

PRODUCT DESCRIPTION

Tremco Dualproof C membrane is a fully welded system, consisting of a special non-woven PP-Fleece, which is co-extruded with a highly flexible, water and gas resistant, soft PVC membrane. The fresh concrete forms a mechanical bond with the PP-Fleece and prevents water tracking between the membrane and the concrete.

The Tremco Dualproof C membrane system is new generation technology, it is specifically designed for the waterproofing and protection of below ground reinforced concrete.

FEATURES & BENEFITS

Tremco Dualproof C Membrane System is proprietary, highly flexible soft PVC composite waterproofing membrane which forms a permanent mechanical bond with freshly poured concrete:

- Protection against lateral water flow up to 6.9 bar
- May be used in salt-water areas to protect the concrete structure
- Used for water pressure-tight surface sealing of concrete structures
- External barrier, for the waterproofing and protection of floor slabs and exterior concrete wall surfaces against soil moisture
- Radon gas barrier
- Tough and resistant - fast and easy to install
- High compound shear strength
- Quality control (CE-Certification) / Several independent test reports
- Crack bridging in case of concrete cracks caused by strength and shrinkage
- Crack-bridging capacity up to 3.2mm / 6.9 bar water pressure
- May be installed in all weather conditions / Working temperature between -5°C and +50°C
- Lightweight and versatile- Easy on-site handling
- Membrane edge for overlapping
- Protects concrete against chemical, salt and sulphate attack



USAGE/PURPOSE

Tremco Dualproof C may be used in all applications, where reinforced concrete structures must be protected against groundwater and contaminants. It is suitable for waterproofing of:

- Foundations
- Basements
- Tunnels
- Other concrete constructions below grade
- In saline or alkaline environments due to its chemical resistance

PACKAGING

1.08m x 20m Rolls

COLOUR

Green

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TEST RESULTS
Intended use	EN 13967 – Flexible membrane for waterproofing (Building) Type A and Type T Waterproofing membrane with moisture barrier and groundwater barrier	
Material	Soft PVC membrane + PP nonwoven	
Visible defects	EN 1850-2	No visible defects
Straightness	EN 1848-2	≤ 75mm / 10m
Thickness	EN 1849-2	1.9mm
Watertightness against water	ASTM D 5385 / EN 1928 (B)	690 kPa / 60 kPa / 24h; 500 kPa / 72h
Durability against artificial aging	EN 1296 / EN 1928 (B)	12 weeks / 70°C; 60 kPa
Durability against chemicals	EN 1847 / EN 1928 (B)	28 d / +23°C; 60 kPa / 24h
Compatibility with bitumen	EN 1548 / EN 1928 (B)	60 kPa / 24h
Watertightness in case of subsequent cracks	ASTM D 5385	DualProof mechanical bond with freshly poured concrete
Tensile strength MD / CMD	EN ISO 12311-2 (A)	≥ 500 / 500 N/50mm
Shear resistance in the overlapping	EN 12317-2	Collapse outside of the overlapping: ≥ 300 N/50mm
Resistance to impact	EN 12691 (A)	≥ 350 mm
Tear resistance MD / CMD	EN 12310-1	≥ 350 / 350 N (nail-shank)
Resistance to static load	EN 12730 (A) / EN 12730 (B)	≥ 20kg / 24h
Crack bridging ability	ASTM D 5385	≥ 3,2 mm
Reaction to fire	EN ISO 11925-2 / EN 13501-1	Klasse E / Class E

SHELF LIFE

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

STORAGE

Store in a dry, cool place in an upright position in original unopened packaging.

SUBSTRATE PREPARATION

All surfaces should be sound, solid and free from gaps or voids that are greater than 12mm. All corners, up-stands, pipe / service penetrations, etc. must be detailed correctly (please consult our Technical Department for further advice) prior to the application of the membrane.

Tremco Dualproof C Membrane is designed for use with structural reinforced concrete. The concrete should be designed by a Structural Engineer. Please ensure that the concrete is placed and cured correctly, and that all non- movement construction joints are detailed with Tremstop Waterstops.

