

**SECTION 077100 - ROOF SPECIALTIES:**

**PART 1 - GENERAL**

- 1.1 SUMMARY
A. Section Includes:
1. Copings.
2. Roof-edge specialties.
3. Counterflashings.

- 1.2 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: For roof specialties.
1. Include plans, elevations, sections, and joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.

- 1.3 INFORMATIONAL SUBMITTALS
A. Product Test Reports: For tests performed by a qualified testing agency.
B. Sample warranty.

- 1.4 CLOSEOUT SUBMITTALS
A. Maintenance Data: For roofing specialties to include in maintenance manuals.

- 1.5 QUALITY ASSURANCE
A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are SPRI ES-1 tested to specified design pressure.
1.6 WARRANTY
A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Section 075233 "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing".
B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.

**PART 2 - PRODUCTS**

- 2.1 PERFORMANCE REQUIREMENTS
A. SPRI Wind Design Standard: Manufacture and install copings and roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
1. Design Pressure: As indicated on Drawings.
B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstretching of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

- 2.2 COPINGS
A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet (3.6 m), concealed anchorage, with coping units, and cap units, and concealed splice plates with finish matching coping caps.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Architectural Products Company.
b. Hickman Company, W. P.
c. Merchand & Evans, Inc.
d. Metal-Era, Inc.
e. Metal-Fab Manufacturing, LLC.
f. Petersen Aluminum Corporation.
2. Metallic-Coated Steel Sheet Coping Caps: Zinc-coated (galvanized) steel, nominal 0.034-inch (0.86-mm) thickness.
a. Surface: Embossed finish.
b. Finish: Two-coat fluoropolymer.
c. Color: As indicated on Drawings.
3. Corners: Factory mitered and continuously welded.
4. Coping-Cap Attachment Method: Snap-on or face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.
a. Snap-on Coping Anchor Plates: Concealed, galvanized-steel sheet, 12 inches (300 mm) wide, with integral cleats.
b. Face-Leg Cleats: Concealed, continuous galvanized-steel sheet.

- 2.3 ROOF-EDGE SPECIALTIES
A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet (3.6 m) and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Hickman Company, W. P.
b. Metal-Era, Inc.
c. Metal-Fab Manufacturing, LLC.
2. Metallic-Coated Steel Sheet Fascia Covers: Zinc-coated (galvanized) steel, nominal 0.034-inch (0.86-mm) thickness.
a. Surface: Embossed finish.
b. Finish: Two-coat fluoropolymer.
c. Color: As indicated on Drawings.
3. Corners: Factory mitered and continuously welded.
4. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
5. Receiver: Galvanized-steel sheet, nominal 0.040-inch (1.02-mm) thickness.
6. Fascia Accessories: Fascia extenders with continuous hold-down cleats Wall cap Soffit trim.

- 2.4 MATERIALS
A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation.
B. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.

- 2.5 UNDERLAYMENT MATERIALS
A. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils (0.76 to 1.0 mm) thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS modified asphalt adhesive, with release-paper backing, cold applied. Provide primer when recommended by underlayment manufacturer.
1. Thermal Stability: ASTM D 1970/D 1970M, stable after testing at 240 deg F (116 deg C).
2. Low-Temperature Flexibility: ASTM D 1970/D 1970M, passes after testing at minus 20 deg F (29 deg C).
3. Products: Subject to compliance with requirements, provide one of the following:
a. Carlisle Coatings & Waterproofing; CCV WIP 3000T.
b. Grace Construction Products, a unit of W. R. Grace & Co.; Grace Ice and Water Shield HT.
c. Henry Company; Blueskin PE20 HT.
d. Metal-Fab Manufacturing, LLC; MetShield.
e. Owens Corning; WeatherShield Metal High Temperature Underlayment.

- 2.6 MISCELLANEOUS MATERIALS
A. Fasteners: Manufacturer recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 303 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.
B. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant of type, grade, class, and use classifications required by roofing specialty for each application.
2.7 FINISHES
A. Cold-Coated Galvanized-Steel Sheet Finishes:
1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with ASTM A 755/A 755M and coating and resin manufacturers' written instructions.
a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat.

**PART 3 - EXECUTION**

- 3.1 UNDERLAYMENT INSTALLATION
A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply wrinkle free, in straight fashion to shed water, and with laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.
1. Apply continuously under copings, roof-edge specialties and reglets and counterflashings.
2. Coordinate application of self-adhering sheet underlayment under roof specialties with requirements for continuity with adjacent air barrier materials.

