

PREPRUFE[®] 275 / PREPRUFE[®] 275 LT Membrane

Blindside waterproofing membrane for both cast-in-place concrete or shotcrete foundation walls and cast-in-place concrete slabs

Product Description

The GCP PREPRUFE[®] 275 & PREPRUFE[®] 275 LT membrane is a composite sheet comprised of an HDPE film, an aggressive pressure sensitive adhesive and a weather resistant protective coating. Using patented Advanced Bond Technology™, PREPRUFE[®] 275 & PREPRUFE[®] 275 LT membrane provides a continuous seal to concrete or shotcrete resisting water ingress and migration between the membrane and the structure.

Product Advantages

- Forms a continuous adhesive bond to concrete poured against it
- Durable system designed specifically to withstand the force of shotcrete placement
- Its unique continuous and integral bond to the structure is specifically designed to reduce lateral water migration between the membrane and the concrete or shotcrete
- Designed with fully adhered adhesive to adhesive watertight ZipLap™ seams and easy to execute detailing
- Provides a barrier to water, moisture and soil gases physically isolating the structure from the surrounding substrate
Release liner free, expedites installation and reduces construction site waste
- Can be applied to permanent formwork - allows maximum use of confined sites
- Installed membrane is unaffected by wet jobsite conditions – jobsite water will not cause premature activation
Waterproofing is not reliant on confining pressures or hydration
- Installed membrane is unaffected by freeze/thaw or wet/dry cycles
- Chemical resistance - protects structure from salt or sulphate attack effective in most types of soils and waters

Product Applications

PREPRUFE[®] 275 & PREPRUFE[®] 275 LT membranes are designed for shotcrete walls as well as cast in place concrete with intermittent water and low or no hydrostatic condition. To provide long-term waterproofing performance in high-risk, hydrostatic and critical shotcrete conditions, PREPRUFE[®] SCS blindside waterproofing system is recommended. Complete product information and a Product Data Sheet for PREPRUFE[®] SCS blindside waterproofing system can be found at gcpat.com.

System Components:

Membrane

PREPRUFE® 275 & PREPRUFE® 275 LT waterproofing membrane is for horizontal use below concrete slabs, or vertically against timber lagging or other soil retention systems. Intended for both cast-in-place and shotcrete applications.

Ancillary Components (refer to the most current Data Sheets for all system components available on gcpat.com)

- PREPRUFE® Tape – 4 in. wide tape for covering cut edges, roll ends, penetrations and detailing
- PREPRUFE® CJ Tape – 8 in. wide tape for detailing, and may be used at construction joints for optional additional protection
- BITUTHENE® Liquid Membrane — for sealing around penetrations, etc.
- ADCOR® — Waterstop for joints in concrete walls and floors
- DE NEEF® INJECTO® Tube — groutable waterstop for non-moving concrete construction joints and penetrations
- PREPRUFE® Tieback Covers — preformed cover for soil retention wall tieback heads

Limitations of Use

- Approved uses include only those specifically detailed in this Product Data Sheet and other current Product Data Sheets that can be found at gcpat.com
- PREPRUFE® 275/LT membranes are not intended for any other use. Contact GCP Technical Services where any other use is anticipated or intended.
- PREPRUFE® 275/LT membranes are designed for in-service temperatures below 120°F (49°C).
- For hydrostatic and critical waterproofing applications consider PREPRUFE® SCS blindside waterproofing system for shotcrete applications and PREPRUFE® Plus for cast-in-place concrete applications.
See separate Product Data Sheet at gcpat.com.

Safety and Handling

Users must read and understand the product label and Safety Data Sheets (SDS's) for each system component 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 SDS's before use. The most current SDS's can be obtained from our web site at gcpat.com.

