

## TREMproof® 250GC Cold Fluid-Applied Membrane

### Below Grade Waterproofing

#### 1. Purpose

1.1 The purpose of this document is to establish uniform procedures for installing TREMproof 250GC cold fluid-applied membrane in below-grade waterproofing applications.

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 TREMproof 250GC cold fluid-applied membrane to qualify for the manufacturer's warranty. Tremco recognizes that site specific conditions, weather patterns, contractor preferences and membrane detailing may require deviation or alteration from these prescribed installation procedures. When such circumstances and situations exist on a project, Tremco recommends that the local Tremco Sales Representative or Technical Services be contacted for assistance and approval as required.

#### 3. Conditions

3.1 Surface to be waterproofed may be dry or damp concrete or dry plywood, and shall be clean, sound and free of all contaminants which may interfere with adhesion or proper curing. If release agents are present, they must be removed prior to the application of TREMproof 250GC.

3.2 Concrete slabs should be light steel troweled followed by a fine hair broom or equivalent finish. Concrete surface shall be free of voids, exposed aggregate areas, honey combs, splatters, ridges, fins and other projections or depressions which preclude a smooth and level surface. All reinforcing including cut off rebar shall be covered by a minimum of 3/4" (18 mm) of concrete, epoxy or approved repair mortar.

3.3 Concrete that is to receive waterproofing shall be water cured. Consult Architect or Engineer for minimum cure time on concrete before water cure can be stopped and foot traffic is permitted. Allow a minimum of 24 hours for concrete surface to dry after stopping water cure on decks or removing forms from walls or underside of decks. In the event it is necessary to use a curing agent, said curing agent shall be sodium silicate type (i.e. Euclid Chemical Company Eucosil).

Most dissipating types of curing compounds require removal before membranes can be successfully applied. Numerous manufacturers claim their curing compounds will not affect the adhesion of membranes and sealants and in many cases they may not. Sometimes the breakdown of the curing compound does not happen and/or the residual materials are left on the concrete and can cause adhesion problems with the membrane. Tremco recommends the use of water curing in areas where membranes and sealants are to be used. Tremco will not accept responsibility for adhesion failures due to curing compounds.

3.4 Any concrete masonry unit construction may receive a parge coat of acceptable cementitious coating approved by Tremco. All CMU walls must have all joints solid grouted and struck flush with no voids.

3.5 Plywood that is to receive waterproofing shall be exterior grade plywood, 5/8" (16mm) thick minimum, with A side up, fastened with ring-shank nails. OSB and particle board are not acceptable as a substrate.

3.6 Metal flashing that is to receive waterproofing shall be set in a continuous bedding bead of urethane sealant. Install sealant S-bead between metal laps and mechanically fasten to substrate along leading edges every 4" (10cm) O.C., staggered linearly to lay flat without fishmouths. It is preferred the wood or concrete be routed in the leading edges so the flashing lays flush with the decking.

3.7 Following good drainage practice for split slab conditions, it is recommended the structural slab shall be sloped to drain a minimum of 1/8" (3 mm) per running foot. For split slab conditions and plywood decks that will receive a lightweight topping slab, drains capable of providing drainage at the membrane layer of the building deck shall be installed.

3.8 All penetrations shall be encased in concrete. Penetrations must be solid grouted in place. No flexible pipe or corrugated pipe of any type shall be used for a through slab penetration. Penetrations shall be spaced a minimum of 2" (5 cm) apart to allow for detail work around penetration. All copper piping shall be sleeved with sleeve extending through slab and above any planter fill. The waterproofing of the inside of the sleeve is the responsibility of other.

3.9 Sidewalls of expansion joints shall be parallel, smooth and straight. Block out if required shall be per the recommendations of the manufacturer. Expansion joints running through planters, walls, water features or at building to deck shall have a curb to curb construction approved by Tremco, waterproofing contractor and architect/engineer.

#### 4. Materials

4.1 Recommended materials and their use are as follows. TREMproof 250GC: TREMproof 250GC is an aliphatic, rapid-curing, high solids, VOC compliant modified polyurethane waterproofing membrane. It can be applied to damp and Green concrete. TREMproof 250GC is a one-part moisture curing elastomer available in three viscosities: Self-Leveling, Roller and Trowel.

