

Procor®

Fluid applied waterproofing for elevated concrete decks

Advantages

- **Fully bonded** – water cannot track beneath the membrane
- **Elastomeric** – accommodates minor structural movements and will bridge concrete shrinkage cracks
- **Asphalt free formulation** – does not become brittle with age and remains flexible to -30° C (-23° F)
- **Chemical cure** – no loss of thickness, wet thickness = dry thickness
- **Seamless** – continuous waterproofing integrity with easy detailing
- **Primerless** – applied directly to the substrate with minimal surface preparation
- **Damp surface tolerant** – can be applied to damp-to-touch surfaces
- **Low risk** – non-hazardous product, no harmful solvents, safe to use
- **Cold applied** – eliminates fire hazards during application
- **Low odor** – no noxious fumes
- **Quick and easy application** – by airless spray or trowel
- **Wide application window** – can be spray applied down to -7° C (20° F)
- **Versatile** - easy to use at drains, pipe penetrations, internal and external corners, etc.

Description

Procor® is a two component, synthetic rubber, cold vulcanized fluid applied waterproofing membrane. It cures to form a resilient, monolithic, fully bonded elastomeric sheet.

Procor will protect elevated decks and roofs against water and water vapor ingress.

The Volatile Organic Compound (VOC) content of Procor waterproofing membranes is less than 75 g/L.

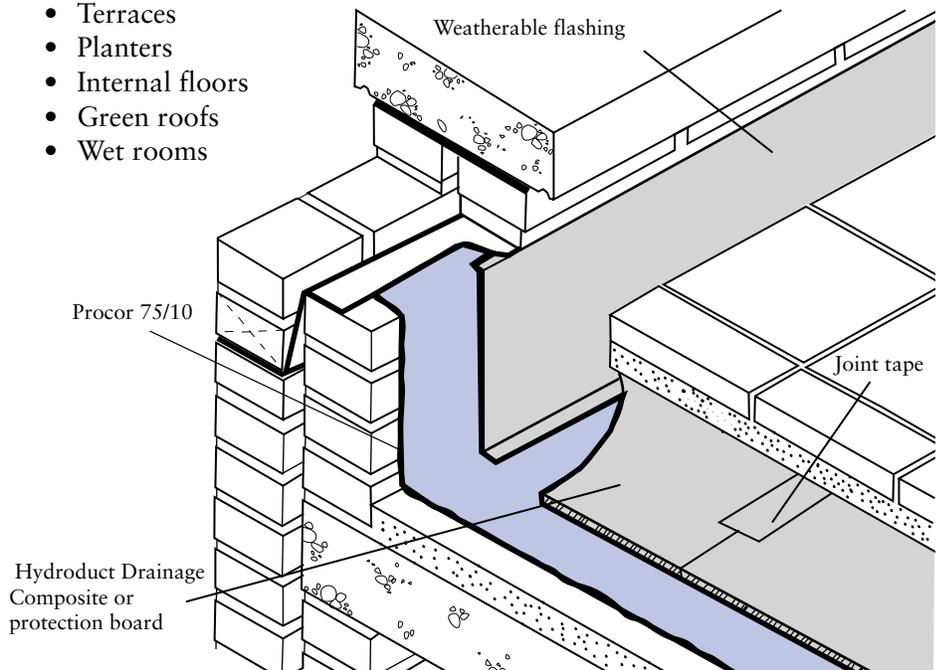
Principal Applications

New and remedial waterproofing of elevated concrete decks:

- Parking/plaza decks
- Podiums
- Terraces
- Planters
- Internal floors
- Green roofs
- Wet rooms

System Components

- **Procor 75 Spray Grade** – for horizontal and vertical applications
- **Procor 10 Pourable Grade** – for horizontal applications
- **Procor 20 Trowel Grade** – for vertical applications and details
- **Hydroduct® Drainage Composites** – high compressive strength, high flow geocomposite drainage sheets
- **Bituthene Liquid Membrane** - for detailing at pipe entries, etc.



Installation

Safety

Refer to product label and Material Safety Data Sheet before use. All users should acquaint themselves with this information prior to working with the material. Carefully read detailed precaution statements on the product labels and MSDS before use. MSDS's can be obtained from our website at www.graceconstruction.com or by calling our toll free number 866-333-3SBM (3726) for technical assistance.

Application

Procor fluid applied waterproofing membranes are typically applied at a minimum thickness of 1.5 mm (0.060 in.). Procor can be installed by hand or using airless spray application. Grace has a network of Procor Specialist Spray Applicators who are trained and experienced in spray application. Contact Grace for further details of local applicators, application techniques and spray equipment.