- 3.2 INSTALLATION, GENERAL
A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof-specialty systems.
1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
2. Provide uniform, neat seams with minimum exposure of solder and sealant.
3. Install roof specialties to fit substrates and to result in weathering performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
4. Torch cutting of roof specialties is not permitted.
5. Do not use graphite pencils to mark metal surfaces.
B. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 12 feet (3.6 m) with no joints within 18 inches (450 mm) of corners or intersections unless otherwise indicated on Drawings.
2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
C. Fastener Sizes: Use fasteners of sizes that penetrate (buck locking) or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws) (substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance) -insert size requirement-.
D. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
E. Seal joints as required for weathering construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

- 3.3 COPING INSTALLATION
A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at manufacturer's required spacing that meets performance requirements.
2. Interlock face-leg drip edge into continuous cleat anchored to substrate at manufacturer's required spacing that meets performance requirements. Anchor back leg of coping with screw fasteners and elastomeric washers at manufacturer's required spacing that meets performance requirements.

- 3.4 ROOF-EDGE SPECIALTIES INSTALLATION
A. Install cleats, corns, and other anchoring and attachment accessories and devices with concealed fasteners.
B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

- 3.5 CLEANING AND PROTECTION
A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
B. Clean and neutralize flux materials. Clean off excess solder and sealants.
C. Remove temporary protective coverings and stripplable films as roof specialties are installed.

**END OF SECTION**

**SECTION 079200 - JOINT SEALANTS:**

**PART 1 - GENERAL**

- 1.1 SUMMARY
A. Section Includes:
1. Silicone joint sealants.
2. Urethane joint sealants.
1.2 PRECONSTRUCTION TESTING
A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tall Procedure, in ASTM C 1521.

- 1.3 ACTION SUBMITTALS
A. Product Data: For each joint-sealant product indicated.
B. Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

- 1.4 INFORMATIONAL SUBMITTALS
A. Product test reports.
B. Preconstruction field-adhesion test reports.
C. Field-adhesion test reports.
D. Warranties.

- 1.5 QUALITY ASSURANCE
A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

- 1.6 WARRANTY
A. Special Installer's Warranty: Manufacturer's standard form in which installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within Owner specified warranty period.
B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within Owner specified warranty period.

**PART 2 - PRODUCTS**

- 2.1 MATERIALS, GENERAL
A. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
B. Sealant Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
C. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

- 2.2 SILICONE JOINT SEALANTS
A. Silicone Joint Sealant: ASTM C 920.
A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. BASF Building Systems.
2. Dow Corning Corporation.
3. GE Advanced Materials - Silicones.
4. May National Associates, Inc.
5. Pecos Corporation.
6. Polymeric Systems, Inc.
7. Schneer-Morehead, Inc.
8. Sika Corporation; Construction Products Division.
9. Tremco Incorporated.
1. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant (Group S1): ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
2. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant (Group S2): ASTM C 920, Type S, Grade NS, Class 50, for Use NT.

- 2.3 URETHANE JOINT SEALANTS
A. Urethane Joint Sealant: ASTM C 920.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. BASF Building Systems.
b. Bosfil, Inc.
c. Lymtal, International, Inc.
d. May National Associates, Inc.
e. Pacific Polymers International, Inc.
f. Pecos Corporation.
g. Polymeric Systems, Inc.
h. Schneer-Morehead, Inc.
i. Sika Corporation; Construction Products Division.
j. Tremco Incorporated.
2. Single-Component, Nonsag, Urethane Joint Sealant (Group U1): ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
3. Multicomponent, Nonsag, Urethane Joint Sealant (Group U2): ASTM C 920, Type M, Grade NS, Class 50, for Use NT.

- 2.4 JOINT SEALANT BACKING
A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
2.5 MISCELLANEOUS MATERIALS
A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

**PART 3 - EXECUTION**

- 3.1 PREPARATION
A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
1. Remove lintance and form-release agents from concrete.
2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

- 3.2 INSTALLATION
A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between end sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
F. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

- 3.3 FIELD QUALITY CONTROL
A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed and cured sealant joints as follows:
Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tall Procedure, in ASTM C 1521.
B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

- 2.3 FABRICATION
A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.
B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Finish attachment devices and fasteners of type required to secure access doors to types of supports indicated.
D. Latching Mechanisms: Finish number required to hold doors in flush, smooth plane when closed.
1. For cylinder locks, furnish two keys per lock and key all locks alike.
2.4 FINISHES
A. Comply with NAAMTs "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
B. Protect mechanical finishes on exposed surfaces from damage by applying a stripplable, temporary protective covering before shipping.
C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
1. Factory Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, with a minimum dry-film thickness of 1 mil for topcoat.

