305-R-431 CEMENT CONCRETE PAVEMENT CRACKING AND SEATING

(Revised 07-20-06)

The Standard Specifications are revised as follows:

SECTION 305, AFTER LINE 14, INSERT AS FOLLOWS:

Coarse Aggregate, Class B or Higher, Size No. 11 .....*904*
Coarse Aggregate, Class D or Higher, Size No. 53 904
Coarse Aggregate, Class D or Higher, Size No. 73 904
Epoxy Coated Reinforcing Bars.....*910.01(b)9*

SECTION 305, AFTER LINE 115, INSERT AS FOLLOWS:

(e) Cement Concrete Pavement Cracking and Seating

The existing pavement shall be cracked with an impact hammer capable of delivering sufficient energy across a pavement lane to satisfactorily crack the pavement as described below. The hammer shall be designed to prevent penetration into or spalling of the existing surface. The cracked pavement shall be seated with a pneumatic-tire roller.

Subsurface drains shall be installed along the edges of pavement in accordance with 718 prior to cutting transverse relief joints.

At least 24 hours prior to the cracking operation, relief joints of 3 to 4 in. (75 to 100 mm) width shall be cut at approximately 1,500 ft (450 m) to 2,000 ft (600 m). The first relief joint shall be located at the beginning of the project and the last relief joint shall be located at the end of the project. The relief joints shall be located in pavement areas that are in sound condition. They shall be cut at the midpoint of two adjacent joints and shall extend across the entire pavement width. The device used to cut the relief joints shall not leave a smooth face on the sides of the relief joint. The relief joint cut shall extend through the concrete pavement, and a maximum of 2 in. (50 mm) into the subbase.

The existing concrete pavement shall be cracked to generate full depth, generally transverse, hairline cracks at a nominal longitudinal spacing of 18 to 24 in. (450 to 600 mm). The impact hammer used for cracking shall not strike directly on existing cracks, joints, or D cracked areas, and shall be operated so that the existing crack or joint becomes a part of the desired cracking pattern. The cracking operation shall begin 24 in. (600 mm) from the first relief joint and proceed toward the next relief joint. The cracking operation shall not create a continuous longitudinal crack. If longitudinal cracking occurs the breaker shall be moved to the next relief joint and the direction of the cracking operation shall be reversed to minimize longitudinal cracking.

The height of the impact hammer shall be approximately 24 in. (600 mm). If this height does not crack the pavement or causes destruction or visible damage to the pavement, the 24 in. (600 mm) dimension may be increased or decreased in 2 in. (50 mm) increments until a cracking pattern determined to be satisfactory is obtained. The Contractor shall furnish and apply water to dampen the pavement to enhance the visual determination of the cracking pattern. Flour may be used in lieu of water if it adequately shows the cracking pattern.

The Contractor shall crack the pavement at night when the ambient and pavement temperatures are lower if the proper crack pattern and spacing cannot be achieved during day light hours. The Contractor shall apply water onto a section of pavement a minimum of once each day to verify that the specified crack pattern is being maintained. Additional check sections will be required if cracking problems are encountered. Adjustments shall be made to the energy or striking pattern based on the sections checked or the field conditions.

Once the cracking procedure is completed, the relief joints shall be patched in accordance with 506 except that the coarse aggregate shall be Aggregate No. 11 stone, the cement content shall be a minimum of 752 lb/cu yd (446 kg/m^3), and the Department provided spreadsheet is not required.

Retrofit load transfer in accordance with 507.08 shall be used to provide load transfer at each relief joint location except No. 8 epoxy coated reinforcing bars shall be used in place of dowel bars.

A pneumatic-tire rolling device with a body suitable for ballasting to a minimum gross weight (mass) of 40 t (36 Mg) shall be used to seat the cracked pavement after the relief joints have been completed. The rolling device and ballast shall be weighed at certified scales in the presence of the Engineer. The roller shall have four rubber-tired wheels equally spaced across the lane width and mounted in line on a rigid steel frame such that all wheels carry equal loads, regardless of surface irregularities. Three passes of the pneumatic roller shall be made across the cracked pavement. Ballast loading shall be regulated so as to allow the roller to be emptied for crossing bridge structures or other weight-restrictive features.

HMA operations shall be initiated immediately after completion of the cracking and seating operation. The cracked and seated pavement shall not be exposed for more than 15 calendar days before the initial lift of HMA is completed. The HMA surface material shall be completed on the pavement lanes prior to opening to traffic.

SECTION 305, AFTER LINE 158, INSERT AS FOLLOWS:

Cement concrete pavement cracking and seating will be measured by the square yard (square meter). Saw cutting of relief joints will be measured by the linear foot (meter) of joint cut.

SECTION 305, AFTER LINE 169, INSERT AS FOLLOWS:

Cement concrete pavement cracking and seating will be paid for at the contract unit price per square yard (square meter) complete in place. The cutting of the sawed relief joints will be paid for at the contract unit price for relief joint.

SECTION 305, AFTER LINE 173, INSERT AS FOLLOWS:

Cement Concrete Pavement Cracking and Seating .....SYS (m2)

SECTION 305, AFTER LINE 177, INSERT AS FOLLOWS:

Relief Joint .....LFT (m)

SECTION 305, AFTER LINE 205, INSERT AS FOLLOWS:

The cost of maintaining the cracked and seated pavement in suitable condition for traffic, if required; all labor; equipment; materials; and necessary incidentals shall be included in the cost of cement concrete pavement cracking and seating.