Decks

The deck is a structural base over which Procor is applied. All decks should be prepared to provide a clean, firm and smooth surface to accept application. Grace recommends the following:

- No excessive deflection or movement of the deck, nor any other structural problems
- Deck should provide for support of maximum anticipated dead and environmental loads, and for expansion and contraction suitable for the roof system structure
- All projections, penetrations and openings in the deck should be completed before Procor application begins
- Joints in pre-cast/pre-stressed concrete decks are to be grouted before membrane application so the top surface is level and smooth

Slope For Drainage

A minimum slope to drain of 11 mm/m (1/8 in./ft) should be used on all concrete decks. This is best achieved with a monolithic structural slab and not with a separate concrete fill layer. Technical recommendations contained in ASTM C 898, "Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Separate Wearing Course," should be observed.

Surface Preparation

All cementitious surfaces must be wood float or shutter finish and free from frost, dirt, grease, oil or other contaminants.

Surface irregularities and voids greater than 13 mm (1/2 in.) in depth should be pretreated with Procor membrane or repaired with a lean concrete mix or grout. Remove windrows, form match lines and high spots greater than 3 mm (1/8 in.) in height. All substrates must be wire-brushed, swept with a stiff broom or blown off with low pressure air to remove dirt, dust and loose stones.

Poor quality surfaces with excessive laitance may require shot blasting or pressure washing to provide a dense smooth surface, free from contaminants.

On highly porous and rough substrates it may be necessary to apply Procor Concrete Sealer or a scratch coat of Procor before applying the full thickness Procor membrane. Contact Grace Construction Products if in doubt about the suitability of the substrate.

Application to "Green" Concrete or Damp Surfaces

Procor may be applied to "green" concrete or over surfaces which are damp to the touch. Remove any visible water prior to application. In "green" concrete or damp substrate applications, direct sunlight may cause the surface temperature to rise rapidly, drawing moisture from the substrate and resulting in blisters and pinholes in the membrane. Under these conditions it may be necessary to apply Procor Concrete Sealer or a scratch coat of Procor before applying the full thickness Procor membrane.

Do not apply Procor waterproofing membranes in wet weather. Once applied, Procor membranes will not be affected by light rain showers.

Application Temperature

Hand Application: Apply Procor 10 and 20 membranes at ambient and substrate temperatures above 4°C (40°F). Do not apply the material if the ambient temperature is likely to fall below 0°C (32°F) within one hour of application completion.

Spray Application: In spray applications using Procor 75, it is possible to work at temperatures below 4°C (40°F) provided there is no frost or condensation on the substrate. The minimum temperature for spray application is -7°C (20°F). Refer to Technical Bulletin, "Spraying Procor 75 at Low Temperatures," or contact your Grace Construction Products representative for details of cold weather spraying.

Detailing

Detailing should be completed prior to applying the full coverage of Procor membrane. The continuous field application should completely cover the detail areas to provide double thickness coverage. For a complete description and instructions on Procor details, see Detail Drawings (on website).

Inside and Outside Corners

- Apply a 1.5 mm (0.060 in.) coating of Procor membrane starting in the corner and extending 150 mm (6 in.) from each side of the corner. For added protection over rough surfaces on inside corners install a 25 mm (1 in.) fillet of Bituthene Liquid Membrane or Procor 20 by hand to reinforce the corner.

Non-moving Joints and Hairline Cracks

- Apply a 1.5 mm (0.060 in.) coating of Procor membrane over non-moving joints or hairline cracks and extend the material 150 mm (6 in.) from each side of the opening.
- Non-moving joints are defined in ASTM C 898, "Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane With Separate Wearing Course," as cold joints, construction joints, isolation joints and control joints held together with steel reinforcing bars or wire fabric. These joints are generally considered by the designer of the structural system as non-moving or static joints. Hairline cracks are defined as cracks less than 1.5 mm (0.060 in.) in width.

Drains and Penetrations

- In drain applications, apply a 1.5 mm (0.060 in.) coating of Procor membrane over the drain flange and extend it 150 mm (6 in.) beyond the flange.
- Penetration openings must be sealed and stabilized prior to the application of Procor membrane.
- Once sealed and stabilized, install a 25 mm (1 in.) fillet of Procor 20 or Bituthene Liquid Membrane around the protrusion. Extend the Procor membrane 150 mm (6 in.) onto the structural substrate and at least 50 mm (2 in.) onto the penetration. For plastic pipes and other low adhesion substrates, a tie-in using Preprufe® Tape will be needed.

