

ITEM 402.7601 18 - ROUTING, CLEANING AND SEALING CRACKS IN HOT MIX ASPHALT PAVEMENT USING HOT APPLIED SEALANT

DESCRIPTION.

Rout, clean and seal only primary cracks at locations shown in the contract documents or where directed by the Engineer along their entire length. Do not treat secondary radial cracks. The Engineer will determine which cracks are to be routed prior to cleaning and sealing. In this specification, the word crack also means joint.

Primary cracks are defined as those greater than or equal to 3 mm and less than or equal to 25 mm wide.

MATERIALS.

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.

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

CONSTRUCTION DETAILS.

General. Complete all pavement repairs contained in the contract documents bordering pavement cracks prior to commencing work.

Furnish all equipment that is necessary for routing, cleaning, and sealing the pavement cracks. Use equipment meeting the description and/or performance requirements described herein and approved by the Engineer. Replace pavement markings that become covered and/or obliterated more than 25% of their width with the sealant at no additional cost to the State.

Crack Preparation. Prepare cracks for sealing on the same day that they are to be sealed.

Rout all primary cracks as defined above with a router to provide at least a 16 mm wide by 13 mm deep vertical-edged reservoir with minimal spalls at its edges.

Use a high pressure air lance or hot air lance to thoroughly clean and dry routed cracks 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.

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.

Protect the public from potentially objectionable and/or hazardous airborne debris.

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Sealant Melting. Heat and melt the sealant in a melter constructed either as a double boiler filled with a heat-transfer medium between the inner and outer shells, or with internal tubes or coils carrying the 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 $\pm 5^{\circ}\text{C}$ indicated on the material packaging.

Check the discharge temperature of the sealant with a non-contact infrared thermometer. Discharge the sealant at a temperature between the manufacturer's 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.

Sealing is not permitted if the melter and discharge temperatures do not meet with the requirements described above.

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 sealant from the discharge hose and the melter to maintain the proper sealant pouring temperature.

Do not use sealant material heated beyond the safe heating temperature. If the manufacturer's recommendations allow the sealant to be reheated or heated in excess of six hours, recharge the melter with fresh material amounting to at least 20 percent of the volume of the material remaining in the melter.

Sealing. Sealing is to be done when ambient air temperature is at or above 5°C .

Seal the routed crack by placing the applicator wand in or directly over the recess and carefully discharge the sealant. Strike-off the sealant flush with the pavement surface using a squeegee or sealing shoe pressed firmly against the pavement. Only a narrow thin film of material measuring from 25 mm to 50 mm wide and 1 mm thick is allowed on the pavement surface after sealing the reservoir. If the sealant sinks into the reservoir more than 10 mm below the pavement surface, clean it with high pressure air and seal it to meet the specified thin film amount. Properly sealed joints shall be watertight.

A low pressure, light spray of water may be used to accelerate cooling of the sealant. Blotting the sealant with fine aggregate is not allowed.

Remove and dispose sealant in excess of the specified thin "film" dimensions or that has not bonded to both sides of the reservoir.

Do not allow traffic on the sealed reservoirs until the seal has cured so as not to track. Clean sealed reservoirs damaged from traffic with high pressure air and reseal them to meet the specified thin film amount at no additional cost to the State.

METHOD OF MEASUREMENT.

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The Engineer will measure the number of meters of cracks properly routed, cleaned and sealed in conformance with this specification.

BASIS OF PAYMENT.

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

Item No.	Item	Pay Unit
402.7601-18	Routing, Cleaning and Sealing Cracks in HMA Pavements Using Hot Applied Sealant	Meter