1. EXPANSION JOINT – PRECOMPRESSED [707] (ADDED 10-08-20)

Description. This work is furnishing and installing a preformed, pre-compressed, self-expanding, sealant system with a silicone pre-coated surface.

Materials. Use a joint system designed to withstand an HL-93 truck loading and impact in accordance with AASHTO specifications. Furnish materials comprised of the following 3 components:

Cellular polyurethane foam impregnated with hydrophobic 100% acrylic, water-based emulsion, factory coated with highway-grade, fuel resistant silicone.

Field-applied epoxy adhesive primer.

Field-injected silicone sealant bands.

Use an impregnation agent having proven non-migratory characteristics. Furnish a highway-grade, low modulus, fuel resistant silicone applied to the impregnated foam sealant at a width greater than maximum allowable joint extension and which when cured and compressed will form a bellows. Furnish expansion joint foam seal having a depth as recommended by the manufacturer. Ensure joint system is capable of movements of +50%, -50% (100% total) of nominal material size. Use factory-fabricated transition assemblies where changes in plane and direction are necessary. Ensure transitions are watertight at inside and outside corners through the full movement capabilities of the product.

Construction Requirements. Provide accurate dimensions of the joint length and opening size to the joint manufacturer so they can appropriately size the joint system.

Prepare the joint opening in accordance with the manufacturer’s recommendations.

Ensure all concrete surfaces adjacent to the joint are in sound condition.

Repair any unsound concrete in accordance with the manufacturer’s recommendations.

Install the joint system using the manufacturer's standard field-applied epoxy adhesive. Install the joint system such that when the field-applied injection band of silicone is installed between the substrates and the foam-and-silicone-bellows, the system will be recessed ½-inch (12.5 mm) below the substrate surface. Do not permit vehicle traffic to travel over the joint for a period of 3 hours after installation is complete.

Submittals.

Certifications. Certify that the joint material meets the following:

Free in composition of any waxes or asphalts, wax compounds, or asphalt compounds.

Capable of withstanding 150°F (65°C) for 3 hours while compressed down to the minimum of movement capability dimension of the basis of design product (-25% of nominal material size) without evidence of any bleeding of impregnation medium from the material.

That the same material after the heat stability test will self-expand to the maximum of movement capability dimension of the basis-of-design product (+30% of nominal material size) within 24 hours at room temperature 68°F (20°C).

Shop Drawings. Submit shop drawings describing the following:

Name of the manufacturer.

Joint dimensions.

Joint location and details of field splices, and

Expansion joint at curbs and sidewalks.

Do not begin fabrication of the joint until the Department has approved the shop drawings.

Work Plan. When the contract requires casting of new concrete at the joint location, submit a work plan describing the procedures that will be used to form the joint opening. Include the following in the work plan:

Joint Width. Provide methods that will ensure the joint is constructed to the plan joint opening width. Consider that the joint opening width will change with temperature before, during and after concrete placement. Use methods and/or sequencing that prevent shoving of the concrete during thermal expansion of the span(s). Request approval for additional construction joints not shown in the plans if needed.

Straightness. Provide methods that will ensure the joint does not deviate from a straight line by more than ½-inch (12.5 mm).

Method of Measurement and Basis of Payment. Pre-compressed expansion joints are measured and paid for by the linear foot along the centerline of the joint, parallel to the plane of the finished joint surface.

Payment at the contract unit price is full compensation for all resources necessary to complete the item of work in accordance with the contract.