

	Department of Design and Construction	SPECIFICATION BULLETIN	SB 24-004
Title: PIGMENTED ADMIXTURE FOR PORTLAND CEMENT			
Prepared: 4/8/2024		Approved: 4/15/2024	
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APPLICABILITY:

- This Specification Bulletin (SB) is effective for projects advertised on or after 4/15/2024.

SUPERSEDEENCE:

- This SB supersedes the following SBs: **None.**

ATTACHMENTS:

1. *Section 2.19 (2 pages)*
2. *Sub-Section 4.13.4 (H) (1 page)*

**REVISIONS TO THE NEW YORK CITY DEPARTMENT OF TRANSPORTATION
STANDARD HIGHWAY SPECIFICATIONS, DATED 5/16/2022:**

All references contained below are to the New York City Department of Transportation Standard Highway Specifications, Dated May 16, 2022. Said Standard Highway Specifications are hereby revised as follows:

- a) **Refer** to Section 2.19 – Pigmented Admixture for Portland Cement
Delete in its entirety Section;
Substitute the revised Section in Attachment 1 (2 pages)
- b) **Refer** to Sub-Section 4.13.4 (H)- Sidewalk, Concrete Pigmenting
Delete in its entirety Sub-Section;
Substitute the revised Sub-Section in Attachment 2 (1 page)

For questions regarding this bulletin, please contact Richard Jones, jonesri@ddc.nyc.gov.

SECTION 2.19 – Pigmented Admixture for Portland Cement

2.19.1. This section describes pigmented admixture for coloring Portland cement mixtures.

2.19.2. Pigmented admixture must be certified by the manufacturer to consist of pure synthetic mineral oxide only, and to comply with the requirements of ASTM C979 and ACI 316.

The pigmented admixture must produce a color equivalent to that required below and the standards on file at the office of the New York City Department of Design and Construction, Division of Infrastructure, 30-30 Thomson Avenue, Long Island City, New York 11101 and the Office of New York City Landmarks Preservation Commission, unless otherwise specified.

Pigmented admixtures known to produce equivalent colors:

Color	Pigmented Concrete: Dark (Commercial Grey) ¹	Bluestone	Granite
Davis Colors	884 – 3%	884 – 3%	884 – 1%
EA Pigments Corp. (Previously Bayferrox or Lanxess)	“Landmarks Grey” at 3.5lbs per sack ²	“Limestone 330” at 2lbs per sack ²	“Silver 330” at 1lbs per sack ²
DCL Corp (previously Lansco Colors)	8330 – 5lbs per sack ² and 3 parts sand	8330 – 5lbs per sack ² and 3 parts sand	8330 – 2.5lbs per sack ² and 3 parts sand
Sika (previously LM Scofield)	“Landmarks Grey” C-284	“Cool Black #4”	“Cool Black #1”

Notes:

1. As required by the NYCDOT Highway Rules, Commercial Grey must be used in commercial districts C4-4 through C4-7, C5, and C6.
2. A sack, as used above, is 94 pounds of light grey Portland Cement.

2.19.3. (A) If the pigmented admixture is not included in the mix design, the pigmented admixture manufacturer must certify that when used at the recommended dosage, the pigmented admixture will have no deleterious effect on any mix design approval parameter (such as compressive strength, yield, and slump) and will not increase the compressive strength more than 10% when compared to the approved mix design.

(B) Calcium Chloride must not be used in the composition of the admixture nor in the composition of the concrete.

(C) The pigmented admixture must be packaged by the manufacturer in incremental amounts by weight for a single cubic yard of concrete, with the designated dosage clearly marked on each package.

2.19.4. (A) An air entraining agent complying with the requirements of **Section 2.09** must be used in combination with the pigmented admixture.

Water reducing admixtures complying with the requirements of **Section 2.09** may also be used in combination with the pigment admixture as per the Pigment manufacturer's instructions.

(B) No other agents or admixtures can be used with the pigmented admixture in the concrete, unless stated in writing by the manufacturer of the pigmented admixture to be of no consequence to the colorfastness of the concrete mixture.

(C) The concrete containing the pigmented admixtures must be mixed and delivered in accordance with **Section 3.05**. The quantity of concrete being mixed in a mixer must be no less than 40% of the capacity of the mixing drum (a minimum of 4 yards in a 10-yard truck). Before placing the pigmented admixture in a mixer drum, the drum must be thoroughly cleaned and wetted with approximately

35 gallons of mix water and a portion of the aggregate added. This mixture must mix for 3-4 minutes while the truck hopper and fins are washed with 5 gallons of water. After adding the remainder of the concrete to the truck, the load must mix at mixing speed for a minimum of 80 revolutions or 10 minutes.

