

ITEM 402.7507XX25 - FILLING SHOULDER JOINTS BETWEEN PCC PAVEMENT AND HMA SHOULDERS USING FIBER REINFORCED P-G BINDER OR HOT APPLIED SEALANT

1. DESCRIPTION:

- 1.01 Clean and fill the shoulder joint between portland cement concrete pavement and hot mix asphalt shoulders at locations shown in the Contract Documents or where directed by the Engineer.

2. MATERIALS:

- 2.01 Use fiber reinforced Performance-Graded (PG) Binders or crack sealants that meet the following requirements:

A. **Performance-Graded Binder:** Use a PG Binder supplied by a primary source as defined in Section 702 and meeting the specification for PG 64-22 or PG 64-28. Acceptance for use is contingent upon certification of compliance to these specification requirements by the primary source and subsequent suppliers.

B. **Fibers:** Acceptance of the polyester fibers is based on the manufacturer certification that the fibers meet with the following:

- Type of Fiber: Polyester
- Tensile Strength: 69.6 kips/sq. in.
- Specific Gravity: 1.32 – 1.40
- Melt Temperature: 475°F
- Elongation: 33% ± 9%
- Length of Fiber: .25 in ± .03 in.

Legibly mark containers with the following information:

- Manufacturer's Name
- Trade Name of Fiber
- Type of Fiber

C. **Composition of Sealant and Polyester Fiber Mixture:** Mix a PG Binder meeting the requirements of PG 64-22 or PG 64-28 with polyester fibers until there is a minimum of 5.0%, by weight, of polyester fibers.

D. **Mixing Temperature:** Mix the PG Binder and fibers at the temperatures recommended by the fiber manufacturer. The mixing temperature is not to exceed 325°F.

E. **Crack Sealant:** Use a sealant meeting the requirements of §705-02, Highway Joint Sealants, and ASTM D6690 Type II; Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements. Deliver the sealant in the manufacturer's original sealed container legibly marked with the following information:

- Manufacturer's Name
- Trade name of sealant.
- Manufacturer's batch or lot number
- ASTM D6690, Type II
- Minimum application temperature
- Maximum (or Safe) heating temperature.

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2. MATERIALS: (cont'd)

2.01 E. **Crack Sealant:** (cont'd)

Provide the Engineer with a copy of the manufacturer's recommendations pertaining to heating and application of the sealant prior to commencing work.

3. CONSTRUCTION DETAILS:

- 3.01 **General:** Furnish all equipment that is necessary for filling/sealing the shoulder joints. Use equipment meeting the description and/or performance requirements described herein and approved by the Engineer.
- 3.02 Replace pavement markings that become covered and/or obliterated more than 25% of their width with sealant at no additional cost to the Authority.
- 3.03 **Joint Preparation:** Prepare joints for filling/sealing on the same day that they are to be sealed.
- 3.04 Use a high pressure air lance or hot air lance to thoroughly clean and dry joints of dust, dirt, foreign material, sand and any other extraneous materials immediately prior to sealing joints. Do not burn, scorch or ignite the adjoining pavement when using a hot air lance.
- 3.05 Install suitable traps or devices on the compressed air equipment to prevent moisture and oil from contaminating the joint surfaces. Maintain these devices and see that they are functioning properly.
- 3.06 Protect the public from potentially objectionable and/or hazardous airborne debris.
- 3.07 **Filler/Sealer Melting:** Heat and melt the filler/sealant in a melter constructed either as a double boiler filled with a heat-transfer medium between the inner and out shells, or with internal tubes or coils carrying the filler/sealant through a heated oil bath and into a heated double wall hopper. The melter will be equipped with separate thermometers to indicate the temperature of the heat transfer medium and the sealant material, positive temperature controls and with a mechanical agitator or a recirculating pump to assure a homogeneous blend of the sealant. Maintain the sealant at the pouring temperature $\pm 9^{\circ}\text{F}$ indicated on the material packaging. Check the discharge temperature of the filler/sealant with a non-contact infrared thermometer. Discharge the sealant at a temperature between the manufacturers' recommended pouring and safe heating temperatures indicated on the material packaging. Submit an alternate method for measuring the discharge temperature to the Engineer for approval if desired.
- 3.08 Filling/sealing is not permitted if the melter and discharge temperatures do not meet with the requirements described above.
- 3.09 Equip the discharge hose with a thermostatically controlled heating apparatus or insulate it to maintain the proper sealant pouring temperature. Holster the discharge hose to the melter if it is not thermostatically heat controlled. Circulate the filler from the discharge hose and the melter to maintain the proper filler/sealant pouring temperature.
- 3.10 Do not use filler/sealant material heated beyond the safe heating temperature.

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3. CONSTRUCTION DETAILS: (cont'd)

- 3.11 If the manufacturer's recommendations allow the filler/sealant to be reheated or heated in excess of six (6) hours, recharge the melter with fresh material amounting to at least 20 percent of the volume of the material remaining in the melter.
- 3.12 **Filling and Sealing:** Filling and sealing is to be done when ambient air temperature is at or above 41°F.
- 3.13 Overfill the joint by placing the applicator wand in or directly over the recess and carefully discharge the filler. Strike off the joint using a (neoprene type) "V" shaped squeegee or sealing shoe that is capable of conforming to the pavement surface. Form a band 4 inches wide and 60 mils to 120 mils thick, with tapered edges, centered over the joint. The distance between the filler/sealant applicator wand and the squeegee shall not exceed 2 feet. Properly filled/sealed joints shall be watertight.
- 3.14 Do not allow traffic on the filler or sealant until it has cured so as not to track. A low pressure light spray of water may be used to accelerate cooling of the filler/sealant. Blotting with fine aggregate is not allowed.
- 3.15 Remove and dispose filler/sealant in excess of the specified thin "film" dimensions or that has not bonded to both sides of the joint. Clean filled/sealed joints damaged from traffic with high pressure air and reseal them to meet the specified thin film amount at no additional cost to the Authority.

4. METHOD OF MEASUREMENT:

- 4.01 The quantity measured for payment shall be the number of feet of shoulder joint sealed in accordance with the specification.

5. BASIS OF PAYMENT:

- 5.01 In the unit bid price, include the cost of all material, equipment and labor necessary to complete the work.

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
402.75070125	FILLING SHOULDER JOINTS BETWEEN PCC PAVEMENT AND HMA SHOULDERS USING FIBER REINFORCED P-G BINDER	FEET
402.75070225	FILLING SHOULDER JOINTS BETWEEN PCC PAVEMENT AND HMA SHOULDERS USING HOT APPLIED SEALANT	FEET