

PART 1 – GENERAL

1.01 Work Included

- A. The work shall consist of furnishing and installing waterproof vertical expansion joints in accordance with the details shown on the plans and the requirements of the specifications. The expansion joints utilize factory applied 0.50 inch [13 mm] thick silicone face seal and secondary polyurethane foam backer block creating a monolithic and binary sealing system. A field applied primer-less one-part silicone sealant is used to achieve a 3-sided bond to the expansion joint sidewalls on each side of the preformed silicone seal.
- B. Related Work
 - Division 3 - Section - Cast-in-place concrete
 - Division 4 - Masonry
 - Division 7 - Thermal & Moisture Protection
 - Division 7 - Sealants, caulking and waterproofing

1.02 Submittals

- A. General – Submit the following according to Division 1 Specification Section.
- B. Standard Submittal Package – Submit typical expansion joint drawing(s) indicating pertinent dimensions, general construction, expansion joint opening dimensions and product information.

1.03 Product Delivery, Storage and Handling

- A. Deliver products to site in Manufacturer’s original, intact, labeled containers and store indoors in a dry location until installed. Store off the ground in temperatures above 40°F, protect from weather and construction activities.

1.04 Basis of Design

- A. All joints shall be designed to meet the specified performance criteria of the project as manufactured by Erie Metal Specialties, Inc., 13311 Main Road, Akron, NY, 14001. / Tel. 716-542-3991 / Fax. 716-542-3996 Web. www.eriametal.com
- B. Alternate manufacturers will not be considered for this project due to insufficient product evaluation time. Submit for future evaluation, products that meet the design criteria and exhibit performance features that are equal to or superior to those called for in the base product specification. Submittal of alternates must be made two weeks prior to bid opening on future projects to allow proper evaluation time.

1.05 Quality Assurance

- A. Pre-construction Meeting – the General Contractor, Engineer/Architect, Concrete Subcontractor, Manufacturer’s Representative and Certified Contractor, will conduct a pre-construction meeting to discuss joint gap construction, joint gap settings and construction phasing.
- B. Joint Opening Adjustment – the Project Engineer shall provide calculations to the concrete subcontractor to adjust the nominal joint opening the day of the concrete placement. Use a “temperature adjustment table” with expansion joint openings calculated in five (5°F) degree increments based on a temperature range of [adjust for project] -20°F to 120°F.
- C. Pre-installation Inspection – the General Contractor, Engineer/Architect, Manufacturer’s Representative and Certified Contractor, will conduct a pre-installation project site inspection. The General Contractor shall provide a field report that summarizes the project conditions and any remedial action necessary to correct field conditions (substrate, joint size, non-parallel sidewalls, vertical offsets, etc.) that may affect expansion joint system performance.
- D. Certified Installation – a factory-trained and “certified” contractor shall install the specified expansion joint system. The contractor shall provide proof of certification from manufacturer and proof of participation in manufacturer’s continuing education program.
- E. Warranty – The expansion joint system, when installed by the Manufacturer’s Certified Contractor, shall be warranted for a period of two (2) years under specified movements and design conditions for vertical applications. The warranty covers leakage at the joint under normal use due to cohesive or adhesive failure and material failure related to tearing, weathering or abrasion. No liability or responsibility is accepted due to defects in the surrounding substrate. The Certified Contractor and Manufacturer will jointly warrant and provide at no charge, all materials and labor needed to properly repair or replace defective product within the term of the warranty.

PART 2 – PRODUCT

2.01 General

- A. Provide watertight silicone expansion joint sealing system that meets the specified movement requirements for structural expansion joints, panel joints, window perimeter joints, EIFS panel joints, curtain walls joints or other penetrations of the building envelope.
- B. System shall consist of a high performance engineered silicone seal that is a minimum of 0.50 inch [13 mm] thick and is factory cured and fused to a cellular

polyester/polyurethane foam backer block creating a monolithic and binary sealing system. A field applied primerless one-part silicone sealant is used to achieve a 3-sided bond to the expansion joint sidewalls on each side of the seal.

