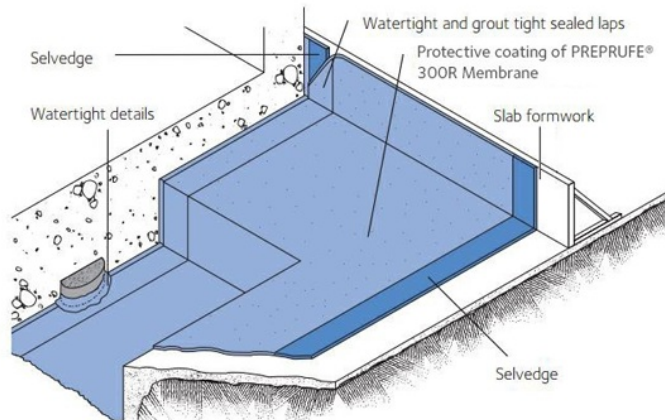


PREPRUFE® 300R & 160R Membranes Data Sheet (US Version)

Pre-applied waterproofing membranes that bond integrally to poured concrete for use below slabs or behind basement walls on confined sites

Product Description

GCP Applied Technologies ("GCP") PREPRUFE® 300R & 160R membranes are proprietary composite sheets comprised of a thick HDPE film, pressure sensitive adhesive and weather resistant protective coating. Designed with Advanced Bond Technology™, PREPRUFE® 300R & 160R membranes form a proprietary, integral bond to poured concrete, designed to prevent lateral migration of water while providing a robust barrier to water, moisture and gas penetration.



Drawings are for illustration purposes only.
Please refer to gcpat.com for specific application details.

Product Advantages

- Forms a continuous adhesive bond to concrete poured against it specifically designed to prevent water migration
- Continuous bond to poured concrete means PREPRUFE® 300R & 160R membranes are unaffected by ground settlement
- Can be placed directly over properly prepared compacted soil
- Does not activate prematurely during construction
- Fully adhered watertight laps and detailing
- Provides a barrier to water, moisture and gas - physically isolates the structure from the surrounding ground
- BBA Certified for all basement grades (BS 8102:2009)
- Impermeable- Perm rating less than 0.1 Perms
- Solar reflective - reduced temperature gain during construction

- Simple and quick to install – requires no priming on surfaces properly prepared following GCP surface preparation requirements
- Can be applied to permanent formwork - maximizes use of confined sites
- Allows for foot traffic immediately after application
- Ready for immediate placing of reinforcing steel
- Inherently waterproof--does not require water activation
- Waterproofing is not reliant on confining pressures or hydration
- Installed membrane is not affected by exposure to water during construction
- Waterproofing performance unaffected by wet/dry cycling
- Chemical resistance – protects structure from salt and sulfate attack, effective in most types of soils and waters

System Components:

Membrane

- PREPRUFE® 300R membrane- heavy-duty 46 mil grade can be used in horizontal applications below slabs and on rafts (i.e. mud slabs) and can be applied to vertical (blind side) substrates.
- PREPRUFE® 300R membrane is designed to accept the placing of heavy reinforcement using conventional concrete spacers
- PREPRUFE® 160R membrane 32 mil grade for blindside, zero property line applications against soil retention systems.
- PREPRUFE® 160R membrane is for vertical use only.

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

- PREPRUFE® Tape LT – Low temperature tape for covering cut edges, roll ends, penetrations and detailing in cold weather
- PREPRUFE® Tape HC – High temperature tape for covering cut edges, roll ends, penetrations at elevated temperatures
- PREPRUFE® CJ Tape LT – Low temperature joint tape for construction joints and detailing in cold weather conditions
- PREPRUFE® CJ Tape HC – High temperature joint tape for construction joints and detailing at elevated temperatures
- BITUTHENE® Liquid Membrane - for sealing around penetrations, etc.
- ADCOR® - waterstop for joints in concrete walls and floors
- PREPRUFE® Tieback Covers - preformed cover for soil retention wall tieback heads
- PREPRUFE® 300LT and 160LT membranes are an equal alternate for application at low temperatures. See GCPAT.com

