

SECTION 05800 – EXPANSION JOINT COVERS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Provide all labor, materials, equipment and services, and perform all operations required for complete installation of Expansion Control and related work as indicated on the drawings and specified herein.
- B. Work Included: The work of this section shall include, but not be limited to the following:
1. Floor expansion joint cover assemblies.
 2. Wall/ceiling expansion joint cover assemblies.
 3. Exterior expansion joint seals.
 4. Specialty expansion joint systems.
 5. Roof expansion joint assemblies.
 6. Fire barrier systems.
- C. Related Work Specified Elsewhere
1. Concrete – Section 03300.
 2. Unit Masonry – Section 04200.
 3. Miscellaneous Metal – Section 05500.
 4. Flashing and Sheet Metal – Section 07620.
 5. Sealant and Caulking – Section 07920.
 6. Color designs – Section 09050.

1.3 QUALITY ASSURANCE

- A. Materials and work shall conform to the latest edition of reference specifications specified herein and to all applicable codes and requirements of local authorities having jurisdiction.
- B. Fire Performance Characteristics:
1. Fire Resistance – Where indicated, provide expansion joint cover assemblies identical to those of assemblies whose fire resistance and cycling capability has been determined per UL 2079. Fire rating not less than the rating of adjacent construction.

Specifier note: All current national building codes call for joint systems to be cycle tested prior fire testing. Systems tested in accordance with ASTM E119 and/or ASTM E814 only will not meet the most current building codes.

- C. Loading Characteristics:

1. Standard Floor Covers – shall be designed to withstand a minimum point load of 500 lbs. without damage or permanent deformation. Heavy-duty covers should withstand a point load of 2,000 lbs.

D. Single-Source Responsibility

1. Obtain expansion joint cover assemblies from one source from a single manufacturer.

1.4 SUBMITTALS

- A. Product Data – Submit copies of manufacturer’s latest published literature for materials specified herein for approval, and obtain approval before materials are fabricated and delivered to the site. Data to clearly indicate movement capability of cover assemblies and suitability of material used in exterior seal for UV exposure.
- B. Certificates – Material test reports from qualified independent testing laboratory indicating and interpreting test results relative to compliance of fire-rated expansion joint assemblies with requirements indicated.
- C. Shop Drawings – Submit shop drawings for work specified herein for approval and obtain approval prior to fabrication and shipment of materials to the job site.
 1. Shop drawings showing full extent of expansion joint cover assemblies; include large-scale details indicating profiles of each type of expansion joint cover assembly, splice joints between sections, joinery with other types, special end conditions, anchorage’s, fasteners, and relationship to adjoining work and finishes. Include description of materials and finishes and installation instructions.
- D. Samples – Samples of materials specified herein shall be submitted for approval, and approval obtained before materials are delivered to the site. Samples shall include the following:
 1. Samples for each type of metal finish indicated on metal of same thickness and alloy to be used in work. Where normal color and texture variations are to be expected, include two (2) or more units in each set of samples showing limits of such variations.
 2. Samples of each type of flexible seal to be used in work with color samples as above.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Exercise proper care in the handling of all work so as not to injure the finished surface, and take proper precautions to protect the work from damage after it is in place.
- B. Deliver materials to the job site ready for use, and fabricated in as large sections and assemblies as practical. Assemblies shall be identical to submitted and reviewed shop drawings, samples and certificates.
- C. Store materials under cover in a dry and clean location off the ground. Remove materials that are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials at no additional cost.

1.6 PROJECT CONDITIONS

- A. Where necessary, check actual locations of walls and other construction to which work must fit, by accurate field measurements before fabrication. Show recorded measurements on final shop drawings and coordinate fabrication schedule with construction progress to avoid delay of work.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Expansion joint cover assemblies specified herein and indicated on the drawings shall be manufactured by Construction Specialties, Inc., P.O. Box 380 Muncy, PA, or other manufacturer with prior written approval.

