

ITEM 18502.701002 M - RESEALING TRANSVERSE JOINTS IN PORTLAND CEMENT  
CONCRETE PAVEMENT, 19 m PAVEMENT SLABS - SILICONE SEALANT  
ITEM 18502.702002 M - RESEALING TRANSVERSE JOINTS IN PORTLAND CEMENT  
CONCRETE PAVEMENT, 6 m PAVEMENT SLABS - SILICONE SEALANT

DESCRIPTION

This work shall consist of cleaning and sealing transverse joints in existing portland cement concrete pavement. Joints not having adequate reservoir width or depth shall be sawed to suitable dimensions in accordance with this specification.

MATERIALS REQUIREMENT

**Silicone Joint Sealant:** The sealant shall be a one part, low modulus silicone formulation that has dynamic movement capability of  $\pm 50\%$  of the joint width. Primer shall be used in conjunction with the silicone sealant if required by the manufacturer. Each container shall be legibly marked with the following information:

Manufacturer's Name  
Trade Name of the Sealant  
Manufacturer's lot or batch number

**Backer Rod Material:** Backer rod material shall be closed cell polyethylene foam rod.

Backer rod diameter shall be a minimum of 25% larger than the joint width, it shall: support the sealant at its proper depth, prevent the sealant from leaking around and underneath it, and allow the sealant to deform freely when the joint expands and contracts.

BASIS OF ACCEPTANCE

Silicone joint sealants shall be accepted on the basis of the brand name labeled on the container and appearing on the current Approved List titled "Silicone Joint Sealants." The Department reserves the right to conduct supplementary sampling and testing.

CONSTRUCTION DETAILS

**General:** The Contractor shall seal transverse pavement joints in accordance with the requirements of this specification. Minimum required reservoir and sealant dimensions are contained in Table I. Transverse joints that measure less than the minimum widths or have inadequate reservoir depths shall be sawed to a suitable width and depth.

All pavement repairs including the cleaning and sealing of cracks which border pavement joints must be completed prior to the joint sealing operation.

**Seasonal and Temperature Limitations:** Joint sealant shall not be placed when pavement or ambient temperatures fall below 4°C or when the pavement is wet.

**Initial Joint Preparation and Cleaning:** Existing joint sealing material, asphalt, incompressibles and any other material present in the joint reservoir or adhering to the joint wall shall be removed by plow, saw, wire brush, high pressure air or other suitable tools approved by the Engineer to the bottom of the existing joint reservoir. The material and debris removed from the joint shall be removed from the pavement to prevent re-contamination of the joint. Removal of liquid joint sealant from the joint may require running a saw along each joint face to adequately remove all existing joint sealer.

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Removal of existing joint sealers shall be scheduled so that no joints are open more than 10 days prior to sealing. After September 30, the Engineer may at his discretion further limit the amount of existing sealer to be removed to avoid open joints through the winter.

The Contractor shall be responsible for protecting traffic and property from hazard or damage during all joint cleaning operations. Materials and methods used for this purpose will be subject to the approval of the Engineer.

**Sawing of Joints:** Any transverse joint that does not exhibit adequate depth or width as shown on Table I shall be sawed to suitable dimensions in order that proper sealant dimension, sealant recess, and backer rod placement can be achieved. If the joint is faulted the Contractor shall determine joint reservoir depth and width by taking measurements from the top edge of the dropped slab. The sawing shall produce vertical and parallel joint faces. The existing joint dimensions, amount of slab faulting, amount of pavement grinding and time of year joints are sealed, will determine the amount of joint sawing required.

Immediately after sawing the joint, the resulting slurry shall be completely removed from the joint and the immediate area by flushing with a jet of water under pressure and by the use of other tools as necessary.

**Final Joint Preparation and Cleaning:** Immediately prior to the placement of the backer rod and sealant, both joint faces shall be thoroughly cleaned to the bottom of the new joint reservoir, by sandblasting. The operator of the sandblaster shall tip the nozzle of the equipment so that the blast material is directed against one wall at a time. The joint walls shall be thoroughly clean and indicate a uniform minor abrasion of the wall surface. All joints are to be sandblasted. The joints shall then be blown with a compressed air stream of sufficient power to remove any remaining blast sand, dirt and loose material. Suitable traps or devices shall be installed on the air equipment to prevent moisture and oil from contaminating the joint surfaces. Any joints not sealed the same day shall be recleaned and resandblasted prior to sealing.

**Sealing:** The proper diameter and type of backer rod shall be installed in a manner that will produce the sealant dimensions specified. The joints shall be thoroughly dry and clean at the time of sealing.

Primer, if required by the manufacturer of the material, shall be applied to the joint faces in a thin film by brush or spray equipment. The primer shall completely wet the surfaces to be sealed and shall dry tack free prior to installation of the backer rod.

Sealant shall be pumped directly from plastic pails or drums by compressed air powered extrusion pumps designed for moisture curing silicone sealants. Teflon seals and packing and teflon lined hoses are recommended to prevent moisture permeation. Sealant application nozzles should be designed so that sealant is applied within the confines of the joint slot. The sealant shall be applied so that it is below the surface of the slab and completely fills the width of the joint. Immediately after the sealant is applied, it shall be tooled to form a concave surface, provide firm contact with the joint faces and to form the required recess below the slab surface.

Traffic may be allowed over the sealed areas as soon as the Engineer determines that the sealant has cured sufficiently to prevent tracking. If rocking or vertical deflection due to vertical loads is expected the sealant shall be allowed to cure for 2 hours or more, as ordered by the Engineer.

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Sealant that becomes damaged, is not properly bonded to the concrete, or that is installed improperly shall be repaired. Damaged or deficient areas shall have the sealant removed, the surfaces properly cleaned, and new sealant installed to the satisfaction of the Engineer at the Contractor's expense.

METHOD OF MEASUREMENT

This work shall be measured by the number of linear meters of joints sealed.

BASIS OF PAYMENT

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

**TABLE I  
JOINT AND SEALANT DIMENSIONS**

<b>Joint Width W (mm)</b>	<b>(Minimum) d (mm)</b>	<b>a (mm)</b>	<b>b (mm)</b>
10*	29	6-10	6-10
13	32	6-10	6-10
16**	35	6-10	6-10
19	41	9-13	6-10
22	45	9-13	9-13
25	50	9-13	9-13
25+	50+	13-16	9-13
* Minimum width for 6m slabs			
** Minimum width for 19m slabs			

