

APPLICATION INSTRUCTIONS

1. Purpose

- 1.1 The purpose of this document is to establish uniform procedures for applying the Vulkem® 350NF/Tremco Epoxy Primer Under Tile Waterproofing System. The techniques involved may require modifications to adjust to jobsite conditions. If you have any questions about your application, contact your local Tremco Sales Representative for specific design requirements.
- 1.2 This document will provide the necessary instructions and troubleshooting for the application of the Vulkem Pedestrian Deck Coating System to qualify for the manufacturer's warranty.

2. Inspection of Jobsite Conditions

- 2.1 Investigation of the substrate should be performed to determine the type of surface preparation that will need to take place to achieve the appropriate surface profile required for the coating application. Depending on the condition of the concrete, one or more types of surface preparations may be required. Refer to ICRI's Technical Guideline No. 03732- Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings and Polymer Overlays for best practices on selecting the appropriate method of concrete preparation. Thin film or high-build coatings will require the surface profile, CSP 2-4.

3. Conditions for Concrete Surfaces

- 3.1 Concrete shall be water-cured and attain a 2500 psi minimum compressive strength. Moisture content in the concrete must be lower than 4.5% as measured using a Tramex CME 4 Moisture Meter. Depending on concrete construction and job site location, additional concrete testing may be required. Please contact your local Tremco Sales or Technical Representative.
- 3.2 Concrete shall be free of any laitance which can usually be achieved by shotblasting (preferred method) or sandblasting the surface. For proper methods, refer to ICRI's Technical Guideline No. 03732.
- 3.3 Concrete surface shall be properly cleaned so that the surface to receive the coating, sealant or liquid-applied flashing is free of mold, paint, sealers, coatings, curing agents, loose particles, and other contamination or foreign matter that may interfere with the adhesion. Jobsite conditions may require the use of a Vulkem primer.
- 3.4 Shrinkage cracks in the concrete surface that are 1/16" (1.6 mm) wide or greater shall be ground out to a minimum 1/4" wide x 1/2" deep (6 mm x 12 mm) and treated according to the instructions in Section 7, Detail Work.
- 3.5 Structural cracks regardless of width shall be ground out to a minimum 1/4" wide x 1/2" (6 mm x 12 mm) deep and treated according to the instructions in Section 7, Detail Work.
- 3.6 Spalled areas shall be cleaned free of loose contaminants prior to repair. Because jobsite conditions vary, it is recommended that you contact Tremco Technical Services at 866-209-2404 for the best method of repair.
- 3.7 In the event of exposed reinforcing steel, it is recommended that the structural engineer of record be contacted for investigation and for best repair method.
- 3.8 Surfaces shall be made free of defects that may telegraph and show through the finished coating. Surfaces that 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.

- 3.9 All drains shall be cleaned and operative. Drains shall be recessed lower than the deck surface. The surface shall be sloped to drain to provide positive drainage. Drains should be detailed as instructed below:
 - Cut a 1/4" wide x 1/4" deep (6 mm x 12 mm) 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, for example, at the end of a ramp, around drains and alongside expansion joints.
- 3.10 If the project is a restoration deck, old sealant and backing material shall be removed. The joint interface will require a thorough wire brushing, grinding, sandblasting, solvent washing and/or primer.

4. Conditions for Wood Surfaces

- 4.1 Wood must be exterior grade plywood installed A-side up and must be firm and well fastened, with proper consideration given to joints and movement.
- 4.2 Wood surfaces may require primer. Please contact your local Tremco Sales or Technical Representative.

5. Special Surfaces

- 5.1 Vulkem 350NF requires TREMprime Non-Porous Primer on metal surfaces. Lap joints must be sealed with Dymonic® 100 and coated with Vulkem 350NF in order to cover seams, bolts and rivets prior to applying the system.

6. Jobsite Materials

- 6.1 Recommended materials and their uses are as follows:

Dymonic 100: A one-part, moisture-curing, gun grade polyurethane sealant for use in precast, masonry, expansion joints, control joints and for use in forming canals.

Vulkem 350NF Base Coat: A one-part, low odor, low VOC, polyurethane coating used as the elastomeric waterproofing membrane of the system, available in a R (roller) grade for vertical applications and SL (self-leveling) for horizontal applications.

Tremco Epoxy Primer: A two-component (1:1) primer, used as a top coat over the Vulkem 350NF base coat.

