

350 CEMENT CONCRETE PAVEMENT.
(REV 1-12-11) (FA 1-24-11) (7-11)

ARTICLE 350-1 (Pages 343 – 344) is deleted and the following substituted:

350-1 Description.

Construct Portland cement concrete pavement in one course, on a prepared subgrade. Use either the fixed-form or the slip-form method of construction. When reinforced cement concrete pavement is specified or required, use concrete reinforced with steel bars or steel fabric, in accordance with details shown in the plans. The Engineer may require a demonstration of equipment and paving operations.

If any uncontrolled cracks appear during the life of the Contract, remove and replace the cracked concrete at no expense to the Department. Investigate and implement immediate effective solutions to eliminate further cracks, in consultation with, and subject to the approval of the Engineer.

Furnish the following information in the Quality Control Plan (QCP) as required in Section 105:

1. A detailed sequence and schedule of concrete placement operations including, but not limited to, width of pavement to be placed, proposed equipment, production rates, working hours, concrete hauling, and placement, curing, sawing, and sealing methods. Identify backup equipment and the procedures that will be followed in the case of a breakdown of equipment.
2. A method to ensure the proper placement of reinforcing steel, tie bars and dowel bars.
3. A traffic control plan that includes provisions for the placement and maintenance of barriers required to protect the pavement from traffic, for a minimum of 14 days after concrete placement.
4. Defined provisions for adequate lighting for all work done at night, including finishing, curing, and sawing joints.
5. A method for ensuring pavement thickness is met and a consolidation procedure is identified.
6. If forms are to be utilized define the material, dimensions, type, connections, and staking of the forms.
7. Define the procedure for the protection of the fresh concrete pavement from inclement weather.

SUBARTICLE 350-3.3 (Page 345) is deleted and the following substituted:

350-3.3 Vibratory Units: Consolidate the concrete for the full width of the strip being placed with either surface pan type or internal type vibrators. Use a vibration method with sufficient intensity and duration to ensure complete consolidation of the concrete without causing segregation of the materials.

For the surface vibrators, use a frequency of not less than 3,500 impulses per minute. For internal type vibrators, use a frequency of not less than 5,000 impulses per minute for tube vibrators and not less than 7,000 impulses per minute for spud vibrators. When using

spud-type internal vibrators adjacent to forms, either hand-operated or attached to spreaders or finishing machines, use a frequency of not less than 3,500 impulses per minute. Measure and record the frequency of internal vibrators in plastic concrete and submit data to the Engineer. Mount spud vibrators such that the free tip trails, and space spud vibrators at a maximum interval of 30 inches.

Provide an amplitude of vibration with spud vibrators that is sufficient for the vibration to be perceptible on the surface of the concrete along the entire width of the strip being placed. Measure and record the actual frequency of vibrations and submit data to the Engineer. Control all vibration by the forward movement of the spreader or finishing machine so that vibration automatically ceases when stopping the forward movement of the spreader.

SUBARTICLE 350-5.4 (Page 347) is deleted and the following substituted:

350-5.4 Cleaning Forms: Thoroughly clean the forms after each use and before placing concrete against them. Apply a release agent in accordance with the manufacturer's recommendations.

ARTICLE 350-6 (Page 347) is deleted and the following substituted:

350-6 Protection from Weather.

Meet the requirements of 400-7.1 when placing concrete. When rain appears imminent, stop all paving operations, and cover the surface of the unhardened concrete with the protective covering.

SUBARTICLE 350-7.2 (Page 347) is deleted and the following substituted:

350-7.2 Fabric: Place welded wire reinforcement at right angles to the centerline of the pavement and accurately to the position and location shown in the plans. Lap adjacent sheets of welded wire reinforcement not less than 6 inches. Make the laps only in the longitudinal members.

SUBARTICLE 350-9.1 (Pages 348 and 349) is deleted and the following substituted:

350-9.1 General Requirements: Immediately after placing the concrete, strike-off, consolidate, and finish it to produce a finished pavement in accordance with the cross-section, width, and surface finish required by the Contract Documents. Perform the sequence of operations as follows: strike-off; vibratory consolidation; screeding; floating; removal of laitance; straightedging; and final surface finish. Except as specified, perform strike-off, consolidation, screeding, and floating by the machine method.

Use equipment that is fully and accurately adjustable to produce a pavement meeting project requirements. Use equipment that is capable of operating in a consistent and smooth manner under all conditions of use.

As soon as possible after screeding while the concrete is plastic, correct all flaws such as cavities, blemishes, marks, or scratches that will not be removed by planing. .

Provide a concrete surface true to grade, cross slope and superelevation, and free of irregularities. If the Engineer permits adding water to assist the finishing operations, apply water as a fog spray by means of approved spray equipment.

SUBARTICLE 350-12.4 (Pages 352 – 353) is deleted and the following substituted.

350-12.4 Load-Transfer Devices: Provide dowel load-transfer devices in all transverse joints. Firmly hold dowel bars in a position parallel to the surface and the centerline of the slab, by approved steel supports and spacers of a type shown in the plans. The Engineer may approve the use of dowel bar supports or assemblies other than those specifically detailed in the plans. Allow the dowels to be free to move in one slab as the concrete contracts and expands. Paint each dowel with one coat of zinc rich primer or red oxide alkyd based primer meeting the requirements of SSPC Paint 25 Type I or Type II. Wait a minimum of 7 days before coating one-half of the dowel with a petroleum based lubricant grease to inhibit bonding to the concrete. Provide a cap for the free end of expansion joint dowels.

Position each dowel such that its final deviation from parallel to the surface of the pavement and parallel to the longitudinal centerline of the pavement does not exceed 1/2 inch. Position each dowel such that its final deviation from being centered on the joint does not exceed 2 inches. Position each dowel such that at no point in its length does it deviate from the surface of the pavement as shown in the plans in excess of 1 inch. Confirm the position of dowel bars by suitable means acceptable to the Engineer, which may include non-destructive testing methods.

SUBARTICLE 350-18 (Pages 357 - 358) is deleted and the following substituted:

350-18 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section, including any preparation of the subgrade not included in the work to be paid for under another Contract item; all transverse and longitudinal joint construction, including tie-bars and dowel bars; the furnishing of test specimens; repair of core holes; and all incidentals necessary to complete the work.

Payment will be made under:

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| Item No. 350- 1- | Plain Cement Concrete Pavement - per square yard. |
| Item No. 350- 2- | Reinforced Cement Concrete Pavement - per square yard. |
| Item No. 350- 72- | Cleaning and Resealing Joints - per foot. |
| Item No. 350- 78- | Cleaning and Sealing Random Cracks - per foot. |