



Erie Metal Specialties, Inc.
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SPECIFICATION

Section 07 95 13

Erie Metal Specialties, Interior Architectural Systems

Model(s) “ESFC”, “ESFC-W”

Seismic Floor Expansion Control Systems

PART 1 - GENERAL

1.01 Work Included

- A. The work shall consist of furnishing and installing expansion joints in accordance with the details shown on the plans and the requirements of the specifications. The joints are proprietary designs utilizing extruded base members and support plates.
- B. Related Work
 - Cast-in-place concrete
 - Miscellaneous and ornamental metals
 - Flashing and sheet metal
 - Sealants and caulking

1.02 Submittals

- A. Template Drawings - Submit typical seismic joint cross-section(s) indicating pertinent dimensioning, general construction, component connections, and anchorage methods.

1.03 Product Delivery, Storage and Handling

- A. Deliver products in each manufacturer's original, intact, labeled containers and store under cover in a dry location until installed. Store off the ground, protect from weather and construction activities.

1.04 Acceptable Manufacturer

- A. All joints shall be supplied by; Erie Metal Specialties, Inc. • 13311 Main Road • Akron • New York • 14001 • Phone (716) 542-3991 • Fax (716) 542-3996 • sales@eriemetal.com • www.eriemetal.com .
- B. Alternate manufacturers and their products will be considered, provided they meet the design concept and are produced of materials that are equal to or superior to those specified.



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- C. Any proposed alternate systems must be submitted and receive approval 21 days prior to the bid. All post bid submittals will not be considered. This submission shall be in accordance with MATERIALS AND SUBSTITUTIONS.

- Any manufacturer wishing to submit for prior approval must provide the following:

- A working 6" sample of the proposed system with a letter describing how system is considered superior to the specified system.

- A project proposal drawing that illustrates the recommended alternate system installed in the floor construction that is specific to the project. Typical catalog cut sections will not be considered.

- A Verifiable list of prior installations showing prior and successful experience with the proposed Systems.

Any substitution products not adhering to all specification requirements within, will not be considered.

1.05 Quality Assurance

- A. Warranty: The Professional Series expansion control system's performance shall be warranted for a period of 3 years when installed by the manufacturer's factory trained Certified Applicator. Installation shall be in strict accordance with manufacturer's technical specifications, details, installation instructions and general procedures in effect for normal intended usage and suitable applications under specified design movements and loading conditions.
- B. Manufacturer: Shall have a minimum ten (10) years experience specializing in the design and manufacture of Architectural Expansion Control Systems.
- C. Products: Expansion Control Systems must be installed with manufacturer's block out repair and infill material(s).
- D. Application: The specified expansion control systems shall be installed by a Certified Applicator, factory trained and certified in the proper installation of the specified expansion control system and fire barrier system.
- E. Maintenance: The manufacturer shall provide the owner-operator a preventive maintenance guideline for Expansion Control Systems.

PART 2 - PRODUCT

2.01 General

- A. Self-centering Provide floor joint cover expansion control system that is capable of accommodating multi-directional seismic movement without stress to its components. System shall consist of metal profiles that utilize various metal finishes with a universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy the project movement and loading requirements.



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Secure cover plate to base members by utilizing manufacturer’s pre-engineered bar. Anchor floor joint cover systems to floor slab utilizing adjustable clip angles and manufacturer’s standard anchor.

Furnish Erie Metal Specialties, “ESFC” joint cover meeting ADA Guidelines for interior joint locations as manufactured by EMS and as indicated on drawings. Select Model based on requirements.

2.02 Components and Materials

- A. Aluminum Extrusions - Material to conform to properties of ASTM B221, alloy 6061-T6 or 6063-T5.
- B. Aluminum Shapes - Material to conform to ASTM B209, alloy 6061-T6, or 5005-H34.
- C. Slide Plate - Provide minimum 3/16” thick plate with material to be aluminum conforming to ASTM B209, alloy 6061-T6, where loading requirements do not dictate a structural alloy, utilize 5005-H34 for slide plate installed in a floor to wall condition. Slide plate to be secured to joint assembly utilizing a pre-engineered self-centering bar that freely rotates in all directions. Preformed metal devices that utilize tension or compression to maintain and secure slide plate will not be allowed.

During seismic movement and full closure of the structural opening, the slide plate shall be capable of clearing the raised edge of the base member extension profile (if utilized), without damage to the Expansion Control System.