Limitations of Use

- Approved uses only include those uses specifically detailed in this Product Data Sheet and other current Product Data Sheets that can be found at gcpat.com
- PREPRUFE® 300R & 160R membranes are not intended for any other use. Contact GCP Technical Services where any other use is anticipated or intended.
- PREPRUFE® 300R membranes are designed for in-service temperatures below 120°F (49°C)
- PREPRUFE® 160R membrane is not for use in horizontal applications
- PREPRUFE® 300R & 160R membranes should not be used with conventional twin-sided formwork. (See PREPRUFE® Technical Letter #13 Forming Systems For Use with PREPRUFE® Membranes)
- **Special Note:** When this information is printed from the gcpat.com global website, a footer appearing on this document will restrict its applicability to the United States. Note that the information and references in this document are hereby expanded and apply to North, Central and South America.

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 must 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 the GCP web site at gcpat.com or by contacting GCP toll free at 1-866-333-3SBM (3726).

Storage

- Observe 1 year shelf life and use on a first in first out basis
- Store in dry conditions at 40°F (4.5°C)-90°F (32°C)
- Store off ground under tarps or otherwise protected from rain and ground moisture
- See PREPRUFE® Technical Letter #30 Shelf Life/Storage and Handling of GCP Waterproofing

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 Applied Technologies Contractor Handbook and Literature on (www.gcpat.com). Documents in hardcopy as well as information found on websites other than www.gcpat.com may be out of date or in error. Before using this product it is important that information be confirmed by accessing www.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® 300R & 160R membranes.

Support is also available by full-time technically trained GCP Applied Technologies 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 call toll-free at (866) 333-3SBM (3726).

Temperature Requirements

- PREPRUFE® membranes can be applied at temperatures of 25 °F (-4 °C) or above. When installing PREPRUFE® products in cold or marginal weather conditions <55 °F (<13 °C) the use of PREPRUFE® Tape LT is required at all laps and detailing. All surfaces to receive PREPRUFE® Tape LT must be clean and dry.
- As an alternate, where temperatures are between between 25 °F (-4 °C) and 60 °F (15.5 °C) PREPRUFE® Low Temperature (LT) Membrane is can be used without taping of laps. Refer to PREPRUFE® LT Membrane data sheet and Technical Letter #16 PREPRUFE® Waterproofing membranes: Cold Weather installation for more information.

Substrate Preparation

All surfaces - It is essential to create a sound and solid substrate to eliminate movement during the concrete pour. 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. Avoid curved or rounded substrates. 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" (12mm) out of alignment.

Membrane Application

PREPRUFE® 300R & 160R membranes are supplied in rolls 4 ft. (1.2m) wide, with a selvedge on one side to provide self-adhered laps for continuity between rolls. The rolls of PREPRUFE® Membrane and PREPRUFE® Tape are manufactured with a disposable plastic release liner which must be removed before placing reinforcement and concrete. NOTE that the release liner must also be removed before application of any required tapes and at all surfaces where a bond between layers is to be formed.

Horizontal substrates -

PREPRUFE® 300R membrane can be applied horizontally to smooth prepared concrete or well rolled and compacted earth or crushed stone substrate. Place the PREPRUFE® 300R membrane HDPE film side to the substrate with the clear plastic release liner facing towards the concrete pour. End laps should be staggered to avoid a buildup of layers. Leave plastic release liner in position until overlap procedure is completed. When completed remove release liner. When installing over carton forms, contact your local GCP representative.

Accurately position succeeding sheets to overlap the previous sheet 3 in. (75 mm) along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back the plastic release liner from between the overlaps allowing the two overlapped layers to bond together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller. Completely remove the plastic liner to expose the white protective coating. Any initial tack will quickly disappear. Notes:

- PREPRUFE® 300R 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.
- Rebar Chairs: See PREPRUFE® Technical Letter #15 Rebar Chairs on PREPRUFE® Membranes.

