

**ITEM 18403.7508 M - FILLING SHOULDER JOINTS BETWEEN PORTLAND CEMENT
CONCRETE PAVEMENT AND ASPHALT CONCRETE SHOULDERS
USING ASTM D3405**

DESCRIPTION

This work shall consist of cleaning and filling the shoulder joint between portland cement concrete pavement and asphalt concrete shoulders with plastic joint material ASTM D3405.

MATERIALS

Filler shall meet the requirements of ASTM D3405; Joint Sealants, Hot-Poured for concrete and asphalt pavements. The material will be accepted on the basis of the manufacturer's certification that it conforms to the requirements of ASTM D3405 and 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 filler
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.

CONSTRUCTION DETAILS

General. The Contractor shall furnish all equipment necessary for cleaning and filling the shoulder joints. All equipment shall be approved by the Engineer before its use.

Filling shall be done at locations shown on the Plans or as directed by the Engineer.

All joints shall be thoroughly cleaned of all dust, dirt, moisture, foreign material, incompressibles or any other extraneous materials by high pressure air, hot air lance, wire brush or other suitable method or tool approved by the Engineer. Suitable traps or devices shall be installed on the compressed air equipment to prevent moisture and oil from contaminating the joint surfaces. The Contractor shall maintain these devices and see that they are functioning properly. The joints shall be cleaned a minimum of 13 mm deep. The material and debris removed from the joint shall be removed from the pavement and shoulder to prevent re-contamination of the joint.

Immediately prior to filling and after the joint has been prepared as specified above, both joint faces shall be thoroughly cleaned to a minimum depth of 13 mm using compressed air. The joint

**ITEM 18403.7508 M - FILLING SHOULDER JOINTS BETWEEN PORTLAND CEMENT
CONCRETE PAVEMENT AND ASPHALT CONCRETE SHOULDERS
USING ASTM D3405**

sides shall appear thoroughly clean and dry prior to filling. The Contractor may be ordered to reclean joints if in the opinion of the Engineer adequate cleaning and drying is not being obtained. Final cleaning or recleaning may be performed with the use of a hot air lance. When using a hot air lance, care shall be taken so as not to burn, scorch, or ignite the adjoining pavement. Any joints not filled the same day shall be recleaned prior to filling. The Contractor shall be responsible for protecting traffic and property from hazard or damage during the joint cleaning operation. Materials and methods used for this purpose will be subject to the approval of the Engineer.

The filler shall be heated in a melter constructed either as a double boiler with the space between inner and outer shells filled with heat-transfer medium, or with internal tubes or coils carrying the filler through a heated oil bath and into a heated double wall hopper. Direct heating shall not be used. The melter shall be capable of maintaining the pouring temperature. The melter shall be equipped with positive temperature controls, and with mechanical agitation or a re-circulation pump capable of assuring a homogeneous blend of the filler. The melter shall have separate thermometers to indicate the temperature of the heat transfer medium and the filler material in the hopper. Before any filling shall commence, the Engineer shall inspect the melter to ascertain the presence and working condition of the thermometers. Under no circumstances will the Engineer permit any filling if thermometers are found to be defective or missing.

Prior to any filling the temperature of the filler shall be measured as it is discharged from the applicator wand. The temperature shall be at least equal to or above the manufacturer's recommended minimum pouring temperature and equal to or below the manufacturer's recommended safe heating temperature. For this purpose, the Contractor shall provide a 20 liter bucket and two (460 mm stem) thermometers. The two thermometers are for cross referencing and to provide a backup should one be lost or damaged. The Contractor shall discharge filler into the 20 liter bucket and the Engineer shall immediately measure the temperature of the filler. The Contractor may submit an alternate method for measuring the discharge temperature for approval by the Engineer.

The discharge hose shall be equipped with a thermostatically controlled heating apparatus or shall be insulated sufficiently to maintain the proper filler pouring temperature. The application wand shall be returned to the machine if it is not thermostatically heat controlled, and the material recirculated as necessary to maintain the proper filler pouring temperature between individual filling operations.

Filler material heated beyond the safe heating temperature shall not be used. Filler material may be reheated or heated in excess of six hours providing the manufacturer's recommendations pertaining to heating and application allow it. If this is done, the melter shall be recharged with fresh material amounting to at least twenty percent of the volume of material remaining in the melter.

**ITEM 18403.7508 M - FILLING SHOULDER JOINTS BETWEEN PORTLAND CEMENT
CONCRETE PAVEMENT AND ASPHALT CONCRETE SHOULDERS
USING ASTM D3405**

If in the opinion of the Engineer, the Contractor displays an inconsistency in ability to perform the joint cleaning or filling operation the Contractor shall cease operations until achieving compliance with the required criteria in a consistent manner.

The filler shall be placed when ambient air temperature is at or above 5°C. Reasonable care should be taken so as not to obliterate pavement markings.

Joints shall be filled by slightly overfilling and using a “V” shaped squeegee or sealing shoe to form a band 100 mm wide and 1.5 mm to 3 mm thick, with tapered edges, centered over the joint. The squeegee shall have a flexible (neoprene type) edge capable of conforming to the pavement surface. During the filling operation, the distance between the filler application wand and the squeegee shall not exceed 600 mm. Traffic shall not be allowed on the filler until it has cured sufficiently to prevent tracking. A low pressure light spray of water may be used to accelerate cooling of the filler. Blotting with fine aggregate will not be allowed. Filler that becomes damaged or that is installed improperly shall be repaired. Damaged or deficient areas shall have the surfaces properly cleaned and new filler installed to the satisfaction of the Engineer at the Contractor's expense.

METHOD OF MEASUREMENT

The quantity to be paid for shall be the actual number of liters of ASTM D3405 corrected to 15°C liters used to complete the work.

No payment will be made for waste material.

BASIS OF PAYMENT

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