Tremco Protection Mat: Tremco Protection Mat is an ultra lightweight, extremely tough 14 oz. protection mat for waterproofing membranes in both vertical and horizontal applications.

HDPE Protection Course: Tremco HDPE Protection Courses are a series of high-density polyethylene sheets designed for both membrane protection as well as various barrier applications. Available in 20 mil, 40 mil and 60 mil thicknesses.

Tremco 2450: Tremco 2450 Protection Board is an extruded, hollow-core polypropylene/polyethylene copolymer. The board is commonly used both during and after construction.

TREMDrain Series: The TREMDrain Series is a family of drainage mats with a variety of compression strengths, core sizes and fabric options available.

Dymeric 240 FC: Dymeric 240 FC is a gun-grade, multi-component, chemically curing polyurethane sealant. It is a general purpose sealant that provides flexible, durable waterproofing in a fast curing formulation.

Tremco Reemay: Tremco Reemay is a spun bound polyester fabric style 2014, consisting of a nonwoven fabric of continuous filament polyester fibers that are randomly arranged.

## 5. Detail Work

5.1 All shrinkage cracks shall be treated with a 30 mil coating of TREMproof 250GC, 6" (15cm) wide, centered over the crack.

5.2 Moving structural cracks greater than 1/16" (1.6 mm) shall be routed and caulked with TREMproof 250GC-T or Dymeric 240 FC, followed by a 60-mil detail coat of TREMproof 250GC extending a minimum of 3" (7.6cm) on either side of the crack.

5.3 A 1" (2.5 cm) cant of TREMproof 250GC-T or Dymeric 240 FC shall be installed at all horizontal-vertical junctures and projections. Integral flashing shall be installed to the height indicated on the drawings.

5.4 Expansion joints may be treated in one of two ways.

5.4.1 Caulk the expansion joint with Dymeric 240FC followed by a 30-mil detail coat of TREMproof 250GC, extending 3" (7.6cm) on either side of the joint.

5.4.2 Install closed cell backer rod into the expansion joint. Embed Tremco Reemay into a 30-mil detail coat of TREMproof 250GC. Tremco Reemay shall extend 6" (15 cm) on either side of the joint. An additional 30-mil detail coat is then placed on top of the Tremco Reemay to fully embed it into the membrane. At overlaps of Tremco Reemay, overlap the two meeting sections at least 3" (7.6 cm). Seal the overlap with TREMproof 250GC.

5.5 Plywood joints shall be caulked with Dymeric 240FC and treated with a 6" (15cm) wide strip of mesh reinforcing fabric, centered over the joint followed by a 30 mil detail coat of TREMproof 250GC.

5.6 A 1" (2.5 cm) cant of TREMproof 250GC-T or Dymeric 240 FC shall be installed around all penetrations. Install a 30-mil detail coat of TREMproof 250GC extending 2" (5cm) onto the penetration and 6" (15cm) onto the surrounding substrate.

5.7 Inside corners shall be treated with a fillet bead of

TREMproof 250GC-T, or Dymeric 240 FC. Install a 30-mil detail coat of TREMproof 250GC extending 6" (15 cm) on either side of the corner.

5.8 Outside corners should have a 3/4" to 1" (18-25 mm) chamfer. Install a 30-mil detail coat of TREMproof 250GC extending 6" (15 cm) on either side of the corner.

5.9 If detailing is exposed more than 24 hours, apply Vulkem 191 Primer prior to application of the membrane. The primer shall be dry with a surface tack before applying TREMproof 250GC.

5.10 Detailing shall be wiped clean with xylene prior to the application of the membrane.

## 6. Membrane Application

6.1 Standard Application - Vertical or Horizontal

6.1.1 TREMproof 250GC shall be roller, squeegee or trowel applied at the rate 25 square feet per gallon (0.66 square meter per L) to provide a thickness of 60 mils.

6.2 High Build Application - Horizontal

6.2.1 SINGLE LIFT SYSTEM TREMproof 250GC may be applied in a single pass up to 120 mils for horizontal applications. Apply at a rate of 13 square feet per gallon (0.32 square meter per L.)

