

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION OF 1990**

NOTE: This special provision is generally written in the imperative mood. The subject, "the *Contractor*" is implied. Also implied in this language are "*shall*", "*shall be*", or similar words and phrases. The word "*will*" generally pertains to decisions or actions of the Kansas Department of Transportation.

Add a new Section to Division 800

DIVISION 800

SEALING JOINTS AND CRACKS

1.0 DESCRIPTION.

Concrete Pavement: Re-saw the longitudinal and transverse joints, and saw or rout the random cracks in the PCCP at the locations designated by the Engineer. Clean and fill the sawed (or routed) joints and cracks with hot type joint sealing compound.

Bituminous Pavement and Concrete Pavement with Spalled Joints and Cracks: Prepare the existing cracks and joints at the locations designated by the Engineer. Fill the cracks and joints with the specified materials.

Bituminous Shoulder Adjacent to Concrete Pavement: Clean the existing longitudinal joint between PCCP and bituminous shoulder at the locations designated by the Engineer. Fill the joint with hot fiber-reinforced asphalt.

BID ITEM	UNIT
Sealing PCCP Joints (Longitudinal)	linear foot
Sealing PCCP Joints (Transverse)	linear foot
Sealing PCCP Cracks ($>1/8"$ $<2"$)	linear foot
Sealing Spalled PCCP Joints & Cracks ($>2"$ $\leq 3"$)	linear foot
Sealing Spalled PCCP Joints & Cracks, Type A or B ($>2"$ $\leq 3"$)	linear foot
Sealing Bituminous Cracks ($>1/8"$ $\leq 3/8"$)	linear foot
Sealing Bituminous Cracks ($>3/8"$ $<2"$)	linear foot
Sealing Longitudinal Bituminous Shoulder Joint	linear foot

2.0 MATERIALS.

a. Hot Type Joint Sealing Compound. If required, provide hot type joint sealing compound that complies with the requirements of **Section 1500 (Special Provision 90P-192, latest revision)**. If required, provide backer rod intended for use with the hot type joint sealing compound.

b. Fiber-Reinforced Asphalt. If required, provide a mixture of performance graded asphalt binder and polypropylene fibers. Provide a mixture that has not less than 8 percent fiber content by mass.

Provide PG 64-22 asphalt binder that complies with the requirements of **Section 1200 (Special Provision 90P-196)**, latest revision).

Provide polypropylene fibers suitable for the intended use that have a denier of 15 ± 3 . The Engineer will accept the polypropylene fibers based on a Type D Certification according to the requirements of **Section 2600** of the **Standard Specifications**, and visual inspection of the mixture.

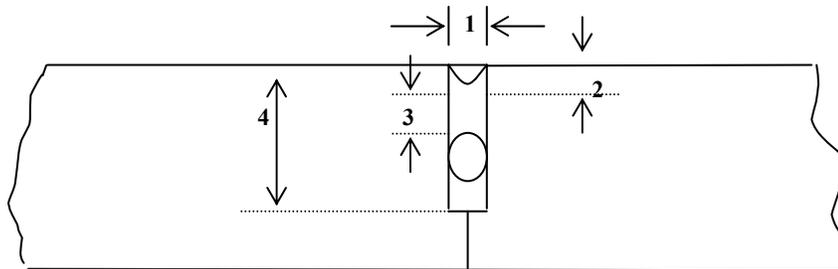
c. Rapid-Set Concrete Patching Material. If required, provide rapid-set concrete patching material that complies with the requirements of **Section 1700 (Special Provision 90P-252)**, latest revision). Provide foam core backer board intended for use with the rapid-set concrete patching material.

3.0 CONSTRUCTION REQUIREMENTS.

a. Concrete Pavement, Joints and Cracks.

(1) Transverse Joints. Saw the existing transverse joints with a saw blade wide enough to clean both surfaces of the cut of all existing sealant. Configure the **transverse joints** according to these details:

PCCP Sawed Transverse Joint Detail



1 Joint Width	2 Recess Below Surface	3 Sealant Thickness	Backer Rod Diameter	4 Total Joint Depth
1/4"	1/8" to 1/4"	3/8"	3/8"	1"
3/8"	1/8" to 1/4"	3/8"	1/2"	1 1/8"
1/2"	1/8" to 1/4"	3/8"	5/8"	1 1/4"
5/8"	1/8" to 1/4"	1/2"	3/4"	1 1/2"
3/4"	1/8" to 1/4"	1/2"	7/8"	1 5/8"
7/8"	1/8" to 1/4"	1/2"	1"	1 3/4"
1"	1/8" to 1/4"	1/2"	1 1/8"	1 7/8"
2"	1/8" to 1/4"	1"	2 1/2"	3 5/8"

All dimensions in the Table are nominal.

