Vulkem 360NF/951NF

UV Resistant Pedestrian Deck Coating Waterproofing System
Comprised of Low VOC, Green Star Qualified Multi-Component Membranes

www.tremco.com.au

PRODUCT DESCRIPTION

Vulkem 360NF/951NF is a modified polyurethane pedestrian deck coating system composed of a base coat (Vulkem 360NF) and a UV stable top coat (Vulkem 951NF). This unique waterproofing system is designed to have tenacious adhesion, extreme impact and abrasion resistance along with remarkable chemical stability.

USAGE/PURPOSE

Vulkem 360NF/951NF is ideal for pedestrian traffic and waterproofing areas such as:

- ❑ Podiums
- ❑ Recreational Decks
- ❑ Mechanical Rooms
- ❑ Stadiums
- ❑ Balconies
- ❑ Rooftops
- ❑ Similar applications that require an elastomeric, traffic grade waterproofing system

PACKAGING & COLOUR

Vulkem 360NF Basecoat (22.7L Kit: 18.9L Membrane + 3.8L Water)

- ❑ Grey

Vulkem 951NF Top Coat (17.4L Kit: 14.2L Part A + 3.2L Part B)

- ❑ Grey
- ❑ Slate Grey
- ❑ Special colours are available upon request.

FEATURES & BENEFITS

- ❑ Tested to AS4654.1 to ensure compliance with the BCA for external waterproofing in Australia.
- ❑ Multiple component products provide predictive curing and minimise the risk of blistering in the membrane.
- ❑ Green Star qualified products help products meet the most stringent of environmental design criteria.
- ❑ Low VOC membranes minimise disruption to remedial applications and existing tenants.
- ❑ Fast cure through time allows the area to be returned to use 24 hr after installation in most instances.
- ❑ Excellent durability and UV resistance extend the useful life of pedestrian systems.
- ❑ Re-coatable and compatible with other Tremco sealants, which enhances waterproofing protection with full system compatibility.

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	Vulkem 360NF	Vulkem 951NF
Maximum VOC	Method 310	66 g/L	45 g/L
% Solids by Weight	ASTM D1353	91%	85%
Drying Time @ 23°C, 50% R.H.	ASTM D1640	6 hours	2 - 4 hours
Weathering	ASTM D822	N/A	No Effect
Salt Spray Resistance	ASTM B117	N/A	No Effect
Accelerated Aging	ASTM D573	No loss of elongation or tensile strength	No loss of elongation or tensile strength
Hardness (Shore A)	ASTM D2240	40 - 50	50 Shore D, >95 Shore A
Abrasion Resistance (1,000 Cycles)	ASTM D4060	N/A	33mg - Pass
Bond Strength	ASTM C794	Concrete Masonry - 92 N Plywood - 80 N	N/A
Cyclic Movement	CSIRO Moving Joint Test	Pass	Pass
Elongation at Break	AS4654.1 Appendix A	160%	199%
Elongation	ASTM D412	500%	145%
Heat Ageing	AS/NZS4858	1.22 MPa, 189% Elongation	17.40 MPa, 143% Elongation
Temperature Resistance	AS4654.1 Clause 2.6	Pass	Pass
Ultraviolet Resistance	AS4654.1 Table A4	N/A (Non-Exposed)	18.30 MPa, 196% Elongation
Tensile Strength	ASTM D412	1.89 MPa	31.03 MPa
Durability	AS4654.1 Table A4	Pass	Pass
Water Vapour Transmission Rate	ASTM E96	63.7 g/m²/24hours	3.78 g/m²/24hours

** Drying times will vary depending on ambient temperature and relative humidity*

Vulkem 360NF/951NF

SHELF LIFE

12 months when stored as recommended in original unopened packaging.

STORAGE

Store in original, undamaged packaging in a clean, dry, protected location.

LIMITATIONS

- ❑ Do not apply to damp or contaminated surfaces.
- ❑ Use with adequate ventilation.
- ❑ Not suitable for vehicular or heavy equipment use.

SUBSTRATE PREPARATION FOR CONCRETE SURFACES

1. Concrete shall be water-cured and attain a 20 MPa 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 Representative. Pending environmental conditions, this moisture reading is usually achieved prior to 28 days.
2. All surfaces must be structurally sound, free of dirt, grease, oil, release agents and or other contaminants.
3. All surface imperfections, non-structural cracks etc should be repaired with an appropriate repair mortar from Tremco's TREMcrete product range.

SUBSTRATE PREPARATION FOR METAL SURFACES

All surfaces shall be sand-blasted to meet the requirements in AS1627.4, class 2.5 for "Near White Metal".

