Application Instructions

Vulkem® 350 Under Tile

1. Purpose

1.1 The purpose of this document is to establish uniform procedures for applying the VULKEM 350 WATERPROOFING MEMBRANE UNDERNEATH TILE AS PER TCA GUIDLEINES.

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

2. Scope

2.1 This document will provide the necessary instructions for the application of the VULKEM 350 WATERPROOFING MEMBRANE UNDERNEATH TILE AS PER TCA GUIDLEINES to qualify for the manufacturer's warranty.

3. Conditions for concrete surfaces

Note: Slab-on-grade conditions may require use of a vapor barrier and/or retardant sheet and a primer. Contact your local representative or technical services for more information.

3.1 Concrete shall be water cured and in place for at least 14 days, preferably for 28 days.

3.2 Concrete shall be finished with a light steel trowel followed by a fine hair broom or equivalent finish.

3.3 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.

Job site conditions may require use of a Vulkem Primer. Consult a Tremco Representative for recommendations prior to installing materials.

3.4 The condition of a dry substrate shall be determined by fastening a rubber mat to the concrete deck for a minimum of six hours. The 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.

3.5 Structural or shrinkage cracks in the concrete surface which are greater than 1/16 inch (1.5mm) wide shall be ground out to a minimum of 1/4 inch by 1/2 inch (6mm x 12mm) deep.

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

3.7 Surfaces shall be made free of defects that may telegraph and show through the waterproofing coating. Repaired areas must be primed with Vulkem Primer #171 or TREMprime Multi-Surface Urethane Primer.

3.8 All drains shall be cleaned and operative. Drains shall be recessed lower than the deck surface. The surface shall be sloped to the drain to provide positive drainage. Primer may be required. See Section 5.

3.9 At any point where the coating terminates in an area subject to traffic, cut 1/4" x 1/4" (6mm x 6mm) keyway and terminate the coating into the keyway.

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

4. Conditions for wood surfaces

4.1 Wood must exterior grade plywood installed A-side up and must be firm and well fastened, with proper consideration given to joints and movement. Refer to manufactures details and instructions on Tremco's web site.

4.2 Wood surfaces must be primed with Vulkem Primer #171. Allow primer to dry to a tack before proceeding. TREMprime Multi-Surface Urethane Primer may also be used.

5 Special Surfaces

5.1 Vulkem 350 requires TREMprime Non-Porous Primer on metal surfaces. Lap joints must be sealed with Dymeric 240FC and coated with Vulkem 350 in order to cover seams, bolts and rivets prior to applying the system.

6. Materials

6.1 Materials and their uses are as follows:
DYMERIC 240FC SEALANT. 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, also suitable for continual waterimmersion.

VULKEM 45SSL. A one-part semi-self-leveling urethane sealant used in horizontal and minimal slope applications.

VULKEM 116 or 921 SEALANT. A one-part moisture curing, gun grade polyurethane sealant for use in precast, masonry and window perimeter construction joints. An alternative for Dymeric 240FC.

VULKEM 350 COATING. A one-part, slightly thixotropic, polyurethane coating used as the elastomeric, waterproofing membrane and basecoat.

CEMENTITIOUS MATERIAL. Use as approved by Euclid Chemical company as a base for setting tile.

TREMPRIME MULTI-SURFACE URETHANE PRIMER. A two–part, very low VOC, fast-drying primer for use between urethane coatings/sealants and urethanes, metal, wood and concrete.

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 any metal surface to which any VULKEM product will be applied.

VULKEM PRIMER#191. A one-part interlaminary primer for use when applying a fresh coat of Vulkem urethane after the proceeding coat has been exposed for over 24 hours and/or has lost its surface tack.

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

AGGREGRATE. 60-90 mesh (0.4-0.3 mm diameter) as manufactured by FeldSpar Corp. or equal silica sand or alumina oxide that imparts a texture to the Vulkem 350 and eases adhesion of the tile per TCA guidelines.

7. 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.

7.1 Mix the 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.

7.2 At horizontal and vertical surface junctures, install a 1 inch sealant cant at all interfaces of vertical to horizontal such as: curbs, wall sections, columns or penetrations through deck). Apply a bead of Dymeric 240FC, one inch (2.5 cm) in width, 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.

7.3 In expansion joints, install a Backer Rod, 1/8 inch to 1/4 inch (3mm-6mm) in 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 backer rod to the top of the concrete surface). Sealant to be used in all expansion joints is Vulkem 45SSL.

Proper depth of sealant is as follows:

For joints 1/4 inch (6.4 mm) to 1/2 inch (12.7mm) width to depth ratio should be equal. Joints w/ 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).

7.4 All cracks and joints shall be sealed with Tremco Sealant, and tooled flush with the surface

7.5 Allow Tremco Sealant to cure overnight.

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

7.7 All Vulkem 350 detail coats can be recoated after six hours with Vulkem 350.

NOTE: Expansion joints should not be coated over. Per TCA guidelines, expansion joints must be every 8' apart to preserve the integrity of the tile surface.

8. Coating Application

8.1 Apply Vulkem 350, 60 wet mils (1.5mm) 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 squeegee. Backroll to evenly distribute coating. VULKEM 350 can also be applied with a roller equipped with a solvent resistant roller sleeve.

8.2 Allow Vulkem 350 to cure a minimum of 24 hours at 75˚F (24˚C), 50% relative humidity.

Note: Vulkem 350 should have a slightly tacky surface to aid in the adhesion of the second coat of VULKEM 350. If the membrane coat has reached a tack-free cure, the surface must be cleaned with a cloth which has been wet with Xylol (Xylene). DO NOT SATURATE THE SURFACE WITH SOLVENT. IF THE VULKEM MEMBRANE COAT HAS BEEN ALLOWED TO BE EXPOSED FOR A PROLONGED PERIOD, IT SHOULD BE CLEANED, THEN PRIME COATED WITH EITHER VULKEM PRIMER 191 OR TREMPRIME MULTI-SURFACE URETHANE PRIMER.

8.3 After the base coat has been installed and allowed to cure, install a second layer of the Vulkem 350 at a rate of 150 square feet per gallon, using a short nap (1/4") solvent-resistant roller or squeegee.

8.4 Broadcast silica quartz to fully cover the wet Vulkem 350. The Vulkem 350 must be wet when broadcasting the silica. Depending on the size of the silica used as much as 50 pounds per 100 square feet will be required.

8.6 The second coat of Vulkem 350 should be allowed to cure for 72 hours (at 70°F) Sweep the excess aggregate

from the deck insuring all loose aggregate is removed from the surface.

8.7 After the deck has had all loose aggregate removed, approved Euclid cementitious material may be applied per the instructions supplied by Euclid Chemical and the tile set per said instructions.

9. Clean Up

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

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

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

10. Special Notes

10.1 Expansion joints must be every 8' (2.4m) per TCA guidelines.

10.2 For additional information, contact your local sales representative.

10.3 The tile must be installed within 90 days of completing the waterproofing membrane application or an approved Vulkem topcoat must be installed.