Storage

- Observe 1 year shelf life and use on a first in first out basis
- Store In dry conditions between 40 °F (4.5 °C) -90 °F (32 °C)
- Store off ground under tarps or otherwise protected from rain and ground moisture
- See TL-0030 — "Shelf Life/Storage and Handling of GCP Waterproofing and Air Barrier Products" Technical Letter

Installation

Technical Support, Details and Technical Letters

The most up to date detail drawings and technical letters are available at gcpat.com. For complete application instructions, please refer to the current GCP Contractor Handbook and Literature on (gcpat.com). Documents in hardcopy as well as information found on websites other than gcpat.com may be out of date or in error. Before using this product it is important that information be confirmed by accessing gcpat.com and reviewing the most recent product information, including without limitation Product Data Sheets and Contractor Manuals, Technical Bulletins, Detail Drawings, and detailing recommendations. Please review all materials prior to installation of PREPRUFE® 275 membrane.

Support is also available by full-time technically trained GCP field sales representatives and technical service personnel, backed by a central research and development technical services staff. For technical assistance with detailing and problem solving please contact your local representative. A GCP Representative locator is available at www.gcpat.com.

Temperature Requirements

- PREPRUFE® 275 LT membrane can be applied between temperature 25°F to 95°F. Please use PREPRUFE® 275 membrane for application above 95°F.
- PREPRUFE® Tape LT and PREPRUFE® CJ Tape LT can be applied between temperature 25°F to 95°F. Please use PREPRUFE® Tape HC and PREPRUFE® CJ Tape HC for application above 95°F.

Substrate Preparation

- All surfaces — It is essential to create a sound and solid substrate to eliminate movement during the concrete or shotcrete placement. Substrates must be regular and smooth, with no gaps or voids greater than 0.5 in. (12 mm). Grout around all penetrations such as utility conduits, etc. for stability.
- Horizontal — The substrate must be free of loose aggregate and sharp protrusions. When installing over earth or crushed stone, ensure substrate is well compacted to avoid displacement of substrate due to traffic or concrete pour. The surface does not need to be dry, but standing water must be removed.
- Vertical — Use concrete, plywood, insulation, or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 0.5 in. (12mm) out of alignment.

Membrane Application

PREPRUFE® 275/LT membranes can be applied in horizontal applications to smooth prepared concrete, or well rolled and compacted earth or crushed stone substrate. Kick out or roll out the membrane, with the HDPE film side to the substrate with the green ZipStrip™ facing towards the concrete pour. End laps should be staggered to avoid a buildup of layers. Leave the green and blue ZipStrip™ on the membrane until the overlap procedure is completed. When completed, remove the release liner. Contact your local GCP representative for further details when installing over carton forms.

Accurately position succeeding sheets to overlap the previous sheet 3 in. (75 mm) along the marked selvedge with the blue ZipStrip™ on top of the green ZipStrip™. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back and remove both the green and blue ZipStrip™ in the overlap area to achieve an adhesive-to-adhesive bond at the overlap. Ensure a continuous bond is achieved without creases, and roll firmly with a heavy roller.

PREPRUFE® 275/LT membrane can be returned up the inside face of slab formwork. To attain a fully bonded system and to allow a tie in with BITUTHENE® self-adhered membrane or PROCOR® fluid-applied membrane to all vertical structural surfaces after removal of formwork. (See PREPRUFE® Technical Letter #TL-0013 "Forming Systems for Use with PREPRUFE® Membranes."). Terminate the membrane slightly below the top of concrete/shotcrete wall level in the formwork, no membrane hang-over is allowed (beyond final concrete pour level)

Roll ends and cut edges – Overlap all roll ends and cut edges by a minimum 3 in. (75 mm) and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary. Allow surface to dry and apply PREPRUFE® Tape LT (or HC in hot climates) centered over the lap edges and roll firmly. Immediately remove tinted plastic release liner from the tape.

Membrane Repair

Inspect the membrane before installation of reinforcement steel, formwork, and final placement of shotcrete. The membrane can be easily cleaned by low pressure power washing if required. Repair damage by wiping the area with a damp cloth to ensure the area is clean and free from dust and other contaminants, and allow the membrane to dry. Repair small punctures and slices (0.5 in. (12 mm) or less by applying PREPRUFE® Tape centered over the damaged area. Repair punctures and holes larger than 0.5 in. (12mm) by applying a patch of PREPRUFE® membrane. Extend the patch 6 in. (150 mm) beyond the damaged area. Seal all edges of the patch with PREPRUFE® Tape. Where exposed selvedge has lost adhesion or laps have not been sealed, ensure the area is clean and dry and cover with fresh PREPRUFE® Tape. Any areas of damaged adhesive should be covered with PREPRUFE® Tape. All PREPRUFE® Tape must be rolled firmly and the tinted release liner removed.

