

ITEM 01402.2502 M - SAWING AND SEALING JOINTS IN HOT MIX ASPHALT OVERLAYS WITH PERFORMANCE PERIOD

DESCRIPTION

This work shall consist of saw cutting, cleaning and sealing transverse joints in new hot mix asphalt overlays and shoulders. Bituminous concrete pavement joints shall be constructed over, and in line with, the existing underlying transverse portland cement concrete joints in accordance with plans, specifications, and as directed by the Engineer.

MATERIALS

Joint Sealant. The sealant shall meet the requirements of ASTM D3405; Joint Sealants, Hot-Poured for Concrete and Asphalt Pavements. The sealant shall be delivered in the manufacturer's original sealed containers. The material will be accepted on the basis that the name of the Primary Source (Manufacturer) and trade name appears on the current Approved List. Each container shall be legibly marked with the following information:

Manufacturer's name
Trade name of the sealant
Manufacturer's lot or batch number
Pouring temperature
Safe heating temperature

Prior to the commencement of work the Contractor shall provide the Engineer with a copy of the manufacturer's recommendations pertaining to heating and application.

Bond Breaker Tape. Bond breaker tape shall consist of regular masking tape or a suitable bond breaker tape designed for use with hot poured sealants. The width of the tape may be equal to but not more than 3 mm narrower than the width of the sawcut.

CONSTRUCTION DETAILS

General. The contractor shall conduct his operation so that sawcutting of transverse joints, cleaning, and sealing is a continuous operation. Traffic shall not be allowed to knead together or damage the sawed joints. Sawed joints should be filled and cured prior to opening to traffic. Sawed joints not sealed before traffic is allowed on the overlay shall be resawed when sawing and sealing operations resume at no additional cost to the State. Sawcutting, cleaning and sealing shall be done within seven (7) days after placement of the top course of asphalt pavement.

If the top course is to be placed the following Spring, due to seasonal paving limitations, all underlying courses shall receive a 25 mm deep by 3 mm wide sawcut to facilitate and control reflective cracking as well as to provide a means of properly referencing the sawcut to eventually be made in the top course. These sawcuts shall be made in all underlying courses within seven (7) days after the underlying courses are placed and before any evidence of reflective cracking has developed. Sealing of these sawcuts will not be required. Payment for sawcutting all underlying courses shall be included in the unit bid price for sawing and sealing.

Sawcutting of Transverse Joints. The contractor shall sawcut transverse joints to the appropriate dimensions shown in Figure I, based on the existing pavement slab length and new overlay depth. Full depth patches adjacent to joints in the underlying concrete shall have separate sawcuts in the overlay over the patch/slab interface. See Figure II. Sawcuts over patch interface shall conform to Figure I. The sawcut joints shall be directly over the existing portland cement concrete pavement joints and shall be accurately located by a method employing pins and stringline. The pins shall be accurately located prior to paving. Details of the method for locating the sawcuts shall be subject to the approval of the Engineer.

The blade or blades shall be of such size and configuration that the desired dimensions of the sawcut can be made with one pass. Either dry or wet cutting will be allowed. No spacers between blades will be allowed.

The transverse sawcut joints shall normally extend the full width of the pavement and shall extend into the asphalt shoulder to a distance 1 m beyond the edge of the underlying portland cement concrete pavement edge, unless

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otherwise detailed on the plans or in the proposal. Existing transverse joints that are offset at the longitudinal joint by more than 25 mm, measured between the centers of the joint cavities, shall require separate sawcuts terminating at the longitudinal joints.

Cleaning. Dry sawed joints shall be thoroughly cleaned with a stream of air sufficient to remove any dirt, dust or deleterious matter adhering to the joint walls or remaining in the joint cavity. Wet saw joints shall be thoroughly cleaned with a water blast (345 kPa minimum) immediately after sawing to remove any sawing slurry, dirt, or deleterious matter adhering to the joint walls or remaining in the joint cavity. Wet sawed joints shall be blown with air to provide dry joint surfaces prior to sealing.

All sawing slurry from the wet sawing process shall be immediately flushed from the pavement surface. Dry dust and material from the dry sawing process shall be blown or brushed off the pavement surface.

The contractor shall be required to provide protective screening, subject to the approval of the Engineer, if his cleaning operations are capable of causing damage to or interference with traffic in adjacent lanes.

Sealing. The joint sealant material shall be heated in a kettle or melter constructed as a double boiler, with the space between the inner and outer shells filled with oil or other heat transfer medium. The equipment shall include positive temperature control, mechanical agitation, recirculation pumps and thermometers for continuous reading of the temperature of both the sealing compound and the heat transfer medium. The applicator wand shall be heated or insulated to maintain the pouring temperature of the sealant during placing operation. Pour pots or similar devices shall not be used to fill sawed joints.

A copy of the manufacturer's recommendations pertaining to the heating and application of the joint sealant material shall be submitted to the Engineer prior to the commencement of work. These recommendations shall be adhered to and followed by the Contractor. The temperature of the sealer in the field application equipment shall never exceed the safe heating temperature recommended by the manufacturer. Any given quantity of material shall never be heated at the pouring temperature for more than six hours and shall never be reheated.

