

SECTION 23 37 91 – ACOUSTICAL SMOKE VENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes Hatch-type heat and smoke vents with acoustical characteristics.

1.3 SUBMITTALS

- A. Product Data: For each type product indicated and specified.
- B. Shop Drawings: Show fabrication and installation details. Show layouts of roof accessories including plans and elevations. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other work.
- C. Provide Installation, Operating and Maintenance manuals.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify required openings for each type of roof accessory by field measurements before fabrication and indicate measurements on Shop Drawings.

1.5 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing system type and flashing requirements. Provide a watertight and secure installation.

1.6 WARRANTY

- A. Provide manufacturer's standard 5-year warranty. All roof hatches and smoke vents shall be free from manufacturing defects in materials and workmanship for a period of five (5) years from the date of shipment. Should a product fail to function in normal use within this period, manufacturer shall furnish a replacement or new part at manufacturers' discretion.

PART 2 - PRODUCTS

2.1 ACOUSTICAL HEAT AND SMOKE VENTS

- A. Where indicated on drawings provide Acoustical Smoke Vents manufactured by Babcock-Davis Inc. Smoke vents are to be provided with manual inside and outside release, indoor chain extension with manual winch, electric actuator for interlock with the building's fire alarm system, fall protection mesh, and door position sensor for interlock with the building's security systems.
- B. Certification: Smoke vent to have official UL label for testing to UL 793 Smoke and Heat Vents and FM 4430 Approved.
- C. Performance:
 - 1. STC Rating: STC 50 - OITC 39 Rated per ASTM E 90 and OITC rated per ASTM E 1332.
 - 2. Loads: 40-lbf/sq. ft. live load with a maximum deflection of 1/150th of the span; 90 lbf/sq. wind uplift.
 - 3. When release is actuated, lid shall open against 10-lbf/sq. ft. snow or wind load and lock in position.
- D. Hatch Material:
 - 1. Cover: 0.078-inch galvanized steel cover and liner. Provide minimum 2-inch mineral wool insulation with sound mat contained within 3.25-inch-thick covers. The total thermal resistance shall be a minimum R 10.
 - 2. Curb frame: .078 galvanized steel curb, double wall curb with EZ tab counterflashing and 5-1/2 inch mounting flange.
 - 3. Curb Insulation: STC 50, OITC 39: 3-inch mineral wool insulation with sound mat contained within 3-3/4 inch thick curb and channel, providing total thermal resistance of R-14.
 - 4. Refer to drawings for the type of curb required for the specified roofing system and the required curb height. Provide curbs with an integral metal cant, stepped integral metal cant raised the thickness of roof insulation or as required to suit the details.
- E. Finish:
 - 1. Cover Exterior: color to be selected by Architect from manufacturer's full range.
 - 2. Cover Interior: Black powder coat finish.
 - 3. Curb: Black powder coat finish.
- F. Latch: Positive hold zinc plated steel rotary latch assembly. Upon latch releases, vent covers are closed manually at rooftop level. Latch released automatically by UL 33 listed fusible melt-out link at temperature of 165 degrees F.
- G. Safety Railing Fall Protection: Provide manufacturer's standard safety 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 & 29 CFR 1926.502 requirements and authorities having jurisdiction. Rails to be 1 1/4" aluminum schedule 40 at 42" high. Provide all required mounting brackets and self-closing spring-loaded gate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper or timely completion
- B. Verify that deck, curbs, roof membrane, base flashing, and other items affecting Work of this Section are in place and positioned correctly.
- C. Verify tolerances and correct improper condition
- D. Identify conditions detrimental to providing proper quality and timely completions of work.
- E. Do not proceed with installation until detrimental conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's recommendations. Coordinate installation of components of this Section with installation of roof deck, roof structure, roofing membrane, and base flashing.
- B. Coordinate installation of sealant and roofing cement with Work of this Section to ensure water tightness.
- C. Securely anchor roof accessories in compliance with manufacturer's instructions.
- D. Set units plumb, level, and true to line without warp or rack. Separate metal from incompatible metal or corrosive substrates, including wood, by coating concealed surfaces, at locations of contact, with bituminous coating or providing other permanent separation.
- E. Flange Seals: Unless otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.
- F. Install fall protection per manufacture's installation instructions. Adjust gate as needed. Clean all rail surfaces and touch-up damaged areas.
- G. Roof curbs: furnish and install a roof curb for all roof mounted vents. Install the roof mounted unit(s) on the roof curb immediately after the curb is installed. If immediate installation is not performed provide temporary watertight covering, for all curb openings, consisting of minimum 3/4" exterior grade plywood and watertight rubber or plastic cover.

3.3 FILED QUALITY CONTROL

- A. Smoke Vent Testing: Test for proper operation after installation by one or all the operational methods:
- B. Melting fusible link for inside at smoke vent level recommend using hand held propane tank torch. Replace fusible link, then close vents from the exterior at the roof top level.
- C. Pull internal and/or external manual pull handles and then close vents from the exterior at the roof top level.
- D. If applicable; open the vents using an electrical signal for fire alarm, push button or other, then close vent from the exterior at the roof top level.

ACOUSTICAL SMOKE VENTS

- E. Do not paint the internal mechanisms, especially moving parts such as spring/dampers, rotary latches and especially the fusible links. Painting any of these components may damage the vents and will void the warranty.

3.4 ADJUSTING

- A. Adjust movable parts for smooth operation.
- B. Operational Units: Test-operate units with operable components. Clean and lubricate joints and hardware. Adjust for proper operation.

3.5 CLEANING

- A. Clean exposed surfaces per manufacturer's written instructions. Touch up damaged metal coatings.

END OF SECTION 23 37 91