- D. Seismic-Centering Bar - Shall exhibit circular sphered ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Bar shall be molded or manufactured incorporating corrosion resistant nylon components with sphered ends and 1” wide standard cross member for standard applications. Provide 1 1/2” wide cross member where heavy-duty application is required. Spacing shall be a maximum of 18” o.c.

During seismic activity design centering bar to permit vertical displacement of metal cover during accelerated inward and outward movement without evidence of fatigue and permanent deformation. Concurrently provide secure connection between plate and underlying system components to maintain proper positioning and contact to adjoining surfaces.

The Bar shall exhibit the following physical properties to demonstrate its ability to resist corrosion and fatigue.

PHYSICAL PROPERTIES

Molded End Profile:

Material:	Nylon
Color:	Black
Tensile Strength @ break:	ASTM D638 25,500 psi



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Cross-Member:
 Material: Pre-tempered spring steel

Damage Mitigation - Test Requirements:

Seismic-centering bar must exhibit ability to disengage (controlled release) from expansion joint edge member(s) when seismic movement exceeds the specified maximum allowable opening. Submit independent test report demonstrating required design of seismic centering bar.

Requirements

- a) Equipment: Instron Machine
- b) Orientation: Specimen subjected to tensile load with cross member parallel to direction of load
- c) Specimens: Test 4(min)– select at random
- d) Disengagement range (lbs): 800 (min.) – 1250 (max.)

- E. Moisture Barrier - Shall be a fabric reinforced tear resistant clean vinyl sheet material. Minimum thickness shall be .026”.
- F. Anchorage - Provide minimum ¼” diameter concrete expansion anchor at maximum 24” o.c. spacing to secure aluminum base member to floor slab.
- G. Block out Repair - Utilize manufacturer’s single component rapid strength repair mortar meeting the following data requirements.

Compressive strength, psi (ASTM C 109)

2 hours	1,500
24 hours	4,500
7 days	8,000
28 days	9,000

- H. Block out Infill - Utilize manufacturer’s non-catalyzed, non-shrink grout containing mineral aggregate meeting the following data requirements.

Compressive strength at plastic consistency, psi

3 days	6,000
7 days	7,000
28 days	8,500



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- I. Accessories - Provide necessary and related parts and fasteners required for complete installation.
- J. Fire Barrier Assembly - Designed for indicated or required dynamic structural movement without material degradation or fatigue. Tested in maximum joint width conditions with a field splice as a component of the expansion joint cover in accordance with ASTM E-119 at full rated period by a nationally recognized testing and inspecting organization. Supply EMS Fire Barrier as governed by joint opening and fire rating.

2.03 Fabrication

- A. Extrusions and generic profiles to be shipped in standard 10 ft. lengths and shall be cut to length on jobsite where required. Profiles shall be miter cut in the field to conform to directional changes unless otherwise contracted with expansion joint manufacturer.
- B. Fire Barriers - Ship manufacturer's standard assembly including fire caulks, sealants (if applicable) and hardware for the required hourly rating. Assemblies shall be miter cut in the field to accommodate changes in direction.

2.04 Finishes (Standard)

- A. The cover plate's exposed surface shall receive a 60-grit brushed finish. All other aluminum extrusions and shapes shall be supplied in standard mill finish.
- B. Surfaces of aluminum profiles that will be in direct contact with concrete where moisture is present shall receive one coat of manufacturer's recommended coating.
- C. Finishes (optional) - Manufacturer shall utilize common aluminum alloys between system components to achieve consistency in product finish.
 - 1. Aluminum - (clear anodize)
Clear anodized finish in accordance with AA-M10 C22 A41 Class I (0.7 - 1.0 thick anodic coating).
 - 2. Aluminum - (color anodize)
Select from manufacturers standard color offering.

PART 3 - EXECUTION

3.01 Installation

- A. Install all Expansion Control Systems utilizing manufacturer's block out repair and infill material(s).
- B. Protect all expansion joint component parts from damage during installation, placement of concrete and thereafter until completion of structure.
- C. Expansion joint systems shall be installed in strict accordance with the manufacturer's typical details and instructions along with the advice of their qualified representative.



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- D. Expansion joint systems shall be set to the proper width for the ambient temperature at the time of installation. This information is indicated in the contract plans.

3.02 Clean and Protect

- A. Protect system and its components during construction. After work is complete in adjacent areas clean exposed surfaces with a suitable cleaner that will not harm or attack the finish.