**PART 3 - EXECUTION**

- 3.1 INSTALLATION
A. Comply with manufacturer's written instructions for installing access doors and frames.
B. Install doors flush with adjacent finish surfaces or recessed to receive finish material.
3.2 ADJUSTING
A. Adjust doors and hardware, after installation, for proper operation.
B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

**END OF SECTION**

**SECTION 079200 - JOINT SEALANTS: (continued)**

**3.4 JOINT-SEALANT SCHEDULE**

Table with columns: Characteristic, Mark, Description, Sealant Material, Type, Grade, Class. Includes entries for Silicone, Urethane, Single component, Multi-component, Pourable, Non-sag, 100/50 100 percent extension/ 50 percent compression.

Table with columns: For the Following Exterior Application, Use Any of the Following, Material, Type, Grade, Class, Use, Group. Includes entries for Vertical and Horizontal Non-Traffic Joints in, Joints between different materials and exterior finish systems, Perimeter exterior finish systems and framing of doors, windows and louvers, Joints not otherwise indicated.

Table with columns: Use, Traffic, Immeasurable, Group. Includes entries for 50 50 percent compression and extension, 25 25 percent extension and compression, NT Non-Traffic, 1 Traffic, 1 Immeasurable.

Table with columns: Use, Traffic, Immeasurable, Group. Includes entries for 50 50 percent compression and extension, 25 25 percent extension and compression, NT Non-Traffic, 1 Traffic, 1 Immeasurable.

Table with columns: Use, Traffic, Immeasurable, Group. Includes entries for 50 50 percent compression and extension, 25 25 percent extension and compression, NT Non-Traffic, 1 Traffic, 1 Immeasurable.

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Table with columns: Use, Traffic, Immeasurable, Group. Includes entries for 50 50 percent compression and extension, 25 25 percent extension and compression, NT Non-Traffic, 1 Traffic, 1 Immeasurable.

**END OF SECTION**

**SECTION 08113 - ACCESS DOORS AND FRAMES**

**PART 1 - GENERAL**

- 1.1 SUMMARY
A. Section Includes:
1. Access doors and frames for exterior walls.
1.2 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
C. Schedule: Types, locations, sizes, latching or locking provisions, and other data pertinent to installation.

**PART 2 - PRODUCTS**

- 2.1 ACCESS DOORS AND FRAMES FOR EXTERIOR WALLS
A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Access Panel Solutions.
2. Acador Products, Inc.
3. Babcock-Davis.
4. J. L. Industries, Inc.; Div. of Activar Construction Products Group.
5. Larsen's Manufacturing Company.
6. Milcor Inc.
7. Nystrom, Inc.

- 2.2 MATERIALS
A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
B. Steel Sheet: Uncoated or electrolytic zinc coated, ASTM A 879/A 879M, with cold-rolled steel sheet substrate complying with ASTM A 1008/A 1008M, Commercial Steel (CS), exposed.
C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 or A60 metallic coating.
D. Frame Anchors: Same type as door face.
E. Inserts, Bolts, and Anchor Fasteners: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.
2.3 FABRICATION
A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.
B. Metal Surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
C. Doors and Frames: Grind exposed welds smooth and flush with adjacent surfaces. Finish attachment devices and fasteners of type required to secure access doors to types of supports indicated.
D. Latching Mechanisms: Finish number required to hold doors in flush, smooth plane when closed.
1. For cylinder locks, furnish two keys per lock and key all locks alike.

- 2.4 FINISHES
A. Comply with NAAMTs "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
B. Protect mechanical finishes on exposed surfaces from damage by applying a stripplable, temporary protective covering before shipping.
C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
1. Factory Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, with a minimum dry-film thickness of 1 mil for topcoat.

**PART 3 - EXECUTION**

- 3.1 INSTALLATION
A. Comply with manufacturer's written instructions for installing access doors and frames.
B. Install doors flush with adjacent finish surfaces or recessed to receive finish material.
3.2 ADJUSTING
A. Adjust doors and hardware, after installation, for proper operation.
B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

**END OF SECTION**

**SECTION 089516 - WALL VENTS:**

**PART 1 - GENERAL**

- 1.1 SUMMARY
A. Section includes wall vents.
1.2 ACTION SUBMITTALS
A. Product Data: For each type of product.
**PART 2 - PRODUCTS**

