

EXPECTED IMPLEMENTATION JULY 2024 (FY 2024-25)

352 GRINDING CONCRETE PAVEMENT. (REV 6-20-23) (FA 10-11-23) (FY2024-25)

ARTICLE 352-5 is deleted and the following substituted:

352-5 Acceptance Testing for Surface Tolerance.

Test the pavement surface for smoothness with a 10 foot long straightedge, a 10 foot long rolling straightedge, or a California Type Profilograph while the Engineer observes the operations as described below. For pavement surfaces not meeting the smoothness requirements, provide corrective work and retesting to ensure conformity approved by the Engineer.

1. Testing with a 10 foot straightedge: Use this straightedge for longitudinal profiling, parallel to centerline, within 15 feet of a bridge approach or existing pavement which is being joined. Use it for all transverse profiling of cross slopes, approaches, and as otherwise directed with respect to (2) or (3) below.

Furnish and operate a 10 foot straightedge. When portland cement concrete pavement abuts bridge approaches or pavement not under this Contract, ensure that the longitudinal slope deviations of the finished pavement do not exceed 1/8 inch in 10 foot length.

Produce transverse slope deviations of the finished pavement that do not exceed 1/8 inch with the straightedge laid in a direction perpendicular to the centerline.

2. Testing with a 10 foot rolling straightedge: Use this straightedge for longitudinal profiling of short pavement sections up to 250 feet long, including mainline and non-mainline sections on tangent sections and on horizontal curves with a centerline radius of curve less than 1,000 feet and the pavement within the superelevation transition of such curves, turn lanes, ramps, tapers, and other non-mainline pavements as directed.

Furnish and operate the straightedge. Provide and operate a 10 foot rolling straightedge of a design acceptable to the Engineer, able to accurately measure surface irregularities exceeding 1/8 inch in a 10 foot effective length of the straightedge.

When tested with a straightedge, ensure that the finished pavement profile provides a uniform surface with no deviation greater than 1/8 inch in a 10 foot length. Perform the profiling in lines parallel to the centerline, at not more than 4 foot transversal spacing, and extending across the transverse joints.

The Contractor may confine checking through traffic lanes with the straightedge to joints and obvious irregularities as directed.

3. Testing With A California Type Profilograph:

a. General: Use the profilograph on all longitudinal profiling of mainline full width pavement lanes longer than 250 feet and as otherwise directed.

The following terms are defined:

1. Profilograph: A longitudinal profile testing apparatus used to measure a pavement's surface profile deviations.

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2. Profile Trace or Profilogram: A surface profile record generated along the individual wheel paths using a profilograph. Such a record is analyzed to determine the rate of roughness (or smoothness) and to identify changes in the longitudinal pavement surface elevation that exceed a specified threshold along the pavement length traversed by the profilograph.

3. Profile Index (PI): A profile measurement is a series of numbers representing elevation relative to a specified reference. A Profile Index (PI) is a summary value calculated from these numbers above and below a blanking band over a specified length of pavement.

4. Blanking Band: A band of 0.2 inch uniform height with its longitudinal center positioned optimally between the highs and the lows of the profilogram depicting at least 100 ft of pavement.

b. Equipment: Furnish, calibrate, and operate an electronic California Type Profilograph device in accordance with FM 5-558. .

c. Surface Test: Produce a riding surface meeting the requirements of FM 5-558 and having a Profile Index meeting the requirements herein. Start and terminate the profile 15 feet from each bridge approach or existing pavement, which is being joined.

Take at least two pavement profile traces with bump option turned on. Locate the position of the profiles in the traffic wheel paths. Take the profiles in the direction of the traffic and parallel to and approximately 3 feet from the outside edges of each traffic lane. The Contractor may take additional profiles to define the limits of an out-of-tolerance surface variation.

Upon completion of each day's testing, submit the profilograms to the Engineer for review to determine the pavement section in compliance with these requirements. The Engineer will retain those profilograms meeting these requirements. The Engineer will return profilograms with deficiencies to the Contractor for use to correct section deficiencies. The Engineer will retain the corrected profilograms, along with the deficient profilograms, for comparison purposes of the circumstances between the two profilograms.

Ensure that pavement tested meets the Profile Index requirements and is applicable to the profilogram for each profile trace:

1. Ensure that pavement on tangent alignment and horizontal curves having a centerline radius of curve 2,000 feet or more has a Profile Index of 5 inches per mile or less.

2. Ensure that pavement on horizontal curves having a centerline radius of curve 1,000 feet or more but less than 2,000 feet and pavement within the superelevation transition of such curves has a Profile Index of 7 inches per mile or less.

3. Ensure that the pavement riding surfaces have all deviations in excess of 0.3 inch in 25 feet removed.

The Engineer will evaluate the pavement in 0.1 mile consecutive sections. Grind all areas represented by individual points having deviations

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in excess of 0.3 inch in 25 feet or less pavement length, until such points do not exceed 0.3 inch.

After removing all individual deviations in excess of 0.3 inch in 25 feet, perform additional grinding as necessary to reduce the Profile Index to the specified requirements.

Surface smoothness tests with a California Type Profilograph on bridges are specified in 400-15. Ensure that the pavement within 15 feet of a bridge approach (or existing pavement which is being joined) complies with the testing requirements of a 10 foot straightedge.

Visually inspect transverse joints and random cracks to ensure that the adjacent surfaces are in the same plane. Where misalignment of the planes of the surfaces on adjacent sides of the joints or cracks is in excess of 1/16 inch, grind the pavement until the surfaces are flush.

ARTICLE 352-8 is deleted and the following substituted:

352-8 Basis of Payment.

Price and payment will be full compensation for all work and materials specified in this Section, including furnishing all labor, materials, tools, equipment, testing, and incidentals and for doing all work involved in grinding existing or new concrete pavement, removing residue, and cleaning the pavement, including necessary disposal of residue, and furnishing any water or air used in cleaning the pavement.

Pay adjustments based on the surface smoothness will be made in accordance with Table 352-1.

Table 352-1 Profile Index Pay Factors		
Average Profile Index (inches/mile) per 0.1 mile Section		Pay Factor
Curvature Radius ≥2,000 ft	1,000 ft ≤ Curvature Radius < 2,000 ft	
PI ≤ 2	PI ≤ 4	1.05
2 < PI ≤ 5	4 < PI ≤ 7	1.00
PI > 5	PI > 7	Corrective work required

The Pay Factor will be based on the initial measured average Profile Index, prior to any corrective work. The Pay Factor will be applied to the bid price for Grinding Concrete Pavement.

The Pay Adjustment will be computed by multiplying the Pay Factor times the unit bid price for grinding concrete pavement times the plan surface area of grinding concrete pavement. The Pay Adjustment will apply to the total area of the 0.1 mile section for the lane width represented by the profilograms for the average Profile Index.

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Payment will be made under:

Item No. 352- 70- Grinding Concrete Pavement - per square yard.

