

SECTION 07 72 33 - ROOF HATCHES AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
  - 1. Roof hatches.
  - 2. Roof hatch safety equipment.
- B. Related Sections:
  - 1. Division 05 Section "Metal Fabrications" for metal vertical ladders, ships' ladders, and stairs for access to roof hatches.
  - 2. Division 07 Section "Thermoplastic Polyolefin (TPO) Roofing".

1.3 COORDINATION

- A. Coordinate layout and installation of roof hatches with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of roof hatch and accessory.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof hatches and accessories.
  - 1. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
  - 1. Size and location of roof hatches and accessories specified in this Section.

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2. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit adjacent to roof hatches and accessories.
3. Required clearances.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof hatches and accessories to include in operation and maintenance manuals.

1.7 WARRANTY

- A. Warranty: Manufacturer's standard form stating roof hatches and accessories shall be free of defects in material and workmanship.
  1. Defective parts shall be provided by the manufacturer and installed by the installer.
  2. Warranty Period: 5 years from date of purchase.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof hatches and accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

2.2 ROOF HATCH

- A. Roof Hatches: Metal roof-hatch units with single leaf lids and insulated double-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing, straight sides, and integrally formed deck-mounting flange at perimeter bottom.
  1. Basis of Design: Subject to compliance with requirements, Roof Hatches incorporated into the project shall be based on products as follows:
    - a. The Bilco Company; Type S - (36"x30").
  2. Acceptable Manufacturers: Subject to compliance with requirements, in lieu of the Basis of Design manufacturer, Contractor may provide products from the following manufacturers that meet or exceed the published data of the specified Basis of Design product.
    - a. Babcock-Davis.
    - b. J.L. Industries, Inc.
    - c. Nystrom.
    - d. Safe Pro.
- B. Loads: Minimum 40-lbf/sq. ft. external live load and 20-lbf/sq. ft. internal uplift load.
- C. Hatch Material: Aluminum sheet.
  1. Thickness: Manufacturer's standard thickness for hatch size indicated.
  2. Finish: Mill.

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- D. Construction:
1. Insulation: Manufacturer's standard insulation.
  2. Nailer: Factory-installed wood nailer continuous around hatch perimeter.
  3. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.
  4. Curb Liner: Manufacturer's standard, of same material and finish as metal curb.
  5. Fabricate curbs to minimum height of 12 inches above roofing surface unless otherwise indicated.
- E. Hardware: Spring operators, hold-open arm, stainless-steel spring latch with turn handles, stainless-steel butt- or pintle-type hinge system, and padlock hasps inside and outside.
1. Provide two-point latch on lids larger than 84 inches.
  2. Provide remote-control operation.

2.3 ROOF HATCH SAFETY EQUIPMENT

- A. Safety Railing System: Roof-hatch manufacturer's standard system including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete installation; attached to roof hatch and complying with OSHA 29 CFR 1910.23 requirements and authorities having jurisdiction.
1. Height: 42 inches above finished roof deck.
  1. Posts and Rails: Aluminum pipe, 1-1/4 inches in diameter, schedule 40 6061 T6 aluminum.
  2. Flat Bar: Aluminum, 2 inches high by 3/8 inch thick.
  3. Maximum Opening Size: System constructed to prevent passage of a sphere 21 inches in diameter.
  4. Self-Closing Gate: Fabricated of same materials and rail spacing as safety railing system. Provide manufacturer's standard hinges and self-latching mechanism.
  5. Post and Rail Tops and Ends: Weather resistant, closed or plugged with prefabricated end fittings.
  6. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members.
  7. Fabricate joints exposed to weather to be watertight.
  8. Fasteners: Manufacturer's standard, finished to match railing system.
  9. Finish: Manufacturer's standard.
    - a. Color: Safety Yellow.
- B. Basis of Design: Subject to compliance with requirements, Roof Hatch Safety Equipment incorporated into the project shall be based on products as follows:
1. Bilco; "Bil-Guard"<sup>®</sup> 2.0 Roof Hatch Safety Railing System.
- C. Acceptable Manufacturers: Subject to compliance with requirements, in lieu of the Basis of Design manufacturer, Contractor may provide products from the following manufacturers that meet or exceed the published data of the specified Basis of Design product.
1. Listed roof hatch manufacturers only.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.

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- B. Cellulosic-Fiber Board Insulation: ASTM C 208, Type II, Grade 1, thickness as indicated.
- C. Glass-Fiber Board Insulation: ASTM C 726, nominal density of 3 lb/cu. ft., thermal resistivity of 4.3 deg F x h x sq. ft./Btu x in. at 75 deg F, thickness as indicated.
- D. Polyisocyanurate Board Insulation: ASTM C 1289, thickness and thermal resistivity as indicated.
- E. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, containing no arsenic or chromium, and complying with AWPA C2; not less than 1-1/2 inches thick.
- F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- G. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- H. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant as recommended by roof hatch and accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- I. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
- J. Asphalt Roofing Cement: ASTM D 4586/D 4586M, asbestos free, of consistency required for application.

2.5 GENERAL FINISH REQUIREMENTS

- A. 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.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install roof hatch and accessories according to manufacturer's written instructions.
  - 1. Install roof hatch and accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.

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2. Anchor roof hatches and accessories securely in place so they are capable of resisting indicated loads.
  3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof hatches and accessories and fit them to substrates.
  4. Install roof hatches and accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
- C. Roof-Hatch Installation:
1. Verify that roof hatch operates properly. Clean, lubricate, and adjust operating mechanism and hardware.
  2. Attach safety railing system to roof-hatch curb.

3.3 REPAIR AND CLEANING

- A. Clean exposed surfaces according to manufacturer's written instructions.
- B. Clean off excess sealants.
- C. Replace roof hatches and accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 07 72 33