2.2 MATERIALS

- A. Aluminum – ASTM B221, alloy 6063-T5 for extrusions; ASTM B209, alloy 6061-T6 for sheet and plate.
 - 1. Protect aluminum surfaces in contact with cementitious materials with heavy metal free high solids primer or chromate conversion coating.
- B. Structural Steel Shapes – ASTM A36.
- C. Steel Plates – ASTM A283 Grade C.
- D. Rolled Steel Floor Plates – ASTM A786
- E. Bronze – ASTM B455 alloy C38500 for extrusions; alloy C28000 Muntz Metal for plates.
- F. Brass – UNS alloy C26000 for half-hard sheet and coil.
- G. Stainless Steel – ASTM A167, Type 304 with 2B finish, unless indicated otherwise, for plates, sheets and strips.
- H. Extruded Preformed Seals – Single or multi-layered rubber extrusions as classified under ASTM D2000, designed with or without continuous, longitudinal, internal baffles and formed to fit compatible frames, in color indicated or if not indicated, as selected by architect from manufacturer's standard colors.
- I. Exterior Seals – Typically two single layered flexible extrusions, one interior PVC and one exterior Santoprene 8000 series non-hydroscopic, thermoplastic rubber, as classified under ASTM D2000, retained in a set of compatible frames, in color indicated or if not indicated, as selected by architect from manufacturer's standard colors.
- J. Fire Barriers – Designed for indicated or required dynamic structural movement without material degradation or fatigue in accordance with ASTM E1966. Tested in maximum joint width condition as a component of an expansion joint cover in accordance with UL 2079 including hose stream testing of wall assemblies at full-rated period by Underwriters Laboratories Inc.

- K. Accessories – Manufacturer’s standard anchors, fasteners, set screws, spacers, flexible vapor seals and filler materials, drain tubes, adhesives, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.3 FABRICATION

- A. General – Provide expansion joint cover assemblies of design, basic profile, materials, and operation indicated. Select units comparable to those indicated or required to accommodate joint size, variations in adjacent surfaces, and structural movement. Furnish units in longest practicable lengths to minimize number of end joints. Provide hairline-mitered corners where joint changes directions or abuts other materials. Include closure materials and transition pieces., tee-joints, corners, curbs, cross-connections and other accessories as required to provide continuous joint cover assemblies.

B. Interior Expansion Joint Covers

1. Extruded Aluminum Cover Assemblies – Provide continuous extruded aluminum frame assemblies of suitable profile to receive free floating cover plate of design indicated. Furnish depth and configuration to suit type of construction with no exposed fasteners. All aluminum in contact with concrete to have heavy metal free high solids primer, exposed aluminum to be finished as noted, free of gaskets and filler and be capable of 50% expansion and contraction without loss of cover. Floor covers must withstand minimum 500-lb. point load without damage or permanent deformation unless otherwise indicated. Provide continuous flexible waterstop where detailed. All as C/S Allway series manufactured by Construction Specialties, Inc.
 - a) Heavy Duty Floor Cover – Provide continuous heavy duty frame on each side of joint with seating surface to accept serrated cover plates fixed with countersunk fasteners 12” on center. Minimum ¼” thick center plate to be free floating and capable of withstanding 2,000-lb. point load without damage or permanent deformation. Finish to be mill. As model AL-HD.

C. Fire Barrier Systems

1. Provide prefabricated fire barrier assemblies tested in accordance with UL 2079 for 2-hour certification, unless otherwise detailed, and in compliance with ASTM E1966. Materials to carry UL label and be subject to Underwriters Laboratories follow-up service for quality assurance. Systems to be installed strictly in accordance with manufacturer’s installation instructions. All as C/S Fire Barrier manufactured by Construction Specialties, Inc.
 - a) For nominal floor joint widths from 1” to 4” requiring +/-50% movement provide C/S Reflex floor fire barrier systems. Reflex floor systems utilize pre-engineered, fiberglass composite insulation assemblies and stainless steel foil heat shields that have been UL tested and listed for 2-hour rated floor applications. Components supplied in longest practical lengths to minimize field splicing. As model RFX-_F.
 - b) For all joints within enclosed spaces such as chase walls, fire barrier system to include 2 mil stainless steel foil cover where conventional expansion joint cover is not used. As model SSF.

Specifier note: Additional layers may be added to achieve 3 and 4-hour ratings as necessary.

D. Metal Finishes

1. Comply with NAAM “Metal Finishes Manual” for finish designations and application recommendations, except as otherwise indicated. Apply finishes in factory after products are fabricated. Protect finishes on exposed surfaces with protective covering before shipment.
2. Aluminum Finishes
 - a) Clear Anodize Finish – AA-C204R1; medium matte etched finish with 0.4 mil minimum thick anodic coating.