Clean, and fill the transverse joints according to **subsections 502.03(h)(7.3)&(8.0)**. Fill the transverse joints with a hot type joint sealing compound.

(2) Longitudinal Joints and Random Cracks. Saw the existing longitudinal joints with a saw blade wide enough to clean both surfaces of the cut of all existing sealant. Rout or saw random cracks greater than 1/8 inch wide with a blade wide enough to produce a cut on each side of the crack. Rout or saw random cracks to a uniform width the full length of the crack. Configure the longitudinal joints and random cracks to the width in column 1 in the table above, with the depth equal to the width plus 1/8 to 1/4 inch.

Clean, and fill the longitudinal joints and random cracks according to **subsections 502.03(h)(7.3)&(8.0)**. Fill the longitudinal joints and random cracks with a hot type joint sealing

compound. Fill the reservoir with sealant to within $\frac{1}{8}$ to $\frac{1}{4}$ inch of the surface. Do not use backer rods in the longitudinal joints and random cracks.

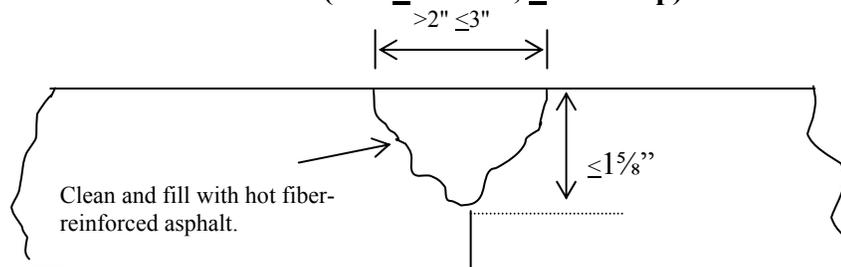
b. Concrete Pavement, Spalled Joints and Cracks. Clean the full depth of the spalled joints and cracks. Remove all foreign material that will prevent bonding of the sealant. Clean the joints and cracks by sandblasting. Remove loose material on the surface immediately adjacent to the joints and cracks.

Do not seal PCCP spalled joints or cracks greater than 3 inches wide.

If the PCCP joints and cracks are 3 inches, or less, wide and $1\frac{5}{8}$ inches, or less, deep, fill the joints and cracks with hot fiber-reinforced asphalt. Fill the joints and cracks to a level slightly recessed from the pavement surface.

Sealing PCCP, Spalled Joints and Cracks

($>2'' \leq 3''$ wide, $\leq 1\frac{5}{8}''$ deep)

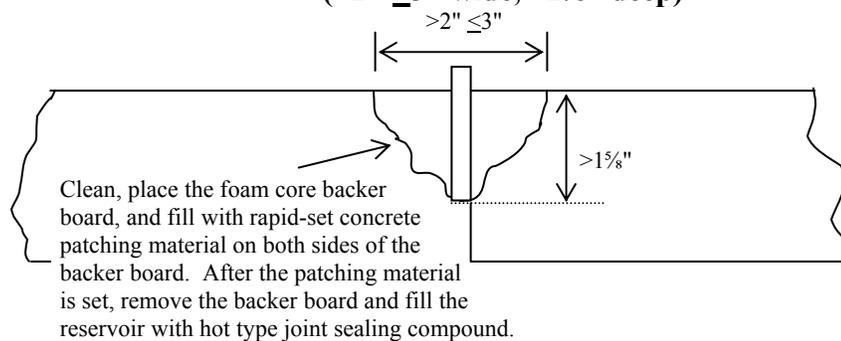


If the PCCP joints and cracks are 3 inches, or less, wide and greater than $1\frac{5}{8}$ inches deep, use either the Type A option or the Type B option to fill the joints and cracks:

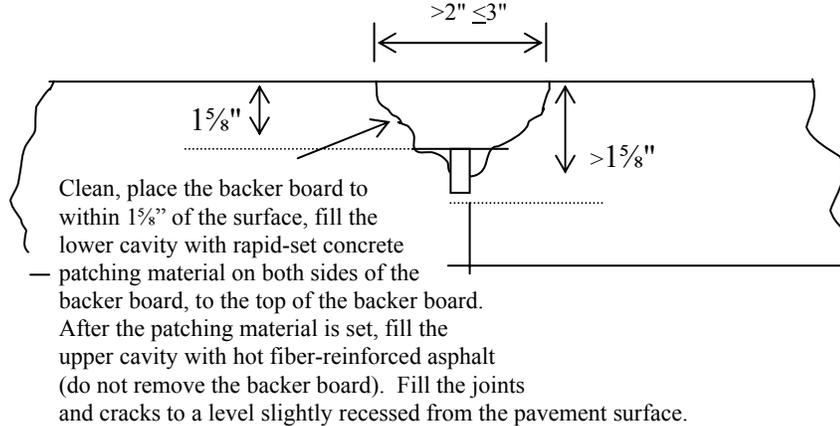
Type A

Sealing PCCP, Spalled Joints and Cracks

($>2'' \leq 3''$ wide, $> 1\frac{5}{8}''$ deep)