6.2.2 MULTI-LIFT 120 MIL SYSTEM Apply the first coat of TREMproof 250GC at a rate of 60 mils with a coverage rate of 25 square feet per gallon (0.66 square meter per L). This may be followed by setting Tremco Reemay Fabric into the wet membrane, overlapped a minimum of 1" (2.5cm). Allow TREMproof 250GC to cure to a firm rubber, minimum 4 hours at 75°F (23°C), 50% R.H., then apply a second coat of 60 mils of TREMproof 250GC. When not using Reemay, let the membrane cure to a firm rubber overnight at standard conditions. Make sure membrane is clean before second application. If the membrane has been exposed for more than 24 hours, priming with Vulkem 191 primer is recommended before the second application. The primer shall be dry with a surface tack before applying TREMproof 250GC.

6.2.3 MULTI-LIFT 215 MIL SYSTEM Apply the first coat of TREMproof 250GC at a rate of 90 mils with a coverage rate of 18 square feet per gallon (0.44 square meter per L). This may be followed by setting Tremco Reemay Fabric into the wet membrane, overlapped a minimum of 1" (2.5 cm). Allow TREMproof 250GC to cure to a firm rubber, minimum 4 hours at 75°F (23°C), 50 % R.H., then apply a second coat of 125 mils of TREMproof 250GC with a coverage rate of 13 square feet per gallon (0.32 square meter per L).

6.3 The cure rate of TREMproof 250GC may be accelerated by adding water. Water may be added to TREMproof 250GC-SL only. Water shall be bottled or tap. Add 4 oz. (1/2 cup, 118 ml) water for every 5 gallons (18.9 L) of TREMproof 250GC-SL. Mix the material by producing a vortex close to the surface of the membrane and add the water. Following the addition of water, continue mixing the membrane to evenly disperse the added water for up to 1 minute. Exceeding the recommended 1 minute of mixing may result in introducing an excessive amount of air in the membrane. Exceeding the recommended 4 oz (1/2 cup) of

water per 5-gallon pail of membrane may result in a reduction of working time.

Temperature	Approx. cure time*
> 80°F (27°C)	3 to 4 hours
40°F - 80°F (4° - 27°C)	6 to 12 hours
< 40°F (4°C)	72 hours

\*Dependent upon environment conditions i.e. substrate temperature, humidity, etc.

6.4 Terminations shall be installed in accordance with ASTM C898 Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Separate Wearing Course and ASTM C1471 Standard Guide for Use of High Solids Content Cold Liquid-Applied Elastomeric Waterproofing Membrane on Vertical Surfaces.

6.4.1 Vertical wall terminations should be made a minimum 6" (15cm) above the finish grade or brick ledge. For applications where the concrete wall is to be exposed above grade, terminate no more than 2" (5 cm) below grade. The waterproofing systems should terminate a minimum of 12" (30 cm) below the lower floor line or on top of the footing a minimum of 6" (15 cm) out from the wall. When terminating below the lower floor line or on top of the footing, do not terminate the waterproofing system above the drainage collection level. The waterproofing system should overlap a minimum of 24" (60 cm) onto intersecting walls columns or counterforts.

6.4.2 The vertical waterproofing system should connect with the below slab waterproofing and air barrier systems when used. When the same system or compatible materials are used, they may overlap. When connecting with a horizontal plaza, make sure the materials are compatible prior to installation.

6.4.3 For horizontal applications where the membrane is turned up on a wall, terminate the waterproofing to eliminate the possibility of ponded surface water penetrating the wall above the membrane. The minimum height is determined by the designer and should take into account the opportunity for such occurrence as well as the building's geometry and environment.

6.5 An approved protection course and/or TREMDrain Series drainage mat may be placed after membrane is cured to a firm rubber set, minimum 4 hours at 75°F (23°C), 50% R.H.

6.6 On horizontal slabs, a Flood test should be run in accordance with ASTM D 5927. The membrane should be cured to a firm rubber set (36 hour minimum) before flooding. Flood with a minimum of 1" (2.5 cm) of water for 24 hours. As an alternative, Electronic Field Vector Mapping may also be used.

