971 COATINGS AND TRAFFIC MARKING MATERIALS–QUALIFIED PRODUCTS LIST.

(REV 1-7-05) (FA 1-11-05) (7-05)

SUBARTICLE 971-1.4 (Page 882) is deleted and the following substituted:

971-1.4 Qualified Products List: All coatings and traffic marking materials shall be one of the products listed on the Qualified Products List. Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6 accompanied by a copy of the infrared identification curve (2.5 to 15 µm) for the vehicle component.

Products may only be used for applications recommended by the manufacturer.

A notation of the number of coats and the thickness of each coat at which the product passes testing may be placed on the QPL. When listed, this will be the minimum criteria for application of the coating.

SUBARTICLE 971-17.1 (Page 901) is deleted and the following substituted:

971-17.1 General: Upon cooling to normal pavement temperature, these materials shall produce an adherent, reflective pavement marking capable of resisting deformation by traffic. The manufacturer shall utilize alkyd based materials only and has the option of formulating the material according to his own specifications. However, the requirements delineated in this Specification, Section 711, and FM 5-541 apply regardless of the type of formulation used. The pigment, glass spheres, and filler shall be well dispersed in the resin. The material shall be free from all skins, dirt and foreign objects.

SUBARTICLE 971-22.2 (Pages 912-913) is deleted and the following substituted:

971-22.2 Material Tests and Certification: Meet the requirements of the tests listed below:

(a) Freeze-Thaw Tests: Subject the applied finish coating to Freeze-Thaw Cycle Tests as follows:

(1) Cast and cure three concrete specimens, not less than 4 by 6 by 6 inches [102 by 152 by 152 mm], of the mix design for the structure. Moist cure the specimens for 14 days followed by a drying period in room air at 60 to 80ºF [16 to 27ºC] for 24 hours.

Ensure that there is no excessive oil on specimen forms. Apply the finish coating to the sides of specimens (brush permitted) at a spreading rate of 50 ± 10 ft^2/gal [1.25 ± 0.25 m^2/L]. Cure the specimens at room temperature and 50% relative humidity for 24 hours, at room temperature and 90% relative humidity for 48 hours, and at room temperature and 50% relative humidity for four days for a total cure time of seven days. After the completion of curing:

(2) Immerse the specimens in water at room temperature (60 to 80ºF [16 to 27ºC]) for three hours; remove and:

(3) Place in cold storage at -15ºF [-26ºC] for one hour; remove and;

(4) Thaw at room temperature for one hour.

(5) Repeat Steps three and four for a total of 50 cycles. At the end of 50 cycles Freeze-Thaw Test, verify that the specimens show no visible defects.

(b) Accelerated Weathering: Subject the applied finish coating specimens to a 5,000-hour exposure test in Twin-Carbon-Arc-Weather-ometer, ASTM G 155, Type D, at an operating temperature of 145ºF [63ºC]. Perform this test at 20-minute cycles consisting of 17 minutes of light and three minutes of water spray plus light. At the end of the exposure test, verify that the exposed samples show no chipping, flaking, or peeling. Prepare the panels for this test by applying the coating at a spreading rate of 50 ± 10 ft^2/gal [1.25 ± 0.25 m^2/L] to both sides and edges of panels cut from non asbestos cement shingles conforming to Federal Specification SS-S-346, Type I. Use curing time as in (a) above.

(c) Fungus Growth Resistance: Ensure that the applied finish coating to be used passes a fungus resistance test as described by Federal Specification TT-P-29G with a minimum incubation period of 21 days where no growth is indicated after the test.

(d) Abrasion Resistance: Ensure that the applied finish coating to be used passes the 3,000 L sand abrasion test, Federal Test Method Standard 141A Method 6191 Abrasion Resistance - Falling Sand.

Prepare the specimens for this test by applying the coating to a cleaned steel panel at a spreading rate of 50 ± 10 ft^2/gal [1.25 ± 0.25 m^2/L]. Cure at room temperature for 21 days.

(e) Impact Resistance: Apply the coating to a concrete panel prepared in accordance with Federal Test Method Standard 141A, Method 2051 at a spreading rate of 50 ± 10 ft^2/gal [1.25 ± 0.25 m^2/L], and allow it to cure for 21 days at room temperature. Then, run the test using the Gardner Mandrel Impact Tester and its method, applying an impact load of 24 inch-pounds [2.7 N·m]. Verify that the coating shows no chipping under this impact load.

(f) Salt-Spray Resistance Test: Coat a concrete specimen with the applied finish coating at a rate of 50 ft^2/gal ± 10% [1.25 m^2/L ± 10%], and cure it for 21 days at room temperature.

Using the ASTM B 117 test method, expose the coated specimen to a 5% salt solution for 300 hours where the atmospheric temperature is maintained at 90 ± 2ºF [32 ± 1ºC]. At the end of 300 hours of exposure, verify that the coating shows no loss of adhesion or deterioration.

(g) Flexibility Test: Coat a sheet metal specimen with the applied finish coating at a rate of 50 ± 10 ft^2/gal [1.25 ± 0.25 m^2/L]. Bend the coated specimen 180 degrees over a 1 inch [25 mm] round mandrel. After bending, verify that the coating shows no breaking.

Supply a service record showing that the finish coating material has a satisfactory service record for a period of not less than five years prior to the date of submission of the service record and that the finish coating has shown satisfactory service characteristics without peeling, chipping, flaking, or non-uniform change in texture or color. Name a specific structure for the specific product for the service record.

Submit the following product analysis data:

(a) Weight per gallon [liter].

(b) Viscosity [Consistency] (Krebs Units).

(c) Weight percent pigment.

(d) Weight percent vehicle solids.

(e) Infra-red spectra of vehicle solution.