CLR	Clear	Plastic	CLR	48"X48"

Number of screw packs required by plate size (specify TEK Screws or TORK screws)

	22"-25"	26"-33"	34"-41"	42"-48"
4"-8"	1	1	1	1
9"-16"	1	1	1	1
17"-24"	1	1	1	2
25"-32"	1	1	2	2
33"-40"	1	2	2	2
41"-48"	2	2	2	2

- Custom finishes are available as engineering special, consult customer service.

Available options

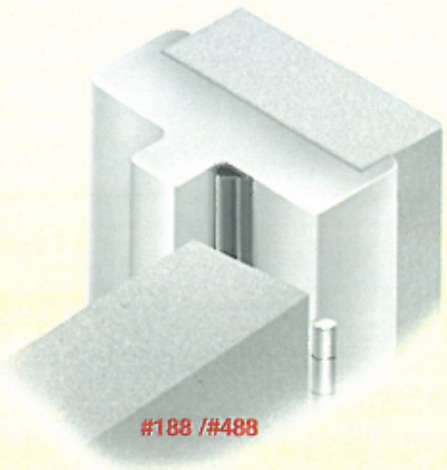
- Specify B-NH for no mounting holes. (Not available on 8402. Available only with US32D, US32, US3, US4, US28, Clear, Black only)
- Specify B-NHA for no mounting holes with adhesive.
- Specify ERS prepped with extra row of screws.
- Special Cut-outs are available as engineering special, consult customer service.

Available accessory

- Gasket tape kit tape is recommended when using a brass plate on a metal door to reduce tarnishing from electrolytic oxidation. One tape pack will cover an the perimeters of a 8" x 34" kickplate. Order 8401 gasket tape.

Self-Adhesive Weatherstripping

Note:
N = Neoprene
S-Bk = Silicone, Black
S-Wh = Silicone, White
S-Br = Silicone, Brown
S-Cl = Silicone, Clear
S-Gy = Silicone, Grey
FS= Intumet™ Rubber
Y-Bk = Polyvinyl, Black
BIO = Antibacterial Gasketing, White
PSA* is equipped with 3M self-adhesive tape
All products are available with ZAG feature (Anti-Ligature)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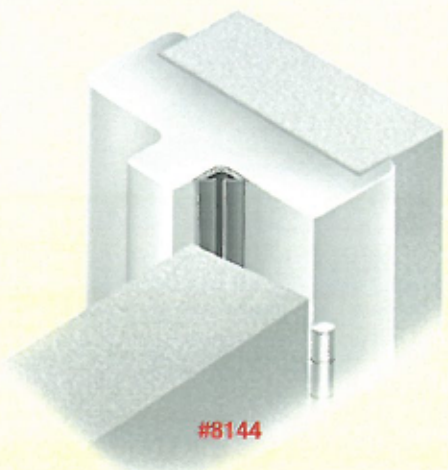
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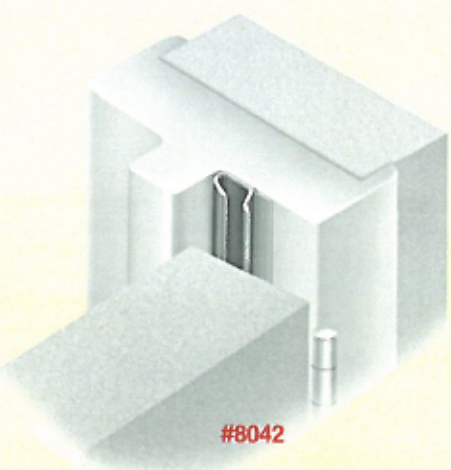
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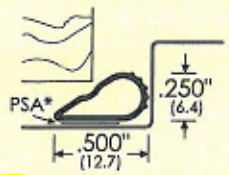

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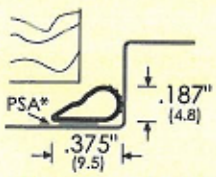
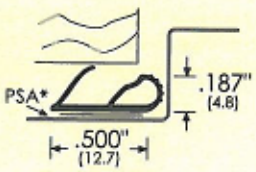
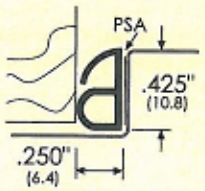
#188S-Br #188FS
#188S-Cl #188BIO
#188S-Gy
ZERO Compress-O-Matic®



