SECTION 079500

HORIZONTAL EXPANSION CONTROL SYSTEM

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 elastomeric seals, heavy duty molded base members, polyurethane bedding compounds and polyurethane sealants.

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 expansion 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 as designed and manufactured by Watson Bowman Acme, 95 Pineview Drive, Amherst, New York 14228.

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.

C. Any proposed alternate systems must be submitted and approved 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:

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

2. Letter from approved independent laboratory stating that the proposed product’s physical properties and design meet the requirements of the project specification.

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

4. Verifiable list of prior installations showing successful experience with the proposed systems.

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

D. Bidders are presumed by the specifier to furnish the materials specified in specification Section 05800 and related sections unless the bidder clearly stipulates in their bid form their intent to use an alternate material.

The bidder must otherwise clearly submit with the bid, which of the specified products the bid is based upon. Upon award of the project, the bidder will be required to utilize the product that was stipulated in their bid.

As an alternate, bidders may elect to use an expansion control system other than the one specified, however, the bidder is required to submit all supporting information mentioned in Section 1.04C, including the manufacturers’ joint and several performance warranty, at the scheduled bid opening. The specifier reserves the right to require any bidder to submit supplementary or additional information after bids are opened before approving alternatives. A bidder intending to use an alternative system shall not be eligible for award unless the supporting information has been submitted to the specifier at bid opening and approved prior to award.

1.05 Quality Assurance

A. Manufacturer: Shall be ISO-9001:2008, RC14001:2008 certified and shall provide written confirmation that a formal Quality Management System and Quality Processes have been adopted in the areas of, (but not limited to) engineering, manufacturing, quality control and customer service for all processes, products and their components. Alternate manufacturers will be considered provided they submit written proof that they are ISO 9001:2008, RC14001:2008 certified prior to the project bid date. Manufacturers in the process of obtaining certification will not be considered.

B. Warranty: The expansion control system 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 specific design movements and loading conditions.

C. Manufacturer: Shall have a minimum ten (10) years experience specializing in the design and manufacture of expansion control systems.

D. Application: The specified expansion control system(s) shall be installed by the manufacturer's factory trained installer.

PART 2 - PRODUCT

2.01 General

A. Provide watertight Heavy Duty Expansion Control System that is capable of accommodating HS-20 loading requirements. Utilize steel reinforced premolded ethylene propylene diene monomer (EPDM) Anchor Blocks with integrated bolt hole cavities and tongue and groove end connections. Incorporate a continuous elastomeric membrane gland designed with integral side flanges to accommodate the required movement and watertightness. Gland shall comply with ADA guidelines to accept pedestrian traffic. Install all components utilizing manufacturer's polyurethane sealant for complete installation. Alternate systems utilizing anchor blocks without steel insert reinforcement or designs that incorporate metal slide plates will not be permitted.
Furnish Wabo® ElastoFlex Expansion Control System designed for heavy duty interior traffic conditions as manufactured by Watson Bowman Acme and as indicated on drawings.

2.02 Components and Materials

A. Elastomeric Anchor Block - Provide 6'-0" standard panel designed with non-slip exposed surfaces, integrated bolt hole cavities and tongue and groove end connections. The panel shall be molded utilizing EPDM meeting the properties as called for in ASTM D2000 as the base compound with a preformed steel shape suspended in the elastomeric material to provide reinforcement. Anchor blocks extruded from thermoplastic compounds will not be permitted.

B. Wabo®ElastoFlex Gland

Model "EFJ" - Provide continuously extruded thermoplastic profile designed and offered in multiple nominal widths to accommodate various structural joint sizes and movement requirements. The profile shall be multi-cellular and designed to accept pedestrian traffic. When installed the top surface of the seal profile shall be non-slip and provide a suitable transition across the joint opening that complies

with ADA guidelines. Material shall be Santoprene or manufacturer's alternate material exhibiting a shore A hardness of 67 +/- 3.

C. Bolt Cavity Sealant - Utilize Wabo®Crete II

Bolt hole cavities shall be filled using Wabo®Crete II ambient cure elastomeric material meeting manufacturers standard product requirements. Contractor to ensure that elastomeric anchor blocks are dry from moisture prior to placement of material.

D. Edge Void Sealant - Utilize NP1 Sealant

It is a one part polyurethane moisture cure sealant conforming to federal specification TT-S-00230C Type II. For interior applications Wabo®Crete II may be utilized as an optional edge void material by reducing the aggregate mix by 50 percent. Contractor shall ensure that elastomeric anchor blocks are free from moisture prior to placement of material.

E. Bedding Compound – Utilize NP1 Sealant

Utilize NP1 Sealant and apply as a bedding material to the blockout base prior to placement of Wabo®ElastoFlex gland. It is a one part polyurethane moisture cure sealant conforming to federal specification TT-S-00230C Type II.

PHYSICAL PROPERTIES at 24°C ± 1°C (75°F ± 2°F)

Characteristic	Result	ASTM Test Method
Peel Adhesion	30 pli	C794
Tensile Yield	350 psi	D412
Elongation	800%	D412
Sag	None	C639
Service T Range	-40ºF to 180ºF	
Water Resistance	Passes	AAMA 800
Skin Time	30-45 min at 50% RH	
Cure Time	24-48 hours at 50% RH	

F. Anchors - Provide 5/8" diameter x 4½" long manufacturer's recommended injection adhesive anchor with assembly hardware at 12" o.c. maximum spacing. Threaded bolt shall conform to ASTM A36 and be free of oils. Install anchors in strict accordance with manufacturer's instructions in sound concrete with 3 ¼ inch anchor embedment.

G. Blockout Repair - Utilize a single component rapid strength repair mortar.

H. Accessories - Provide necessary and related parts required for complete installation.

I. Fire Barrier Assembly (if required) - 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 Wabo®FlameGuard II or Wabo®ThermoShield Fire Barrier as governed by joint opening and fire rating.

2.03 Fabrication

A. Premolded Anchor Blocks to be shipped in standard 6 ft. lengths and shall be cut to length on jobsite where required. Anchor blocks shall be miter cut in the field to conform to directional changes unless otherwise contracted with expansion joint manufacturer.

B. Wabo®ElastoFlex Glands shall be shipped in the longest practical continuous length on manufacturer's standard shipping pallet.

C. Sealants, Bedding Compounds and Anchors shall be shipped in manufacturer's standard cartridge or carton.

D. Fire Barriers - Ship manufacturer's standard assembly and components for the required hourly rating.

2.04 Finishes (Standard)

A. All components shall be supplied in standard color: Black.

PART 3 - EXECUTION

3.01 Installation

A. Install Expansion Control System utilizing manufacturer's blockout repair material.

B. Protect all expansion joint component parts from damage during installation of adjacent materials 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.

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 elastomeric material.