

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

SECTION 300

**CRACKING AND SEATING
PLAIN PORTLAND CEMENT CONCRETE PAVEMENT**

1.0 DESCRIPTION.

This work shall consist of cracking and seating existing plain (non-reinforced) Portland cement concrete pavement for full depth and full panel width. The desired product is a pavement with tight cracks that permits load transfer across the crack through aggregate interlock with little loss of structural value. All work shall comply with the Plans and the Standard Specifications except specifically superseded herein.

BID ITEMS

Cracked and Seated Concrete
Crushed Stone for Backfill
Removal of Bituminous Material

2.0 CONSTRUCTION REQUIREMENTS.

(a) General.

The Contractor shall exercise care during cracking and seating to protect, and prevent damage to underground utilities and drainage facilities.

(b) Cracking the PCC Pavement.

(1) Size Requirements.

The existing PCC pavement shall be cracked such that the majority of the surface material shall be generally of 600 mm size or smaller, with no more than 20% of the material larger than 600 mm, and no individual fragments larger than 750 mm.

The extent of the breakage will be based on cracks visible to the unaided normal vision when the pavement surface is dry.

Cracking should be accomplished in a manner that will produce the desired breakage without displacing the concrete more than ± 12 mm vertically (before rolling).

The Contractor shall continuously monitor the cracking operation, and shall make adjustments in the striking pattern, striking energy, number of passes, or other factors as necessary to continually achieve acceptable cracking throughout the project.

All asphaltic material, in the form of overlays or patches, must be removed prior to the cracking of the PCCP. Asphaltic patches will be replaced with crushed stone for backfill.

(2) Equipment.

Cracking shall be accomplished with an impact hammer or other suitable equipment which cracks the pavement into the required sizes without displacing the cracked material into the base or subgrade. The hammer shall be capable of delivering such energy as may be necessary to satisfactorily crack the pavement. The breaker shall be equipped with a plate-type shoe designed to prevent penetration into the existing surface. Other methods and equipment may be used when authorized by the Engineer. A shield satisfactory to the Engineer shall be provided to protect vehicles in the adjacent lane from flying chips during the fracturing process when necessary.

(3) Test Section.

Before cracking operations begin, the Engineer will designate a test section. The Contractor shall crack the test section using varying energy and striking patterns and, if necessary, repeated passes of the equipment over the pavement until the test section is acceptably cracked as specified in paragraph (b)(1). The extent of cracking of the test section shall be used as a guide for cracking the pavement on the remainder of the project. The Engineer may require additional test sections any time during the course of the work that the size requirements are not met. See section (d)(2) for establishment of a rolling procedure.

(c) Grader Patching of Cracked PCC Pavement.

The Engineer may require grader patching to be performed directly on the cracked pavement at specific locations where a substantial amount of leveling is deemed necessary and only one lift of asphaltic concrete base will be used. Where two or more courses of asphaltic concrete base is called for, leveling should take place in the form of wedges on top of the first course of asphaltic concrete. If aggregate is used in the leveling process, Crushed Stone for Backfill should be used.

(d) Seating of Cracked PCC Pavement.

(1) Roller Requirements.

After cracking, the concrete shall be seated by rolling with a pneumatic-tire roller containing 30 to 45 metric tons of mass. The roller shall be one of the following types:

* The roller may be a pneumatic tire roller consisting of four (4) rubber-tired wheels equally spaced across the full width and mounted in line on a rigid steel frame in such a manner that all wheels carry equal loads, regardless of surface irregularities. Roller tires shall be capable of satisfactory operation at a minimum inflation pressure of 690 kPa, and tires shall be inflated to the pressure necessary to obtain proper surface contact pressure to satisfactorily seat pavement slabs.

* The roller may be a two-axle self propelled pneumatic-tire roller, providing the roller is equipped with no more than seven (7) tires, and the requirements in the paragraph above concerning tire inflation pressure, surface contact pressure, and gross mass are met.

(2) Seating.

A rolling procedure shall be established while determining the cracking pattern in (b)(3). A rolling pattern shall be used that will ensure that the entire area of the cracked pavement is well seated and is thoroughly and uniformly compacted. However, the rolling shall not result in rutting, pumping, or de-densification of the cracked material.

Any soft spots detected by proof rolling shall be removed and unsuitable material shall be undercut as directed by the Engineer. These areas shall be backfilled and compacted with approved soil to the top of the subgrade. Finish filling and compacting the undercut area to the top of the adjacent cracked concrete with Crushed Stone for Backfill.

(e) Placement of Asphaltic Concrete Base.

The construction sequence herein shall apply unless modifications are approved or directed by the Engineer in writing.

Placing of the asphaltic concrete base shall follow the cracking and seating operation as closely as practicable and, in no case, shall the cracked pavement remain exposed more than 24 hours unless otherwise approved by the Engineer. If this 24 hour requirement is not met, cracking operations shall be suspended until all cracked pavement has been covered by at least one course of bituminous concrete base. Traffic will not be allowed on the roadway until at least 100 millimeters of bituminous material is placed on the cracked surface. The use of a tack coat will be required on a cracked PCCP base at a rate of not less than 0.90 L/m².

3.0 METHOD OF MEASUREMENT.

The area of cracked and seated Portland cement concrete pavement will be measured in square meter. The width will be the actual width of the existing Portland cement pavement and the length will be measured horizontally along the centerline of each roadway or ramp.

Crushed stone for Backfill shall be measured by the metric ton or cubic yard of crushed stone in the vehicle at the time and place of unloading or at such point as may be designated by the Engineer. Deductions will be made for all moisture in the material when measurement is by the metric ton.

Removal of Bituminous Material shall be measured by the square meter removed from the existing concrete pavement. This includes any full depth bituminous patches.

4.0 BASIS OF PAYMENT.

The amount of completed and accepted work, measured as provided above, shall be paid for at the Contract unit price per square meter for "Cracked and Seated Concrete" and "Removal of Bituminous Material", and per metric ton or cubic meter for "Crushed Stone for Backfill", which price shall be full compensation for furnishing all labor, equipment, materials and incidentals necessary to acceptably crack and seat the existing Portland cement concrete pavement and suppress the dust until the base is placed.

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