PREPRUFE® Low Temperature Membranes

Pre-applied fully-bonded waterproofing membranes for low temperature applications

Product Description

PREPRUFE®Low Temperature Membranes (300LT and 160LT) are unique composite sheets comprised of a thick HDPE film, an aggressive pressure sensitive adhesive formulated for application temperatures down to 25°F (-4°C), and a weather resistant protective coating.

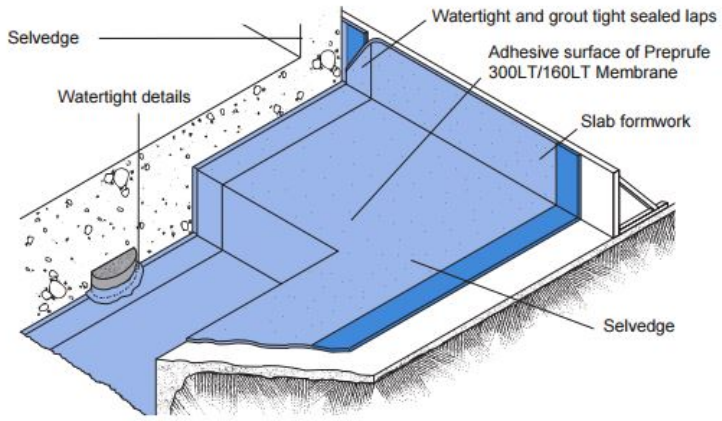
Unlike conventional non-adhering membranes, which are vulnerable to water ingress tracking between the unbonded membrane and structure, the unique PREPRUFE®bond to concrete prevents ingress or migration of water around the structure.

The PREPRUFE®LT System is designed for application temperatures between 25°F (-4°C) and 60°F (+16°C) and includes:

- PREPRUFE® 300LT—heavy-duty grade for use below slabs and on rafts (i.e. mud slabs). Designed to accept the placing of heavy reinforcement using conventional concrete spacers
- PREPRUFE® 160LT—thinner grade for blindside, zero property line applications against soil retention systems
- PREPRUFE® Tape LT—for covering cut edges, roll ends penetrations and detailing
- BITUTHENE® Liquid Membrane—for sealing around penetrations, etc.
- ADCOR® ES—waterstop for joints in concrete walls and floors
- PREPRUFE® Tieback Covers—preformed cover for soil retention wall tieback heads
- PREPRUFE® Preformed Corners—preformed inside and outside corners

PREPRUFE®300LT & 160LT membranes are applied either horizontally to smooth prepared concrete, carton forms or well rolled and compacted sand or crushed stone substrates; or vertically to permanent formwork or adjoining structures. Concrete is then cast directly against the adhesive side of the membranes. The specially developed PREPRUFE®adhesive layers work together to form a continuous and integral seal to the structure.

PREPRUFE®can be returned up the inside face of slab formwork but is not recommended for conventional twin-sided formwork on walls, etc. Use BITUTHENE®Low Temperature self-adhesive membrane or PROCOR® fluid applied membrane to walls after removal of formwork for a fully bonded system to all structural surfaces.



Preprufe Low Temperature Membrane Application

Product Advantages

- **Forms a unique continuous adhesive bond to concrete poured against it**—prevents water migration and makes it unaffected by ground settlement beneath slabs
- **Fully-adhered watertight laps** and detailing
- **Provides a barrier to water, moisture and gas**—physically isolates the structure from the surrounding ground
- **Simple and quick to install at temperatures down to 25°F (-4°C)**—requiring no priming or fillets
- **Zero permeance** to moisture
- **Solar reflective**—prevents reduced temperature gain
- **Can be applied to permanent formwork**—allows maximum use of confined sites
- **Self protecting**—can be trafficked immediately after application and ready for immediate placing of reinforcement
- **Unaffected by wet conditions**—cannot activate prematurely
- **Inherently waterproof, non-reactive system:**
  - not reliant on confining pressures or hydration
  - unaffected by freeze/thaw, wet/dry cycling
- **Chemical resistant**—effective in most types of soils and waters, protects structure from salt or sulphate attack

Limitations

It is recommended that concrete be poured within 56 days of application of the membrane.

PREPRUFE®300LT & 160LT should only be used when application temperatures are between 25°F (-4°C) and 60°F (+16°C). For application temperatures above 60°F (+16°C), use PREPRUFE®300R & 160R membranes.

