

TEX•COTE XL-70 BRIDGE-COTE  
GUIDE SPECIFICATION FORMAT  
APPLIED FINISH MASONRY COATING  
TRANSPORTATION/HIGHWAY CONSTRUCTION

**DESCRIPTION.** This work shall consist of the preparation of the concrete surfaces, cleaning the surfaces, furnishing and applying the masonry coating as described herein. The masonry coating shall be applied to all concrete surfaces indicated on the plans or as directed. The coating shall be applied only after completion of the surface preparation specified herein.

**MATERIALS.** The masonry coating material shall be a commercial product designed specifically for coating concrete and must be suitable for application on damp, uncured concrete and/or cured concrete. Only one coating material shall be used on an individual structure. It shall be delivered to the job site in sealed containers bearing the manufacturer's original labels. The brand, color, and type shall be clearly marked on each container. A copy of the manufacturer's printed instructions shall be made available.

The coating material shall be stored in airtight, upright containers. The containers shall be stored in a dry location where the temperature is above 40°F and less than 100°F.

The masonry coating shall have a shelf life of not less than 12 months. After application, the coating shall be dry to the touch within 48 hours and shall achieve a final cure within 2 to 3 weeks under ideal conditions.

The color of the applied masonry coating shall be in accordance with Federal Color Standard No. 595 and shall match the color identification number shown on the plans.

**SURFACE PREPARATION.** Surface preparation by the general contractor, prior to the application of an applied finish coating shall consist of a general surface finish in accordance with the specific requirements of the state transportation department or government agency.

Surface to be coated shall be free from efflorescence, flaking coatings, oil, curing compounds, release agents and other deleterious substances prior to the application of the applied coating. Curing compound and release agent must be removed and may require light sandblast or waterblast at a minimum 2500 PSI or greater.

**APPLICATION.** The application, including equipment used, shall be in accordance with the manufacturer's recommendations. The material shall be applied by qualified personnel experienced in the work.

The material shall be thoroughly mixed in its original container. If skins have formed, they shall be removed prior to mixing the material. The material shall not be thinned. The masonry coating may be applied over damp, but not wet surface. It shall be applied at a uniform film thickness at a rate of 50±10 square feet per gallon. The application rate shall be sufficient to produce a uniform color and texture. The material

shall be applied only when the ambient temperature is between 40°F and rising, and 100°F. It shall not be applied over frozen surfaces or if rain is imminent. Should rain occur on a freshly applied surface, re-coating may be necessary based on the damage, if any.

Every attempt should be made to schedule the application of the masonry coating as one of the final finishing operations to minimize construction-generated dust. To prevent lap marks, a wet edge shall be maintained at all times. Stopping and starting in mid-sections shall be avoided. Every attempt shall be made to start or end at natural breaks in the surface such as at a panel edge, corner or joint. When applying the coating with a roller, the material shall be applied in vertical strokes initially, cross rolled for even film and appearance, then finished with vertical strikes.

**FINISHED PRODUCT.** The coating material in the finished state shall be capable of accommodating the thermal and elastic expansion ranges of the substrate without cracking.

The texture of the completed finish coat shall be generally similar to that of rubbed concrete. The completed finished coating shall be tightly bonded to the structure and present a uniform appearance and texture. If necessary, additional coats shall be applied to produce the desired surface texture and uniformity.

Coatings shall be entirely removed from the structure upon their failure to positively adhere without chipping, flaking or peeling, or attaining the desired surface appearance. The finish coating shall be reapplied after proper surface preparation until the desired finish product is achieved. The average thickness of the completed finish coating shall not exceed 1/8 of an inch.

**MATERIAL TESTS AND CERTIFICATION.** Before material is applied a Type \_\_\_\_\_ certification shall be furnished attesting that the commercial product furnished is in accordance with the same formula as that previously subject to the tests specified below and approved. Copies of the current tests reports shall be attached to certification.

All testing shall be performed by a qualified commercial testing laboratory acceptable to the Division of Materials and Tests.

The applied finish coating shall be subjected to and shall satisfy the requirements of the tests listed below, prior to use on a structure.

