

SPECIAL SPECIFICATION

SECTION 07710S

PREFABRICATED ROOF SPECIALTIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Copings, roof curbs, roof expansion joints, fascias, trim, and other manufactured roof specialties.

1.02 SYSTEM DESCRIPTION

- A. Curbs, Equipment Supports, Pipe Roller Supports, and Pipe Portals:
 - 1. Design Requirements: Manufacturer is responsible for designing units, including anchorage to structural system and necessary modifications to meet specified requirements.
 - 2. Structural Requirements: Design to support load of curb-mounted equipment.

1.03 REFERENCES

- A. AAMA 605.2 - Voluntary Specification for High Performance Organic Coatings on Architectural Aluminum Extrusions and Panels.
- B. ASTM A 167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
- C. ASTM A 653 - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- D. ASTM B 209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- E. ASTM B 221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- F. ASTM B 370 - Copper Sheet and Strip for Building Construction.
- G. ASTM D 4586 - Asphalt Roof Cement, Asbestos Free.
- H. AWPA C2 - Lumber, Timber, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes.
- I. SSPC Paint 12 - Cold-Applied Asphalt Mastic (Extra Thick Film).

1.04 SUBMITTALS

A. Product Data:

1. Submit manufacturer's descriptive literature and product specifications for each product.
2. Indicate profiles, anchorages, jointing details, flashings, and accessories.
3. Include color charts for finish indicating manufacturer's standard colors available for selection.

B. Shop Drawings:

1. Indicate typical layout including dimensions, configuration, locations, interface with adjacent systems, clearances, tolerances, frequency of attachment, and fabrication details.
2. Submit detail drawings of transitions, intersections, and connections.
3. Submit detail drawings of accessory components not included in manufacturer's product data.

C. Certifications:

1. Submit manufacturer's certification that products furnished for Project meet or exceed specified requirements.
2. Submit Contractor's and installer's certification that products are installed in accordance with Contract Documents.
3. Provide certification of compliance from authority having jurisdiction indicating approval of smoke hatches.

D. Qualification Data: Manufacturer's and installer's qualification data.

E. Manufacturer's instructions.

F. Operation and Maintenance Data for Smoke Hatches:

1. Submit manufacturer's printed, recommended operation and maintenance data.
2. Indicating methods of operation and resetting of activating devices.

1.05 QUALITY ASSURANCE

- A. Single Source Responsibility: Furnish each product from one manufacturer, unless otherwise acceptable to A/E.
- B. Manufacturer Qualifications: Company specializing in manufacturing Products specified in this Section with minimum five years experience.
- C. Roof Curb Installer Qualifications: Acceptable to manufacturer with documented experience on at least five projects of similar nature in past five years.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Stack materials to prevent twisting, bending and abrasions, and to provide ventilation.

1.07 WARRANTY

- A. Warrant installed roof curbs, roof expansion joint covers, fascias, and copings to be free from defects in material and workmanship for time period to match roof system specified.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Galvanized Steel: Structural quality, ASTM A 653/A 653M, with galvanized G90 coating.
- B. Preservative Treated Wood: Softwood lumber treated in accordance with AWPA C2 for above grade use.
- C. Bituminous Paint: SSPC Paint 12.
- D. Roofing Cement: ASTM D 4586, Type I.

2.02 ROOF EXPANSION JOINT COVERS

- A. Manufacturers:
 - 1. Celotex Corporation, "Expansion Joint Shield".
 - 2. Johns Manville Roofing Systems, "Expand-O-Flash".
- B. Roof Expansion Joint Covers: Flexible bellows mechanically fastened to metal nailing flanges.
 - 2. Style: L-Shaped curb flanges One L-Shaped curb flange and one straight flange for mounting on curb flange and wall.
 - 3. Flange Metal: 26 gauge commercial quality galvanized steel.
 - 4. Bellows: Manufacturer's standard neoprene, EPDM, or chlorosulfonated polyethylene laminated with closed cell foam.
 - 5. Size to accommodate nominal joint width of 1 inch.
 - 6. Accommodate movement in three dimensions plus torsion.
 - 7. Provide factory-formed configurations, corners, intersections, and transitions.
- C. Accessories:
 - 1. Primer, adhesives, joint/lap cement, splice strips and bituminous coatings: Types and composition recommended by manufacturer of expansion joint assemblies.

2. Fasteners: Large headed nails of type and size recommended by manufacturer of expansion joint assemblies, compatible with metal flanges.

2.03 TRIM

A. Fascia:

1. Metal water dam with fascia.
2. Provide with continuous clamp mechanically fastened to be secured and engaged against roofing membrane.
3. FM 1-90 wind uplift rating.
4. Dam: 24 gage commercial quality galvanized steel.
5. Fascia: 24 gage commercial quality galvanized steel.
6. Provide with splice plates to conceal and weatherseal joints between sections of dam and fascia.
7. Products:
 - a. W.P. Hickman Company, Safeguard System, Style F.
 - b. MM Systems Corporation, "Model SLF Series I System".