Installation

The most current application instructions, detail drawings and technical letters can be viewed at gcpat.com. For other technical information contact your local GCP representative. The minimum application temperature of PREPRUFE®membranes is 25°F (-4°C). When installing the PREPRUFE®waterproofing system in cold or marginal weather conditions (below 60°F (16°C)) the use of PREPRUFE®300LT & 160LT membranes is recommended. PREPRUFE®300LT & 160LT membranes are supplied in rolls 4 ft (1.2 m) wide, with a selvedge on one side to provide self-adhered side laps for continuity between rolls. The specially formulated low temperature adhesive provides for easy formation of side laps at temperatures down to 25°F (-4°C). To ensure a continuous bond is achieved, roll all laps firmly with a heavy roller. Unlike PREPRUFE®300R & 160R, PREPRUFE®300LT & 160LT membranes do not require the addition of PREPRUFE®Tape LT at the side laps at temperatures below 60°F (16°C). However, PREPRUFE®Tape LT should still be used for all end laps and other details requiring tape. During cold or damp conditions, the selvedge and tape adhesive can be gently warmedusing a hot air gun or similar to remove moisture and improve initial adhesion. Refer to the PREPRUFE®300R & 160R data sheet, application guides, and technical letters for all other standard application details.

The rolls of PREPRUFE®Membrane and PREPRUFE®Tape are interwound with a disposable plastic release liner which must be removed before placing reinforcement and concrete. Follow American Concrete Institute's *Cold Weather Concreting* – ACI 306R88 to ensure concrete properly cures allowing the PREPRUFE®to form an intimate bond to the concrete.

Specification Clauses

PREPRUFE®300LT or 160LT shall be applied with its adhesive face presented to receive fresh concrete to which it will integrally bond. Only GCP approved membranes shall be bonded to PREPRUFE®300LT/ 160LT. All PREPRUFE®300LT/160LT system materials shall be supplied by GCP, and applied strictly in accordance with their instructions. Specimen performance and formatted clauses are also available.

NOTE: Use PREPRUFE®Tape to tie-in PROCOR® with PREPRUFE®.

Health and Safety

Refer to relevant SDS (Safety Data Sheet). Complete rolls should be handled by a minimum of two persons.

Supply

DIMENSIONS (NOMINAL)	PREPRUFE® 300LT MEMBRANE	PREPRUFE® 160LT MEMBRANE	PREPRUFE® TAPE LT
Thickness	0.046 in. (1.2 mm)	0.032 in. (0.8 mm)	
Roll size	4 ft x 98 ft (1.2 m x 30 m)	4 ft x 115 ft (1.2 m x 35 m)	4 in. x 49 ft (100 mm x 15 m)
Roll area	392 ft^2 (36 m^2)	460 ft^2 (42 m^2)	
Roll weight	108 lbs (50 kg)	92 lbs (42 kg)	4.3 lbs (2 kg)
Minimum side/end laps	3 in. (75 mm)	3 in. (75 mm)	

Ancillary Products: BITUTHENE®Liquid Membrane—1.5 US gal (5.7 liter) or 4 US gal (15.1 liter)

Physical Properties

PROPERTY	TYPICAL VALUE 300LT	TYPICAL VALUE 160LT	TEST METHOD
Color	white	white	
Thickness	0.046 in. (1.2 mm)	0.032 in. (0.8 mm	ASTM D3767
Lateral Water Migration Resistance	Pass at 231 ft (71 m) of hydrostatic head pressure	Pass at 231 ft (71 m) of hydrostatic head pressure	ASTM D5385, modified[1]
Low temperature flexibility	Unaffected at -20°F (-29°C)	Unaffected at -20°F (-29°C)	ASTM D1970
Resistance to hydrostatic head	231 ft (71 m)	231 ft (71 m)	ASTM D5385, modified[2]
Elongation	660%	580%	ASTM D412, modified[3]
Tensile strength, film	4000 psi (27.6 MPa)	4000 psi (27.6 MPa)	ASTM D412
Crack cycling at -9.4°F (-23°C), 10 cycles	Unaffected, Pass	Unaffected, Pass	ASTM C836
Puncture resistance	221 lbs (990 N)	100 lbs (445 N)	ASTM E154
Peel adhesion to concrete	5.0 lbs/in. (880 N/m)	5.0 lbs/in. (880 N/m)	ASTM D903, modified[4]
Lap peel adhesion	5.0 lbs/in. (880 N/m)	5.0 lbs/in. (880 N/m)	ASTM D1876, modified[5]
Permeance to water vapor transmission	0.01 perms (0.6 ng/(Pa x s x m^2))	0.01 perms (0.6 ng/(Pa x s x m^2))	ASTM E96, method B
Water absorption	0.5%	0.5%	ASTM D570

Footnotes:

1. Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the membrane.

2. Hydrostatic head tests of PREPRUFE ®Membranes are performed by casting concrete against the membrane with a lap. Before the concrete cures, a 0.125 in. (3 mm) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to the head indicated.

3. Elongation of membrane is run at a rate of 2 in. (50 mm) per minute.

4. Concrete is cast against the protective coating surface of the membrane and allowed to properly dry (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 2 in. (50 mm) per minute at room temperature.

5. The test is conducted 15 minutes after the lap is formed (per GCP published recommendations) and run at a rate of 2 in. (50 mm) per minute at 25°F (-4°C).

Last Updated: 2018-12-12

ca.gcpat.com/solutions/products/preprufe-pre-applied-waterproofing-solutions/preprufe-low-temperature-membranes