

Vulkem® 350/345/346

Traffic Deck Coating System

1. Purpose

1.1 The purpose of this document is to establish uniform procedures for applying the VULKEM TRAFFIC DECK COATING SYSTEM.

1.2 The techniques involved may require modifications to adjust to job-site conditions. Consult your Tremco Field Representative for specific design requirements.

2. Scope

2.1 This document will provide the necessary instructions for the application of the VULKEM TRAFFIC DECK COATING SYSTEM to qualify for the manufacturer's warranty.

3. Conditions

3.1 Surface to receive coating, sealant or liquid-applied flashing material shall be sound, dry, clean and free of all dirt, dust, oil, grease, wax, tar, asphalt, mildew, mold, paint, sealers, coatings, curing agents, loose particles, laitance and other contamination or foreign matter which may interfere with the adhesion of the coating, sealant or liquid applied flashing materials.

3.2 The conditions of "dry" shall be determined by fastening a rubber mat to the concrete deck for a minimum of six hours. Said mat shall be located in an area exposed to the sun. After six hours (minimum), the surface beneath the rubber mat shall show minimal evidence of moisture or dampness.

3.3 Shrinkage cracks in the concrete surface which are 1/8 inch (3mm) wide or greater shall be ground out to a minimum 1/4 inch wide by 1/2 inch (6mm x 12mm) deep and treated following section 5. Detail Work. Structural cracks resulting from building movement regardless of width shall be ground out to a minimum 1/4 inch wide by 1/2 inch (6mm x 12mm) deep and treated following section 5. Detail Work.

3.4 Spalled areas shall be cleaned and filled with non-shrink grout and made level with the existing surface.

3.5 In the event of exposed reinforcing steel, the exposed portions of steel shall be ground to expose clean, bright metal and coated with Vulkem Primer #171 or TREMprime Multi-Surface Urethane Primer.

3.6 Surfaces shall be made free of defects which may telegraph and show through the finished coating. Surfaces which are rough (fins, ridges, exposed aggregate, honeycombs, deep broom finish, etc.) shall be leveled and made smooth by applying a coat of sand-filled epoxy or equivalent filler material. If filler material is porous, it should be sealed with Vulkem Primer #171 or TREMprime Multi-Surface Urethane Primer at the rate of 125 sq ft per gallon (3.1 m²/L).

3.7 All drains shall be cleaned and operative. Drains shall be recessed lower than the deck surface. Surface shall be sloped to the drain to provide positive drainage.

3.8 Cut a 1/4 inch wide by 1/4 inch (6mm x 6mm) deep keyway into the concrete surface at any point where the coating will have an exposed terminating edge. That is; any point where the coating will end in an open area subject to traffic (i.e. at the end of a ramp, etc.).

3.9 If the project is restorative in nature, old sealant and backing material shall be removed. The joint interface may require a thorough wire brushing, grinding, sandblasting, solvent washing and/or a primer.

4. Materials

4.1 Recommended material and their use are as follows:

Dymeric 240FC. A two-part, chemically-curing, gun-grade, polyurethane deck joint sealant for use in sealing cracks, expansion joints, control joints and for use in forming cants. (Do not use with Vulkem Primer #171).

VULKEM 350 COATING. A one-part, polyurethane coating used as the elastomeric waterproof membrane of the system available in an R (roller) and SL (self-leveling) grade for vertical and horizontal application.

VULKEM 345 COATING. A two-part, sand-filled, polyurethane coating to provide optimum wearing characteristics.

VULKEM 346 COATING. A one-part, aliphatic modified coating to provide additional chemical and UV resistance to the coating system.

BACKER ROD. A closed cell polyethylene back up material used in expansion joints and at the base of cants to prevent three-sided adhesion, and to control the depth of the sealant.

VULKEM PRIMER #171. A one-part, film-forming primer to be used on porous surfaces to improve adhesion and to reduce pinholes in the membrane. Also used in expansion joints subject to continuous immersion or subject to water intrusion from hydrostatic conditions.

TREMprime NON-POROUS PRIMER. A one-part, primer for use on metal surfaces.

VULKEM PRIMER #191. A one-part interlaminar primer for use when applying a fresh coat of Vulkem urethane after preceding coat has been exposed for long periods and/or has lost its surface tack.

TREMPRIME MULTI-SURFACE URETHANE PRIMER. A VOC-compliant, quick-drying, two-part primer for use between urethanes and urethanes, wood, concrete, PVC and steel.

AGGREGATE. 20-30 mesh silica sand or alumina oxide, which imparts the non-slip texture and contributes to wear resistance as made by Best Sand, Chardon, Ohio or equal.

5. Detail Work

Note: Do not apply sealant or coatings to a frosty, damp or wet surface or when air temperature is below 40°F (4°C) or the surface temperature is above 110°F (43°C). Cure times as stated below are based upon standard ambient conditions of 75°F (25°C), 50% Relative Humidity. A decrease in ambient temperature will significantly lengthen the cure time.

5.1 Mix Dymeric 240FC using a suitable size mixing blade in a slow speed electric or air powered drill motor. Avoid trapping air into the mixture. Move the mixing blade around the inside of the container to assure complete disbursement of the catalyst.

5.2 Lay a 1/4" inch (6mm) diameter Backer Rod into the corner at the juncture of all horizontal and vertical surfaces (such as: curbs, wall sections, columns or penetrations through the deck). Apply a bead of Dymeric 240FC one inch (2.5 cm) wide over the Backer Rod. Tool the sealant bead to form a 45° cant. Use sufficient pressure to force out any entrapped air and to assure complete wetting of the surface. Remove excess sealant from the deck or wall surface.

