



Erie Metal Specialties, Inc.
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SPECIFICATION

Section 07 95 13

Erie Metal Specialties, Interior Architectural Systems

Model(s) "EFLP", "EFLP-W"

Horizontal Seismic Control System

PART 1 - GENERAL

1.01 Work Included

- A. The work shall consist of furnishing and installing seismic joints in accordance with the details shown on the plans and the requirements of the specifications. The joints are proprietary custom designs utilizing extruded edge frames and structural pan designed to displace vertically during seismic activity.
- 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 system components in manufacturer's original, intact, labeled packaging 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 called for in the base product specification.



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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 horizontal construction that is specific to the project. Typical catalog cut sections will not be considered.

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

1.05 Quality Assurance

- A. Manufacturer: Shall have 10-years experience manufacturing and designing expansion joint systems. Alternate manufacturers will be considered provided they submit written proof that they have manufactured expansion joint systems for 10-years. Lesser manufacturers will not be considered.
- B. Warranty: The Professional Series expansion control system's performance shall be warranted when installed by the manufacturer's factory trained installer. 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.
- 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.

PART 2 - PRODUCT

2.01 General

- A. Provide horizontal seismic control system capable of accommodating multi-directional seismic movement without stress to its components during thermal movement. System shall consist of a structural pan designed to displace vertically and to receive finish floor treatments up to 1 ¼ inch in thickness. The pan plate shall be designed of width and thickness required to satisfy project movement and a 150 PSF distributed live load. Incorporate semi-circular continuous bearing surface at underside of pan assembly to enhance horizontal motion and vertical rotational movement. For floor to wall condition design system to include hinged feature at pan to wall connection for smooth upward displacement during seismic activity. Secure pan to edge frames by utilizing manufacturer's



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pre-engineered seismic-centering bar and anchor system to horizontal slab utilizing manufacturer's standard anchor. Design system to receive traffic bearing elastomeric sealant to accommodate limited seasonal thermal movement. Sealant shall be considered sacrificial during seismic activity.

Furnish EMS, Inc model "EFLP" Seismic Control System for horizontal joint locations as indicated on drawings. Custom engineered systems available. Standard system supplied unless architect submits specific project requirements in writing to manufacturer for design evaluation.

2.02 Components and Materials

- A. Aluminum Extrusions - Material to conform to properties of ASTM B221, alloy 6063-T6.
- B. Edge Frames - Provide aluminum extruded profile conforming to properties of ASTM B221, alloy 6063-T6. All surfaces to receive elastomeric sealant shall be serrated to promote enhanced adhesion. Satisfy impact loading anchorage requirements by incorporating a continuous cavity properly sized to receive 1/4" dia. hex nut.
- C. Pan - Provide minimum 1/4" thick aluminum plate conforming to ASTM B209, alloy 6061-T6. For 16" and 18" openings provide 3/8" thick plate. 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. Modify pan to include gusset plates for heavy-duty applications.
- 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.

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

PHYSICAL PROPERTIES

Molded End Profile:	
Material :	Nylon
Color:	Black
Tensile Strength @ break:	ASTM D638 25,500 psi
Cross-Member:	
Material:	Pre-tempered spring steel



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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 -

Equipment: Instron Machine

Orientation: Specimen subjected to tensile load with cross member parallel to direction of load.

Specimens: Test 4(min)– select at random.

Disengagement range (lbs) : 800 (min.) – 1250 (max.)

E. Moisture Barrier - Not supplied with standard system.

Option “A” (medium-duty)

Provide fabric reinforced tear resistant clear vinyl sheet material. Minimum thickness shall be .026”.

Optional “B” (heavy-duty)

Provide EMS Flexible Gutter utilizing fabric reinforced neoprene sheet material .060” thickness. Incorporate drain tubes if drainage of moisture is required.

F. Block out Repair - Utilize a rapid strength repair mortar.

G. Block out Infill - Utilize non-catalyzed, non-shrink grout containing mineral aggregate.

H. Anchorage - Provide minimum ¼” dia. x 2 ¼” lg. threaded concrete anchor with csk. flathead at maximum 18” o.c. spacing to secure aluminum edge frame to adjacent construction. At back of frame provide ¼” dia. x ¾” long anchor bolts at 36” o.c. At wall mounted frame provide spacing at 15” o.c. and appropriate style of anchor as determined by wall construction.

I. Accessories - Provide necessary and related parts, and fasteners required for complete installation including connector plates and hardware for butt splices between pans. Provide stainless steel hex head bolt with plastic cap to secure pan assembly to self-centering bar.

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 and cycle tested by a nationally recognized testing and inspecting organization. Supply Fire Barrier (2-way movement) as governed by joint opening and fire rating. Provide (4-way movement) where movement parallel to joint opening is expected.

K. Colored Elastomeric Sealant (by others) - Material shall be a two-component polyurethane. Comply with federal specification TT-S-0027-E(3) with a shore A hardness of 25. Installer shall provide required backer rod profile to ensure proper performance of sealant. Silicone sealants may be substituted to provide enhanced movement capabilities.



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2.03 Fabrication

A. Extrusions, pan and edge frame profiles to be shipped in standard 10 ft. lengths and shall be cut to length on job site where required. Profiles shall be miter cut in the field to conform to directional changes unless otherwise contracted with expansion joint manufacturer. Where factory transitions are required installing contractor shall provide field measurements to the manufacturer for evaluation and costing.

B. Fire Barriers

Ship manufacturer's standard assembly including splice sealants and hardware for the required hourly rating. Assemblies shall be miter cut in the field to accommodate changes in direction. Where factory transitions are required installing contractor shall provide field measurements to the manufacturer for evaluation and costing.

2.04 Finishes

All aluminum extrusions and shapes shall be supplied in standard mill finish.

PART 3 - EXECUTION

3.01 Installation

- A. Install all Expansion Control Systems utilizing manufacturer's block out repair and infill material.
- B. Protect all seismic control joint components from damage during installation, placement of concrete, finishes 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.
- 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.
- E. Two component polyurethane sealants shall be installed in strict accordance with the sealant manufacturer's instructions along with the advice of their qualified representative.

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.