Vulkem Primer #171: A one-part, film-forming primer to be used on porous surfaces.

Vulkem 191 Primer: a low-VOC compliant, one-part, porous and interlaminar primer for use in applying a fresh coat of Vulkem coating or sealant after preceding coat has been exposed for long periods of time.

TREMprime Multi-Surface Urethane Primer: a low-VOC, quick drying, two-part primer for use between urethanes and urethanes, wood, concrete, PVC and steel.

Aggregate: 30-40 mesh (0.6-0.7 mm diameter) silica sand or alumina oxide which imparts a textured finish.

Backer Rod: A back up material used in joints to prevent three sided adhesion and to control the depth of sealant.

6.2 Refer to the project manager for your specific job requirements

7. Detail Work

Note: Do not apply sealant or coatings to a frosty, damp or wet surface or when substrate 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% RH. A decrease in ambient temperature and humidity will significantly lengthen the cure time.

- 7.1 At the juncture of all horizontal and vertical surfaces such as curbs, wall sections, columns, or penetrations through the deck, apply a bead of Dymonic 100. Tool the sealant bead to form a 45° cant. Use sufficient pressure to force out any trapped air and to assure complete wetting of the surface. Remove excess sealant from the deck or wall joint.
- 7.2 Install a backer rod, 1/8" to 1/4" (3 mm to 6 mm) diameter larger than the joint width to all prepared control joints. Set depth of backer rod to control the depth of the sealant. (Depth of sealant is measured from the top of the backer rod to the top of the concrete surface.) Proper depth of sealant is as follows:
 - 7.2a. For joints 1/4" (6.4 mm) to 1/2" (12.7 mm) wide, the depth ratio should be equal.
 - 7.2b. Joints 1/2" (12.7 mm) wide or greater should have a sealant depth of 1/2" (12.7 mm). The minimum joint size is 1/4" x 1/4" (6.4 mm x 6.4 mm).
- 7.3 All cracks and joints shall be sealed with Tremco approved sealant, and tooled flush with the surface. Note: Expansion joints should not be coated over. For treatment of expansion joints, contact your local Tremco Sales Representative.
- 7.4 Allow sealant to cure overnight.
- 7.5 Apply a strip of masking tape or duct tape to the vertical sections at a minimum of 2" above the Dymonic 100 Sealant's cant to provide a neat termination of the vertical detail coat.
- 7.6 Prior to use, Vulkem 350NF should be mixed with a spiral paint mixing paddle at a rate of 500 rpm for a minimum of 5 min. For further detail, please refer to the Vulkem 350NF Mixing Guide at www.tremcosealants.com.
- 7.7 Apply 25-mil (.64 mm) thick detail coat of Vulkem 350NF Roller Grade over the treated cant, and extend it to the tape on the vertical surface and 4" (100 mm) onto the horizontal surface. Feather-edge the terminating edge of the Vulkem 350NF Roller Grade detail coat on the horizontal surface so it will not show through the finished coating.
- 7.8 Apply a 25-mil (.64 mm) thick detail coat of Vulkem 350NF Roller Grade 6" (150 mm) wide centered over all untreated cracks, all routed and sealed cracks and over all cold joints. Feather-edge terminating edge of detail coat to keep these edges from showing through the finished coating.
- 7.9 Allow all detail coats to cure for a minimum of 4 to 6 hr depending on temperature and humidity.

NOTE: Recommended coverage rates are approximate. Sand loading methods and concrete surface profiles may increase the amount of material required to obtain uniform coverage.

