

## PROCOR®

### Fluid applied waterproofing for below grade structures

#### 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 below ground structures against water and water vapor ingress.

The Volatile Organic Compound (VOC) content of Procor waterproofing membranes is less than 75 g/L. Architectural and Industrial Maintenance Regulations limit the VOC content in products classified as Architectural Coatings. Refer to Technical Letters at [www.graceconstruction.com](http://www.graceconstruction.com) for most current list of allowable limits.

#### Advantages

- **Fully bonded**—water cannot track beneath the membrane
- **Waterproof**—resists a hydrostatic head in excess of 65 ft (20 m)
- **Elastomeric**—accommodates minor structural movements and will bridge concrete shrinkage cracks
- **Asphalt free formulation**—does not become brittle with age and remains flexible to -23°F (-30°C)
- **Chemical cure**—100% solids; wet thickness equals 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
- **Cold applied**—eliminates fire hazards during application
- **Quick and easy application**—by airless spray or trowel
- **Wide application window**—can be sprayed down to 20°F (-7°C)
- **Versatile**—easy to use at drains, pipe penetrations, internal and external corners, etc.
- **ASTM C836**—meets or exceeds all physical performance criteria

#### Principal Applications

New and remedial waterproofing applications:

- Concrete and masonry basements
- Retaining walls
- Elevator pits
- Service ducts
- Split slab applications
- Floors
- 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.
- **Preprufe® Tape**—for tie-ins of Procor, Bituthene or Preprufe waterproofing sheet membranes

#### Installation

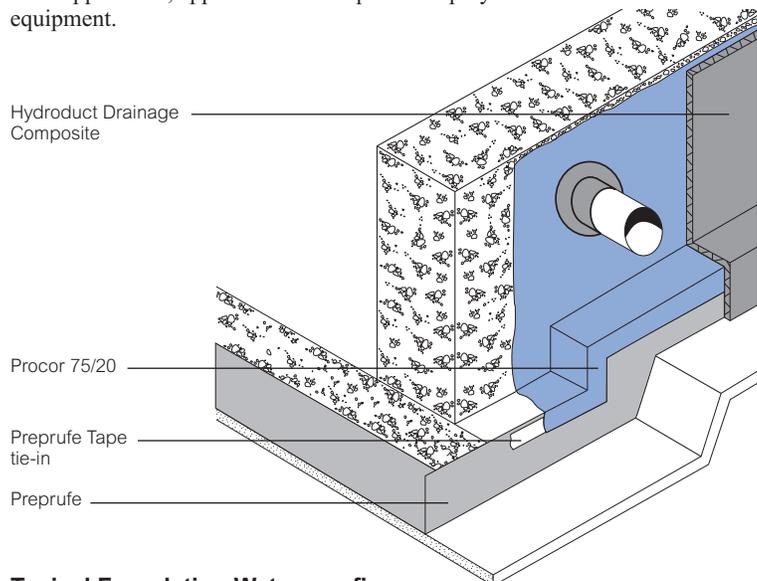
##### Safety

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. MSDSs can be obtained from our web site at [www.graceconstruction.com](http://www.graceconstruction.com) or by contacting us toll free at 866-333-3SBM (3726).

##### Application

Procor fluid applied waterproofing membranes are typically applied at a minimum thickness of 60 mil (1.5 mm).

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.



#### Typical Foundation Waterproofing

Drawings are for illustration purposes only. Please refer to [www.graceconstruction.com](http://www.graceconstruction.com) for specific application details.

## Surface Preparation

### Concrete

Cementitious surfaces must be smooth, monolithic and free of frost, voids, spalled areas, loose substrate and sharp protrusions, dirt, oil, grease and debris and must contain no other contaminants or any visible coarse aggregate. Repair defects such as spalled or poorly consolidated areas.

Tie-holes and “bugholes” larger than ¼ in. (6 mm) in diameter or deeper than ⅛ in. (3 mm) or both, should be either pretreated with Procor or repaired with a lean concrete mix or grout. See ASTM D5295, *Preparation of Concrete Surfaces for Adhered Membrane Waterproofing Systems*, for further details on substrate preparation.