5.3 Install a Backer Rod, 1/8 inch to 1/4 inch (3mm to 6mm) diameter larger than the joint width to all prepared expansion joints. Set depth of Backer Rod to control the depth of the sealant. (Depth of sealant is measured from the top of the concrete surface.) Proper depth of sealant is as follows: For joints 1/4 inch (6.4mm) to 1/2 inch (12.7mm) wide, the width to depth ratio should be equal. Joints 1/2 inch (12.7mm) wide or greater should have a sealant depth of 1/2 inch (12.7mm). Minimum joint size is 1/4 inch by 1/4 inch (6.4mm by 6.4mm).

5.4 Completely fill joint with Dymeric 240FC. For cracks, tool sealant flush with the surface. For expansion joints, tool sealant slightly concave so the surface of the sealant is below the surface of the deck.

5.5 Allow Dymeric 240FC to cure overnight.

5.6 Apply a strip of tape (masking tape or duct tape) to the vertical sections, two or three inches above the Dymeric 240FC cant to provide a neat termination of the vertical detail coat. Apply 25 mil (.64mm) thick detail coat of Vulkem 350-R over the treated cant and extend the Vulkem 350-R to the tape on the vertical surface and 4 inches (100mm) onto the horizontal surface. Feather-edge the terminating edge of the Vulkem

350-R detail coat on the horizontal surface so it will not show through the finished coating.

5.7 Apply a 30 mil (.75mm) thick detail coat of Vulkem 350-R, 6 inches (150mm) wide centered over all untreated cracks, all routed and sealed cracks and over all cold joints. Feather-edge terminating edge of detail coat to avoid these edges from showing through the finished coating.

5.8 Allow all detail coats to cure for 24 hours.

NOTE: Expansion joints should not be coated over.

6. Coating Application

6.1 Apply Vulkem 350, 25 mils (.64mm) thick to the entire area to be coated, including over all detail coats, but excluding expansion joints. The most popular method of application is with a notched trowel. Vulkem 350 can be applied with a roller (solvent resistant, medium nap (3/8" - 1/2") roller sleeve) or by airless spray equipment. Airless spray should be at least a 45:1 ratio pump. Operate at 50 psi (345 Kpa) use a .29 to .37 (.7mm - .9mm) reversible tip. (Note: In sloped areas use Vulkem 350-R in lieu of Vulkem 350-SL).

6.2 Allow Vulkem 350 to cure for 24 hours. (See Note Section 5)

6.3 VULKEM 345 MIXING. Vulkem 345 should be mixed thoroughly before application to eliminate any settling.

NOTE: The Vulkem 350 should have a slight surface tack to aid in the adhesion of the Vulkem 345. If the membrane coat has cured so as to not have a surface tack, the surface must be cleaned with a cloth which has been wet with Xylol (Xylene). DO NOT SATURATE THE SURFACE WITH SOLVENT. IF THE MEMBRANE COAT HAS BEEN ALLOWED TO BE EXPOSED FOR A PROLONGED PERIOD, IT SHOULD BE CLEANED, THEN PRIME COATED WITH VULKEM PRIMER #191 OR TREMPRIME MULTI-SURFACE URETHANE PRIMER.

6.4 The first coat of Vulkem 345 is applied to driving lanes, ramps and turn areas. Apply the Vulkem 345 with a heavy duty roller [3/4 inch - 1 inch (19mm - 25mm) nap] at a thickness of 15 mils (.38mm). Apply sections which can be easily reached for backrolling. Immediately following the application of the Vulkem 345, broadcast 20 to 30 mesh (.7mm - .9mm) diameter silica sand or other suitable aggregate into the wet Vulkem 345. Broadcast the sand at a rate of 12.5 pounds per gallon (1.5kgs/L) of Vulkem 345. This is an equal volume of sand and liquid. Regardless of how the sand is broadcast (i.e. by hand, seed spreader, sand blast, etc.). Backrolling is necessary to assure all the aggregate is evenly distributed.

6.5 Allow the first coat of Vulkem 345 to cure overnight.

6.6 Repeat steps above (paragraph 6.3 thru 6.5). The second coat of Vulkem 345 shall be applied over the entire surface of the deck.

6.7 Allow the second coat of Vulkem 345 to cure overnight.

6.8 Apply Vulkem 346 topcoat with a brush, roller or airless spray at a rate of 150-175 square feet per gallon (3.7-4.3m²/L). Apply this final coat to the entire coated area.

7. Clean Up

7.1 Clean all adjacent areas to remove any stains or spills with MEK, Toluene or Xylene.

7.2 Clean tools or equipment with MEK, Toluene, or Xylene before materials cure.

7.3 Clean hands by soaking in hot, soapy water then brush with a stiff bristle brush.

8. Usage

The following is a guide to figuring material usage:

DYMERIC 240FC. For a 1 inch (25.4mm) cant bead over a 1/4 inch (6mm) backer rod, 1 gallon of sealant for every 20 linear feet is required (1 liter for 8 meters).

VULKEM 350 COATING. When applied at 64 square feet per gallon (1.57 m²/L) will yield a mil thickness of 25 mils (.64mm) wet.

VULKEM 345 COATING. Apply at 107 square feet per gallon (2.5m²/L) for a mil thickness of 15 mils (38mm).

VULKEM 346 TOPCOAT. Apply at 150-175 square feet per gallon (3.7-4.3m²/L) for a mil thickness of 11-9 mils avg (.26mm).

AGGREGATE. Approximately 15 pounds of approved aggregate will be used with each gallon of Vulkem 345, as prescribed in section 4.1.

