

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION 850**

Diamond Grinding Portland Cement Concrete Pavement

December 14, 2000

850.01	Description
850.02	Equipment
850.03	Construction
850.04	Final Surface Finish
850.05	Method of Measurement
850.06	Basis of Payment

850.01 Description. This work shall consist of diamond grinding and texturing Portland cement concrete pavement longitudinally to substantially eliminate joint and crack faulting and to restore proper riding characteristics to the pavement surface. The work shall be accomplished in accordance with these specifications and in reasonably close conformity to the details on the plans.

850.02 Equipment. The grinding equipment shall be a power driven, self-propelled machine that is specifically designed to smooth and texture Portland cement concrete pavement with diamond blades or diamond impregnated cylinder rings. The blades or cylinder rings shall be mounted on an arbor head. The grinding head shall be a minimum of 3 feet (0.9 m) wide. The equipment shall be capable of grinding the surface in the longitudinal direction without causing spalls or other damage at cracks, joints and other locations. It shall correct the pavement profile and provide proper cross slope on the concrete pavement.

The effective wheelbase of the machine shall not be less than 12.0 feet (3.6 m). It shall have a set of pivoting tandem bogey wheels at the front of the machine and the rear wheels shall be arranged to travel in the track of the fresh cut pavement. The center of the grinding head shall be no further than 3.0 feet (0.9 m) forward from the center of the back wheels. It shall also be of a shape and dimension that does not encroach on traffic movement outside of the work area.

The Contractor shall furnish and maintain, for daily use during the grinding operations, a profilograph, with necessary supplies for full operation and graphing of test results, to test the ground pavement for smoothness. Initial approval and project verification of the profilograph used shall be in accordance with Supplement 1058. Upon completion of project the profilograph shall remain the property of the Contractor.

The Contractor shall establish a positive and immediate means for removal of grinding residue. Solid residue shall be removed from the pavement surfaces before it is blown by traffic action or wind. Residue shall not be permitted to flow across lanes used by the traveling public or into gutters or drainage facilities.

850.03 Construction. The plans will designate the areas of pavement surfaces to be ground. Grinding of bridge decks and roadway shoulders will not be required unless indicated on the plans or required to provide drainage. Grinding will be accomplished in a manner that eliminates crack or joint faults while providing positive lateral drainage by maintaining a constant cross-slope between grinding extremities in each lane. Auxiliary or ramp lane grinding shall transition as required from the mainline edge to provide positive drainage and an acceptable riding surface.

The operation shall result in pavement that conforms to the typical cross-section and the requirements specified for the final surface finish, however, it is the intention of this specification that the faulting at joints and cracks be eliminated and the overall riding characteristics be restored within the limits specified. To accomplish the smoothness required, grinding may not be required on 100 percent of the pavement surface.

During the initial grinding operations, the pavement surface will be tested with the profilograph as soon as the concrete has been ground full lane width. The purpose of the initial testing is to aid the Contractor in evaluating the grinding methods and equipment being used. Subsequent to the initial testing, daily profiles of each day's grinding shall be run the next working day.

850.04 Final Surface Finish. The grinding process shall produce a pavement surface that is true to grade with the ground area consisting of a longitudinal corduroy-type texture. The peaks of the ridges shall be approximately 1/16 inch (1.5 mm) higher than the grooves with 53 to 57 evenly spaced grooves per foot (174 to 187 per meter). The finished pavement surface shall be measured for riding quality.

The grinding shall produce a mainline riding surface which does not exceed an average profile index of 12 inches per mile (305 mm per 1.6 km) measured in any 0.10 mile (0.16 km) section, nor any localized surface deviations in excess of 0.4 inches in 25 feet (10 mm in 7.6 m), as measured with the approved profilograph using a Profile Trace in accordance with California Test 526, 1978 on file in the office of Contract Sales. The Contractor shall test the pavement surface in the wheel paths, in the presence of the Engineer. The wheel paths will be located parallel to the centerline of the pavement and approximately 3 feet (0.9 m) measured transversely, inside all lane edges. The alignment of the profilograph with reference to the pavement edge is to be maintained at all times. Any 0.10 mile (0.16 km) sections with an average profile index greater than 12 inches per mile (305 mm per 1.6 km) shall be re-ground to lower the profile index to 12 inches per mile (305 mm per 1.6 km) or less.

Necessary traffic control and survey stationing for initial measurements or any subsequent measurements shall also be provided by the Contractor. The profile requirement will terminate 25 feet (7.6 m) from each bridge approach slab.

Transverse joints and cracks shall be made flush with adjacent surfaces. Transverse joints and cracks shall be visually inspected to ensure that adjacent surfaces are in the same plane. Alignment of adjacent sides of the joints or cracks shall be within of 1/16 inch (1.5 mm) of each other to be considered flush. The transverse slope of the pavement shall be uniform to a degree that no depressions or misalignment of slope greater 1/4 inch in 12 feet (6 mm in 3.6 m) are present when tested with a straightedge placed perpendicular to the centerline. Straightedge requirements do not apply outside of area ground.

850.05 Method of Measurement. Pavement grinding on existing pavements will be measured by the square yard (square meter) of pavement ground and accepted. The quantity of pavement grinding will be determined by multiplying the width specified on the plan by the total length of the finished pavement surface, excluding bridge decks, approach slabs or the 25 feet (7.6 m) adjacent to the approach slabs and other areas designated by the Engineer.

850.05 Basis of Payment . The contract price per square yard (square meter) for Diamond Grinding Portland Cement Pavement shall be full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all work involved in grinding the existing surface, removing residue, cleaning the pavement, and testing with a profilograph in accordance with these specifications and as shown on the plans.

Item	Unit	Description
850	Square yard (square meter)	Diamond grinding portland cement concrete pavement