JOBSITE MATERIALS

Recommended materials and their uses are as follows:

- ❑ TREMstop PVC Waterstops: Made of specially compounded PVC resin, suitable for construction and expansion joints in foundation works, basements, retaining walls, tunnels, reservoirs and swimming pools.
- ❑ TREMstop Hydro Waterstops: An extruded TPE-based alloy made from rubber, hydrophilic resin, polyethylene, silicon and special admixtures which is suitable for the use in both vertical and horizontal joints in prefabricated elements.
- ❑ TREMstop Hydro Mastic: A one-component, solvent-free adhesive and sealing compound, based on polyurethane technology which swells in contact with water for the sealing of joints and pipe penetrations.
- ❑ Dymonic 100: A one-part, exceptional movement (+100/-50%) moisture-curing, gun grade polyurethane sealant for use in precast, masonry, expansion joints and control joints.
- ❑ Tremco Pressure Seal: Is an AS 4654.2 compliant, aluminium 'K-Bar' style pressure seal for use with TREMproof Torch, TREMproof 3300HD, Paraseal LG/SW and Tremco Dualproof C sheet membranes.
- ❑ Paraseal Paraterm Bar: An aluminium 'Flat-Bar' style pressure seal for use with TREMproof Torch and Dualproof C membranes.

USAGE

The following is a guide to estimate material usage:

- ❑ Coverage Rate Total Coverage
- ❑ 1.08m Wide 20m Long 21.6m²

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

METHOD OF APPLICATION

HOT AIR FUSION WELDING TREMCO DUALPROOF C

HOT AIR FUSION WELDING TOOLS

- ❑ Hand Held Hot Air Welding Gun
- ❑ 40mm 15° Welding Nozzle (for straight runs)
- ❑ 20mm 60° Welding Nozzle (for detailing)
- ❑ 40mm Silicone Pressure Roller
- ❑ Brass 'Penny' Roller
- ❑ Seam Pick/Probe
- ❑ Wire Brush

*Please note, automatic and semi-automatic hot air fusion welding machines may also be used to install Tremco Dualproof C.

HOT AIR FUSION WELDING

1. Tremco CPG Australia recommends that hot air fusion welding is completed at an operating temperature of between 400°C – 550°C. The exact required temperature is going to vary depending on environmental conditions, the product temperature and will change slightly from machine to machine.
2. Membrane laps must be a minimum of 50mm.
3. The weld width must be a minimum of 40mm.
4. Prior to the application of the Tremco Dualproof C, 'Test Welds' must be completed on site by the installer to ensure the correct temperature and speed/technique has been achieved. Tremco CPG Australia recommends 'peel tests' be completed at the beginning of the day and at various intervals throughout the day, as the ambient temperature changes.
5. Hot air welding a lap of Tremco Dualproof C should be completed in 3x stages:
 - a) **Spot/Tack Weld** – Complete every 500mm O.C to ensure Tremco Dualproof C stays firmly in place while welding. This is not a true 'weld' and can be removed if needed.
 - b) **Pre-Weld** – Weld the rear off the lap, leaving a 35mm opening (when using a 40mm 15° nozzle).
 - c) **Final Weld** – Weld the remaining 35mm of the opening, ensuring 5mm off the nozzle is left protruding out from the lap to ensure it is completely sealed.
6. Once a lap of Tremco Dualproof C has been welded, a seam check must be completed using a 'Seam Pick/Probe' to ensure a 100% sealed, waterproof lap has been achieved.

METHOD OF APPLICATION – UNDER SLAB

1. The grade should be prepared by either installing a blinding slab (preferred), compacting the original earth, or compacting a granular base meeting a minimum modified 85% proctor density (per Engineer's design).
2. Irrespective of the sub-base preparation, the substrate should be free of angular projections and voids. Consult Tremco CPG Australia Technical Services for project specific recommendations.
3. All penetrations must be secured prior to detailing. For single pipe penetrations, refer to Tremco CPG Australia standard detail drawings.
4. Multiple penetrations shall be spaced a minimum of 150mm apart to allow for proper detailing. If 150mm spacing is not available, contact Tremco CPG Australia 'Technical Services' for a job-specific recommendation.
5. Apply a 45° fillet of Eucocrete RM at all floor to wall transitions to support Tremco Dualproof C.
6. Tremco Dualproof C should be installed fleece side up to form a mechanical bond with the wet concrete.
7. A double layer of Tremco Dualproof C must be installed (fleece side up) across all construction joints and perpendicular junctions (floor to wall and wall to wall). Refer to Tremco CPG Australia standard detail drawings.
8. All laps must be set back a minimum of 300mm from any construction joint or expansion joint.
9. For below slab applications, laps must be a minimum of 50mm, with the ends of the rolls staggered by a minimum of 300mm.
10. End laps must be welded onto a 200mm wide detail strip of Tremco Dualproof C (PVC side up, to allow for a PVC to PVC weld) running perpendicular under and extending past the end lap.

