

**KANSAS DEPARTMENT OF TRANSPORTATION
 SPECIAL PROVISION TO THE
 STANDARD SPECIFICATIONS, EDITION 2007**

Add a new SECTION to DIVISION 700:

EXPANSION JOINT (MEMBRANE SEALANT)

1.0 DESCRIPTION

Install expansion joints as designated in the Contract Documents. Expansion Joint (Membrane Sealant) consists of: an impregnated, self expanding foam sealant; an adhesive to bond the foam to the joint sides; and a splice adhesive to join the foam sections together.

BID ITEMS

Expansion Joint (Membrane Sealant*)
 *Type (Poly-Tite, Seal-Tite, WaboHSeal, Emseal)

UNITS

Linear Foot

Note: Joint type substitution requires prior approval of the State Bridge Office.

2.0 MATERIALS

a. Foam Sealant. Provide a foam sealant consisting of an open-cell high density polyurethane foam impregnated with either a polymer modified bitumen or a neoprene rubber suspended in chlorinated hydrocarbons. Precompress the foam sealant prior to packaging. The precompressed dimension shall be as recommended by the sealant manufacturer to provide a water tight seal throughout a joint movement range of $\pm 25\%$ (minimum) from the specified joint opening dimension. In no case shall the precompressed dimension exceed 75% of the joint opening width. The foam sealant shall be slowly self expanding to permit workers ample time to install the foam before the foam exceeds the joint opening width. Supply the foam in pieces 5 feet in length or longer. Miter the ends of each piece for ease of joining to the adjacent pieces.

Provide the foam sealant in 3 inch deep pieces (minimum). Provide foam sealant that is ultra-violet and ozone resistant. Meet the following physical requirements when tested according to the procedures specified:

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>REQUIREMENTS</u>
Tensile Strength	ASTM D3574	21 PSI min.
Elongation, Ultimate	ASTM D3574	125% +- 20%.
Density, Uncompressed		9 lb./cu. ft. min.
Compressed Density at Joint Width		45 lb./cu.ft. min.
Compression Set	ASTM D3574	3% max.
Softening Point	ASTM D816	140° F. min.
Low Temperature Flexibility 32°F to -10° F	ASTM C711	No Cracking or Splitting

b. Bonding Adhesive. Provide a waterproof epoxy adhesive that is compatible with concrete and recommended by the manufacturer of the foam sealant.

c. Splice Adhesive. Provide any polyurethane adhesive recommended by the manufacturer of the foam sealant.

d. Basis of Acceptance. Receipt and approval of a Type D certification as specified in **DIVISION 2600** and visual inspection at destination for condition and compliance with dimensional and other requirements.

3.0 CONSTRUCTION REQUIREMENTS

- 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 ½ 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.

4.0 MEASUREMENT AND PAYMENT

When shown as a bid item in the contract, the Engineer will measure the expansion joint (membrane sealant) by the linear foot, measured along the centerline of the expansion joint.

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

12-09-13 BD(BS) (JPJ)
Apr-14 Letting