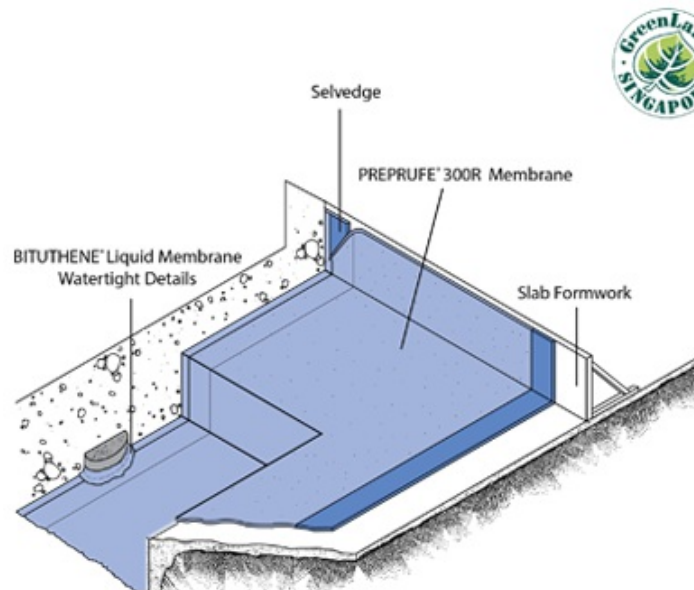


# PREPRUFE® 300R & 160R

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 unique 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 unique, integral bond to poured concrete. This integral bond is specifically designed to provide a robust barrier to water, moisture and gas and to prevent both the ingress and lateral migration of water. Selvege overlaps and deliver superior performance in harsh conditions without the need for specialised equipment, heat or power.



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

## Product Advantages

- The unique continuous adhesive bond to concrete poured against it and is designed to prevent water migration and make it unaffected by ground settlement beneath slabs.
- Designed with fully adhered adhesive to adhesive watertight seams and easy to execute detailing. Provides a barrier to water, moisture and gas physically isolating the structure from the surrounding substrate.
- Simple and quick to install requiring no priming or fillets.
- Can be applied to permanent formwork – allows maximum use of confined sites
- Self-protecting – can be trafficked immediately after installation and ready for immediate placing of reinforcement

- Installed membrane is unaffected by wet jobsite conditions – cannot activate prematurely
- Inherently waterproof as supplied. Passive non-reactive waterproofing system does not require water activation
- Waterproofing is not reliant on confining pressures or hydration Membrane unaffected by freeze/thaw, wet/dry cycling
- Chemical resistance – protects structure from salt or sulphate attack and is effective in most types of soils and waters,
- Resistant to methane and radon gasses. Specific independent laboratory test data available on request Independent Assessments and International Certifications
- Methane, carbon dioxide and radon gas protection in excess of the standard Membrane requirements in BRE Reports 211 (Radon) and 212 (Methane and Carbon Dioxide)
  - BBA Certificate No. 97/3325.
  - Mott MacDonald Special Services Report May 2001.

## System Components:

### Membrane

- PREPRUFE® 300R Membrane — heavy-duty 1.2mm grade Membrane designed for horizontal and vertical use. Designed for use below slabs and on rafts (i.e. mud slabs) and for vertical blindside<sup>1</sup> applications. Designed to accept the placing of heavy reinforcement using conventional concrete spacers.
- PREPRUFE® 160R Membrane — standard 0.8mm grade Membrane designed for vertical use in blindside<sup>1</sup>, zero property line applications against soil retention systems. PREPRUFE® 160R Membrane is for vertical use only.

Note 1: system where membrane is placed against soil retention system from where direct hydrostatic head exposure will occur. Single sided concrete form is then placed and concrete is then poured against membrane (between the single sided form and the membrane.)

### Ancillary Components (refer to the most current Data Sheets for all system components available on [gcpat.com](http://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 and detailing at elevated temperatures (min.100C)
- PREPRUFE® CJ Tape LT — low temperature joint Tape for construction joints, and detailing in cold weather
- PREPRUFE® CJ Tape HC — high temperature joint Tape for construction joints, and detailing in hot weather
- BITUTHENE® Liquid Membrane — for sealing around penetrations, etc.
- SWELLSEAL® / ADCOR® — waterstop for joints in concrete walls and floors
- PREPRUFE® Tieback Covers — preformed cover for soil retention wall tieback heads

- PREPRUFE® 300R LT and 160R LT Membranes are equal alternate Membranes with reduced taping requirements for use at low temperatures; see gcpat.com
- For conventional concrete walls formed with two sided forms use BITUTHENE® self-adhesive Membrane or SILCOR® Membrane on walls after removal of formwork for a fully bonded system to all structural surfaces
- RE-INJECTO™ LB – groutable injection tube for non moving construction joints and penetrations

## 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 & 160R Membranes are designed for use where temperature of membrane will not exceed 49°C
- PREPRUFE® 160R Membrane is not for use in horizontal applications
- PREPRUFE® 300R & 160R Membranes are not designed to be used with conventional two-sided formwork. (See PREPRUFE® Technical Letter #13 (AP) Forming Systems For Use with PREPRUFE® Membranes)
- PREPRUFE® 160R Membrane is not for use in the Middle East

## 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 gcpat.com web site or by contacting your local GCP representative for support.

