

## SECTION 507—EVALUATION OF CONCRETE PAVEMENT RIDE QUALITY AND PAYMENT OF INCENTIVE

**507.1 DESCRIPTION**—This work is evaluating concrete pavement surface profile and determining the ride-quality incentive associated with the surface profile.

**(a) General Requirements.** Determine the ride quality of finished pavement surfaces within the project limits. In the presence of the Inspector, measure the surface profile according to PTM No. 428. Provide the surface profile data to the Representative. The Representative will use the surface profile data to determine payment for each ride-quality lot based on the International Roughness Index (IRI).

Measure the pavement surface of the following excluded areas separate from the surface profile of ride-quality lots. The Representative will not include measurements from excluded areas to determine lot incentive payment.

- Approach slabs.
- Bridge decks.
- Ramps less than 457 m (1,500 feet) in length.
- Tapered pavements less than 3.6 m (12 feet) wide.
- Shoulders, medians, and other pavement surfaces indicated.

**(b) Lot Size.** A full lot is 161 m (528 feet) of a single pavement lane with the same lot type. The lot types are Type 1 (traffic speed greater than 70 kph (45 miles per hour)) and Type 2 (traffic speed less than or equal to 70 kph (45 miles per hour)). Designate lots starting at the beginning limit of paving and continue to the ending limit of paving for each pavement lane and ramp that is 3.6 m (12 feet) or wider. Do not include the length of excluded areas in the 161 m (528 feet). If the lot type changes, end the lot and start designating a new lot.

The Representative will designate a partial lot at the ending limit of paving, at a change in the lot type, and at an excluded area, if the lot length is less than 161 m (528 feet). The Representative will evaluate a partial lot as a percentage of a full lot.

### 507.3 CONSTRUCTION—

**(a) Equipment and Operator.** Provide pavement surface profile measuring equipment that has been verified by the Department according to PTM No. 428. In the presence of the Inspector, calibrate the distance sensor and check the profile system calibration before each day's testing.

Provide an operator that is Department certified according to PTM No. 428.

#### **(b) Testing.**

**1. Lots.** Provide the traffic control and station marking necessary to accommodate testing. Remove objects and equipment from the pavement and sweep the pavement as necessary to remove debris. In the presence of the Inspector, determine the pavement surface profile for each lot according to PTM No. 428. At the completion of testing, replace curing covers, and immediately submit the profile data, as defined in PTM No. 428, to the Representative.

**2. Excluded Areas.** Test the entire surface of each excluded area in stages using a 3 m (10-foot) straightedge. At each stage, hold the straightedge in contact with the surface and parallel to the road centerline and, in successive positions, test the pavement surface from one side of the excluded area to the other. Advance the test location to the next stage by moving the straightedge along the pavement centerline not more than 1.5 m (5 feet). To improve the ride quality and at the Department's expense, the Representative may require grinding of excluded areas that conform to the acceptable straightedge surface tolerances specified in [Section 507.3\(c\)](#).

**(c) Acceptance.**

**1. Lots.** The Representative will compare the lot IRI to Table A in [Section 507.4](#) to determine if the lot requires corrective action.

**2. Excluded Areas.** Correct high points in excess of 6.5 mm (1/4 inch). Pavement containing depressions of more than 6.5 mm (1/4 inch) is defective. Correct longitudinal joints not conforming to the requirements specified in [Section 501.3\(p\)1](#).

**(d) Corrective Action.**

**1.** Perform all corrective action before testing for pavement depth. Use one or more of the following methods:

**1.a. Carbide Grinding.** Use carbide grinding for correcting areas 4.5 m (15 feet) in length or less. Use grinders of the walk-behind type that have cutting heads of carbide tipped shackles, stars, or blades and have a locking depth control to produce a uniform pavement surface texture.

Provide a pavement surface texture with parallel grooves that are between 2 mm and 6 mm (3/32 inch and 1/4 inch) and a "land area" between 2 mm and 5 mm (1/16 inch and 3/16 inch). Operate the grinder to achieve a finished product by making multiple passes, with a maximum depth of any single pass of 3 mm (1/8 inch). Grind longitudinally or transversely across the pavement surface.

**1.b. Diamond Grinding.** As specified in [Section 514.3](#) and modified as follows:

**(d) Tolerance.** Delete this section.

Unless otherwise approved, grind the entire lane width. Do not apply a sealer to diamond-ground surface areas.

**1.c Removal and Replacement.** Remove and replace a minimum of 3 m (10 feet) of pavement between transverse joints of reinforced cement concrete pavements or an entire panel of plain cement concrete pavement. Where replacement extends to an existing transverse joint, replace the joint in kind as directed. Construct transverse joints at other locations resulting from removal of defective pavement using the methods for joining pavements shown on the Standard Drawings.

**2.** Produce surfaces that are neat and of a uniform texture and cross section. Do not produce a deviation, such as a ridge or valley with the adjacent pavement, of more than 3 mm (1/8 inch) when measured on the transverse profile. Correct a sufficient length of pavement to correct the surface profile without producing additional high or low points. Perform additional measurements of the surface profile, as necessary, for the Representative to determine which lots do not require additional corrective action.

**(e) Defective Work.** A ride-quality pavement lot is defective if:

- The depth of an area within the lot is deficient by more than 12.5 mm (1/2 inch) from the pavement design thickness.
- The IRI of the lot exceeds the maximum acceptable IRI specified in Table A of [Section 507.4](#).

- The surface adjacent to another ride-quality lot contains a ridge or valley of more than 3 mm (1/8 inch).
- The specifications for pavement construction require removal and replacement of pavement within the ride-quality lot.

Unless the Department and Contractor agree to leave a defective lot in place as specified in [Section 507.4](#), remove and replace defective areas and retest the ride-quality lot.

**507.4 MEASUREMENT AND PAYMENT**—The proposal includes a predetermined amount (PDA) for this item. If the lot is not defective, the Representative will use Table A and the lot IRI to determine the incentive payment for ride-quality.

The Representative will determine the incentive payment for a lot subjected to corrective action using Table A and the corresponding IRI after the Contractor completes corrective action.

The Representative will determine the incentive payment of a partial lot as a percentage of a full lot.

After corrective action, the Contractor may leave a defective lot in place if the District Engineer/Administrator provides written approval and if the Contractor accepts a \$4,000 downward adjustment in the amount paid for the lot.

Costs associated with evaluating the pavement ride quality are incidental to the concrete paving items.

**TABLE A**  
**Payment Schedule for Ride Quality Incentive**

<b>Type 1 Lots</b>	<b>Type 2 Lots</b>	<b>Payment</b>
<b>IRI</b>	<b>IRI</b>	<b>Amount</b>
<b>mm/km/lot (inches/mile/lot)</b>	<b>mm/km/lot (inches/mile/lot)</b>	
≤ 553 (35)	≤ 632 (40)	\$1,500
≤ 790 (50)	≤ 948 (60)	\$1,000
≤ 948 (60)	≤ 1105 (70)	\$500
≤ 1105 (70)	≤ 1500 (95)	\$0
> 1105 (70)	> 1500 (95)	Corrective Action Required