

unless otherwise specified in the Contract Documents. Potentially expansive materials, such as steel slag, shall not be used.

Recycled portland cement concrete or recycled HMA pavement may be used as select borrow, capping borrow, and modified borrow with the written approval of the Engineer. Recycled portland cement concrete, recycled HMA pavement, and processed contaminated soil shall not be used within 1 ft of the surface in any area to be vegetated. All recycled or rehandled materials shall conform to Section TC-6.10.

916.01.01 Select Borrow. Select borrow shall conform to A-2, A-3, or A-2-4 material as specified in the Contract Documents. The maximum dry density shall be a minimum of 105 lb/ft³.

916.01.02 Capping Borrow. Capping borrow shall conform to the select borrow requirements except when A-3 material has less than 10 percent retained on the No. 10 sieve, at least 15 percent shall pass the No. 200 sieve. Sieve analysis shall be determined in conformance with MSMT 302.

916.01.03 Modified Borrow. Modified borrow shall have a minimum of 50 percent retained on the No. 4 sieve, a maximum liquid limit of 30 when tested as specified in T 89, and a maximum plasticity index of 9 when tested as specified in T 90. The maximum dry density shall not be less than 125 lb/ft³. A-5 material, as defined in the Contract Documents shall not be used.

916.01.04 Common Borrow. Common borrow shall have a maximum dry density of not less than 100 lb/ft³.

SECTION 917 — EPOXY PROTECTIVE COATINGS

917.01 EPOXY PROTECTIVE COATINGS FOR CONCRETE. The protective coatings shall be two component epoxy systems for use in conjunction with concrete. One component shall be a clear or pigmented condensation product of the reaction of epichlorohydrin with bisphenol A, the resin of which shall be composed of 100 percent reactive constituents. The other component shall be a clear polyamide hardener.

The producer shall submit a sample of each component for laboratory analysis. The sample shall be coded as the original sample. The original and all subsequent samples shall conform to the following:

TEST PROPERTY	TEST METHOD	SPECIFICATION LIMITS
Pot Life, hr min	Fed. Spec TT-C-535	8
Color	Fed. Standard 595	Gray No. 26440
Dry Film Thickness 1st coat, mil min 2nd coat, mil min	D 1005	2 3
Sagging	D 4400	Must pass test for Recommended film Thickness
Flexibility	Federal Spec TT-P-115	Must not crack, check or delaminate
Infrared Spectrogram	Equipment Manufacturer's Procedure	Each component shall match original sample
Tensile Strength, psi min	MSMT 609	400

917.02 FUSION BONDED EPOXY POWDER COATINGS FOR STEEL. The epoxy protective coatings shall be a one coat, heat curable, thermosetting powdered coating that is electrostatically applied on metal surfaces as specified in the Contract Documents. Unless otherwise specified in the Contract Documents, the color for structural steel shall match Federal Standard No. 595, No. 20040. For reinforcement steel the color shall be a bright color to contrast with the normal color of reinforcement steel and rust (e.g., orange, red, green, yellow, etc., and not brown or any color in the rust family). If reinforcement steel is coated before fabrication, all hairline cracks and minor damage on fabrication bends shall be patched, even if there is no bond loss. The epoxy coating material shall be selected from the prequalified materials list maintained by the Office of Materials and Technology.

Epoxy coatings shall conform to D 3963.

917.02.01 Touch Up System. Material used for the touch up system shall be a two part epoxy system designated and color matched for patching the epoxy coating used.

Patching material shall be available through the manufacturer of the epoxy powder. The patching material shall be fully cured one hour after application at 35 F ambient.

917.02.02 Certification. The manufacturer shall furnish certification as specified in TC-1.02.

917.03 FUSION BONDED POLYESTER COATING FOR METAL TRAFFIC BARRIERS.

917.03.01 Cleaning and Coating. Cleaning and coating shall be performed in an environmentally controlled plant that is fully enclosed and preapproved by the Administration.

All components shall be free of any oil or grease and shall be grit blasted to Near White SSPC-SP 10. Cleaned surfaces shall be protected from high humidity, rainfall or surface moisture and shall not be allowed to flash rust. Blast profile shall be approximately 1 to 1.5 mil, but not greater than 2 mil, as checked with a surface profile gauge approved by the Engineer.

The polyester coating shall be checked for continuity using a 67-1/2 volt wet sponge detector to check for holidays, pinholes, and discontinuities. Coating thickness shall be checked with a properly calibrated magnetic gauge. Minor defects shall be repaired with a liquid touch up recommended by the manufacturer.

The polyester coating shall conform to the following additional requirements:

TEST PROPERTY	TEST METHOD	SPECIFICATION LIMITS
Abrasion	Taber Abraser CS-10, 1000 gm load, 1000 cycles, D 1044	100 mg max weight loss
Adhesion	D 3359, Initial & 1000 hr, Method A	Rating 5A
Gloss	D 523, Initial 500 hr 1000 hr	82% @ 60° 90% @ 60°
Hardness	D 3363	2H - No Gouge
Impact	D 2794	Pass 80 in.·lb
Salt Spray Resistance	B 117, D 1654 1000 hr unscribed 400 hr scribed	Table 2, Rating 10 Table 2, Rating 10
Weather Resistance	G 23, 102 minutes of light followed by 18 minutes of light & Water Spray as in Method I.	No film failure
Thickness	G 12	7 ± 2 mil
Color	Federal Standard 595	Color No. 20040 or as specified in Contract Documents
Infrared Spectrogram	Equipment Manufacturer's Procedure	Match original
Flexibility	1/4 in. Mandrel 180° bend in 1 second, cured per manufacturer's recommendations or specimen prepared by manufacturer.	No breaks, flaking, or cracks. Tested with a Q- panel with no cracking.
Humidity	D 2247, 1000 hr	No blistering.

917.03.02 Certification. The manufacturer shall furnish certification as specified in TC-1.02.

SECTION 918 — TRAFFIC BARRIERS

918.00 CERTIFICATION. The manufacturer shall furnish certification as specified in TC-1.02.