Specifier note: Paint finish is not recommended for use on floor covers

- b) Paint Finish – Shall be inhibited thermocured primer, .02 mil minimum dry film thickness and thermocured fluorocarbon coating containing full 70% Kynar 500 resin, 1.0 mil minimum dry film thickness. Provide color indicated or, if not indicated, as selected by architect from manufacturer’s standard colors.
 - c) Duranodic Bronze Finish – AA-C22A42; integral color anodic coating minimum 27mg per square inch. Color to be light, medium or dark bronze.
 - d) Factory Primed Concealed Surfaces – Protect concealed metal surfaces that will be in contact with concrete and masonry surfaces when installed by applying a shop coat of manufacturer’s standard primer to contact surfaces. Provide minimum dry film thickness of 2.0 mils.
 3. Bronze/Stainless Steel Finish
 - a) Natural Satin Finish – NAAMM-M32, mechanical finish, directional textured, medium satin.

E. Composite Panel Finishes

4. Panels shall be field primed (1 coat) and finish painted (2 coats) with commercial acrylic latex materials.

PART 3 – EXECUTION

3.1 Examination

- A. Make a thorough examination of all surfaces receiving the work of this section and before starting the installation, notify the architect, in writing, of any defect which would affect the satisfactory completion of the work of this section.

3.2 Preparation

- A. Examine the contract drawings and specifications in order to insure the completeness of the work required under this section.

- B. Verify all measurements and dimensions at the job site and cooperate in the coordination and scheduling of the work of this section with the work of related trades, with particular attention given to the installation of items embedded in concrete and masonry so as not to delay job progress.
- C. Provide all templates as required to related trade for location of all support and anchorage items.

3.3 Installation

- A. In addition to requirements of these specifications, comply with manufacturer's instructions and recommendations for all phases of work, including preparation of substrate, applying materials and protection of installed units.
- B. Provide anchorage devices and fasteners where necessary for securing expansion joint cover assemblies to in-place construction, including threaded fasteners with drilled-in fasteners for masonry and concrete where anchoring members are not embedded in concrete. Provide fasteners of metal, type and size to suit type of construction indicated and provide for secure attachment of expansion joint cover assemblies.
- C. Perform all cutting, drilling and fitting required for installation of expansion joint covers. Install joint cover assemblies in true alignment and proper relationship to expansion joints and adjoining finished surfaces measured from established lines and levels.
- D. Allow adequate free movement for thermal expansion and contraction of metal to avoid buckling.
- E. Set floor covers at elevations to be flush with adjacent floor materials. If necessary, shim to level, but ensure base frames have continual support to prevent rocking and vertical deflection.
- F. Locate wall, ceiling, roof and soffit covers in continuous contact with adjacent surfaces. Securely attach in place with all required accessories.
- G. Locate anchors at interval recommended by manufacturer, but not less than 3" from each end and not more than 24" on center.
- H. Maintain continuity of expansion joint cover assemblies with end joints held to a minimum and metal members aligned mechanically using splice joints. Cut and fit ends to produce joints that will accommodate thermal expansion and contraction of metal to avoid buckling of frames.
- I. Adhere flexible filler materials (if any) to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.
 1. Installation of extruded preformed seals: install seals to comply with manufacturer's instruction and with minimum number of end joints.
 2. For straight sections provide preformed seals in continuous lengths.
 3. Vulcanize or heat-seal all field splice joints in preformed seal material to provide watertight joints using manufacturer's recommended procedure.
 4. Apply manufacturer's approved adhesive, epoxy or lubricant-adhesive to both frame interfaces prior to installing preformed seal.
 5. Seal transitions in accordance with manufacturer's instruction.
- J. Installation of Exterior Seal Joint Assemblies
 1. Seal all end joints within continuous runs and joints at transitions in accordance with manufacturer's directions to provide a watertight installation.
 2. Install exterior flexible seal in standard lengths.
 3. Seal transitions and butt joints in accordance with manufacturer's instruction

4. Install secondary seals in continuous lengths; vulcanize all field splice joints in secondary seal material to provide watertight joints using manufacturer's recommended procedures.

K. Installation of Fire Barrier

1. Install fire barrier in accordance with federal, state and local building codes using manufacturer's recommended procedures.
2. Install transition and end joints to provide continuous fire resistance and in accordance with instructions.

3.4 Cleaning and Protection

- A. Do not remove strippable protective material until finish work in adjacent areas is complete. When protective material is removed, clean exposed metal surfaces to comply with manufacturer's instructions.