Slices or relief cuts can be butted or overlapped and repaired by applying PREPRUFE® Tape centered over the edge of the overlap or center of the butt joint. Where it is not possible to create a butt joint or overlap, repair with fresh membrane and PREPRUFE® Tape as detailed above.

Reinforcing Steel Anchors

Only compatible rebar supports such as concrete dobies shall be placed against the PREPRUFE® 275/LT membranes. The steel should be tied to the shoring system using GCP approved anchors only.

Contact your local GCP representative for additional information.

Shotcrete Placement

Ensure the plastic release liner is removed from all PREPRUFE®Tapes.

Under most climatic conditions concrete should be poured within 56 days of membrane installation. Where ambient temperatures will exceed 100°F (38°C) for more than a total of 7 days, concrete should be placed within 42 days of installation of the membrane. Concrete must be placed and compacted carefully to avoid damage to the membrane. Never use a sharp object to consolidate the concrete.

Important: Prior to concrete or shotcrete placement, ensure that the zip strip liner and any plastic release liner is completely removed from all areas of PREPRUFE® 275/LT membranes and PREPRUFE® Tapes.

It is highly recommended that the PREPRUFE® 275/LT membranes system be included in preconstruction test panels successfully meeting the project specifications. The test panel needs a mean core grade less than or equal to 2.5 as described and defined in ACI 506.2 shall be allowed to place shotcrete against the PREPRUFE® 275/LT membranes. Individual shotcrete cores greater than 3 are unacceptable.

Supply

DIMENSIONS (NOMINAL)	PREPRUFE® 275 MEMBRANE
Thickness	0.038 in. (0.95 mm)
Roll size	3 ft 10 in. x 120 ft (1.17 m x 36.6 m) ¹
Roll weight	102 lbs (46 kg)
Minimum side/end laps	3 in. (75 mm)

Note#1 Individual roll length may vary +/-1%

Physical Properties (PREPRUFE® 275/LT MEMBRANE)

PROPERTY	TYPICAL VALUE	TEST METHOD
Color	white	
Thickness	0.038 in. (0.95 mm)	ASTM D3767
Lateral Water Migration Resistance	Pass at 231 ft (71 m) of hydrostatic head pressure	ASTM D5385 ¹
Low Temperature Flexibility	Unaffected at -20°F (-29°C)	ASTM D1970
Resistance to hydrostatic head	231 ft (71 m)	ASTM D5385 ²
Elongation	300%	ASTM D412 ³
Tensile strength, film	4000 psi (27.6 Mpa)	ASTM D412
Crack cycling at -9.4°F (-23°C), 100 cycles	Unaffected, Pass	ASTM C8364
Puncture resistance	135 lbs (600 N)	ASTM E154
Peel adhesion to concrete	5.0 lbs/in. (880 N/m) min.	ASTM D903 ⁵
Lap peel adhesion at 72°F (22°C)	7 lbs/in. (1225 N/m)	ASTM D1876 ⁶
Lap peel adhesion at 40°F (4°C)	7 lbs/in. (1225 N/m)	ASTM D1876 ⁶
Permeance to water vapor transmission	0.01 perms (0.6 ng/(Pa x s x m ²))	ASTM E96, method B

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 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 at 72°F (22°C).
4. Concrete is cast against the PREPRUFE® membrane and allowed to cure (7-days minimum).
5. Concrete is cast against the PREPRUFE® membrane and allowed to cure (7-days minimum). Peel adhesion of membrane to concrete is measured at a rate of 2 in. (50 mm) per minute at 72°F (22°C).
6. The test is conducted 15 minutes after the lap is formed at evaluation temperature with rate of 2 in. (50 mm) per minute.

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ca.gcpat.com/solutions/products/preprufe-comprehensive-waterproofing-system/preprufe-275-preprufe-275-lt