

ITEM 04558.02 M - DIAMOND GRINDING AND TEXTURING OF STRUCTURAL SLAB

DESCRIPTION:

The work shall consist of diamond grinding and texturing the structural slabs as designated on the Contract plans or as ordered by the Engineer. 100% of the slab surface designated on the Contract plans shall be ground and textured.

The Contractor is hereby notified that concrete curing requirements, combined with structural slab loading restrictions may have a significant effect upon the specific time, relative to concrete placement, at which grinding may be performed. The Contractor shall become familiar with the limits imposed by these factors, and conduct all operations accordingly.

Upon completion of the diamond grinding operations, the Contractor shall furnish and apply a protective sealer to the concrete surfaces indicated on the plans or as ordered by the Engineer.

MATERIALS:

A. Diamond Grinding Equipment: Use diamond grinding equipment specifically designed with gang mounted diamond saw blades such as TARGET PGM 1400, that allows for a continuous operation or equal as approved by the Engineer. The grinding operation shall include a vacuum system capable to continually remove the slurry and residue from the slab surface. Cooling water shall meet the requirements of section 712-01.

B. Protective Sealer: The protective sealer used shall meet the requirements of Item 18559.1896 M – Protective Sealing of Structural Concrete on New Bridge Decks and Bridge Deck Overlays.

CONSTRUCTION DETAILS:

A. Diamond Grinding: No grinding shall commence on any concrete surface until either one of the following time durations has elapsed:

Option 1: Twenty-eight (28) curing days after concrete slab placement. A curing day is as defined in Section 555-3.09A.

- or -

Option 2: The curing period, specified for the concrete in question, or seven curing days, whichever is greater.

If the Contractor chooses to perform grinding operations under Option 2, and a full depth structural slab has been placed, the total mass of equipment is limited to 900 kg for the first fourteen curing days after concrete placement has been fully completed on any one span. If the grinding operations are performed after fourteen curing days have elapsed, but prior to twenty-eight curing days having elapsed, the limitations of Section 557-3.14 shall apply.

The diamond blades shall be spaced such that the thin fins of concrete left between the cuts break off during the grinding process. Blade spacing shall be based on the aggregate hardness. The cut grooves shall be between 2.3 mm and 3.3 mm in width. The Contractor shall inform the Engineer of the proposed spacing and obtain approval prior to commencement of the work. Grinding depth shall be no more than 5 mm.

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The Contractor shall grind the slab surface in a longitudinal direction parallel to the centerline as shown on the Contract plans and provide for positive lateral drainage by maintaining a constant cross-slope between grinding passes.

The grinding shall extend across the slab to within 250 mm of each curb face. Grinding shall be terminated at 250 mm from each side of the slab joints as indicated on the Contract plans.

Slurry, or debris from the grinding operation shall not be permitted to accumulate. Residue shall be continuously removed. The slurry shall not be permitted to harden. Slurry, or debris, shall not be disposed of on the structure, highway, in the drainage system nor on the embankment slopes. It shall be disposed of in a manner satisfactory to the Engineer.

Damage to any portion of the structural slab, or anything connected to it, or embedded in it, attributable to the Contractor's operations shall be repaired in a manner satisfactory to the Engineer. All repair, or replacement costs shall be borne by the Contractor.

B. Protective Sealer Application: Protective sealer shall be applied to the structural slabs in accordance with the requirements of Item 18559.1896 M – Protective Sealing of Structural Concrete on New Bridge Decks and Bridge Deck Overlays.

METHOD OF MEASUREMENT:

The work will be measured as the number of square meters of surface grinding as stated in the Estimate of Quantities, shown on the Contract plans.

BASIS OF PAYMENT:

The unit bid price per square meter shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work. No compensation will be made for any repair, or replacement work necessitated by the Contractor's operations.

Payment will be made under:

<u>Item Number</u>	<u>Description</u>	<u>Units</u>
04558.02 M	Diamond Grinding and Texturing of Structural Slab	Square Meter