Hand Application

On horizontal applications, use the “pour and spread” method. Pour the mixed material directly from the container and spread using a steel trowel, flexible spreader, float or screed. A metal squeegee with thickness guides at the ends is acceptable and flexible bladed rubber squeegees may also be used. Care must be taken to ensure that any thin areas are brought to the recommended thickness. A notched squeegee is not recommended since it will leave thin spots in the waterproofing. Plan the application sequence so that there is no need to walk on the freshly applied material. The membrane can typically accept foot traffic after 24 to 48 hours. However, in temperatures above 20°C (70°F), the membrane can accept foot traffic in less than 24 hours.

Spray Application

Procor 75 membrane may be spray applied to horizontal and vertical surfaces. Contact Grace Construction Products for qualified spray equipment.

Thickness Control

Application thickness is controlled in both horizontal and vertical applications by marking the area and spot checking the thickness with a wet film thickness gauge. Swipe and trowel marks on the Procor membrane are acceptable as long as the minimum thickness is maintained.

Mixing and Pot Life (Hand Application)

If Procor waterproofing membranes are stored in cold temperatures, allow the material to stand for several hours at room temperature to facilitate mixing and application.

Open the Part A container and stir or mix for about 15 seconds. Add the entire contents of the Part B container to the Part A container and mix either mechanically or by hand. For mechanical mixing, use a slow speed (300-450 RPM), heavy duty drill with a spiral mixing paddle (such as Goldblatt® Paint/ Mud Mixer by Stanley Tools) and mix for about 1 minute. For hand mixing, use a flat board or paddle and mix for about 2 to 3 minutes using a slow folding motion.

The mixed product should have a uniform color, free from any white streaks. Take care to scrape material from the side and bottom of the container to assure thorough mixing. Once mixed use immediately. Do not over mix as over mixing will result in premature thickening of the material in

the container and decrease the pot life. Once properly mixed, the pot life is typically 30 to 60 minutes depending on ambient temperature. The pot life may be reduced to about 15 minutes in temperatures above 30°C (86°F).

CAUTION:

Always install the entire contents of the container as soon as possible. The reaction that occurs between Part A and Part B is exothermic (gives off heat) and mixed material left in the pail will reach temperatures higher than 100°C (212°F).

Do not cover the material after it is mixed.

Do not add water to thin the product.

For Procor 75, use qualified spray equipment systems. Mixing occurs within the spray gun assembly. Pre-mix Part A prior to pumping to bring any settled material back into solution.

Coverage Rates

Procor fluid applied waterproofing membranes are typically applied at a minimum thickness of 1.5 mm (0.060 in.). The theoretical coverage rate (not including waste) at a 1.5 mm (0.060 in.) thickness is about 0.6 m²/L (25 ft²/gal). Coverage rates will be reduced over rough and uneven substrates.

Drainage, Protection or Insulation

Protect Procor membranes to avoid damage from other trades, construction materials and backfill. Protection products may be installed on the same day as the Procor membrane.

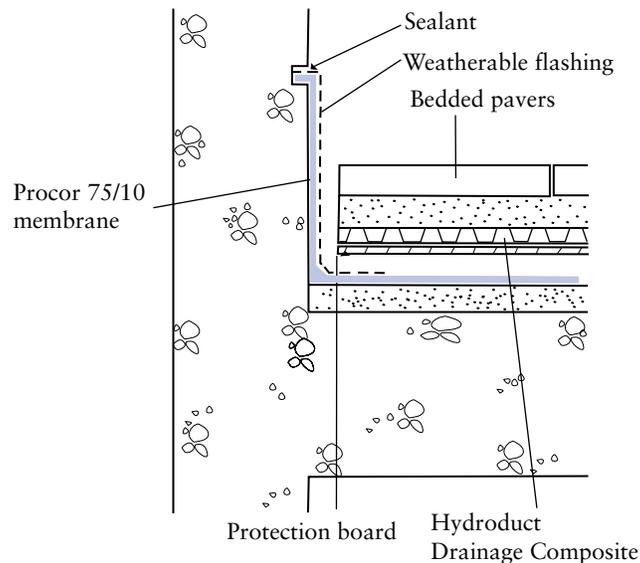
Bonding of the protection products to the Procor membrane is achieved if the protection products are installed when the Procor membrane is tacky; generally 1 to 2 hours after the Procor membrane is installed. To achieve non-bonded protection, wait until the Procor membrane surface is no longer tacky, or spread cement dust or lime to remove the tack prior to applying the protection. Take care not to displace the Procor membrane.

On horizontal applications, use Hydroduct 660 Drainage Composite. Alternate methods of protection are 3 mm (1/8 in.) or 6 mm (1/4 in.) asphalt hardboard. Extruded polystyrene insulation boards may also be used and are compatible with Procor membranes.

