TREMCO

*Construction Products Group*

# Vulkem 125

## Low-odour, One Part, Polyurethane Waterproofing Membrane

### PRODUCT DESCRIPTION

Vulkem 125 is a low-odour, single-component, moisture-curing, high-elongation polyurethane membrane.

### USAGE/PURPOSE

Vulkem 125 may be used to apply a seamless, monolithic waterproof membrane to a variety of substrates in areas such as:

- ❑ Showers
- ❑ Bathrooms
- ❑ Balconies
- ❑ Terraces
- ❑ Podium Decks
- ❑ Other areas which are to be tiled and protected from UV and traffic

### FEATURES & BENEFITS

- ❑ Tested to AS 4654.1 and AS 4858, ensuring compliance with the National Construction Code (NCC) of Australia.
- ❑ Class III membrane providing high flexibility and movement accommodation.
- ❑ Ready-to-use, single-pack solution.

### PACKAGING

- ❑ 15 L

### COLOUR

- ❑ Light Grey

### SHELF LIFE

9 months when stored as recommended in original, unopened packaging.




### STORAGE

Store in the original, unopened packaging in a clean, dry, protected location.

### LIMITATIONS

- ❑ Not to be used as a trafficable or UV-stable waterproof membrane.
- ❑ Not to be used below-grade applications.
- ❑ Do not apply to damp or contaminated surfaces.

### SUBSTRATE PREPARATION FOR CONCRETE SURFACES

1. Concrete shall be water-cured and attain a 20 MPa minimum compressive strength. Moisture content in the concrete shall be lower than 4.5%, as measured using a Tramex CME Moisture Meter. Where the moisture content is 4.5% or above, a minimum of 2× coats of TREMproof 200EC primer will be required. Depending on concrete construction and job site location, additional concrete testing may be required. Please contact your local Tremco Representative.

**TYPICAL PHYSICAL PROPERTIES**

| PROPERTY | TEST METHOD | Vulkem 125 |
|---|---|---|
| Drying Time at 23 °C and 50% Relative Humidity (RH) | ASTM D1640 | 12 Hours |
| Drying Time at 23 °C and 50% Relative Humidity (RH) | ASTM D1640 | 24 Hours per coat |
| Solid by Volume | ASTM D1353 | 88% |
| Hardness | ASTM D2240 | 50 Shore A |
| Abrasion Resistance (1,000 cycles) | AS 1580.403.2 | N/A |
| Bond Strength | ASTM C794 | Concrete – 96 N<br>Plywood – 103 N |
| Cyclic Movement | CSIRO moving joint test | Pass |
| Elongation at Break | AS4654.1 Appendix A | > 300% |
| Elongation at Break | AS4858 Appendix A | > 300% |
| Elongation | ASTM D412 | N/A |
| Heat Ageing | AS/NZS 4858 | > 300% |
| Heat Ageing | AS 4654.1 | Pass |
| Temperature Resistance | AS4654.1 Table A4 | Pass |
| Ultraviolet Resistance | AS4654.1 Table A4 | N/A |
| Tensile Strength | AS4654.1 Table A4 | > 2.2 MPa |
| Durability | AS4654.1 Table A4 | Pass |
| Durability | AS 4858 Appendix A | Pass |
| Water Vapour Transmission Rate | ASTM E96 | < 6.8 g/m$^2$/24 hr |

*Note: Drying times will vary depending on ambient temperature and relative humidity. VOC content is a weighted average of the VOC content of all raw materials in the formulation, calculated using supplier raw material data.*