Type B
Sealing PCCP, Spalled Joints and Cracks
 (>2" ≤3" wide, >1½" deep)



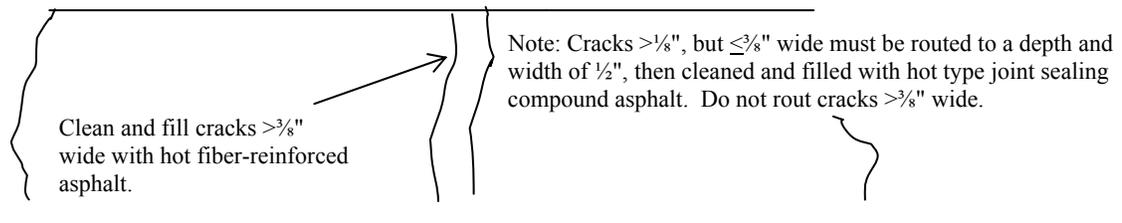
c. Bituminous Pavement, Cracks. Limit the sealing of cracks in bituminous pavement to the ones that are open enough to permit entry of the sealant. Do not seal cracks less than 1/8 inch wide. Do not seal cracks wider than 2 inches.

Rout all the cracks that are 1/8 to 3/8 inch wide. Following the existing crack, rout the cracks to a width and depth of 1/2 inch. Cracks wider than 3/8 inch do not require routing.

Clean the full depth of the cracks. Remove all foreign material that will prevent bonding of the sealant. Remove loose material on the surface immediately adjacent to the joints and cracks. Clean and dry the cracks with a heat lance. Do not burn the pavement (indicated by smoke) with the heat lance.

Fill the routed cracks with hot type joint sealing compound. Fill cracks wider than 10 mm with hot fiber-reinforced asphalt. Fill the cracks to a level slightly recessed from the pavement surface.

Sealing Bituminous Pavement Cracks (>1/8" <2")



d. Bituminous Shoulder Adjacent to Concrete Pavement. Clean the joints as required in subsections 502.03(h)(8.1)&(8.2). Fill the joint with hot fiber-reinforced asphalt. Fill the joint with sealant to within 1/8 to 1/4 inch of the surface. Do not use backer rods in the joints.

e. Traffic Control. For all types of work furnish all traffic control devices to effectively control traffic in accordance with the Standard Specifications, Traffic Control Standard Plan Sheets and MUTCD. Submit the traffic control plans to the Engineer for approval before commencing any work. Perform the work without closing the road to through traffic. Maintain traffic on at least 1 lane at all times.

f. Equipment.

(1) Air Compressor. Use an air compressor with a minimum capacity of 100 cubic feet per minute at 90 psi with a $\frac{5}{8}$ inch hose (minimum). Use oil-free compressed air.

(2) Applicator. For concrete pavement, use an applicator head that completely fills the joints and cracks.

For bituminous pavement, use an applicator head that completely fills the cracks.

(3) Heating Pot. Prepare the material in a heating pot (400 gallon minimum capacity) equipped with an agitator that will provide a proper mixing pattern to keep a consistent percent of fiber and maintain the heat distribution throughout the pot. Use equipment recommended by the sealant manufacturer.

(4) Heat Lance. Use a heat lance manufactured by SEAL-ALL, L.A. HEAT LANCE, or another brand approved by the Engineer.

g. Manufacturer's Representative. Notify the sealant manufacturer's technical representative of the starting date of the initial installation. Demonstrate competence in applying sealant to the Engineer and the manufacturer's representative. Operations and procedures considered detrimental by the Engineer are not permitted.

This requirement will be waived for experienced contractors. Submit your waiver request, along with a list of successfully completed joint and crack sealing projects, to the Engineer for consideration.

h. Preparation of Asphalt for Crack Sealing. Heat the material to the temperature recommended by the manufacturer.

i. Weather Limitations. Do not place sealant when the ambient air temperature is below 40°F or above 105°F.

4.0 MEASUREMENT AND PAYMENT.

The Engineer will measure the completed and accepted sealing of joints and random cracks by the linear foot (to the nearest lin. ft.) along the center of the joint or crack.

Payment for "Sealing PCCP Joints (Longitudinal)," "Sealing PCCP Joints (Transverse)," "Sealing PCCP Cracks," "Sealing Bituminous Cracks," "Sealing Spalled PCCP Joints and Cracks," "Sealing Spalled PCCP Joints and Cracks, Type A or B," and "Sealing Longitudinal Bituminous Shoulder Joint" at the Contract unit price is full compensation for the specified work.

07-19-04 M&R(SP) (AJG)