

**STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENTAL SPECIFICATION 801  
CRACK AND JOINT CLEANING AND SEALING  
WITH SILICONE SEALANT**

**October 30, 2003**

**801.01 Description**

**801.02 Materials**

**801.03 Equipment**

**801.04 Construction**

**801.05 Method of Measurement**

**801.06 Basis of Payment**

**801.01 Description.** This work shall consist of sawing and cleaning existing transverse and longitudinal joints or routing and cleaning existing random cracks in portland cement concrete pavement and sealing the prepared cracks or joints with an approved one-part silicone sealant.

**801.02 Materials.** The sealant will be a one part silicone formulation which does not require a primer for bond to concrete. The sealant will be applied with a pressure applicator that forces it into the joint.

The backer rod will be an expanded, closed cell polyethylene foam. The backer rod will be approximately 25 percent larger in diameter than the width of the joint or crack to be sealed. Other backup materials (paper, rope and open cell foam) are not acceptable.

The backer rod will be compatible with the sealant, and no bond or reaction will occur between the backer rod and sealant.

The silicone sealant will conform to ASTM D5893. Only use silicone sealants from the Department's Qualified Products List.

All materials shall be prequalified by the Laboratory.

Material shall not be used after 9 months from the date of shipment from the manufacturer. Joint sealant shall be delivered to the job at least 2 weeks prior to the intended use.

Foam backer rod will be accepted by a letter of compliance.

**801.03 Equipment.** Routing equipment, where required, shall be mechanical and power driven, capable of following the path of the cracks and of widening the cracks to the dimensions in Attachment A without causing spalling or damage to the adjacent concrete.

Sawing equipment, where required, shall be power driven (wet or dry) capable of sawing the sealant reservoir to the dimensions shown in Attachment A.

Water cleaning equipment shall be capable of delivering water with a pressure of 2,000 psi (14MPa) from a nozzle to the crack or joint being cleaned, to remove existing joint sealer, debris and loose material from the crack or joint.

Abrasive blast equipment shall be capable of removing the existing sealant, saw slurry, slit or other foreign material from the vertical face of the crack or joint the specified depth, leaving a clean, newly exposed concrete surface.

The sealant shall be installed with an applicator having a built-in grooving tool. The sealant shall be installed by pushing the seal ahead into the joint as opposed to pulling or dragging, to ensure complete adhesion to the sides of the joint. The silicone shall be tooled against the joint walls as it is pumped into the joint. separate tools for application and grooving will not be permitted, unless it is demonstrated to the satisfaction of the Engineer that acceptable results can be produced.

Air compressors shall be capable of furnishing not less than 100 psi (700 kPa) air pressure at the nozzle. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water

**801.04 Construction.** Routing and sealing shall be considered only for cracks that are open wide enough to permit the entry of sealant or mechanical routing tools. Tightly closed cracks that do not show signs of spalling shall not be routed or sealed. Joints or cracks greater than 1 inch(25 mm) in width shall not be sealed.

Both vertical faces of the joint or cracks which are to receive the new sealant shall be completely free of dirt; dust; tar and asphalt; discoloration and stain; as well as any other forms of contamination, leaving a clean, dry, newly exposed concrete surface. Class I, III and V joints of cracks shall be cleaned by abrasive blasting to the bottom of the proposed sealant. Class I, III and V joints or cracks shall be cleaned by abrasive blasting to the bottom of the proposed sealant, Class II, IV and VI joints or cracks shall be cleaned by waterblasting and by abrasive blasting to the bottom of the proposed sealant. Joints or cracks cleaned by waterblasting shall be dry prior to abrasive blasting. Compressed air may be used in lieu of waterblasting to clean Class II cracks. Compressed air shall be used to remove the abrasive residue prior to sealing the joint and crack.

No sealant shall be placed unless the temperature of the air and the pavement is 40oF (5o C) or higher.

No traffic shall be allowed over the sealed joint until adequate curing has been accomplished.

Cracks and joints shall be dry and blown clean with compressed air prior to placing the backer rod and joint sealer. Cracks and joints shall be filled to the level shown in Attachment A.

Sealer material shall be handled and applied according to the manufacturer's recommendations.

The top of the freshly placed sealant shall be  $1/4 + 1/16$  inch (6 + 2 mm) below the pavement surface. Sealant shall not be applied or spilled on the surface of the pavement.

The following classes of cracks and joints are detailed in Attachment A.

Class I Cracks. Random cracks which have an opening of less than  $3/8$ " inch (10 mm) shall be routed to provide a sealer reservoir as shown in Attachment A. Sides of the sealer reservoir shall be near vertical and abrasive blasted clean.