2. Concrete shall be free of any laitance which may inhibit adhesion. Removal of laitance can be achieved through a variety of physical abrasion methods, such as shot blasting (preferred method), sandblasting or grinding. Where a physical abrasion method has been used, a minimum of 2× coats a suitable Tremco CPG Australia primer shall be applied.
3. Surfaces shall be made free of defects that may telegraph and show through the finished coating. All 90° transitions shall be modified to 45°, to eliminate sharp edges/corners. Surfaces that are rough (fins, ridges, exposed aggregate, honeycombs, deep broom finish, etc.) shall be levelled and made smooth by applying a coat of sand-filled epoxy using TREMprime EP.
4. Concrete surface shall be properly cleaned so that the surface to receive the coating, sealant or liquid-applied flashing is free of mould, paint, sealers, coatings, curing agents, loose particles, and other contamination or foreign matter that may interfere with the adhesion.
5. 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.
6. Spalled areas shall be cleaned free of loose contaminants prior to repair. Because jobsite conditions vary, it is recommended that you contact your local Tremco Representative. Depending on the substrate and depth of the spalled areas, a EUCOcrete repair product will be recommended as the best method of repair.
7. Shrinkage cracks in the concrete surface that are 1.6 mm wide or greater shall be ground out to a minimum 6 mm wide × 12 mm deep and treated according to the instructions in 'Detail Work' section.
8. Structural cracks regardless of width shall be ground out to a minimum 6 mm wide × 12 mm deep and treated according to the instructions in 'Detail Work' section.
9. All drains shall be cleaned and operative. Drains shall be recessed lower than the deck surface. The surface shall be sloped to a drainage point to provide positive drainage (refer to the relevant Australian Standards/NCC for required fall). Drains should be detailed as instructed below:

   Cut a 6 mm wide × 12 mm 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, for example, at the end of a ramp, around drains and alongside expansion joints.
10. If the project is a restoration deck, old sealant and membrane material shall be removed. The joint interface will require a thorough wire brushing, grinding, sandblasting, solvent washing and/or primer.

## 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:

- ❑ Vulkem 171: A one-part, film-forming primer to be used on porous surfaces.
- ❑ TREMprime EP: A 100% solids, two-component epoxy primer recommended for use on porous substrates such as concrete, brick and stone, and as a compatible tie-in coat to enable adhesion between otherwise incompatible membranes.
- ❑ TREMproof 200EC: A low-VOC, two-part, water-based epoxy primer for porous substrates such as wood and concrete, providing a vapour retarder application and acting as an efflorescence barrier on concrete substrates.
- ❑ TREMprime Non-Porous Primer: A low-VOC primer for use with polyurethanes on non-porous substrates such as metal, PVC and glass.
- ❑ Vulkem 191 QD Primer: A low-VOC compliant, one-part interlaminar primer for use with Vulkem coatings or sealants where the preceding coat has been exposed to rain or exceeds a 24-hour re-coat window.
- ❑ 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 25FC: A one-part, fast-curing, flexible-fillet joint sealant for use in waterproofing applications.
- ❑ Vulkem 951NF: A two-component, low-VOC, UV-stable, aliphatic-based polyurethane top coat.
- ❑ Vulkem 346: A single-component, UV-stable, aliphatic-based polyurethane top coat.

## USAGE

The table below provides indicative coverage rates for Vulkem 125 per litre and per 15 L pail, together with the corresponding wet film thickness (WFT) and dry film thickness (DFT). These values do not include allowance for on-site material wastage or reduced coverage due to substrate porosity or aggregate profile.

| PRODUCT | COVERAGE RATE | | THICKNESS | |
|---|---|---|---|---|
| | PER LITRE | PER PAIL (15 L) | WET FILM (WFT) | DRY FILM (DFT) |
| Vulkem 125 | 0.74 $m^2$ | 11.10 $m^2$ | 1.36 mm | 1.17 mm |

*Note. All coverage rates are approximate & vary with substrate condition.*

## PRIMING

*Note: Do not apply primer, sealants or membranes to a frosty, damp or wet surface or when substrate temperature is below 10 °C or the surface temperature is above 40 °C. Cure times as stated below are based upon standard ambient conditions of 23 °C, 50% RH. A decrease in the ambient temperature and the humidity will significantly lengthen the cure time.*

- ❑ For low moisture (< 4.5% moisture as per a Tramex CME Moisture Meter) porous substrates, Tremco suggests using Vulkem 171 Primer.
- ❑ For low moisture (< 4.5% moisture as per a Tramex CME Moisture Meter) porous substrates with a poor finish, Tremco suggests using Vulkem TREMprime EP Primer.
- ❑ For high moisture (> 4.5% moisture or above as per a Tramex CME Moisture Meter) porous substrates, Tremco suggests using TREMproof 200EC.
- ❑ For non-porous substrates, Tremco suggests using TREMprime Non Porous Primer.