- C. System design shall provide a .375 inch [9 mm] reveal on each side of the silicone surface seal to create a 3-sided bond area for the field applied silicone adhesion. The increased bond area at the expansion joint sidewalls will ensure a binary watertight joint sealing system.
- D. Furnish approved CSIS-Series Compression Seal with Integrated Sealant as manufactured by Erie Metal Specialties, Inc.
- E. Select the system size at each joint location based on the movement and design requirements that meet the project specification or as defined by the structural engineer of record. Insure that the anticipated service condition is part of the expansion joint system selection criteria.
- F. The Certified Contractor must provide written confirmation; utilizing manufacturer’s product data, insuring the silicone seal selected will comply with and accommodate expansion, contraction and lateral shear throughout the full movement cycle.

2.02 Components and Materials

- A. Primary Preformed Silicone Seal – provide CSIS-Series material consisting of a primary flexible, preformed silicone rubber compound exhibiting the physical properties listed in the table below.

PHYSICAL PROPERTIES OF PREFORMED ESS SILICONE SEAL

(after 14 days at 77°F (25°C) and 50% relative humidity)

<u>Property</u>	<u>Requirement</u>	<u>ASTM Method</u>
Hardness, Shore A	35 - 40	C661
Tensile strength @ max.	1.52-1.59Mpa (220-230 psi)	D412
Ultimate elongation	235 – 260%	D412
Tensile strength @ 100%	0.62-0.69Mpa (90-100 psi)	C1135
Tear Strength	35-40 pli / 6.14-7.02 kN/m	D624
Peel Strength, glass	16-22 pli / 2.81-3.86 kN/m	C794
Cyclical Movement	± 50%	C719
Tack-free time	35 - 45 minutes	C679
Sag	0-0.1 mm (0-0.03”)	D2202
Tooling time	15 – 20 minutes	Skin Formation

- B. Secondary Foam Seal — shall be a cellular polyurethane / polyester backer block factory bonded to the silicone face seal. The monolithic backer system allows for proper alignment and positioning in the structural joint opening.

2.03 Fabrication

- A. CSIS-Series Silicone Seal – shipped in nominal six-foot standard lengths in manufacturer’s standard shipping carton.
- B. Directional Changes – follow manufactures detailed instructions for field splicing.

2.04 Finishes

- A. Silicone seal color shall be selected and approved by the owner from the manufacturer’s standard colors or project specific custom color matching process.

PART 3 – EXECUTION

3.01 Installation

A. Preparation of the Work Area

1. The contractor shall provide a properly formed and prepared expansion joint openings constructed to the exact dimensions and elevations shown on manufacturer’s standard system drawings or as shown on the contract drawings. Deviations from these dimensions will not be allowed without the written consent of the engineer of record.
2. The contractor shall clean the joint opening of all contaminants immediately prior to installation of expansion joint system. Concrete form release agents, water repellents, laitance, surface dirt, rust, old sealants and other surface treatments and protective coatings must be removed from the joint opening sidewalls in order to obtain the proper adhesion.
3. The CSIS-Series product is wider than the joint opening. Compress the foam backer block by hand and insert into the expansion joint opening.
4. Recess the highest point of the silicone strip 1/4" [5mm] below the surface.
5. Position and center the factory preformed silicone strip creating equal reveals on each side.
6. As necessary, mask areas adjacent to the joint with tape to assure neat, clean joint lines. (Remove tape prior to the curing process.)
7. Apply silicone sealant in the reveals on each side of the factory preformed silicone strip with manufacturer’s silicone. Tool immediately to insure firm contact and secure bond.

8. Refer to Manufacturers Installation Guide for detailed step-by-step instructions.

3.02 Clean and Protect

- A. Protect the system and its components during construction. Subsequent damage to the expansion joint system will be repaired at the general contractor's expense. After work is complete, clean exposed surfaces with a suitable cleaner that will not harm or attack the finish.

END OF SECTION