

438.1 to 438.4

substructure, installation, materials, equipment, labor, tools, and incidentals.

ITEM 438

CLEANING AND SEALING JOINTS AND CRACKS (RIGID PAVEMENT AND BRIDGE DECKS)

438.1. Description. Clean and seal joints and cracks in new or existing rigid concrete pavements and bridge decks.

438.2. Materials. Use sealants of the class specified on the plans that meet the requirements of DMS-6310, "Joint Sealants and Fillers." If required, use primers recommended by the manufacturer of the sealant. Use backer rods compatible with the sealant that do not react or bond together.

438.3. Equipment. Use equipment that meets sealant manufacturer's recommendations. Use air compressors equipped with appropriate filters for removing oil and water from the air. For grooving cracks, use devices such as diamond-blade random-cut saws or random-crack grinders, capable of following the path of the crack without causing excessive spalling or other damage to the concrete.

438.4. Construction. Before starting work, submit information from the sealant manufacturer showing recommended equipment and installation procedures. All equipment and procedures will be subject to approval. If the equipment causes damage to dowels, reinforcing steel, concrete, base, subbase, or subgrade, repair the damage and change the procedure and equipment to prevent further damage.

A. Preparation. Remove all debris, dirt, dust, saw cuttings, and other foreign material from the crack or joint by an approved method. Collect and dispose of all the removed material.

1. Joints. Remove existing preformed bituminous fiber board material or other spacer material the full depth of the joint along with all other debris in the joint opening. Resize the joint sealant space by sawing to the width and depth shown on the plans to accommodate the type of sealant specified.

On concrete slab and girder bridges, clean debris from the diaphragm windows below the joints.

Abrasive blast clean the vertical faces of joints armored with steel to remove all visible rust, paint, mill scale, and other forms of

contamination, leaving a white metal appearance. Clean concrete and other surfaces by method approved and in accordance with the manufacturer's specifications before placing sealant. After cleaning, air-blast the joint to remove all dust.

2. **Cracks.** Unless otherwise specified, groove the crack at the surface so that a reservoir with a rectangular cross section is provided for the sealant. Cut grooves to the dimensions shown on the plans.

B. Sealing. Place the sealant in accordance with the manufacturer's recommended procedures. Apply the primer, when required, at the specified rate and time interval before applying the sealant. Apply the sealant to dry joint and crack surfaces unless otherwise recommended by the sealant manufacturer. Tool any sealant material that is not self-leveling to force the sealant against the joint surfaces.

1. **Joints.** For concrete pavement, place approved support spacers into joints as shown on the plans. Place a backer rod in the joint opening to prevent the sealant from flowing through the joint and to hold the sealant at its required elevation unless directed otherwise. Set the top of the sealant and thickness of sealant as shown on the plans. Do not place sealant in an expansion-type joint if surface temperature is below 55°F or above 90°F.
2. **Cracks.** Do not place the sealant when the surface temperature is less than 40°F. Set the top of the sealant 1/8 in. to 1/4 in. below the pavement surface, with a minimum depth of sealant of 1/2 in. unless otherwise recommended by the sealant manufacturer.

438.5. Measurement. When specified on the plans to be a pay item, this Item will be measured by the foot or gallon of sealant placed. If measurement is by the gallon, the volume of sealant placed in the joints and cracks will be measured during progress of work.

438.6. Payment. Unless otherwise specified on the plans, the work performed and materials furnished as required by this Item will not be paid for directly but will be subsidiary to bid items of the Contract.

When shown as a pay item, the work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Cleaning and Sealing of Existing Joints," "Cleaning and Sealing Joints," and "Cleaning and Sealing Cracks." This price is full compensation for furnishing all materials; sawing, routing,

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and cleaning and installing; disposing of debris; and equipment, labor, tools, and incidentals.

ITEM 439

CONCRETE BRIDGE DECK OVERLAYS

439.1. Description. Overlay concrete bridge deck surface with concrete, dense concrete, or latex-modified concrete. Remove and replace deteriorated or delaminated concrete.

439.2. Materials. Provide materials conforming to the pertinent requirements of the following Items except as noted in this Item:

- Item 421, “Hydraulic Cement Concrete”
- Item 428, “Concrete Surface Treatment”
- Item 440, “Reinforcing Steel.”

A. Cement. Use the same type, brand, and source of cement for any 1 structure. Unless otherwise shown on the plans, use Type I or Type II cement.

B. Coarse Aggregate. Provide a crushed or broken coarse aggregate conforming to Grade No. 6 of Section 421.2.E.1, “Coarse Aggregate,” unless used in latex-modified concrete or otherwise shown on the plans. At least 85% of the coarse aggregate particles retained on the No. 4 sieve must have 1 or more mechanically induced crushed faces as determined by Tex-460-A.

Provide an aggregate with an absorption not exceeding 3% when tested in accordance with Tex-403-A, for dense concrete overlays.

For latex-modified concrete, provide aggregate conforming to Grade No. 8 of Section 421.2.E.1, “Coarse Aggregate,” unless otherwise specified.

C. Latex. Provide latex admixture (ASTM C 1438, Type II polymer modifier) meeting the requirements of Table 1.