

## SECTION 07 72 00 ROOF ACCESSORIES

### PART 1 - GENERAL

#### 1.1 DESCRIPTION:

- A. This section specifies roof hatches; equipment supports; and metal guardrail.

#### 1.2 RELATED WORK:

- A. Sustainable Design Requirements: Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- B. Color and texture of finish: Section 09 06 00, SCHEDULE FOR FINISHES.
- C. Sealant material and installation: Section 07 92 00, JOINT SEALANTS.
- D. Rigid insulations for roofing: Section 07 22 00, ROOF AND DECK INSULATION

#### 1.3 QUALITY ASSURANCE:

- A. Provide roof accessories that are the products of manufacturers regularly engaged in producing the kinds of products specified.
- B. For each accessory type provide the same product made by the same manufacturer.
- C. Assemble each accessory to the greatest extent possible before delivery to the site.

#### 1.4 SUBMITTALS:

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Sustainable Design Submittals, as described below:
  - 1. Postconsumer and preconsumer recycled content as specified in PART 2 - PRODUCTS.
- C. Samples: Submit representative sample panel of color anodized aluminum not less than 101 x 101 mm (4 x 4 inches). For extrusions, submit width not less than section to be installed. Show coating with integral color and texture and include manufacturer's identifying label.
- D. Shop Drawings: Each item specified showing design, details of construction, installation and fastenings.
- E. Manufacturer's Literature and Data: Each item specified.
- F. Certificates: Stating that aluminum has been given specified thickness of anodizing.

## 1.5 APPLICABLE PUBLICATIONS:

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Federal Specifications (Fed. Spec.):
  - RR-G-1602D.....Grating, Metal, Other Than Bar Type (Floor, Except for Naval Vessels)
- C. ASTM International (ASTM):
  - A653/A653M-10.....Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) By the Hot-Dip Process
  - B209-14 .....Aluminum and Aluminum Alloy-Sheet and Plate
  - B209M-14 .....Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
  - B221-14 .....Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
  - B221M-13 .....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes (Metric)
  - C726-12 .....Mineral Wool Roof Insulation Board
  - C1289-14a .....Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
  - D1187/D1187M-97(R2011) Asphalt-Base Emulsions for Use as Protective Coatings for Metal
- D. National Association of Architectural Metal Manufacturers (NAAMM):
  - AMP 500 Series.....Metal Finishes Manual
- E. American Architectural Manufacturers Association (AAMA):
  - 2603-13.....Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels
  - 2605-13.....High Performance Organic Coatings on Architectural Extrusions and Panels.
  - 611-14.....Anodized Architectural Aluminum
  - 621-02.....High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) and Zinc-Aluminum Coated Steel Substrates
- F. American Society of Civil Engineers (ASCE):
  - ASCE 7-10.....Minimum Design Loads for Buildings and Other Structures
- G. U.S. National Archives and Records Administration (NARA):

29 CFR 1910.23 .....Guarding Floor and Wall Openings and Holes

**PART 2 - PRODUCTS**

**2.1 MATERIALS:**

- A. Aluminum, Extruded: ASTM B221M (B221).
- B. Aluminum Sheet: ASTM B209M (B209).
- C. Galvanized Sheet Steel: ASTM A653/A653M; G-90 coating.
- D. Recycled Content of Metal Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 30 percent.
- E. Asphalt Coating: ASTM D1187/D1187M, Type I, quick setting.

**2.2 ROOF HATCH (SCUTTLE):**

- A. Performance Characteristics:
  - 1. Cover to be reinforced to support a minimum live load of 195 kg per sq. m (40 lb. per sq. ft.) with a maximum deflection of 1/150<sup>th</sup> of the span or 97 kg per sq. m (20 lb. per sq. ft.) wind uplift.
  - 2. Operation of the Cover: Smooth and easy with controlled operation throughout the entire arc of opening and closing.
  - 3. Operation of the Cover: Not affected by temperature.
  - 4. Entire Hatch: Weathertight with fully welded corner joints on cover and curb.
- B. Shop fabricate from aluminum with mill finish.
- C. Curb and Cover:
  - 1. Exterior facing: Minimum 2.3 mm (0.09 inch) thick sheet aluminum with mill finish.
  - 2. Interior facing: Minimum 1 mm (0.04 inch) thick sheet aluminum.
  - 3. Minimum of 50 mm (2 inch) thick polyisocyanurate insulation (ASTM C1289) with a U-value = 0.47 W/m<sup>2</sup> K (R-value = 12) between facings of cover and over exterior face of curb.
  - 4. Form exterior curb facing with an integral 76 mm (3 inch) wide roof flange and cap flashing minimum 2.3 mm (0.09 inch) thick sheet aluminum.
  - 5. Make curb 305 mm (12 inches) above finish roof surface.
  - 6. Form cover to lap curb and cap flashing.
  - 7. Size opening as shown on construction documents.
  - 8. Finish: Mill color natural aluminum.
- D. Hardware:

1. Provide spring snap latch with inside and outside operating handles and padlock hasp on inside. Provide two snap latches when hinge side is over 2100 mm (7 feet) long. Bolt hardware into heavy gauge channel reinforcement welded to the underside of the cover and concealed within the insulation space.
  2. Provide heavy duty pintle hinges.
  3. Provide automatic hold open and operating arm with enclosed torsion or compression spring lifting mechanism.
  4. Latch Strike: Stamped component bolted or welded to the curb assembly.
  5. Automatically lock in the open position at not less than 70 degrees.
  6. Provide weatherstripping at cover closure.
  7. Galvanize all hardware items.
- E. Assembly:
1. Shop assemble roof scuttle.
  2. Weld joints exposed to the weather and built into the roofing.
  3. Finish weld smooth where exposed.
- F. Safety Accessories:
1. Ladder Assist Post: Provide a telescoping tubular section that locks automatically when fully extended. Control upward and downward movement by a stainless steel spring balancing mechanism. Provide unit completely assembled with fasteners for securing to the ladder rungs in accordance with the manufacturer's instructions.
  2. Safety Railing: Provide a fixed, attached to the roof hatch railing assembly including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete installation; complying with 29 CFR 1910.23 requirements.

### **2.3 EQUIPMENT SUPPORTS:**

- A. Supported Load Capacity:
- B. Fabricate equipment supports from 1.3 mm (0.0516 inch) thick galvanized ASTM A653/A653M steel fabricate with welded corners and with seams joined by continuous water and air tight welds.
- C. Equipment supports to be internally reinforced with angles 1.22 m (48 inches) on center.
- D. Form exterior curb with integral base, and deck closures for curbs installed on steel decking.
- E. Use galvanized steel liners for curbs having inside dimension over 305 mm (12 inches).

- F. Internally insulate with 38 mm (1-1/2 inch) glass-fiber board insulation (ASTM C726).
- G. Fabricate curb with a minimum height of 203 mm (8 inches) above roof surface.
- H. Attach preservative treated wood nailers to top of curb. Provide 50 mm (2 inch) by 50 mm (2 inch) minimum nominal size on curb with openings and 50 mm (2 inch) thick, width of curb up to 305 mm (12 inches) on equipment support curbs.
- I. Make size of supports suit size of equipment furnished, with height as shown on construction documents, but not less than 203 mm (8 inches) above roof surface.
- J. Top of Equipment Supports: Level with pitch built into curb when deck slopes. Equip supports with water diverter or cricket on side that obstructs water flow.
- K. Finish: color.

#### **2.4 FINISH:**

- A. In accordance with NAAMM AMP 500 Series.
- B. Aluminum, Mill Finish: AA-MIX, as fabricated.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION:**

- A. Install roof specialties where indicated on construction documents.
- B. Secure with fasteners in accordance with manufacture's printed installation instructions and approved shop drawings unless shown otherwise.
- C. Coordinate to install insulation where shown; see Section 07 21 13, THERMAL INSULATION and Section 07 22 00, ROOF AND DECK INSULATION.
- D. Comply with section 07 92 00, JOINT SEALANTS to install sealants where required by manufactures installation instructions require sealant.
- E. Coordinate with roofing work for installation of items in sequence to prevent water infiltration.
  - 1. After completion of base flashing bend down cap flashing flange and secure to blocking with screws.
  - 2. Install expansion joint cover with 6 mm (1/4 inch) wide space at end joints and tension bars at 610 mm (24 inches) on center.
  - 3. Install cover plates with formed aluminum flashing concealed and centered on joint. Flashing to lap cover not less than 101 mm (4 inches).

- F. Equipment Supports: Do not anchor to insulating concrete or metal deck. Anchor only to building structure as per manufacturers recommendations.

**3.2 PROTECTION OF ALUMINUM:**

- A. Provide protection for aluminum against galvanic action wherever dissimilar materials are in contact, by painting the contact surfaces of the dissimilar material with two (2) coats of asphalt coating (complete coverage), or by separating the contact surfaces with a preformed neoprene tape having pressure sensitive adhesive coating on side.
- B. Paint aluminum in contact with wood, concrete and masonry, or other absorptive materials, that may become repeatedly wet, with two coats of asphalt coating.

**3.3 ADJUSTING:**

- A. Adjust roof hatch hardware to operate freely and so that cover will operate without binding, close tightly at perimeter, and latch securely.

**3.4 PROTECTION:**

- A. Protect roof accessories from damage during installation and after completion of the work from subsequent construction.

**END OF SECTION 07 72 00**