

SEALING OF TRANSVERSE EXPANSION JOINTS AND LONGITUDINAL JOINTS IN CONCRETE SURFACE COURSE

Description.

This work shall consist of cleaning and sealing, with hot-poured rubber asphalt joint sealer, transverse expansion joints and longitudinal joints in the existing portland cement concrete surface course.

Materials.

Joint sealer shall be a hot-poured sealant conforming to Subsections 908.02, 908.06 and 908.07

The backup material (backer rod) which will be installed prior to the joint sealer, shall be a cross-linked, closed cell polyethylene foam material, non-absorbent and capable of with-standing the temperatures inherent to hot-applied rubber asphalt sealers. The width of the backer rod shall be at least 25 percent greater than the width of the pavement joint and, when placed in the joint, shall be capable of supporting the joint sealer at the proper depth, prevent joint sealer from passing the backer rod and allow the joint sealer to perform freely as the joint expands and contracts.

The backup material (backer rod) shall be clean, free of dirt, oil and moisture and shall conform to the following:

<u>PROPERTY</u>	<u>NOMINAL VALUE</u>	<u>TEST METHOD</u>
Density	40 kg/m ³	ASTM D-1622
Tensile strength	0.17 megapascals.	ASTM D-1623
Water absorption	0.5% by volume	ASTM C-509
Compression		
Deflection	25 % at 0.055 megapascals	ASTM D-1621

Equipment.

Sealing equipment shall consist of a kettle or melter and applicator wand. The melter shall be constructed as a double boiler, with the space between the inner and outer shells filled with oil or other heat transfer medium. The melter 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 the placing operation. Pouring pots or similar devices shall not be used to fill sawed joints.

The compressor for air blowing shall filter moisture and oil from the air, and shall deliver air at a minimum of 3.5 cubic meters per minute and develop at least 0.60 megapascals nozzle pressure.

Construction Requirements.

Joints to be sealed shall be cleaned to a depth of at least 50 millimeters by use of a rectangular plow, a diamond blade saw, a compressed airjet nozzle or other suitable equipment. All joint material, incompressibles, rubble and other extraneous materials present in the joint, or adhering to the face of the adjacent concrete slabs, shall be removed.

After the joint has been prepared, as specified above, the both faces of the joint shall be cleaned by either high pressure (nominal 55 megapascals) water blasting or sandblasting to the depth of the bottom of the proposed sealer, leaving both faces of the joint clean and free of existing joint sealer and other contaminants.

The joint and both faces of the adjacent slabs shall be cleaned and dried by air blowing just prior to the sealing operation.

The backup material (backer rod) shall be installed only in transverse expansion joints and shall be installed at a depth equal to the joint width plus 6 to 3 millimeters for the recess. The backer rod shall be installed by a doublewheeled steel roller without stretching or puncturing the backup material.

The sealant shall be cut into small pieces to facilitate uniform melting and shall be melted slowly, with constant agitation.

Pouring shall be done in such a manner that the sealant will not be spilled on adjacent pavement surfaces. material spilled on the pavement surface shall be immediately removed.

The application temperature of the joint sealant should be approximately 145 degrees C, or 5 degrees C. below the manufacturer's safe heating temperature. The ambient temperature at the time of application shall be at least 5 degrees C or above.

The first four liters of material to flow from the applicator wand shall be considered as unusable and shall be discarded into a designated container and disposed of.

Joints are to be sealed to an elevation of 6 millimeters below the adjacent pavement surface. If the material subsides to a lower elevation an additional pouring will be required. When more than one pouring is required, the pourings shall be done immediately after shrinkage of the previous pouring. Overfilling of the joint shall be avoided. Joints which are filled to an elevation less than 3 millimeters below the surface of the upstream slab shall have the sealant removed for the full slab width and full seal depth, and be thoroughly cleaned and resealed, as specified above. This removal of joint material, cleaning and resealing shall be performed the same day as the joint overfilling occurs.

No traffic or construction equipment will be permitted to cross the newly sealed joints for at least one hour, or as specified by the sealer manufacturer's recommendations, except as approved by the Engineer.

Method of Measurement.

Sealing of transverse expansion joints in concrete surface course will be measured by the linear meter.

Sealing of longitudinal joints in concrete surface course will be measured by the linear meter.

Basis of Payment.

Payment will be made under:

<i>Pay Item</i>	<i>Pay Unit</i>
SEALING OF TRANSVERSE EXPANSION JOINTS IN CONCRETE SURFACE COURSE	LINEAR METER
SEALING OF LONGITUDINAL JOINTS IN CONCRETE SURFACE COURSE	LINEAR METER

Separate payment will not be made for joints resealed at the direction of the Engineer due to damage or improper installation.