After cleaning, and just prior to sealing, a bond breaker tape shall be placed in the bottom of the sawcut joint. The joints shall be sealed when the sealant material is at the pouring temperature recommended by the manufacturer. The sealant shall fill the joint such that after cooling, the level of the sealant will not be greater than 3 mm below the pavement or shoulder surface. Care shall be taken in the sealing of the joints so that the joints are not overfilled and the final appearance will present a neat fine line. The applicator wand shall be returned to the machine and the joint sealant material recirculated immediately upon completion of each joint sealing. Sand shall not be spread on the sealed joints to allow early opening to traffic. Sealant shall be tack free prior to opening to traffic. A low pressure, light stream of water or a compatible detacking agent, as approved by the Engineer, may be used to accelerate cooling of the sealant.

METHOD OF MEASUREMENT

This work will be measured by the number of meters of joints properly sawed and sealed.

The sawed and sealed joints will be inspected following a performance period that will extend to April 30th of the year following the sawing and sealing operation. At the end of the performance period a final inspection will be made by the Engineer. If this inspection identifies any cracks within 600 mm from either side of the previously sawed and sealed joint, the Contractor shall completely repair such work. All repair work shall be performed in accordance with this specification and completed within 60 calendar days of the performance inspection. Routing and sealing of transverse cracks may be allowed in accordance with the latest Department specifications. The Engineer shall determine the limits of repair. A maintenance and protection of traffic plan must be submitted and approved by the Regional Traffic Engineer before repair work commences.

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Upon completion of the final performance inspection, or after satisfactory completion of any repair work, the Engineer will notify the Contractor, in writing, within 10 calendar days, that any further performance responsibility is ended.

This delay in performance inspection and performance acceptance of sawed and sealed joints shall not delay acceptance of the entire project and final payment due if the Contractor provides the Department with a "Faithful Performance Bond," and a "Labor and Material Bond" in the full amount of the sawing and sealing item. These bonds shall conform to the requirements of §103-04 and shall be in full force and effect until final performance inspection and performance acceptance of the sawed and sealed joints. In addition the Contractor shall keep in force the various types of insurance as required by §107-06.

BASIS OF PAYMENT

The unit price bid per meter shall include the cost of all labor, equipment and materials necessary to complete the work as specified.

DISAPPROVED

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DETAILS FOR TRANSVERSE JOINTS IN ASPHALT CONCRETE OVERLAYS

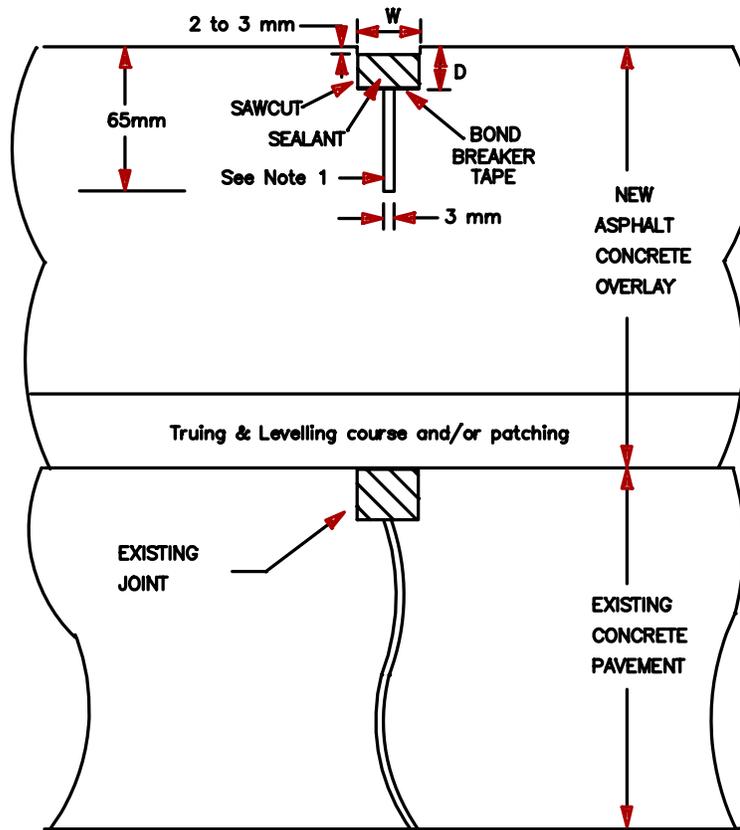


FIGURE I

SAWCUT DIMENSIONS

SLAB LENGTH (m)	W (mm)	D (mm)
< 15	13	16
16 to 19	16	16
20 to 23	19	16
24 to 27	22	19
28 to 31	25	22

Note 1: When the total thickness of asphalt concrete over the existing joint exceeds 115mm, a 3mm wide sawcut shall be included in the joint geometrics to a minimum depth of 65mm.

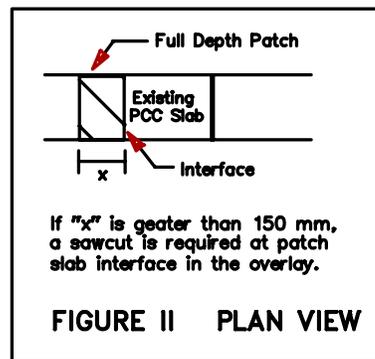


FIGURE II PLAN VIEW