JOBSITE MATERIALS

Recommended materials and their uses are as follows:

- ❑ TREMproof 200EC Primer: A low-VOC, two-part, water based epoxy primer for use on porous substrates, such as wood and concrete to provide a vapour retarder. Also can be used on concrete based substrates to provide an efflorescence barrier.
- ❑ Vulkem 171 Primer: A one-part, film-forming primer to be used on porous surfaces.
- ❑ Vulkem 191 QD Primer: A low-VOC compliant, one-part, interlaminar primer for use in applying a fresh coat of Vulkem coating or sealant after preceding coat has been exposed to rain or for periods of time greater than 24 hours.
- ❑ TREMprime Multi-Surface Urethane Primer: A low-VOC, rapid drying, two-part primer for use between urethane coatings or on porous substrates such as, wood and concrete.
- ❑ TREMprime Non-Porous Primer: A low-VOC primer for use in applying urethanes to non-porous substrates such as metal, PVC and glass.
- ❑ Dymonic 100: A one-part, exceptional movement (+100/-50%) moisture-curing, gun grade polyurethane sealant for use in precast, masonry, expansion joints, control joints and for use in forming cant/fillet bead.
- ❑ TREMflex 50: A one-part, high movement (+/-50%) moisture-curing, gun grade polyurethane sealant for use in precast, masonry, control joints and for use in forming cant/fillet bead.
- ❑ TREMproof Aggregate: Silica sand which imparts a textured finish. Most typically a 16/30 mesh silica sand aggregate.

USAGE

The following is a guide to estimate material usage:

Product	Coverage Rate		Thickness	
Vulkem 360NF	1.23m²/L	27.92m²/Kit	0.82mm WFT	0.75mm DFT
Vulkem 951NF Top Coat	3.26m²/L	58.5m²/Kit	0.30mm WFT	0.25mm DFT

TREMproof Aggregate: Approximately 1.8 to 2.2 kg of approved aggregate will be used with each Litre of Vulkem 951NF Top Coat in order to provide appropriate slip resistance.

PRIMING

Note: Do not apply primer, sealants or membranes to a frosty, damp or wet surface or when substrate temperature is below 4°C or the surface temperature is above 43°C. Cure times as stated below are based upon standard ambient conditions of 23°C, 50% RH. A decrease in ambient temperature and humidity will significantly lengthen the cure time.

- ❑ Vulkem 360NF requires a Tremco approved primer on all porous substrates such as concrete, masonry, brick or stone prior to application of the Vulkem 360NF membrane. TREMproof 200EC Primer, TREMprime Multi-Surface Urethane Primer or Vulkem 171 Primer should be used depending on site conditions and requirements of the project. Please refer to appropriate product data sheet regarding application instructions.
  - ❑ For porous substrates that are not expected to need a vapour retarder, it is suggested to prime prepared substrate with Vulkem 171 Primer. Please refer to appropriate product data sheet regarding application instructions.
  - ❑ For porous substrates that are expected to need a vapour retarder, it is suggested to primer the prepared substrate with TREMproof 200EC or TREMprime Multi-Surface Urethane Primer. Please refer to appropriate product data sheet regarding application instructions.
- ❑ Vulkem 360NF requires TREMprime Non-Porous Primer on metal and PVC surfaces, such as puddle flanges or flashing. Please refer to appropriate product data sheet regarding application instructions.

JOINT PREPARATION

- ❑ All joints must be clean, sound, dry, and free of dirt, grease, oil, release agents and other contaminants.
- ❑ Install appropriate sized backer rod, and set depth of backer rod to control the depth of the sealant. All joints should be treated with a suitable sealant, such as Dymonic 100, and applied to the correct width to depth ratio (2:1).
- ❑ All joints are to be sealed with Tremco approved sealant, and tooled flush with the surface; In heavy duty applications it is suggested to recess sealant 5mm below surface to prolong sealant service life.

Note: Expansion joints should not be coated over. For treatment of expansion joints, contact your local Tremco Representative.

CRACK PREPARATION

- ❑ Cracks >1.5mm must be appropriately prepared and filled with a flexible sealant, such as Dymonic 100. A polyethylene bond breaker tape, such as Tremco Bond Breaker, is then placed over the prepared crack prior to the application of Vulkem 360NF.

COATING APPLICATION

Vulkem 360NF Base Coat:

1. Prior to addition of water, Vulkem 360NF should be mixed with a suitable mixing paddle at a rate of 500rpm for a minimum of 5 minutes. Fresh clean water is added at a rate of one-part water to five parts Vulkem 360NF (1:5 ratio). Mix until all water is encapsulated within the Vulkem 360NF. There should be no visible striations at the end of the mixing.
2. Vulkem 360NF base coat is generally applied at the rate of 1.23m²/L yielding approximately 0.82 mm wet film thickness. The coating is squeegee applied followed by back rolling to evenly distribute the material.
3. Allow Vulkem 360NF to cure a minimum of 4 - 6 hours and a maximum of 24 hours at 25°C and 50% RH.
4. The Vulkem 360NF should have a slightly tacky surface to aid in the adhesion of the Vulkem 951NF top coat.

