

504-R-757 LONGITUDINAL TINING

(Revised 02-15-24)

The Standard Specifications are revised as follows:

SECTION 504, BEGIN LINE 15, DELETE AND INSERT AS FOLLOWS:

504.03 Finishing and Surface Texturing

(a) Finishing

PCCP shall be finished with equipment in accordance with 508.04. The operations shall be controlled so that an excess of mortar and water is not worked to the top. Long-handled floats may be used to smooth and fill in open textured areas in the PCCP.

Hand methods of finishing may be used when finishing equipment breaks down or in tight working areas where field conditions limit the use of mechanical devices. Hand placed concrete shall be further finished by means of a longitudinal float or a transverse smoothing float in accordance with 508.08(a).

The edges of formed PCCP adjacent to HMA or compacted aggregate shall be tooled. A continuous radius with a uniform smooth dense mortar finish shall be produced.

~~The PCCP surface shall be textured with a double thickness burlap drag or a minimum 4 ft wide turf drag.~~

~~The textured surface of PCCP shall be tined, unless otherwise specified. Tining shall consist of transverse grooves that are between 3/32 and 1/8 in. in width, between 1/8 and 3/16 in. in depth, and be spaced as follows: 5/8 in., 1 in., 7/8 in., 5/8 in., 1 1/4 in., 3/4 in., 1 in., 1 in., 1 in., 1 in., 3/4 in., 7/8 in., 1 3/4 in., 7/8 in., 3/8 in., 1 in., 1 in., 1 1/4 in., 1 1/2 in., 7/8 in., 3/4 in., 7/8 in., 1 in., 7/8 in., 1 in. The grooving pattern shall be repeated across the pavement. The tining grooves shall be formed in the plastic concrete without tearing the surface and without bringing pieces of the coarse aggregate to the top of the surface.~~

~~Texturing and curing operations may be performed by a single machine subject to satisfactory performance.~~

~~Areas of PCCP which are not finished in accordance with these requirements shall be corrected by retexturing.~~

~~Retexturing shall consist of cutting longitudinal or transverse grooves in the PCCP surface by means of saw blades or other approved devices. The grooves shall be spaced 3/4 in. center to center and be 1/8 in. in width and depth. Alternative patterns may be used, subject to approval. The PCCP surface, after cutting, shall not be polished.~~

(b) Surface Texturing

The PCCP surface shall be textured with a double thickness burlap drag or a minimum 4 ft wide turf drag followed by tining oriented either longitudinal or transverse to the direction of travel as specified herein, all before the PCCP permanently sets. The

PCCP surface of mailbox approaches and private and commercial driveways shall be broom finished before the PCCP permanently sets.

Tining the textured surface shall be completed using a mechanical device in accordance with 508.06. The Contractor shall oversee the tining operation to ensure the forming of straight, uniform grooves in the textured, plastic PCCP surface without tearing the concrete surface, without allowing the tine groove edges to slump at the edges, and without bringing pieces of the coarse aggregate to the top of the PCCP surface. Wander and overlap of the tining, and any wavy pattern in the tining shall be prevented. Presence of wander, overlap, or wavy pattern in the tining will be cause for retexturing.

For tight working areas, form work, and where field conditions such as small or irregularly shaped areas limit the use of mechanical devices, as determined by the Engineer, the Contractor may request to use a hand tool that is in accordance with 508.06 and has tines and spacing in accordance with 504.03(b)1 or 2 below, as applicable for the application.

Texturing and curing operations may be performed by a single machine subject to satisfactory performance.

1. Longitudinal Tining

Tining shall be in the longitudinal direction, parallel with the direction of travel, on all PCCP that is uniform in width, including mainline and shoulders. Tining shall be completed using a mechanical device in accordance with 508.06 that has 1/8 in. wide tines, spaced at 3/4 in. center-to-center, and produces a uniform, nominal depth tine groove 1/8 in. \pm 1/16 in. deep in the plastic PCCP. The mechanical device shall be able to tine the full width of the PCCP in one operation. Tining shall be completed prior to the application of curing materials. String line or other controls for line and grade shall be used to ensure straight tining parallel with the direction of travel. Tining shall not be performed within 3 in. of pavement edges or longitudinal joints.

2. Transverse Tining

Tining shall be in the transverse direction, perpendicular to the direction of travel, on PCCP on all approaches, ramps, tapered areas, and gore areas. Tining shall be completed using a mechanical device in accordance with 508.06 that has 1/8 in. wide tines, spaced center-to-center as follows: 3/8 in., 9/16 in., 5/8 in., 7/16 in., 3/8 in., 1/2 in., 9/16 in., 5/8 in., 7/16 in., 3/8 in., 13/16 in., 1/2 in., and produces a uniform, nominal depth tine groove 1/8 in. \pm 1/16 in. deep in the plastic PCCP. The tining pattern shall be repeated across the PCCP surface perpendicular to the direction of travel.

(c) Retexturing

Areas of PCCP which are not finished and textured in accordance with the requirements herein shall be corrected by retexturing. Retexturing shall be done in the same longitudinal or transverse direction as the orientation of the existing tining. It shall consist of cutting longitudinal or transverse grooves in the PCCP surface by means of saw blades or other approved devices. The grooves shall be spaced in accordance with 504.03(b)1 or 2 above as appropriate. The PCCP surface, after cutting, shall not be polished.

504.04 Curing

Curing materials shall be applied to exposed surfaces and sides of newly placed PCCP within 30 minutes after the finishing operations have been completed, or as soon as marring of the concrete does not occur. Paving operations shall be immediately suspended if sufficient curing materials are not available on site.

SECTION 504, BEGIN LINE 127, INSERT AS FOLLOWS:

504.06 Basis of Payment

The cost of finishing the PCCP surface furnishing and placing curing materials shall be included in the cost of the PCCP. *Retexturing shall be at no additional cost to the Department.*

SECTION 508, BEGIN LINE 217, DELETE AND INSERT AS FOLLOWS:

508.06 ~~Texturing~~Tining Equipment

~~Mechanical texturing equipment~~*The mechanical device shall be capable of forming transverse have automated elevation and steering controls to ensure the forming of straight grooves of uniform depth and alignment in the plastic PCCP, without tearing the surface. The ~~texturing comb~~mechanical device shall have a single row of steel tines spaced as specified.*

Hand tools consisting of fluted floats, rakes with spring steel tines, or finned floats with a single row of fins shall produce grooves which conform to the same requirements as those specified for the grooves formed by the mechanical ~~equipment~~*device.*