Vertical substrates –

PREPRUFE® 300R & 160R membranes can be applied vertically to permanent formwork or adjoining structures. Concrete should then be cast directly against the adhesive side of the membrane. The membrane may be installed in any convenient length. The clear plastic release liner must be facing towards the concrete pour. Membrane must be shingle overlapped a minimum of 3" (75mm) All laps over cut edges must be taped using PREPRUFE® Tape.

Vertically placed sheets can be held in place using fasteners appropriate to the substrate. Fastening can also be made through the selvedge overlap area using a small and low profile head fastener so that the membrane lays flat and allows firmly rolled overlaps. Fasteners should be placed in the selvedge approximately 0.5" (12.5mm) from the edge of the membrane. The adhesive selvedge of successive membrane sheets must completely cover any fasteners by a minimum of 1 in. (25mm). After rolling immediately remove the plastic release liner. When placing successive sheets insure the underside of each succeeding sheet is clean, dry and free from contamination before attempting to overlap. After placement roll the membrane firmly to ensure a watertight seal.

Note that PREPRUFE® 300R & 160R membranes are not recommended for use with conventional twin-sided formwork. (See PREPRUFE® Technical Letter #13 Forming Systems For Use with PREPRUFE® Membranes)

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 the membrane to dry and apply PREPRUFE® Tape LT (or HC in hot climates) centered over the lap edges and roll firmly. Immediately remove plastic release liner from the tape.

Membrane Repair

Inspect the membrane before installation of reinforcement steel, formwork and final placement of concrete. The membrane can be easily cleaned by 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 selvage 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.

Pouring of Concrete

Ensure the plastic release liner is removed from all areas of PREPRUFE® 300R & 160R Membrane and Tape.

Under most climatic conditions concrete should be poured within 56 days of membrane installation. Where ambient temperatures will exceed 38°C (100°F) 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.

Removal of Formwork

A minimum concrete compressive strength of 3000 psi (20 N/mm²) is recommended prior to stripping formwork supporting PREPRUFE® membranes. Premature stripping may result in displacement of the membrane and/or spalling of the concrete. (see PREPRUFE® Technical Letter #17 Removal of Formwork Placed against PREPRUFE® membranes)

After removal of the formwork and prior to backfilling, all exposed PREPRUFE® Membrane must be protected from damage with an approved protective course.

Supply

DIMENSIONS (NOMINAL)	PREPRUFE® 300R MEMBRANE	PREPRUFE® 160R MEMBRANE
Roll size	4 ft x 98 ft (1.2 m x 30 m)	4 ft x 115 ft (1.2 m x 35 m)
Roll weight	108 lbs (50 kg)	92 lbs (42 kg)
Minimum side and end laps	3 in. (75 mm)	3 in. (75 mm)

Physical Properties

PROPERTY	TYPICAL VALUE 300R	TYPICAL VALUE 160R	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 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 ²
Elongation	400%	400%	ASTM D412 ³
Tensile Strength, Film	4000 psi (27.6 MPa)	4000 psi (27.6 MPa)	ASTM D412
Crack Cycling at -9.4°F (-23°C), 100 cycles	Unaffected, Pass	Unaffected, Pass	ASTM C836 ⁶
Puncture Resistance	200 lbs (890 N)	100 lbs (445 N)	ASTM E154
Peel Adhesion to Concrete	5 lbs/in. (880 N/m)	5 lbs/in. (880 N/m)	ASTM D903 ⁴
Lap Peel Adhesion	5 lbs/in. (880 N/m)	5 lbs/in. (880 N/m)	ASTM D1876 ⁵
Permeance to Water Vapor Transmission (HDPE side exposed)	<0.1 perms (5.74 ng/(Pa x s x m ²))	<0.1 perms (5.74 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 (cured min. 7 days) 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 cure (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 and run at a rate of 2 in. (50 mm) per minute.
6. Test conducted at -9.4°F (-23°C)

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