Vulkem 951NF Top Coat:

1. Pre-mix the Vulkem 951NF base component Part A to assure no settlement of the material is in the bottom of the pail and the colour of the material is consistent with no streaks or striations. Open, mix and use one pail at a time.
2. Empty contents of the curative, Part B into Part A. Using an appropriate mixer, carefully mix the two components and scrape down the sides of the pail, and mix for 3 minutes. Use care to not incorporate air into the product. This could potentially lead to the development of blisters during the coating application.
3. Vulkem 951NF is applied with a squeegee or medium-nap roller at the rate of 3.64m²/L yielding approximately 0.3 mm wet film thickness.
4. Whilst Vulkem 951NF is wet, broadcast sand to create a non-slip finish. There are two approved methods of applying aggregate to the Vulkem deck coating system. Tremco recommends the Sand to Refusal method, however based on aesthetic and minimum slip ratings, the Backroll method is also available.
   - ❑ Sand to Refusal Method:
     - Immediately after applying Vulkem 951NF, broadcast 16/30 mesh silica sand to refusal (flood coat).
     - Allow the Vulkem 951NF to fully cure, about 2 – 4 hours.
     - Before proceeding, sweep or blow off any excess sand that is not well bonded to the Vulkem 951NF membrane.
     - Install another coat of 951NF.
   - ❑ Backroll Method:
     - Immediately after applying Vulkem 951NF, broadcast 0.5 to 0.7 kg of 16/30 mesh silica sand per m² of Vulkem 951NF top coat installed.
     - Backroll the sand into the coating to ensure all the aggregate is evenly distributed.
     - Allow the Vulkem 951NF to cure about 2 – 4 hours.
5. Do not open to foot traffic for a minimum of 24 hours following full cure of Vulkem 951NF.

CLEAN UP

- ❑ Clean all adjacent areas to remove any stains or spills with Tremco Xylol.
- ❑ Clean tools or equipment with Tremco Xylol before material cures.
- ❑ Clean hands by soakng in hot, soapy water, then brushing with a stiff-bristle brush.

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 Representative:

1. When a deck contains too much moisture, the moisture may change into a vapour, which then condenses at the concrete-membrane interface before the coating has cured and may cause blisters or bubbles, ultimately interfering with proper adhesion. If this should occur, the blisters can be cut out, allowing moisture to escape. After moisture has escaped and the surface is dry, the area can be repaired.
2. If the coating application has been installed at a thickness that is greater than our installation instructions, pinholes, blisters or bubbles may develop in the coating. To avoid this occurrence, the material should be applied in accordance to the installation instructions.
3. If the coating is applied in very hot ambient temperatures, the air in the small spaces between the concrete particles increases in volume and forms blisters, contact Tremco should this occur.

WEATHER IMPACT ON COATING APPLICATION

This section discusses the impact of applying these coatings outside the ideal temperature application range of 18 to 30°C at 50% RH.

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.
2. Storing materials at cooler or warmer temperatures than ideal, will affect the handling and curing characteristics of the materials.

APPROXIMATE CURE TIMES IN HOURS AT 50% RH

The following is a guide to estimate cure time:

Temperature at 50% RH	Vulkem 360NF	Vulkem 951NF
4.4 - 12.8°C	40 to 72 hours	48 hours
12.8 - 18.3°C	12 to 24 hours	3 to 6 hours
18.3 - 29.4°C	6 to 12 hours	2 to 4 hours
29.4°C	4 to 6 hours	<2 hours

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 refer to the Installation Instructions or contact Tremco.

HEALTH & SAFETY PRECAUTIONS

The Safety Data Sheet (SDS) must be read and understood prior to use.

TECHNICAL SERVICE

Tremco has a team of representatives who provide assistance in the selection and specification of products. For more detailed information or service and advice, call Customer Service on (02) 9638 2755 or fax (02) 9638 2955.

GUARANTEE/WARRANTY

TREMCO products are manufactured to rigid standards of quality. Any product which has been applied (a) in accordance with TREMCO written instructions and (b) in any application recommended by TREMCO, but which is proved to be defective, will be replaced free of charge.

Any information provided by TREMCO in this document in relation to TREMCO's goods or their use is given in good faith and is believed by TREMCO to be appropriate and reliable. However, the information is provided as a guide only, as the actual use and application will vary with application conditions which are beyond our control. TREMCO makes no representation, guarantee or warranty relating to the accuracy or reliability of the information and assumes no obligation or liability in connection with the information. To the extent permitted by law, all warranties, expressed or implied are excluded.

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