Section 2216. Cracking and Seating PCC Pavement

2216.01 DESCRIPTION.

A. Crack and seat existing PCC pavement prior to HMA resurfacing.

B. Associated work may include removal of an existing HMA overlay if present, subdrain construction, HMA resurfacing, and shoulder work.

2216.02 MATERIALS.

None.

2216.03 CONSTRUCTION.

A. Equipment.

1. Cracking Equipment.
Use equipment capable of producing the desired cracking pattern by providing a broad striking surface. Do not use equipment that punches holes in the pavement or results in excessive spalling of otherwise sound sections. A blade or spade type breaker is recommended and may be required.

2. Seating Equipment.

a. Use a pneumatic rubber tired roller meeting the following requirements:

1) Four rubber tires equally spaced across the full width.

a) The roller tires shall be mounted in line on a rigid steel frame such that all wheels carry equal loads regardless of surface irregularities.

b) The roller tires shall be capable of satisfactory operation at a minimum inflation pressure of 100 psi (700 kPa).

c) The roller tires shall be inflated to the pressure necessary to obtain proper surface contact pressure to satisfactorily seat pavement slabs.

d) At the Contractor's option, the roller tires may contain liquid.

2) Weight body suitable for ballasting to a gross load of 50 tons (45 Mg). The ballast shall allow gross roller weight (mass) to be readily determined and controlled to maintain a gross roller weight (mass) of 50 tons (45 Mg).

b. Tow the roller with a rubber tired prime mover.

3. Other Equipment.

a. Equipment that provides a means to dampen cracked pavement with water.

b. Equipment that provides compressed air with 100 psi (700 kPa).

c. Rotary broom described in Article 2001.14.

d. Various hand tools as needed.

B. Removal of Existing Asphalt Overlay.

1. Before cracking, remove all asphalt and other bituminous material existing on the pavement surface from the area to be cracked. Perform removal using a continuous operation. Remove to the underlying PCC pavement and according to the requirements of Section 2214, excluding Article 2214.03, D. Removal of full depth patches is not required.

2. Remove foamed material in existing pressure relief joints prior to removal of the HMA overlay.

3. Scarify to the full width of the lane, with a runout at the end, before the lane is opened to public traffic. Plan and complete scarification to leave no vertical drop-off at the center line or lane line overnight. Where an overnight drop-off results from unforeseen conditions, sign the approaches with a ROAD WORK AHEAD sign. Mark the drop-off with vertical panels. Place the panels at 150 foot (45 meter) intervals in rural areas and at 50 foot (15 m) intervals in urban areas. Use a minimum of three vertical panels at each drop-off location.

4. Additional scarification of the existing PCC pavement may be required at bridge approaches and other fixed objects, as designated in the contract documents.

C. Pavement Cracking.

1. Crack the existing PCC pavement to produce full depth, transverse hairline cracks at a nominal spacing designated in the contract documents. When not designated, use a spacing of 1 1/2 feet to 3 feet (0.5 m to 1 m). Avoid inducing cracking closer than 2 1/2 feet (0.8 m) from an existing crack or joint or deteriorated concrete. Prevent the formation of a continuous longitudinal crack.

2. When cracking operations begin, the Engineer will designate test sections of approximately 100 feet (30 m). Crack test sections using varying energy and striking patterns until a satisfactory cracking pattern is established. Use this energy and striking pattern for the remainder of the project, unless the Engineer determines that a satisfactory cracking pattern is no longer being produced. In this case, adjust the energy or striking pattern, or both, as necessary to re-establish a satisfactory cracking pattern.

3. Furnish and apply water to the test area to dampen the pavement following cracking to enhance visual determination of the cracking pattern. Furnish and supply water to check stations, as directed by the Engineer, to verify that the specified crack pattern is being maintained. This will normally be once a day. Furnishing and applying this water is incidental and will not be paid for separately.

4. Do not operate cracking equipment on a bridge. Do not crack areas in a bridge approach section or within 3 feet (1 m) of a fixed object.

5. Before opening to traffic, seat cracked pavement and then remove loose or spalled material by sweeping and by blowing joints and cracks with compressed air. Repeat cleaning as necessary until the HMA resurfacing is placed.

D. Pavement Seating.

1. Seat the cracked pavement as shown in the contract documents.

2. Roll the cracked pavement until seated to the Engineer's satisfaction. The intent is to:
   - Load the roller so that satisfactory seating can be reasonably assured by one complete coverage by the roller, and
   - Accomplish seating with a minimum damage to aggregate interlock at the cracks.

3. The Engineer will approve the weight (mass) of the roller and the rolling pattern, including laps, based on one or more initial test sections.

E. Limitations.

1. Ensure persons and vehicles are protected from injury or damage that might occur during the construction period. During construction, provide the traffic control required by the contract documents. Apply Articles 1107.08, 1107.09, and 1108.03.

2. Keep the road open to traffic unless otherwise indicated. Do not allow equipment to extend into an open lane, except as allowed by the traffic control requirements in the contract documents.

3. This work shall be carefully staged to minimize the time public traffic is to drive on pavement where the pavement work is only partially completed. Do not start removing existing HMA overlay more than 14 calendar days before the succeeding operation is scheduled to begin. Do not start pavement cracking more than 14 calendar days before the overlay operation of the cracked and seated area is scheduled to begin.

4. Overlay cracked and seated areas with the full thickness of HMA, required by the contract, before a winter suspension.

5. Examine Article 1105.12. If the operation of the seating roller over a culvert is to be restricted according to Article 1105.12, G, this will be designated in the contract documents.

2216.04 METHOD OF MEASUREMENT.

The Engineer will calculate the area of Cracking and Seating of PCC Pavement, satisfactorily completed, from the length and the nominal width.

2216.05 BASIS OF PAYMENT.

A. Payment for Cracking and Seating of PCC Pavement will be the contract unit price per square yard (square meter).

B. Payment is full compensation for cracking and seating and for furnishing all materials, equipment, and labor.