

415.4.4 Grinding and Texturing

415.4.4.1 General

Submit a detailed grinding plan to the engineer for approval before starting work. Include a sequence to produce the desired surface ride qualities with the least grinding depth throughout the project.

Grind in the longitudinal direction. Grind the entire surface width specified until the pavement surfaces on both sides of all transverse joints and random cracks are on the same plane and meet surface tolerance requirements.

Use grinding equipment that does not strain or damage concrete pavement. Do not use grinding and texturing equipment that causes excessive raveling, aggregate fracturing, spalling, or disturbance of the transverse or longitudinal joints.

Leave neat, rectangular ground areas with a uniform surface appearance, uniformly tapered to adjoining pavement. Perform additional grinding as necessary to extend the ground area so that lateral limits of grinding are at a constant offset distance from, and parallel to, the nearest pavement edge. Feather vertical edges outside the area to be ground. Do not cause adverse drainage by grinding.

Grind mainline pavement to produce a skid-resistant surface consisting of grooves from $\frac{3}{32}$ in to c in [2.5 mm to 3 mm] wide, spaced from $\frac{5}{64}$ in to c in [2 mm to 3 mm] apart, and approximately $\frac{1}{16}$ in [1.5 mm] deep relative to the tops of the adjacent ridges.

Remove grinding slurry and residue continuously and immediately, leave pavement clean, and dispose of slurry as approved by the engineer.

Provide a computerized profilograph or a class 1 inertial profiler. Ensure the class 1 inertial profiler output simulates a mechanical profilograph output using a 0.1-mile [0.16 km] long blanking band template.

Before use on the project and periodically thereafter, check the calibration of the profilograph in the presence of the engineer. Before checking the calibration, provide a document indicating the system specific measurement options for the profilograph to the engineer. To check the horizontal scale, run the profilograph over a known distance and scale the results on the profilograph trace. To check the vertical scale, put a block of known thickness under the profile wheel and scale the result on the profilograph trace. Correct the calibration as necessary before using the profilograph.

The engineer may spot check or retest areas with another profilograph or class 1 inertial profiler. If a discrepancy exists, determine the cause and reprofile the areas as requested by the engineer.

After grinding, test surface roughness with a profilograph. Take profile traces at a distance of 3 ft [1 m] from, and parallel to, the outside edge of the traveled way and 3 ft [1 m] from the centerline joint. In operation, move the profilograph longitudinally along the pavement surface no faster than 3 mph [5 km/h].

Calculate the profile index in/mi [mm/km] as the summation of the individual vertical displacements outside of a 0.1 in [2.5 mm] opaque blanking band centered on the profile trace. Convert the accumulated vertical displacement total for the length of the trace to in/mi [mm/km] to obtain a profile index.

For purposes of calculating the average profile index and where additional pavement grinding is required, determine the average profile index for each 0.1 mi [0.16 km] segment for each lane separately and average both parallel traces within that lane. Combine segments that are less than 0.1 mi [0.16 km] in length with an adjacent 0.1 mi [0.16 km] segment for purposes of evaluation.

Within 24 hours of testing, give the engineer computer-generated profilograph or class 1 inertial profiler traces and printouts of the average profile index for each 0.1 mi [0.16 km] segment evaluated, along with printouts for areas with deviations greater than 0.3 inches in 25 ft [8 mm in 7.5 m]

415.4.4.3 Surface Tolerance

Leave the concrete pavement surface with an average profile index of 10 in/mi [160 mm/km] or less on travel lane pavement segments; grind smooth deviations greater than 0.3 inches in 25 ft [8 mm in 7.5 m], as determined by the profilograph. Ensure the concrete pavement surface meets must-grind and profile index acceptance levels in accordance with Table 415.4.2-1, Must-Grind and PI Acceptance Levels. In the transverse slope of the pavement, do not leave deviations in the traveled way greater than 0.2 inches in 10 ft [5 mm in 3 m] when tested by a string line or straightedge placed perpendicular to the pavement centerline.

Regrind and texture the concrete pavement until all areas meet the surface tolerance requirements. Retest corrective action locations for surface tolerance and submit results to the engineer.

415.5 MEASUREMENT and PAYMENT

415.5.1 General

The engineer will measure:

1. Conc Pvmt Spall Repair by the square foot [square meter] or the cubic foot [cubic meter] measured in the plane of the existing concrete pavement surface.
2. Conc Slab Replacement by the square yard [square meter], measured parallel to the paved surface.
3. Grind/Texture Conc Pvmt by the square yard [square meter] of pavement surface ground.

The department will pay as follows:

Pay Item	Pay Unit	Measure to the Nearest	Pay to the Nearest
Conc Slab Replacement	SY [m ²]	0.1 ft [0.05 m]	SY [m ²]
Conc Pvmt Spall Repair	SF, CF [m ² , m ³]	0.1 ft, 0.1 ft [0.05 m, 0.05 m]	SF, CF [0.1 m ² , 0.1 m ³]
Grind/Texture Conc Pvmt	SY [m ²]	0.1 ft [0.05 m]	SY [m ²]