Cracked, pitted, honeycombed or heavily bugholed surfaces can be filled by spraying from close in (10 in. to 12 in.) but high material usage will result. Under these circumstances it may be more efficient to fill the surfaces with a parge coat of lean mortar mix before application of the Procor. It is also acceptable to fill in gaps with a compatible sealant or caulk.

Remove windrows, sharp protrusions and form match lines. Also remove high spots greater than .03 in. (0.8 mm) in height. On highly porous and rough surfaces, it may be necessary to apply Procor Concrete Sealer or a scratch coat of Procor to provide a smooth surface, before applying the liquid membrane.

All substrates must be wirebrushed, 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 shotblasting or pressure washing to provide a dense smooth surface free from contaminants.

Please refer to Technical Letter 2 for more information on *Inspection and Repair of Concrete*.

### Masonry

Waterproofing concrete block is critical since most concrete block is porous and therefore susceptible to moisture and water infiltration. Refer to Technical Letter *Waterproofing Concrete Block Walls* for surface preparation. Apply a scratch coat of Procor to provide a smooth surface before applying the liquid membrane.

### Wood/Plywood

Apply Procor membrane over securely fastened sound surface. All joints and fasteners shall be flush to create a smooth surface.

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 (minimum 3 days cure time) 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, the 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 40°F (4°C). Do not apply the material if the ambient temperature is likely to fall below 32°F (0°C) within one hour of application completion.

**Spray Application**—In spray applications using Procor 75, it is possible to work at temperatures below 40°F (4°C) provided there is no frost or condensation on the substrate. The minimum temperature for spray application is 20°F (-7°C). Refer to Technical Letter *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, consult the separate detail sheets.

### Inside and Outside Corners

- Apply a 60 mil (1.5 mm) coating of Procor membrane starting in the corner and extending 6 in. (150 mm) from each side of the corner. For added protection over rough surfaces on inside corners install a 1 in. (25 mm) fillet of Procor 20 or Bituthene Liquid Membrane by hand to reinforce the corner.

### Non-moving Joints and Hairline Cracks

- Apply a 60 mil (1.5 mm) coating of Procor membrane over non-moving joints or hairline cracks and extend the material 6 in. (150 mm) from each side of the opening.
- Non-moving joints are defined in ASTM C898, *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 60 mil (1.5 mm) in width.

### Drains and Penetrations

- In drain applications, apply a 60 mil (1.5 mm) coating of Procor membrane over the drain flange and extend it 6 in. (150 mm) beyond the flange.
- Penetration openings must be sealed and stabilized prior to the application of Procor membrane.
- Once sealed and stabilized, install a 1 in. (25 mm) fillet of Procor 20 or Bituthene Liquid Membrane around the protrusion. Extend the Procor membrane 6 in. (150 mm) onto the structural substrate and at least 2 in. (50 mm) onto the penetration. For plastic pipes and other low adhesion substrates, a tie-in using Preprufe Tape will be needed.

### Hand Application on Horizontal Surfaces

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 70°F (20°C), the membrane can accept foot traffic in less than 24 hours.

In horizontal applications where a minimum slope of 0.13 in./ft (11 mm/m) cannot be achieved, apply 2 coats of Procor membrane to achieve total thickness.

### Hand Application on Vertical Surfaces

On vertical applications, scoop the Procor directly from the pail or apply using the “pour and trowel” method. Pour the mixed material directly from the container onto the vertical surface and follow directly behind it with a 12–18 in. (300–450 mm) straight edge steel trowel. Spread the material uniformly across the surface with only one or two passes, starting at the bottom of the wall and pulling the material up the wall. Additional passes with the trowel over the material will cause the material to become “stringy” and difficult to trowel.

### 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 overmix as overmixing 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 86°F (30°C).

### 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 212°F (100°C).**

**Do not cover the material after it is mixed.**

**Do not add water or any other material 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 60 mil (1.5 mm). The theoretical coverage rate (not including waste) at a 60 mil (1.5 mm) thickness is about 25 ft<sup>2</sup>/gal (0.6 m<sup>2</sup>/L). 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 1/8 in. (3 mm) or 1/4 in. (6 mm) 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 1/4 in. (6 mm) asphalt impregnated board or 1 in. (25 mm) extruded polystyrene. Such alternatives do not provide positive drainage to the system.