- (a) **FREEZE-THAW TESTS.** The applied finish coating shall be subjected to freeze-thaw cycle tests as follows:
  1. Three concrete specimens, not less than 4 inches by 6 inches by 6 inches, of the mix design for the structure shall be cast and cured. Fourteen days moist curing with a drying period at room temperature, 60° to 80°F, for 24 hours will be required before the specimens are coated with the applied finish. Caution shall be taken that there be no excessive oil on specimen forms. The finish coating shall be applied to the sides of specimens at a spreading rate of 50±10 square feet per gallon. Brush application will be permitted. Cementitious coatings shall be cured at room temperature and 30 percent relative humidity for 24 hours, at room temperature and 90 percent relative humidity for 48 hours, and at room temperature

and 50 percent relative humidity for 4 days for a total curing time of 7 days. Other coatings shall be cured at room temperature for 48 hours after the completion of curing.

2. The specimens shall be immersed in water at room temperature for 3 hours, then removed.
  3. The specimens shall be placed in cold storage at -15°F for 1 hour, then removed.
  4. The specimens shall be thawed at room temperature for one hour.
  5. Steps 3 and 4 shall be repeated for a total of 250 cycles. At the end of 250 cycles, the specimens shall show no visible defects.
- (b) **ACCELERATED WEATHERING.** The applied finish coating shall be subjected to 7,500 hour exposure test in a Twin-Carbon-Arc-Weatherometer, ASTM G 23, Type D, at an operating temperature of 145°F. The test shall be made at 20-minute cycles consisting of 17 minutes of light and 3 minutes of water spray plus light. At the end of the exposure test, the exposed samples shall show no chipping, flaking, or peeling. The panels for this test shall be prepared by applying the coating at a spreading rate of 50±10 square feet per gallon to both sides and edges of panels cut from asbestos cement shingles in accordance with Federal Specification SS-S-346, Type I. Curing time shall be in accordance with (a).
- (c) **FUNGUS GROWTH RESISTANCE.** The applied finish coating to be used shall pass a fungus resistance test in accordance with Federal Specification TT-P-29g. Fungus growth shall not be indicated after a minimum incubation period of 21 days.
- (d) **ABRASION RESISTANCE.** The applied finish coating to be used shall pass the 2,000 litre sand abrasion test in accordance with Method 6191 Abrasion Resistance—Falling Sand, Federal Test Method Standard 141a, ASTM D968-81. The specimens for this test shall be prepared by applying the coating to a cleaned steel panel at a spreading rate of 50±10 square feet per gallon. The specimens shall be cured at room temperature for 21 days.
- (e) **IMPACT RESISTANCE.** The coating shall be applied to a concrete panel prepared according to Federal Text Method Standard 141a, Method 2051, at a spreading rate of 50±10 square feet per gallon, and allowed to cure for 21 days at room temperature. The test shall then be run using the Gardner Mandrel Impact Tester in accordance with ASTM D 2794 using a \_ of an inch indenter with an impact load of 6 inch-pounds. The coating shall show no chipping under this impact load.

- (f) SALT-SPRAY RESISTANCE TEST. A concrete specimen shall be coated at the rate of one gallon per 50 square feet  $\pm$ 10 percent and cured for 21 days at room temperature. The coated specimen shall be exposed to a 5 percent salt solution in accordance with ASTM B 117 for 2,500 hours where the atmospheric temperature is maintained at  $90^{\circ}\pm 2^{\circ}$ F. At the end of 2500 hours of exposure, the coating shall show no ill effects, loss of adhesion, or deterioration.
- (g) FLEXIBILITY TEST. A sheet metal specimen shall be coated with the applied finish coating at a rate of one gallon per 45 square feet  $\pm$  10 percent and allowed to cure for 48 hours at room temperature. The coated specimen shall be bent 180 degrees over a one inch round mandrel. After bending, the coating shall show no breaking.

In addition to the certification and test reports required above, a service record shall be supplied showing that the finish coating material has a satisfactory service record on concrete surfaces for a period of not less than 5 years prior to the date of submission of the service record. The finish coating shall also have shown satisfactory service characteristics without peeling, chipping, flaking, and non-uniform change in texture or color. A specific structure for the specific product shall be named for the service record.

In addition to the above requirements, the manufacturer shall submit, for each batch of material used, the following product analysis data:

- (a) Weight per gallon.
- (b) Viscosity in Kneb units.
- (c) Weight percent pigment.
- (d) Weight percent vehicle solids
- (e) Infrared spectra of vehicle solution.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT. Only those measurements necessary to verify application rates will be made. The cost of masonry coating used on roadway concrete median barrier shall be included in the cost of such median barrier. Masonry coating used on concrete bridges will be paid for at the contract lump sum price for masonry coating. The costs of surface preparation, furnishing and applying the materials, labor, equipment and incidentals necessary shall be included in the cost of this work.

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