

SECTION 07716
ROOF EXPANSION ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Metal-flanged, bellows-type roof expansion joint assemblies.
- B. Related Sections:
 - 1. Division 5 Section "Architectural Joint Systems" for expansion joint covers in construction other than roofs.
 - 2. Division 7 Section "Sheet Metal Flashing and Trim" for shop- and field-fabricated sheet metal expansion joint systems, flashing, and other sheet metal items.
 - 3. Division 7 Section "Manufactured Roof Specialties" for other manufactured roof items.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide roof expansion joint assemblies that, when installed, remain watertight within movement limitations specified by manufacturer.

1.4 SUBMITTALS

- A. Product Data: Include manufacturer's product specifications, construction details, material and finish descriptions, installation instructions, and dimensions of individual components.
- B. Shop Drawings: Include plans, elevations, sections, details, joints, splices, locations of joints and splices, anchorage details, intersections, transitions, fittings, and attachments to other Work. Where joint assemblies change planes, provide isometric drawings depicting how components interconnect to achieve continuity.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain metal-flanged, bellows-type roof expansion joint assemblies approved by roofing membrane manufacturer and that are part of roofing membrane warranty.
- B. Fire-Test-Response Characteristics: Provide fire-barrier assemblies with fire-test-response characteristics not less than that of adjacent construction, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Assemblies shall be capable of anticipated movement while maintaining fire rating. Identify assemblies with appropriate markings of applicable testing and inspecting agency.
 - 1. Fire-Resistance Ratings: UL 2079.

1.6 SCHEDULING

- A. Coordinate delivery and installation of expansion joint assemblies to prevent damage and provide timely integration of units with roofing membranes and flashing.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Metal-Flanged, Bellows-Type Roof Expansion Joint Assemblies:
 - a. Roof Bellows; Balco Metalines, a division of Balco, Inc.
 - b. Expand-O-Flash; Johns Manville Corporation.
 - c. MM Systems Corporation.
 - d. C/S Systems

2.2 SHEET METALS

- A. CLO Building: Stainless-Steel Sheet: ASTM A 240, Type 304, minimum 0.032 inch thick.
- B. All other buildings: Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation; structural quality, mill phosphatized for field painting.

2.3 MISCELLANEOUS MATERIALS

- A. Roof Cement: ASTM D 4586, Type II.
- B. Mineral-Fiber Blanket: ASTM C 665.
- C. Flexible Cellular Sponge or Expanded Rubber: ASTM D 1056.
- D. Silicone Extrusions: Classified according to ASTM D 2000, 4GE, 709, UV stabilized and does not propagate flame.

2.4 FIRE BARRIERS

- A. Fire Barriers: Devices complying with requirements specified in "Quality Assurance" Article for fire-test-response characteristics and designed for dynamic structural movement without material degradation or fatigue when tested according to ASTM E 1399. Provide joint systems with manufacturer's continuous, standard, flexible fire-barrier seals in back of joint system at locations indicated to provide fire-resistance rating not less than rating of adjacent construction.

2.5 BELLOWS-TYPE ROOF EXPANSION JOINT

- A. Provide manufacturer's standard assemblies of sizes and types indicated, including prefabricated units for corner and joint intersections and horizontal and vertical transitions including those to other building expansion joints, splicing units, adhesives, coatings, and other components as recommended by joint unit manufacturer for complete installation. Fabricate assemblies specifically for roof-to-roof, roof-to-wall, curb-to-wall, and curb-to-curb applications.
- B. Metal-Flanged, Bellows-Type Roof Expansion Assemblies: Provide assemblies consisting of exposed polymeric sheet over foam bellows, securely anchored at both edges to 3- to 4-inch-wide sheet metal nailing flanges, either flat or angle formed to fit cant or curbs as required. Insulate bellows with closed-cell, flexible rubber or plastic foam not less than 5/16 inch thick; adhere bellows to underside of polymeric sheet.
 - 1. Polymeric Sheet: EPDM, 60 mils thick.
 - 2. Metal Flanges: Stainless where indicated and Galvanized steel, elsewhere.
 - 3. Embedded Metal Flanges: Where flanges will be embedded in concrete or mortar, provide manufacturer's standard perforated-metal mortar flanges.
 - 4. Moisture Barrier: Manufacturer's standard, flexible, continuous, polymeric moisture barrier looped under roof expansion assembly covers at locations indicated.
 - 5. Fire Barrier: Provide manufacturer's standard fire barrier.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's written instructions for handling and installing roof expansion assemblies and materials, unless more stringent requirements are indicated.
- B. Coordinate installation of roof expansion joint assembly materials and associated work so complete assemblies comply with assembly performance requirements.
- C. Install fire barriers to provide continuous, uninterrupted fire resistance throughout length of roof expansion joint, including transitions and end joints.
- D. Extend roof expansion joint assemblies over curbs, parapets, and other elements in the construction profile, with factory-fabricated transitions to provide continuous, uninterrupted, waterproof roof expansion assemblies.
 - 1. Install factory-fabricated transitions between roof expansion joint assemblies and building expansion joint cover assemblies, specified in Division 5 Section "Architectural Joint Systems," to provide continuous, uninterrupted, watertight construction.
- E. Splice roof expansion joint assemblies with materials provided by roof expansion assembly manufacturer for this purpose, according to manufacturer's written instructions, to provide continuous, uninterrupted, waterproof roof expansion assemblies.
- F. Provide uniform profile of expansion joint assembly throughout length of each installation; do not stretch polymeric sheets.
- G. Install mineral-fiber blanket insulation to fill joint space within joint and moisture barrier.
- H. Bed anchorage flanges in cement or sealant recommended by manufacturer and securely nail to curbs and cant strips as recommended by manufacturer, but not less than 6 inches o.c.
- I. Anchor roof expansion joint assemblies in the manner indicated, complying with manufacturer's written instructions. On single-ply roofing, install roof expansion joint assemblies in the manner indicated, complying with manufacturer's instructions. Anchor to cants or curbs and seal to membrane with sealant compatible with roofing membrane and expansion joint assembly. Cover flanges with stripping or flashing.

3.2 PROTECTION

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensures roof expansion joint assemblies are without damage or deterioration at time of Substantial Completion.

END OF SECTION 07716