On vertical applications, use Hydroduct 220 Drainage Composite. Alternate methods of protection are 25 mm (1 in.) expanded polystyrene or 6 mm (1/4 in.) extruded polystyrene with a minimum 690 kN/m² (100 lbs/in.²) compressive strength. Such alternatives do not provide positive drainage to the system. If 6 mm (1/4 in.) extruded polystyrene protection board is used, backfill should not contain sharp rock or aggregate over 50 mm (2 in.) in diameter

Backfill and Flood Tests

Allow Procor waterproofing membrane to cure at least 24 hours prior to placement of overburden to avoid displacement of the membrane. Use care during the overburden placement operation to avoid damage to the waterproofing system.



Typical Deck Upstand Detail

Supply

Product	Unit of Sale	Approximate Coverage at 1.5 mm (60 mil)	Weight	Palletization
Procor 75	75 gallon kit	1875 ft ² /kit	748 lbs/kit, net (573 lbs Part A + 175 lbs Part B)	1 or 2 kits/pallet, for orders of 1 or 2 kits only
Procor 10	5.3 gallon kit	132 ft ² /kit	53.4 lbs/kit, net (41.3 lbs Part A + 12.1 lbs Part B)	16 kits/pallet (16 pails Part A + 16 pails Part B = 32 pails total)
Procor 20	1.9 gallon kit	47 ft ² /kit	18.4 lbs/kit, net (14.0 lbs Part A + 4.4 lbs Part B)	40 kits/pallet (40 pails Part A + 40 pails Part B = 80 pails total)
Hydroduct 660	1 roll (4 ft x 50 ft roll)	200 ft ² /roll	54 lbs/roll	6 rolls/pallet
Hydroduct 220	1 roll (4 ft x 50 ft roll)	200 ft ² /roll	42 lbs/roll	6 rolls/pallet

Footnote:

1.Nominal coverage based on 25 sf/gal for smooth concrete. Coverage will vary with substrate condition.

Physical Properties

Property	Typical Value	Test Method
Resistance to hydrostatic head over 3.2 mm (1/8 in.) post formed crack	20 m (65 ft)	ASTM D 5385
Water vapor permeance	4.6 ng/Pa.s.m ² (0.08 Perms)	ASTM E 96 Method B
Peel adhesion to concrete	880 N/m (5 lbs/in.)	ASTM D 903 Modified ²
Elongation	500%	ASTM D 412
Pliability, 180° bend over 25 mm (1 in.) mandrel at -30°C (-23°F)	unaffected	ASTM D 1970
Low temperature flexibility and crack bridging 3.2 mm (1/8 in.) crack cycling at -26°C (-15°F)	Pass	ASTM C 836
Extensibility over 6.4 mm (1/4 in.) crack after heat aging	Pass	ASTM C 836
Solids content	100%	ASTM D 1644

Footnote:

2. Procor waterproofing membrane is applied to concrete and allowed to cure. Peel adhesion of the membrane is measured at a rate of 50 mm (2 in.) per minute with a peel angle of 90° at room temperature.

Flood test all horizontal applications with a maximum 50 mm (2 in.) head of water for at least 24 hours. Mark any leaks and repair when the membrane is dry. Before flood testing, be sure the structure will withstand the dead load of the water. For well-sloped decks, segment the flood test to avoid deep water near drains. Start flood test 48 hours after completing the application of Procor

fluid applied waterproofing. Low voltage electronic leak detection techniques are also suitable.

Cleaning

Tools and equipment are most effectively cleaned by allowing the material to cure and simply peeling it off the next day. Procor Flushing Oil is available to clean spray equipment.

Storage and Handling Information

Procor waterproofing membranes (Part A and Part B) should be stored under cover in original sealed containers above 4°C and below 38° C (40°F and 100° F). Keep Part B from freezing during storage. The shelf life is 9 months in unopened containers.

Limitations

Procor membranes should not be used in areas where they will be permanently exposed to sunlight, weather or traffic. Maximum exposure period is 30 days. Procor membranes should not be used in negative side waterproofing applications in hydrostatic condition. Do not use part mixes.

Specification Clauses

All elevated deck areas shall be waterproofed with Procor Fluid Applied Waterproofing.

All Procor materials shall be supplied or approved by Grace Construction Products. All detailing, application and protection shall be installed strictly in accordance with Grace instructions. Sample performance and formatted clauses are also available.

For Technical Assistance call us toll free at 866-333-3SBM (3726).

Web Visit our web site at www.graceconstruction.com

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