#488S-Bk #488S-Wh
#488S-Br #488FS
#488S-Cl #488BIO
#488S-Gy
ZERO Mini-Matic®



#8145S-Bk
ZERO Compress-O-Matic®



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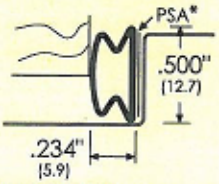
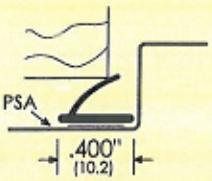
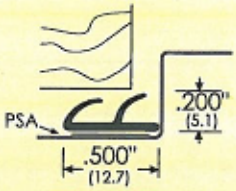


#8216S-Bk



#117S-Bk



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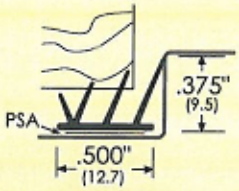

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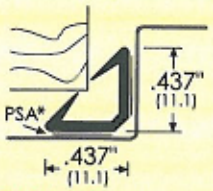
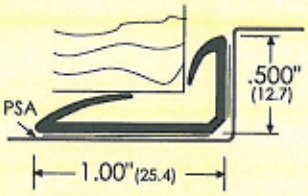
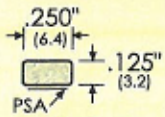


#8144S-Bk
#8144S-Wh
#8144 FS



#8160Y-Bk

Closed Cell Sponge Neoprene



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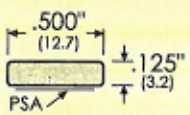

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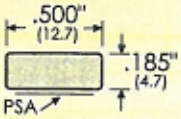

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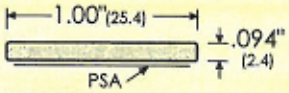

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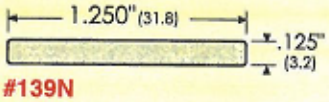

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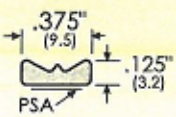

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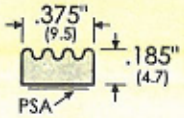

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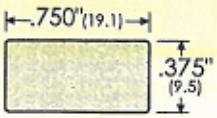

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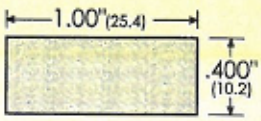

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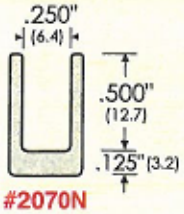

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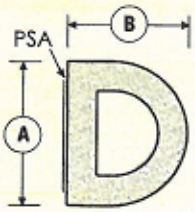
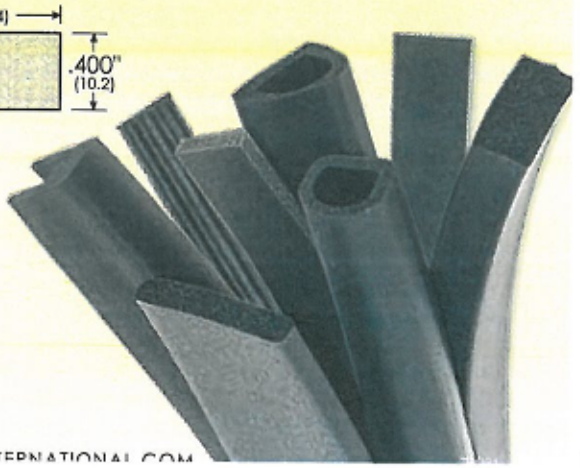


Part#	A	B
#810	.625" (15.9)	.625" (15.9)
#811	.750" (19.1)	.625" (15.9)
#812	1.00" (25.4)	.500" (12.7)
#813	1.250" (31.8)	.625" (15.9)



Door Seals