B. Preformed Coping:

1. Anchor Plate/Cleat: 20 gage thick commercial quality galvanized steel or manufacturer's standard aluminum.
2. Coping: 0.063-inch thick aluminum, smooth surface.
3. Gutter/Splice Plate: Anchor cleat with integral drainable gutter or manufacturer's standard closed cell composition compressible material gasket between anchor plate and coping finish top match coping.
4. FM 1-90 wind uplift rating.
5. Slope coping towards roof.
6. Provide gutter/splice plates at joints between sections of coping
7. Products:
 - a. W.P. Hickman Company, "Permasnap Coping".
 - b. Metal Era, Inc., "Anchor-Tite Coping".
 - c. Peterson Aluminum Corporation, "Tite-Lok Coping".
 - d. MM Systems Corporation, "Snap-Lock Coping, Style SLC".

C. Fabrication:

1. Form sections true to shape, accurate in size, square, free from distortion and defects, to profiles indicated.
2. Shop fabricate intersections, inside corners, and outside corners with miters welded in factory prior to finishing.
3. Shop fabricate radius curved corners.

D. Accessories: Provide fasteners, clamping devices, splice strips adhesives, and sealants required by system for proper performance and as recommended by manufacturer.

2.04 FINISHES

A. Fluorocarbon Coating:

1. Manufacturers:

- a. Akzo Coatings, Inc.
- b. Lilly Industries Inc.
- c. Morton International, Inc.
- d. PPG Industries Inc.
- e. Valspar Corporation.

2. Comply with AAMA 605.2.

3. Resin: 70 percent polyvinylidene fluoride (PVDF).

4. Substrate: Cleaned and pre-treated. Primer:

- a. Coating: Manufacturer's standard epoxy or acrylic coating.
- b. Dry film thickness: Minimum 0.80mil.

6. Topcoat:

- a. Coating: PVDF.
- b. Dry film thickness:
 - (1) Coil: 0.80 mil.
 - (2) Extrusion: 1.0 mil.

7. Color: Manufacturer's standard colors as selected by A/E.

- B. Anodized: Clear anodized finish for surfaces exposed to view: Architectural Class I, medium matte etched coating, 0.7 mil thickness, conforming to AA-M10C22A41.

2.05 CURBS AND SUPPORTS

- A. Sheet Metal: Structural quality galvanized steel, thickness to suit spans and imposed loads with corner seams mitered and welded.
- B. Insulation: 3 pcf density, rigid glass fiber board, minimum 1-1/2 inches thick.
- C. Wood Nailers and Grounds: Preservative pressure treated wood, minimum 2-inch cross sectional dimensions.
- D. Height: 12 inches minimum above elevation of finished roofing, except where indicated otherwise.
- E. Built-In Cant: 3 inches wide; 45-degree angle.
- F. Fabricate with bottom edge of built-in cant raised above roof deck surface to accommodate roof deck insulation.
- G. Curbs:
 - 1. Size: Accommodate curb-mounted equipment, skylight, and pipe portals; coordinate requirements prior to fabrication.
 - 2. Liners: Provide sheet metal liners on inside of unit.
- H. Pipe Rollers Supports:
 - 1. Provide with single channel atop curb to support threaded rods holding pipe rollers.
 - 2. Size pipe rollers to accommodate pipe sizes.
- I. Roof Curb Products:
 - 1. Custom Curb, Inc., "Model CRC-1".
 - 2. The Pate Company, "Style PC-5".
 - 3. Roof Products Systems Corporation, "Model RC-4A".
 - 4. ThyCurb Division of Thybar Corporation, "Model TC-1".
- J. Expansion Curb Products:
 - 1. Custom Curb, Inc., "Model CEJ-1".
 - 2. The Pate Company, "Style EJ-5".

3. Roof Products Systems Corporation, "Model EC-4A".
 4. ThyCurb Division of Thybar Corporation, "Model TXJ-1".
- K. Equipment Support Rail Products:
1. Custom Curb, Inc., "Model CES-1".
 2. The Pate Company, "Style ES-5".
 3. Roof Products Systems Corporation, "Model ER-4A".
 4. ThyCurb Division of Thybar Corporation, "Model TEMS-1".
- L. Pipe Roller Support Products:
1. Custom Curb, Inc., "Model CPRS-1".
 2. The Pate Company, "Style PRS-5".
 3. Roof Products Systems Corporation, "Model DMP".
 4. ThyCurb Division of Thybar Corporation, "Model TEMS-1" with pipe roller assembly.