METHOD OF APPLICATION – BLINDSIDE WALL

SECANT/CAISSON WALLS:

1. When the surface of the individual augered piers, which make up the secant/caisson wall are relatively smooth, Tremco Dualproof C may be installed directly against the piers. However the 'crotch' between each pier must first be filled in with an appropriate Eucocrete repair product and all sharp projections must be removed from the secant/caisson wall.

- When the surfaces of the piers are very rough and irregular, continuous sheets of 19mm or thicker, pressure-treated plywood should first be installed across the secant/caisson wall and shot into place every 300mm O.C.
- The void created behind the plywood shall be filled with sand or aggregate.
- The proper plywood thickness and anchor spacing shall be determined by a civil, structural or geotechnical engineer at the site. This is also dependent on the height of the piling, the span of the plywood and the resultant lateral pressure exerted by the sand fill.

STEEL SHEET PILING:

- Remove all sharp protrusions from the profile of the steel sheet piling.
- When the waterproofing installation is going to span the sheet piling voids, polystyrene infills must be installed into the voids prior to the installation of Tremco Dualproof C. Where polystyrene infills are not suitable, continuous sheets of 19mm or thicker, pressure-treated plywood should first be installed across the voids and shot into place every 300mm O.C.
- The void behind the plywood should be filled with sand and/or aggregate.
- The proper plywood thickness and anchor spacing shall be determined by a civil, structural or geotechnical engineer at the site. This is also dependent on the height of the piling, the span of the plywood and the resultant lateral pressure exerted by the sand fill.

SHOTCRETE WITH CONCRETE PILES (SOLIDER PILES):

- Prior to the installation of Tremco Dualproof C against the shotcrete wall, remove all sharp protrusions and fill all voids with an appropriate Eucocrete repair product. Where required, install a fillet of Eucocrete RM to ensure the membrane is fully supported at each soldier pile transition.

ALL BLINDSIDE WALLS:

- All penetrations shall be secured prior to detailing. For single pipe penetrations, refer to Tremco CPG Australia standard detail drawings.
- Multiple penetrations shall be spaced a minimum of 150mm apart to allow for proper detailing. If 150mm spacing is not available, contact Tremco CPG Australia 'Technical Services' for a job-specific recommendation.
- Apply a 45° fillet of Eucocrete RM at all floor to wall transitions to support Tremco Dualproof C.
- Tremco Dualproof C should be installed fleece side up to form a mechanical bond with the wet concrete.
- A double layer of Tremco Dualproof C must be installed (fleece side up) across all construction joints and perpendicular junctions (floor to wall and wall to wall). Refer to Tremco CPG Australia standard detail drawings.
- All laps must be set back a minimum of 300mm from any construction joint or expansion joint.
- For blind side wall applications, laps must be a minimum of 50mm, with the ends of the rolls staggered by a minimum of 300mm.
- End laps must be welded onto a 200mm wide detail strip of Tremco Dualproof C (PVC side up, to allow for a PVC to PVC weld) running perpendicular under and extending past the end lap.
- Final termination of Tremco Dualproof C is 'generally' completed using one of the below options:
 - A Paraterm Bar or Pressure seal at grade level (post pour), in a manner that stops rain water from tracking in behind membrane.
 - Turing the Tremco Dualproof C into a 15mm x 15mm reglet, filled with an approved 100% solids epoxy. The reglet should be cut into wall of the structure rather than the shoring wall, to reduce the risk of rain water tracking behind the membrane.

** If the above termination options are not available, please contact Tremco CPG Australia 'Technical Services' for a job-specific recommendation.*

CLEAN UP

Wash all equipment immediately on completion of application and mixing.

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.

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