

## 719 - EXPANSION JOINTS

### SECTION 719

#### EXPANSION JOINTS

##### 719.1 DESCRIPTION

Install expansion joints as designated in the Contract Documents. Do not substitute joint material without approval of the State Bridge Office.

##### BID ITEM

Expansion Joint (\*)

\*Strip Seal Assembly, Preformed Elastomeric Neoprene, Preformed Elastomeric Compression, Membrane Sealant\*\* or other

\*\*Type

##### UNITS

Linear Foot

##### 719.2 MATERIALS

**a. General.** Provide the type of expansion joint system designated in the Contract Documents that complies with **DIVISION 1500**. When specified in the Contract Documents, use rapid set concrete patching material according to **SECTION 1716**.

**b. Strip Seal Assembly.** Provide strip seal assemblies and preformed pressurized elastomeric neoprene and compression joint seals that comply with **DIVISION 1500**.

Fabricate the strip seal assembly and armoring and support systems according to **DIVISION 700**.

**c. Preformed Elastomeric Neoprene.** Provide preformed elastomeric neoprene joints that comply with **DIVISION 1500**.

**d. Preformed Elastomeric Compression.** Fabricate the preformed elastomeric compression joint seals to extend across the roadway in 1 piece. The material may be trimmed at the ends.

**e. Membrane Sealant.** Provide membrane sealant that complies with **DIVISION 1500**.

##### 719.3 CONSTRUCTION REQUIREMENTS

**a. Strip Seal Assembly.** Submit shop drawings according to **SECTION 105** for each location, type and model of strip seal assembly used, according to **DIVISION 700**. The Contractor is responsible for preparing shop drawings and coordinating the fabrication of the strip seal assemblies that require structural steel protection angles with the fabricator of the structural steel angles.

Install the strip seal assemblies according to the Contract Documents and the manufacturer's recommendations. Provide a technical representative of the material manufacturer at the jobsite during installation.

Place either a butt joint at each break in the pavement cross slope, or bend a unit of the device to comply closely to the break in cross slope. Do not field cut the device without approval of the Engineer.

If the assembly is installed in sections, show the sequence of unit installation on the shop drawings. Install the first unit and adjust it so that the anchor bolts shall center in the mounting slots. Install washers and tighten bolts to the torque recommended by the manufacturer. Wire brush both ends of the successive units, and butt them tightly against installed units. Do not apply the sealant until the unit is ready to be bolted down. Cut the corner at the face of curb, and grind to match normal curb dimensions. Tighten all bolts and scrape excess sealant off the surface.

If the assembly is installed in one continuous length with no field splices, proceed with the installation in a uniform manner to maintain continuity of the seal.

Complete final sealing of the finished expansion joint as soon as possible after installation. Fill all bolts, exposed ends, joints between units and other areas of possible leakage with sealant. Scrape excess sealant away before it has set.

**b. Preformed Elastomeric Neoprene and Compression Joint Seals.** When constructing the concrete forms for the ends of the bridge deck and adjacent abutment backwalls, form block-outs for the preformed elastomeric

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compression joint seals, according to the Contract Documents. The block-outs in the poured concrete must be uniform in depth and width, and free of irregularities.

Before installing the elastomeric joint seals, thoroughly clean the surfaces of the indentation formed for the elastomeric joint material, and swab it with a uniform coating of the lubricant-adhesive as recommended by the manufacturer.

Install the elastomeric joint material according to the manufacturer's recommendations. Use equipment capable of placing the strips at the specified depth without increasing or decreasing the length as taken from the roll or box by more than 5%.

Recess the top of the installed joint material a minimum of  $\frac{1}{8}$  inch, and a maximum of  $\frac{3}{8}$  inch below the top of the roadway deck adjacent to the joint material.

### c. Membrane Sealant.

- Provide a technical representative from the material manufacturer at the jobsite during installation. Installation will not begin unless representative is present.
- Verify the joint opening size is correct based on the ambient temperature, correct as required.
- The minimum ambient air temperature during the installation and curing process is 40° F.
- Just prior to the sealant being applied, clean the faces of the joint by sand blasting each joint face followed by an air blast to clean incompressibles from the joint. Solvent clean bridge or approach joint surfaces. To obtain complete bonding with the adhesive, the concrete must be surface dry.
- Apply the epoxy adhesive to the prepared concrete joint surfaces according to the manufacturer recommendations.
- Install the membrane sealant material into the joint, positioning it either flush with, or with a maximum recess of  $\frac{1}{2}$  inch from the top surface of the joint, however recommended by the manufacturer.
- Apply the manufacturer recommended splice adhesive liberally to both mitered ends of the 2 sections of membrane sealant material that will meet in the joint as the final step before installation. Install successive lengths of membrane sealant material by maintaining pressure toward the previously installed section while positioning the length being installed. Do not stretch the membrane sealant material.

Provide an air supply that is proven to be oil free prior to blast cleaning and air blasting. This is done by covering the end of the air hose farthest from the compressor with a white rag and discharging air for 10 seconds in the presence of the Engineer.

**d. Other Expansion Joints.** Provide a qualified representative of the expansion joint system manufacturer to instruct the Contractor and KDOT personnel in the correct installation procedures for the expansion joint system used.

Prepare the expansion gap area and install the expansion joint system according to the manufacturer's recommendations. Allow the expansion joint system to cure as recommended by the manufacturer before permitting traffic on the joint.

The Engineer will inspect the expansion gap area for the proper depth, width and alignment, as shown in the Contract Documents.

### 719.4 MEASUREMENT AND PAYMENT

The Engineer will measure expansion joints by the linear foot, measured along the centerline of the expansion joint.

Payment for "Expansion Joint (\*)" at the contract unit price is full compensation for the specified work.