Class II Cracks. Random cracks which have an opening of  $3/8$ " inch (10 mm) or greater will not require routing. They shall be thoroughly cleaned with waterblasting or compressed air, followed by abrasive blasting to a nominal depth of one inch (25 mm).

Class III Transverse Joints. Existing joints which have an opening of less than  $3/8$  inch (10 mm) shall be sawed (wet or dry) to provide a sealer reservoir as shown in Attachment A.

Class IV Transverse Joints. Existing joints which have an opening of  $3/8$  inch (10 mm) or greater will not require sawing. The existing joint sealer shall be removed by waterblasting or other methods approved by the Engineer, followed by abrasive blasting to a nominal depth of one inch (25 mm).

Class V Longitudinal Joints. Existing joints which have an opening of less than  $1/4$  inch (6 mm) shall be sawed (wet or dry) to provide a sealer reservoir as shown in Attachment A and abrasive blasted clean.

Class VI Longitudinal Joints. Existing joints which have a joint opening a  $1/4$  inch (6 mm) or greater will not require sawing. The existing joint sealer shall be removed by water blasting or other methods approved by the Engineer, followed by abrasive blasting to a nominal depth of one inch (25 mm).

**801.05 Method of Measurement.** Class I cracks will be measured by the foot (meter) of cracks, routed, cleaned by abrasive blasting, sealed and accepted.

Class II cracks will be measured by the foot (meter) of cracks, cleaned by water and abrasive blasting, sealed and accepted.

Class III and V joints will be measured by the foot (meter) of joints, sawed, cleaned, by abrasive blasting, sealed and accepted.

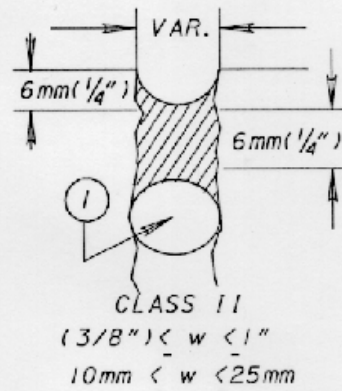
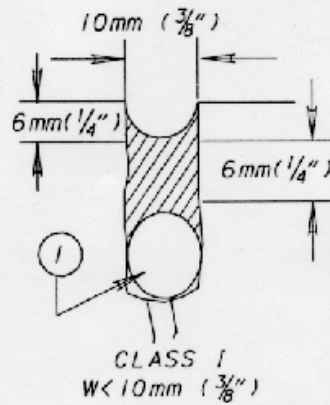
Class IV and VI joints will be measured by the foot (meter) of joints, cleaned by water and abrasive blasting, sealed and accepted.

**801.06 Basis of Payment.** Payment for accepted quantities will be made at the contract price for:

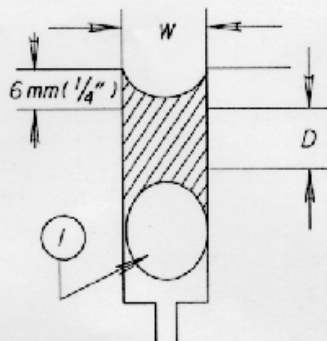
| <b>Item</b> | <b>Unit</b>  | <b>Description</b>                             |
|-------------|--------------|------------------------------------------------|
| 801         | Foot (Meter) | Crack sealing, Class I, Silicone               |
| 801         | Foot (Meter) | Crack sealing, Class II, Silicone              |
| 801         | Foot (Meter) | Transverse joint sealing, Class III Silicone   |
| 801         | Foot (Meter) | Transverse joint sealing, Class IV, Silicone   |
| 801         | Foot (Meter) | Longitudinal joint sealing, Class V, Silicone  |
| 801         | Foot (Meter) | Longitudinal joint sealing, Class VI, Silicone |

SUPPLEMENTAL SPECIFICATION 801

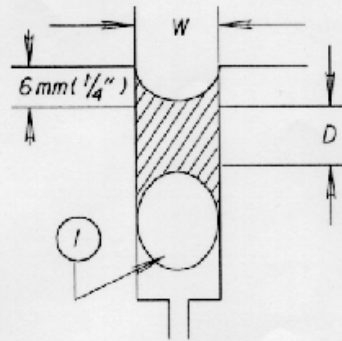
CRACK DETAILS



JOINT DETAILS



CLASS V LONGITUDINAL  
 $W = 6\text{mm } \frac{1}{4}\text{'}$ ,  $D = 6\text{mm } \frac{1}{4}\text{'}$



CLASS VI LONGITUDINAL  
 $W > 6\text{mm } (\frac{1}{4}\text{'})$ ,  $D = 6\text{mm } (\frac{1}{4}\text{'})$

① BACKER ROD, APPROXIMATELY 25% LARGER THAN CRACK OR JOINT

SILICONE SEALANT  
 FOR  
 CONCRETE PAVEMENT