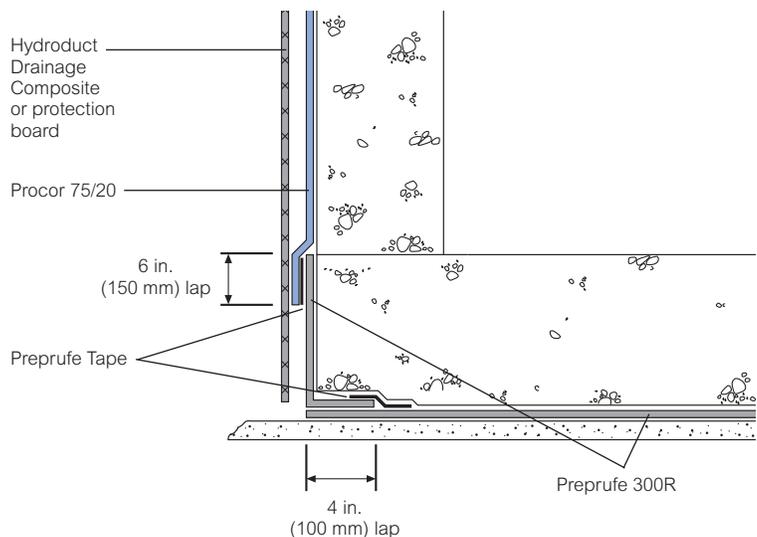
### Backfill and Flood Tests

Allow Procor waterproofing membrane to cure at least 24 hours prior to backfill to avoid displacement of the membrane. Use care during the backfill operation to avoid damage to the waterproofing system. Follow generally accepted practices for backfilling and compaction. Backfill should be added and compacted in 6 in. (150 mm) to 12 in. (300 mm) lifts to avoid stresses on the waterproofing system. Settlement stresses may compromise the integrity of the waterproofing system.

Flood test all horizontal applications with a maximum 2 in. (50 mm) 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.



**Typical Foundation Waterproofing**

## Supply

Product	Unit of Sale	Approx. Coverage at 60 mil (1.5 mm)	Weight	Palletization
<b>Procor 75</b>	75 gallon kit	1875 ft <sup>2</sup> /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
<b>Procor 10</b>	5.3 gallon kit	132 ft <sup>2</sup> /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)
<b>Procor 20</b>	1.9 gallon kit	47 ft <sup>2</sup> /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)
<b>Hydroduct 660</b>	1 roll (4 ft x 50 ft roll)	200 ft <sup>2</sup> /roll	54 lbs/roll	6 rolls/pallet
<b>Hydroduct 220</b>	1 roll (4 ft x 50 ft roll)	200 ft <sup>2</sup> /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 1/8 in. (3.2 mm) post formed crack	65 ft (20 m)	ASTM D5385
Water vapor permeance	0.08 perms (4.6 ng/Pa.s.m <sup>2</sup> )	ASTM E96—method B
Peel adhesion to concrete	5 lbs/in. (880 N/m)	ASTM D903 modified <sup>2</sup>
Elongation	500%	ASTM D412
Pliability, 180° bend over 1 in. (25 mm) mandrel at -23°F (-30°C)	Unaffected	ASTM D1970
Low temperature flexibility and crack bridging 1/8 in. (3.2 mm) crack cycling at -15°F (-26°C)	Pass	ASTM C836
Extensibility over 1/4 in. (6.4 mm) crack after heat aging	Pass	ASTM C836
Solids content	100%	ASTM D1644

### Footnote:

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

## Storage and Handling Information

Procor waterproofing membranes (Part A and Part B) should be stored under cover in original sealed containers above 40°F (4°C) and below 100°F (38°C). 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.

Apply Procor membranes directly to structural surfaces. Do not apply Procor membranes over lightweight insulating concrete. Insulation, if used, must be installed over the membrane.

Procor membranes are not recommended for use as a tank or containment structure liner unless in split slab construction.

Procor is not compatible with petroleum solvents, fuels and oils, materials containing creosote, pentachlorophenol or linseed oil.

Do not use part mixes.

### Specification Clauses

Below grade 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.

[www.graceconstruction.com](http://www.graceconstruction.com)

**For technical assistance call toll free at 866-333-3SBM (3726)**

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