- 2.1 WALL VENTS
A. Extruded-Aluminum Wall Vents:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
a. Construction Specialties, Inc.
b. Greenheck Fan Corporation.
c. Nylstrom, Inc.
d. Rytek Company; Tomkins PLC.
2. Extruded-aluminum louvers and frames, not less than 0.125-inch (3.18-mm) nominal thickness, assembled by welding; with 18-by-14- (1.4-by-1.18-mm) mesh, aluminum insect screening on inside face.
3. Finish: Mill.
2.2 MATERIALS
A. Aluminum Extrusions: ASTM B 221 (ASTM B 221M), Alloy 6063-T5, T-52, or T-6.
B. Aluminum Sheet: ASTM B 209 (ASTM B 209M), Alloy 3003 or 5052 with temper as required for forming, or as otherwise recommended by metal producer for required finish.
C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

**PART 3 - EXECUTION**

- 3.1 INSTALLATION
A. Protect wall surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint.

**SECTION 090709.02 - COATING RESTORATION**

**PART 1 - GENERAL**

- 1.1 SUMMARY
A. Surface Coating Restoration:
1. Submittals
A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
1. REFERENCES
A. ASTM International (ASTM)
ASTM G 153 Carbon Arc Accelerated Weathering
ASTM D 6904 Resistance to Wind-Driven Rain
ASTM D 412 Tensile Strength
ASTM D 3273 Mold Resistance
ASTM D 4541 Direct Tensile Bond
ASTM D 96 Water Vapor Permeability
ASTM E 84 Flame Spread and Smoke Developed
B. South Coast Air Quality Management District (SCAQMD) Rule 1113
C. U.S. Environmental Protection Agency (EPA) Method 24 - VOC
1.2 ACTION ASSURANCE
A. Manufacturer's Qualifications: The manufacturer shall be a company with at least thirty-five years of experience in manufacturing specialty coatings and regularly engaged in the manufacture and marketing of products specified herein. The manufacturer shall have an ISO 9001:2008 certified quality system and ISO 14001:2004 certified environmental management system.
B. Installer's Qualifications: The contractor shall be qualified to perform the work specified by reason of experience. Contractor shall have at least 5 years experience in commercial coating application, and shall have completed at least 3 projects of similar size and complexity. Contractor shall provide proof before commencement of work that he will maintain and supervise a qualified crew of applicators through the duration of the work. When requested Contractor shall provide a list of the last three comparable jobs including the name, location, and start and finish dates for the work.
C. Mock-ups: The contractor shall install a mock-up using proposed application means and methods to a wall area of at least 25 sq. ft. (2.32 sq.m.) for evaluation and approval by the design professional, building owner, or owner's representative/quality assurance agency. Mock-up shall be sufficient size to adequately demonstrate proposed application means and methods.
D. Conduct tests in accordance with ASTM D 4541 on mock-up to verify adhesion of installed primer and top coat to prepared substrate. Test at least 3 specimens and report results to design professional, building owner, or owner's representative/quality assurance agent.
E. Conduct tests in accordance with ASTM D 96 to verify adhesion of installed primer, or owner's representative/quality assurance agent to verify adhesion through the course of the installation.
1.5 DELIVERY, STORAGE AND HANDLING
A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number, and shelf life.
B. Store products in a dry area with temperature maintained between 50 and 85 degrees F (10 and 29 degrees C), at least 25 sq. ft. (2.32 sq.m.) for evaluation and approval by the design professional, building owner, or owner's representative/quality assurance agent to verify adhesion through the course of the installation.
1.6 WARRANTY
A. Provide manufacturer's standard limited warranty.

