SECTION 079500 - EXPANSION CONTROL

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. Section Includes:

1. Interior expansion control systems.
2. Exterior wall expansion control systems.

B. Related Requirements:

1. Division 3 Section "Cast-In-Place Concrete" for cast-in anchorage and frames for expansion joints cover assemblies in concrete floors and walls.
2. Division 4 Section "Unit Masonry" for adjacent masonry wall systems.
3. Division 7 Section "Flashing and Sheet Metal" for sheet metal roof and wall expansion joint systems.
4. Division 7 Section "Roof Accessories" for curb-type expansion joints.
5. Division 7 Section "Joint Sealants" for elastomeric sealants and preformed foam sealants without metal frames.
6. Division 9 Sections for walls, partitions, ceilings, and floor finishes with expansion joints.

1.3 ACTION SUBMITTALS

A. Shop Drawings: For each expansion control system specified. Include plans, elevations, sections, details, splices, blockout requirement, attachments to other work, and line diagrams showing entire route of each expansion control system. Where expansion control systems change planes, provide isometric or clearly detailed drawing depicting how components interconnect.

B. Samples for Initial Selection: For each type of expansion control system indicated.

1. Include manufacturer's color charts showing the full range of colors and finishes available for each exposed metal and elastomeric seal material.

C. Product Schedule: Prepared by or under the supervision of the supplier. Include the following information in tabular form:

1. Manufacturer and model number for each expansion control system.
2. Expansion control system location cross-referenced to Drawings.
3. Nominal joint width.
4. Movement capability.
5. Classification as thermal or seismic.
6. Materials, colors, and finishes.
7. Product options.

8. Fire-resistance ratings.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. General: Provide expansion control systems of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.

1. Furnish units in longest practicable lengths to minimize field splicing. Install with hairline mitered corners where expansion control systems change direction or abut other materials.
2. Include factory-fabricated closure materials and transition pieces, T-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous expansion control systems.

B. Coordination: Coordinate installation of exterior wall expansion control systems with roof expansion control systems to ensure that wall transitions are watertight. Roof expansion joint assemblies are specified elsewhere.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: Where indicated, provide expansion control systems with fire barriers identical to those of systems tested for fire resistance per UL 2079 or ASTM E 1966 by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Hose Stream Test: Wall-to-wall and wall-to-ceiling systems shall be subjected to hose stream testing.
2.

2.3 INTERIOR EXPANSION CONTROL SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. <u>Basis of Design Manufacturer: MM Systems Corporation.</u>
2. Balco, Inc.
3. Construction Specialties, Inc.

B. Source Limitations: Obtain expansion control systems from single source from single manufacturer.

C. Floor-to-Floor:

1. Basis-of-Design Product: MM Systems – Model HFX.
2. Design Criteria:

a. Nominal Joint Width: As indicated on Drawings

b. Fire-Resistance Rating: Provide expansion control system and fire-barrier assembly with a rating not less than 2 hours.

c. Metal: Aluminum.

1) Finish: Clear anodic, Class I.

D. Wall-to-Wall & Ceiling-to-Ceiling:

1. Basis-of-Design Product: MM Systems – Model FX-K
2. Design Criteria:

a. Nominal Joint Width: As indicated on Drawings.

b. Fire-Resistance Rating: Provide expansion control system and fire-barrier assembly with a rating not less than 2 hours.

c. Metal: Aluminum.

1) Finish: Clear anodic, Class I.

2.4 EXTERIOR WALL EXPANSION CONTROL SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Basis of Design Manufacturer: **MM Systems Corporation**.
2. Balco, Inc.
3. Construction Specialties, Inc.

B. Source Limitations: Obtain expansion control systems from single source from single manufacturer.

C. Wall-to-Wall:

1. Basis-of-Design Product: MM Systems: ESS Series.
2. Design Criteria:

a. Nominal Joint Width: As indicated on Drawings.
b. Fire-Resistance Rating: Provide expansion control system and fire-barrier assembly with a rating not less than 2 hours.

c. Silicone Joint – Color to be selected by architect from manufacturer's standard and custom colors.

2.5 MATERIALS

A. Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063-T5 for extrusions; ASTM B 209 (ASTM B 209M), Alloy 6061-T6 for sheet and plate.

1. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious materials.

B. Elastomeric Seals: ASTM E 1783; preformed elastomeric membranes or extrusions to be installed in metal frames.

C. Compression Seals: ASTM E 1612; preformed elastomeric extrusions having an internal baffle system and designed to function under compression.

D. Cellular Foam Seals: Extruded, compressible foam designed to function under compression.

E. Fire Barriers: Any material or material combination, when fire tested after cycling, designated to resist the passage of flame and hot gases through a movement joint and to meet performance criteria for required fire-resistance rating.

F. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

G. Accessories: Manufacturer's standard anchors, clips, fasteners, set screws, spacers, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.6 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. 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.

2.7 ALUMINUM FINISHES

A. Mill finish.

B. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces where expansion control systems will be installed for installation tolerances and other conditions affecting performance of work.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to expansion control system manufacturer's written instructions.

B. Coordinate and furnish anchorages, setting drawings, and instructions for installing expansion control systems. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of expansion control systems.

C. Cast-In Frames: Coordinate and furnish frames to be cast into concrete.

3.3 INSTALLATION

A. Comply with manufacturer's written instructions for storing, handling, and installing expansion control systems and materials unless more stringent requirements are indicated.

B. Metal Frames: Perform cutting, drilling, and fitting required to install expansion control systems.

1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.
2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation. Notify Architect where discrepancies occur that will affect proper expansion control system installation and performance.
3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.
4. Repair or grout blockout as required for continuous frame support using nonmetallic, shrinkage-resistant grout.
5. Install frames in continuous contact with adjacent surfaces.

    a. Shimming is not permitted.

6. Locate anchors at interval recommended by manufacturer, but not less than 3 inches (75 mm) from each end and not more than 24 inches (600 mm) o.c.

C. Seals in Metal Frames: Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions. Install with minimum number of end joints.

1. Provide in continuous lengths for straight sections.
2. Seal transitions according to manufacturer's written instructions. Vulcanize or heat-weld field-spliced joints as recommended by manufacturer.
3. Installation: Mechanically lock seals into frames or adhere to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.

D. Compression Seals: Apply adhesive or lubricant adhesive as recommended by manufacturer to both frame interfaces and/or sides of slabs before installing compression seals.

E. Foam Seals: Install with adhesive recommended by manufacturer.

F. Epoxy-Bonded Seals: Pressurize seal for time period and to pressure recommended by manufacturer. Do not overpressurize.

G. Terminate exposed ends of expansion control systems with field- or factory-fabricated termination devices.

H. Fire-Resistance-Rated Assemblies: Coordinate installation of expansion control system materials and associated work so complete assemblies comply with assembly performance requirements.

1. Fire Barriers: Install fire barriers to provide continuous, uninterrupted fire resistance throughout length of joint, including transitions and field splices.

3.4 PROTECTION

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

B. Protect the installation from damage by work of other Sections. Where necessary due to heavy construction traffic, remove and properly store cover plates or seals and install temporary protection over expansion control systems. Reinstall cover plates or seals prior to Substantial Completion of the Work.

END OF SECTION 079500