At the Contractor's option, pigmented admixtures may be added at the site, in which case:

1. The truck must be charged and mixed at the plant, as previously specified, with the required cement, aggregate and admixtures (excluding pigmented admixtures), but only eighty (80%) percent to ninety (90%) percent of the required water must be added. The truck must leave the plant with 0 revolutions on its counter.
2. Once the truck arrives on Site, the remaining water and the pigmented admixture must be added and the load mixed a minimum of 90 revolutions.

Whether the pigment is batched at the plant or the site:

1. Once mixed as required above, the concrete must be sampled and tested in accordance with **Section 3.05.10**. If the consistency of the mix is not acceptable, additional water may be added not more than twice and mixing resumed for 30 revolutions each time. Water added must not exceed the limits shown on the approved mix design. Once the mix is acceptable, it must be discharged directly into the forms.
2. The total number of revolutions allowable after the truck has left the plant must not exceed 150 and the mix must be discharged within 90 minutes from when the truck has left the plant to achieve the correct workability.

(D) The same type and brand of cement, source of sand and water/cement ratio must be maintained for each load of concrete used in the entire Project.

(E) The slump of the concrete must remain consistent as required in the approved mix design.

(F) Before providing the following sample panel(s), the Contractor must prepare pairs of 6 inch x 6 inch x 4 inch samples of pigmented concrete, one with and one without the color matched curing membrane required below in **Subsection 2.19.5.(B)**. As many samples as necessary must be produced until the color is satisfactory to the Engineer. The Contractor must then furnish for approval and on Site a concrete sample for each color specified using the pigmented admixture. The sample must be at least 4' x 4' x 4" and must be given the specified surface texture and cured with the methods specified for the concrete installation. The Contractor must not order the admixture until the samples are approved by the Engineer. Once approved, the samples will be used for assessing color conformance of pigmented concrete installed.

2.19.5. (A) Water must not be sprinkled or otherwise added to the surface of the slab during finishing. Evaporation retardants may be fog-sprayed provided they are not detrimental to the finished color of the concrete.

(B) Curing Membrane. If the concrete is pigmented as per this **Section 2.19**, the curing membrane must be of the liquid-membrane forming type and must be color-matched to the pigmented concrete. Additionally, the curing membrane must be of a type recommended by the pigmented admixture manufacturer and must conform to both ASTM C309 and all local, State, and Federal regulations concerning volatile organic compounds (VOC). Plastic sheeting, burlap, paper, or other unspecified material must not be used as a curing membrane.

2.19.6. Prior to making any field samples and the placing of any colored concrete, the Contractor, concrete supplier, and the Engineer must meet and discuss methods of handling the colored concrete.

SUB-SECTION 4.13.4 (H) – Sidewalk, Concrete Pigmenting

(H) PIGMENTING

Where pigmenting is specified or required, the concrete sidewalks must be pigmented with an admixture complying with the requirements of **Section 2.19**.

Prior to Commencement of Work, the Contractor must submit the name of the proposed sidewalk installer upon which the Contractor's bid is based, along with their respective work history experience in placing pigmented concrete. The installer must have documented experience in working with pigmented concrete.

Prior to making any field samples and the placing of any pigmented concrete, the Contractor, its concrete supplier, installer, cement producer, laboratory, the pigmented admixture's representative, and the Engineer must meet and agree on the procedures and methods of handling the pigmented concrete.

All pigmented concrete at different locations must be identical, unless otherwise directed. Variations in color/tint/hue will not be acceptable. Therefore, the same brand and type of Portland cement and the same source and type of aggregate must be used throughout the Project.

Prior to the mix design being made, the Portland cement intended for use must be checked to determine that its lightness/darkness is similar to the Portland cement used in the original approved sample. The pigmented admixture must be added in the standard proportion specified by the manufacturer. No fly ash or other admixtures (including, but not limited to, calcium chloride) must be used except an air-entraining agent complying with ASTM Designation C260, when directed by the Engineer.

Prior to commencing the placement of concrete, but after acceptance and approval of the pre-construction field sample, the Contractor must submit properly labeled and identified samples of materials used in the approved sample, as follows:

Coarse Aggregate	20 pounds
Fine Aggregate	20 pounds
Portland cement	20 pounds
Pigmented admixture	1 pint
Joint sealer	2 linear feet
Surface sealer	1 pint
Mix design	1 certified copy
Silicon Carbide Aggregate	20 pounds (when specified)

These samples are in addition to the sampling required by **Section 5.02** and must be stored where directed by the Engineer and will constitute material standards for the Project. During construction, one (1) pint of Portland cement from each load of Portland cement delivered to the plant to be used in this specific job must be retained and, after comparison with retained master sample, dated and stored with other retained samples. The aggregate source must also be checked periodically, as directed by the Engineer, and compared with retained samples.