- 2.1 MATERIALS
A. Surface Conditioner - for chalked or highly absorbent existing painted surfaces
1. Provide Sto Flex W: water-based surface conditioner
B. Primer:
1. Sto Primer Smooth (80904): Vertical above grade primer for use over prepared and fully cured concrete, concrete masonry, stucco, and EIFS. Use Sto Primer Smooth for filling pores, open texture surfaces (e.g. concrete masonry).
2. Finishing: Single component acrylic-based coating, containing acrylic polymer, and colored pigments with Lotus-Effekt Technology. Product shall comply with the following:
a. 8021 StoCoat Lotusan, as manufactured by Sto Corp.
3. Performance and Physical Properties: Meet or exceed the following values for material cured at 73 degrees F (23 degrees C) and 50 percent relative humidity (unless otherwise specified):
a. Working Time: 10-20 minutes, depending on ambient conditions.
b. Application: Spray, roller, or brush.
c. Accelerated Weathering: 2000 hours, no delinetic effects, ASTM G165
d. Resistance to Wind-driven Rain: No water penetration, weight gain <0.02 lbs (0.1 kg) for one coat, weight gain <0.09 lbs (0.05 kg) for two coats, ASTM D 6904
e. Tensile Strength: 182 psi (1.25 MPa), minimum at break, ASTM D 412
f. Mold Resistance: No Mold Growth at 28 days, ASTM D 3273
g. Adhesion to Concrete: 550 (0.79 MPa), ASTM D 4541
h. Water Vapor Permeability: 40 perms (2280 ng/Pa.sq.m.), tested at 5 dry mils applied in two coats, ASTM E 96, wet cup method.
VOC: <50 g/L, EPA 24, Complies with SCAQMD Rule 1113
i. Solids Content: 52%, by volume.
PART 3 - EXECUTION
3.1 INSTALLATION
A. General Surface Preparation
1. All surfaces must be clean, dry, sound, and free of frost and contamination such as mildew, dirt, grease, oils, salts, efflorescence and any other contamination that may affect adhesion.
2. Assemble repair methods for the substrate to repair pitting, spalls, cracks, peeling, blistering, delamination, water damage, or other defects that may exist. Repair defects in the structure such as failed or omitted sealants, absence of flashing or coping, leaky windows, or other conditions that could allow water to enter into or behind the substrate.
3. Remove any loose, scaling, cracked or peeling paint from previously painted surfaces by chemical or mechanical means. Pressure washing is recommended. Follow necessary safety precautions and adjust pressure to avoid damage to the underlying substrate.
4. Mold & Mildew - Surface areas affected by mold and mildew should be treated with a commercial mildew remover and/or wash product carefully following manufacturer's application and safety directions. Rinse thoroughly with clean water, and allow a minimum of 24 hours to dry thoroughly.
5. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing, handling, and installation of materials.
B. Mixing
1. Mix Sto products in accordance with published literature for the product. Mix for approximately 3 minutes using a slow-speed drill and paddle to a uniform consistency. Avoid entrapping air in the liquid during mixing.
C. Application
1. Surface Conditioner Application:
a. Apply Sto Flex W evenly with brush, roller or proper spray equipment to properly prepared mildly chalking substrates.
b. Follow application instructions on Sto Flex W, read product bulletin carefully.
2. Primer:
a. Apply 4-6 uniform wet mil coat of Sto Primer Smooth with brush, roller or proper spray equipment to prepared substrate and allow to dry. Minimum final dry thickness shall be 1.8 mils.
3. Finish Top Coat: Apply two coats of StoCoat Lotusan at 5 - 7 wet mils, per coat, by brush, roller, or appropriate spray equipment. Apply first coat directly to primed substrate and allow to dry completely before applying second coat. Final thickness of StoCoat Lotusan shall be minimum 2.5 dry mils, per coat.
D. Protection
1. Provide protection of installed materials from water infiltration into or behind them.
2. Provide protection of finished materials from dust, dirt, precipitation, freezing and continuous high humidity until they are dry.
3. Provide coping and/or flashing at sills, projecting features, deck attachments, rooftop intersections, parapets and similar construction details to prevent water entry into assembly or into and behind the finish system. Seal penetrations through the finished wall surface with backer rod and sealant or other appropriate means to provide a watertight condition.

- 3.2 MATERIALS
A. Surface Conditioner - for chalked or highly absorbent existing painted surfaces
1. Provide Sto Flex W: water-based surface conditioner
B. Primer:
1. Sto Primer Smooth (80904): Vertical above grade primer for use over prepared and fully cured concrete, concrete masonry, stucco, and EIFS. Use Sto Primer Smooth for filling pores, open texture surfaces (e.g. concrete masonry).
2. Finishing: Single component acrylic-based coating, containing acrylic polymer, and colored pigments with Lotus-Effekt Technology. Product shall comply with the following:
a. 8021 StoCoat Lotusan, as manufactured by Sto Corp.
3. Performance and Physical Properties: Meet or exceed the following values for material cured at 73 degrees F (23 degrees C) and 50 percent relative humidity (unless otherwise specified):
a. Working Time: 10-20 minutes, depending on ambient conditions.
b. Application: Spray, roller, or brush.
c. Accelerated Weathering: 2000 hours, no delinetic effects, ASTM G165
d. Resistance to Wind-driven Rain: No water penetration, weight gain <0.02 lbs (0.1 kg) for one coat, weight gain <0.09 lbs (0.05 kg) for two coats, ASTM D 6904
e. Tensile Strength: 182 psi (1.25 MPa), minimum at break, ASTM D 412
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