2.06 PIPE PORTALS

- A. Manufacturer's standard ABS and EPDM rubber boots to accommodate 3/8-inch through 6-inch diameter pipe.
- B. Furnish complete with stainless steel hose clamps.
- C. Accommodate quantity and size of piping to pass through portal caps.
- D. Fabricate for mounting atop manufacturer's curb.
- E. Products:
 1. Custom Curb, Inc., "N-Series Pipe Portal".
 2. The Pate Company, "PCC Cap".
 3. Roof Products Systems Corporation, "Pipe Portal System".
 4. ThyCurb Division of Thybar Corporation, "TP-1 Piping Cover".

2.07 HATCHES

A. Manufacturers:

1. Babcock-Davis Hatchways, Inc., Arlington, MA.
2. The Bilco Company, New Haven, CT.
3. Dur-Red Products, Cudahy, CA.
4. Milcor Limited Partnership, Lima, OH.

B. Access Hatch, Single Leaf, Nominal Size: Size as indicated on Drawings.

C. Materials:

1. Structural quality galvanized steel or aluminum construction acceptable, except units 7 feet or larger require covers of aluminum construction.
2. Structural quality galvanized steel:
 - a. Curb: 14 gage minimum thickness.
 - b. Cover: 22 gage minimum thickness.
3. Aluminum:
 - a. Curb and Cover: 0.090-inch minimum thickness.
 - b. Liner: 0.063-inch minimum thickness.
4. Liner Insulation: 1 inch thick glass fiber, expanded polystyrene, or expanded polyurethane.
5. Curb Insulation: 1 inch fiber board.
6. Access Hatch Hardware: Manufacturer's standard hinges, compression spring operators, positive snap latch with turn handles inside and out, padlock hasp inside, automatic hold-open device with vinyl covered grip handle, and neoprene draft seal. Smoke Hatch Hardware:
 - a. Manufacturer's standard pintle hinges, compression spring operators, heavy duty shock absorbers, automatic hold-open devices, manual pull rings for interior or exterior operation, hold open arm with vinyl covered grip handle, neoprene draft seal, positive hold/release mechanism, UL listed 160 degrees F fusible link, and replacement fusible link.
 - b. Smoke Hatch Operation:
 - (1) Hatch automatically opens when heat breaks fusible link.

- (2) Hatch also automatically opens independently of fusible link when electro-mechanical hold/release mechanism has been activated by remote signal from fire alarm system.

8. Curb:

- a. 12 inches high minimum with 3-1/2 inch flange equipped with clearances holes for securing to deck.
- b. Equip with integral metal cap flashing, same gage as curb.
- c. Fully cover and protect cover insulation with metal liner.
- d. Fabricate with top of curb level and bottom to accommodate roof slope.

9. Construct cover with 3-inch beaded flange, welded.

10. Fabrication:

- a. Fabricate free of visual distortions and defects.
- b. Weld corners and joints.
- c. Provide for removal of condensation occurring within components or assembly.
- d. Fit components for weather-tight assembly.

11. Finishes:

- a. Aluminum: Manufacturer's standard acrylic lacquered protective coating over mill finish.
- b. Steel: Manufacturer's standard shop applied prime coat. Hardware: Cadmium or zinc plated steel.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that deck, curbs, blocking, cants, roof membrane, and base flashing are in place and positioned correctly.
- B. Fascia, Gravel Guard, and Coping:
 1. Verify that coverage onto vertical finish materials is sufficient to result to watertight installation.
 2. Verify membrane terminations and base flashings are in place, sealed, and secure.

3.02 INSTALLATION

A. General:

1. Install units plumb, level, square, and free from warp or twist while maintaining dimensional tolerances and alignment with surrounding construction.
2. Apply bituminous paint on metal surfaces of units in contact with cementitious materials and dissimilar metals.
3. Securely anchor roof accessories to supporting substrates with appropriate type fasteners.
4. Coordinate with installation of roofing system and related flashings.

B. Expansion Joints:

1. Where installed over asphaltic roof membrane and base flashings set metal flanges in full bed of roofing cement.
2. Splice sections in accordance with manufacturer's instructions producing a watertight installation.
3. Utilize factory fabricated intersections and transitions wherever possible. Field fabricate where pre-manufactured sections are not available.
4. Maintain uniform profile; do not stretch or compress bellows.

C. Fascia and Coping:

1. Secure in place with concealed fasteners using methods as recommended by manufacturer to comply with FM rating.
2. Seal joints watertight.

D. Curbs: Integrate curbs with adjacent roofing systems, base flashings, and counter flashings to create watertight conditions.

E. Hatches:

1. Secure flanges to deck by bolting or welding.
2. Smoke Hatches:
 - a. Coordinate final connection to fire alarm system with Division 16.
 - b. Test for proper operation of electro/mechanical hold/release by activating alarm system.

3.03 ADJUSTING

- A. Adjust hatch covers and hardware for smooth, uniform operation.

3.04 CLEANING

- A. Clean as recommended by manufacturer. Do not use materials or methods which may damage finish or surrounding construction.
- B. Clean primer, adhesive, flashing cements, and other products from surfaces, exposed sheet metal and bellows.

END OF SECTION