

SECTION 351

COLORING CONCRETE PAVEMENT SURFACES

351-1 Description.

Color the surfaces of the concrete pavement at the locations and within the limits shown in the plans. Use an iron oxide pigment or two coats of permanent black stain, or apply a mortar topping of colored concrete to the freshly placed pavement.

351-2 Materials.

- (a) Use iron oxide pigment meeting the requirements of Section 927.
- (b) Use permanent black stain of a good grade of commercial black stain, which provides a lasting color to the surface of the concrete, and which is approved by the Engineer for this use.
- (c) For the iron oxide mixture, use water meeting the requirements of Section 923.
- (d) For the mortar topping (for use in the alternate method specified in 351-4), use a good commercial grade of concrete coloring material approved by the Engineer for this use.

351-3 Construction Methods.

351-3.1 Iron Oxide Pigment: Apply the iron oxide pigment on the newly finished concrete as soon as job conditions permit, but in no event later than four hours after placing the concrete. Apply the iron oxide pigment dry, and then lightly sprinkle it with water or, if the Engineer so orders, apply it in the form of a stiff paste, made by mixing water with the powder. Use a cloth mop or brush for applying the paste.

Apply the coloring pigment at a rate of 5 to 6 lbs of dry powder per 100 ft² [2.5 to 3.0 kg of dry powder per 10 m²] of concrete surface to be colored. The Engineer will designate the exact amount between these limits.

Work the oxide into the surface of the fresh concrete by using wooden floats, steel trowels, stiff bristle brushes, or other approved methods, to ensure a penetration of 1/8 to 1/4 inch [3 to 6 mm] over the entire surface to be colored. The Contractor may use a wooden float, with nails driven through it and protruding approximately 1/4 inch [6 mm] on the finishing side, to ensure the required penetration. After mixing the coloring material well with the concrete, finish the surface smooth.

During the operations of placing and embedding the coloring material, use approved forms or other satisfactory methods to produce a neat, true edge and to prevent the adjacent surface from being stained or colored.

351-3.2 Applying Black Stain: Stain the areas to be colored with two coats of black permanent concrete stain, and apply a single finish or top coat over the stain.

Apply the permanent black stain at the rate of approximately 1/2 gallon of staining solution per 200 ft² [1 L of staining solution per 10 m²] and, for the finish coat, approximately one gallon per 250 ft² [1.5 L per 10 m²].

Do not apply the coloring until the concrete has aged for a period of at least 21 days.

351-4 Alternate Construction Methods.

In lieu of using the methods described above, the Contractor may meet the requirements of this Section by applying a mortar topping of colored concrete to the freshly placed pavement. The Engineer will designate the proportions of the mortar. Add the quantity of pigment to the mortar mix that is, as determined in the field, necessary to give the mix a deep blue-black color. Add pigment to the mix while adding the other solid ingredients.

Strike-off and consolidate the concrete pavement in accordance with Section 350, to an elevation 1/2 inch [13 mm] below finish grade. Apply the mortar topping within 30 minutes of the placing of the concrete pavement and while the pavement concrete is still fresh, so that no lamination results. After spreading the topping, straightedge and finish it as specified for concrete pavement in Section 350.

351-5 Basis of Payment.

The work specified will not be paid for directly but will be considered as subsidiary work pertaining to the items of concrete work on which the coloring material is applied.