8. Coating Application

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- 8.1 Thoroughly mix the Vulkem 350NF with an appropriate mixer taking care not to entrap air bubbles within in the coating. Approximate mixing time should take approximately 5-6 minutes. For recommendations on mixer options, contact Tremco Technical Services.
- 8.2 Apply Vulkem 350NF at 25-40 square feet per gallon to yield 40-60 wet mils thick to the entire area to be coated, including over all detail coats, but excluding expansion joints. The recommended method of application is with a notched squeegee. Cross-rolling may follow in the event the coating may need to be leveled out. Vulkem 350NF can be applied with a roller (solvent resistant, medium nap (3/8" - 1/2"/9.5mmx12.7mm) sleeve.
- 8.3 Allow Vulkem 350NF a minimum of 4 to 6 hours and a maximum of 24 hours to cure. Cure rates depend on temperature and humidity. Refer to cure rate guideline at the end of this document
- 8.4 If the Vulkem 350NF has been applied for 24 hours or longer during the ideal temperature application range (see chart on last page of document), it should be cleaned with a damp cloth of xylene (do not saturate it). Prime coat it with Vulkem Primer #191QD. We highly recommend that you contact your local Tremco Sales Representative with any questions on whether or not priming is necessary.
- 8.5 Pour the Tremco Epoxy Primer Part A and Part B into a separate mixing container by equal volume. The mix ratio is exactly 1-part of A to 1 part of B. Thoroughly mix the Part A and B components with an appropriate paddle mixer taking care not to entrap air bubbles within the epoxy. Approximate mixing time should take 2 to 3 minutes. Scrape down the sides of the pail, and mix for an additional 1 to 2 minutes.
- 8.6 Apply the mixed Tremco Epoxy Primer with a medium nap roller at 10-12 mils thickness (approximately 133-160 square feet per gallon).
- 8.7 Immediately following the application of the Tremco Epoxy Primer broadcast to refusal (flood coat) the material with 30 to 40 mesh diameter silica sand. Allow this to fully cure overnight during ideal ambient temperatures and relative humidity. Prior to proceeding with the tile application sweep or blow off any excess sand.

9. Clean Up

- 9.1 Clean all adjacent areas to remove any stains or spills with Toluene or Xylene.
- 9.2 Clean tools or equipment with Toluene, or Xylene before materials cure.

10. Usage

Dymonic 100: For a 1" (25 mm) cant bead, approximately 5 ft/sausage.

Vulkem 350NF Base Coat: When applied at 25-40 square feet per gallon (.98 to 1.57 m²/L) will yield a mil thickness of 40-60 wet mils.

Tremco Epoxy Primer: When applied at 133-160 square feet per gallon (3.3 to 3.9 m²/L) depending on silica method will yield a mil thickness of 10-12 wet mils.

Aggregate: Seeded to refusal.

11. Troubleshooting

This section describes common industry application issues when certain environmental conditions exist and their remedies. If any of these should occur, it is always recommended that you contact your local Tremco Sales Representative or Tremco Technical Services.

11.1 Tremco requires that any possible recoating job be reviewed and approved by your Sales and/or Technical Representative prior to installation.

Vulkem® 350NF/Tremco Epoxy Primer

Under Tile Waterproofing System

- 11.2 Moisture in concrete may cause blisters or bubbles, and/or interfere with proper adhesion of the waterproofing membrane system.
- 11.3 Installation of the waterproofing membrane system at thicknesses greater than recommended may cause gassing, bubbles or blisters.
- 11.4 Allow Vulkem 350NF to fully cure prior to application of Tremco Epoxy Primer. Failure to do so may prevent full cure of the waterproofing membrane.
- 11.5 Follow the most current TCNA Handbook for Ceramic, Glass, and Stone Tile Installation as a guide to assist in clarifying and standardizing installation specifications for tile.

12. Weather Impact on Coating Application

This section discusses the impact of applying these coatings outside the ideal temperature application range of 65 to 85 °F (18.3 to 29.4 °C) at 50% RH.

- 12.1 At temperatures lower than the ideal range, the material will become viscous and it will cure at a slower rate. Refer to the chart below for approximate cure rates at varying temperatures.
- 12.2 Deck surface temperatures may affect cure rates.
- 12.3 Enclosed areas may slow the cure rate of the coating because humidity levels tend to be low in these conditions.

Quick Reference Application Chart

Layer	Product	Wet Mil	Cure Time*	Square Feet Per Gallon
Base Coat	Vulkem 350NF	40-60	Minimum 6 to 24 hr	25-40
Top Coat	Tremco Epoxy Primer	10-12	Overnight	133-160

*Cure times are based on ideal ambient temperature at 50% RH. See chart below for ideal temperature range.

Approximate Cure Times in Hours at 50% RH

Temperature at 50% RH	Vulkem 350NF	Tremco Epoxy Primer
40°-55° F 4.4°-12.8° C	48+	Overnight
55°-65° F 12.8°-18.3° C	16 to 24	Overnight
65°-85° F 18.3°-29.4° C	6 to 24	Overnight

Variations in temperature and humidity can affect the cure rate of the coating. The above chart should be used as a guide only to determine the approximate rate of cure. Other factors can also influence the cure rate such as substrate temperature and enclosed environments. For more information about proper application procedures please contact Technical Services.

0819/350NF/EPAl-DC

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

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