## DETAIL WORK

- ❑ Shrinkage cracks in the concrete < 1.6 mm wide nominally can be detailed with a 150 mm wide × 1 mm deep WFT strip of Vulkem 125.
- ❑ Shrinkage and non-structural cracks > 1.6 mm wide must be appropriately prepared and filled prior to application of the Vulkem 125 membrane.
  - Grind out cracks to a minimal 6 mm wide × 12 mm deep.
  - Remove all loose debris and concrete dust that may inhibit the adhesion.
  - Apply closed cell polyethylene backer rod or bond breaker tape into the joint to prevent three-sided adhesion of the sealant.
  - Install appropriate Tremco polyurethane sealant, TREMflex 50 or Dymonic 100 into the crack in the correct depth-to-width ratio.
  - Apply a 150 mm wide × 1 mm WFT strip of Vulkem 125 un-reinforced.
- ❑ When tiling over joints, Tremco highly encourages that the joint is expressed through to the surface of the tiles. Between the tiles, fill the joint with the appropriate Tremco joint sealant. Depending on the tile composition, polyurethane or silicone sealant may be recommend. Contact Tremco for further assistance.
- ❑ Consult Tremco for advice on the treatment of movement/expansion joints.

## METHOD OF APPLICATION

1. Vulkem 125 should be mixed with a suitable electric paddle mixer at a rate of 500 rpm for a minimum of 3 minutes, ensuring there is no settlement at the base of the drum.
2. Minimum application requirements set forth by the NCC and the relevant Australian standard (AS 3740 and AS4654.2) should be followed, as well as project-specific detail the requirements/recommendations by Tremco.
3. Using a medium-nap (9 mm to 13 mm) roller cover, apply Vulkem 125 at the following rates to the entire area to be coated, including over applications of Vulkem 125 detail coats, but excluding the expansion joints.

| Application Coat | Coverage Rate | Thickness | |
|---|---|---|---|
| Waterproof Coat | 0.75 $m^2$/L | 1.36 mm WFT | 1.2 mm DFT |

4. Allow Vulkem 125 to cure a minimum of 4 hours between coats to reduce the risk of solvent entrapment between coats. Cure rates depend on temperature and humidity. Refer to cure rate guidelines in chart at the end of this document. If the Vulkem 125 has been applied for 24 hours or longer, it should be cleaned with a damp cloth of Tremco Xylol (do not saturate) and prime with Vulkem Primer 191 QD. We highly recommend that you contact your local Tremco Representative with any questions on the appropriateness of priming.

## CLEAN UP

- ❑ Clean all adjacent areas to remove any stains or spills with Tremco Xylol.
- ❑ Clean tools or equipment with Tremco Xylol before materials cure.
- ❑ Clean hands by soaking 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, dry times could be extended significantly. As a result, Tremco recommends that the material is applied in accordance with 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.
4. If the previous coating application has not fully cured, water may become trapped between the coats and lead to large blisters. When cut out, they may still be tacky on the underside. Blisters may be cut out and repaired after the surface has been allowed to fully dry. Also, additional application will dramatically reduce the rate the material cures and full cure will take dramatically longer than normal.

## WEATHER IMPACT ON COATING APPLICATION

The table below provides a guide to the approximate cure time of Vulkem 125, in hours, at 50% RH across different temperature ranges, including the ideal range of 18 to 30 °C.

| Temperature (°C) | Approximate Cure Time at 50% RH (hours) |
|---|---|
| 4.4 - 12.8 °C | 24–96 |
| 12.8 - 18.3 °C | 6–24 |
| 18.3 - 29.4 °C | 4–6 |
| 29.4 °C | ≤ 4 |

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.
3. Substrate temperatures may affect cure rates even when ambient temperatures are high.
4. Enclosed areas may slow the cure rate of the coating because humidity levels tend to be low in these conditions due to the low exchange of air over the membrane.
5. In extremely dry conditions, even when temperatures are high, cure rates can still be extended.

Variations in temperature and humidity can affect the cure rate of the coating. Other factors, including substrate temperature and enclosed conditions, may also influence the cure rate. For further information, refer to the Installation Instructions or contact Technical Services.

## HEALTH & SAFETY PRECAUTIONS

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

## TECHNICAL SERVICE

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

Any information provided by Tremco CPG Australia in this document in relation to Tremco CPG Australia's goods or their use is given in good faith and is believed by Tremco CPG Australia 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 CPG Australia 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.

## CONTACT OUR TEAM

Tremco CPG Australia Pty Ltd
ABN: 25 000 024 064
Unit 12, 4 Southridge Street
Eastern Creek, NSW 2766

P: (02) 9638 2755
F: (02) 9638 2955
E: tremco@tremco.com.au