## Storage

- All products must be handled and stored consistent with Technical Letter TL-30 (AP)
- Use on a first in first out basis
- Store in dry conditions off ground under tarps or otherwise protected from rain and ground moisture

## Installation

### Technical Support, Details and Technical Letters

The most up to date detail drawings and technical letters are available at [gcpat.com](http://gcpat.com) or from your local GCP Representative. For complete application instructions, please refer to the current GCP Applied Technologies Contractor Handbook and Literature on ([www.gcpat.com](http://www.gcpat.com)). Documents in hardcopy as well as information found on websites other than [www.gcpat.com](http://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](http://www.gcpat.com) and reviewing the most recent product information, including without limitation Product Data Sheets, Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations. Please review all materials prior to installation of PREPRUFE® 300R & 160R Membranes. Where documents are not available on the GCP website contact your local GCP representative for support.

Support is available on all matters 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 contact your local in country GCP representative.

### Temperature Requirements

- PREPRUFE® 160R and 300R Membranes can be applied at temperatures of  $-4^{\circ}\text{C}$  or above. When installing PREPRUFE® Membranes in cold or marginal weather conditions  $<4^{\circ}\text{C}$  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 and the release liner must be removed immediately after application.
- As an alternate, where temperatures are between  $-4^{\circ}\text{C}$  and  $15.5^{\circ}\text{C}$  PREPRUFE® 160R (LT) and 300R (LT) Low Temperature Membranes 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.
- PREPRUFE® 300R & 160R Membranes are designed for in-service temperatures below  $49^{\circ}\text{C}$

### 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 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 12 mm out of alignment. For out of alignment from 12mm and up to 50mm HYDRODUCT® drainage sheet can be used to bridge voids, gaps and out of alignment prior to PREPRUFE® Membrane installation.

## Membrane Application

PREPRUFE® 300R & 160R Membranes are supplied in rolls 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 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 only. (PREPRUFE® 160R Membrane is for vertical use only)

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 with the clear plastic release liner and adhesive side facing the concrete pour and HDPE film side facing the substrate. 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 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. After removal of formwork this allows a tie in with BITUTHENE® self-adhered Membrane or SILCOR® Waterproofing Membrane. For more information on SILCOR® Waterproofing Membrane products contact your local GCP Representative.

### 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 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 12.5mm from the edge of the Membrane. The adhesive selvedge of successive Membrane sheets must completely cover any fasteners by a minimum of 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 (AP) Forming Systems For Use with PREPRUFE® Membranes)

### Roll ends and cut edges –

Overlap all roll ends and cut edges by a minimum 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 the plastic release liner from the Tape.

\*LT denotes Low Temperature (between -4°C and +30°C)

\*\*HC denotes Hot Climates (>+10°C)

### Membrane Repair

Inspect the Membrane before installation of reinforcement steel, formwork and final placement of concrete. The Membrane can be easily cleaned with 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 (12 mm or less) by applying PREPRUFE® Tape centered over the damaged area. Repair punctures and holes larger than 12mm by applying a patch of PREPRUFE® Membrane. Extend the patch 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.

## 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 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/mm<sup>2</sup>) (minimum 3 days) is required prior to stripping formwork supporting PREPRUFE® Membranes. Premature stripping may result in displacement of the Membrane and/or spalling of the concrete.

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

## Supply

### Membrane

DIMENSIONS (NOMINAL)	PREPRUFE® 300R MEMBRANE	PREPRUFE® 160R MEMBRANE
Roll size (see note #1)	1.2 m x 30 m	1.2 m x 35 m
Roll weight (see note #1)	49 kg	42 kg
Minimum side and end laps	75 mm	75 mm
Overlap Allowance: when calculating coverage account for the minimum side & end laps		

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

Ancillary Components: The most current supply information for ancillary products can be found at [gcpat.com](http://gcpat.com)

## Physical Properties (ASTM Test Data Typical values and EN 13967 Declared Values)

	300R	160R	STANDARD
Colour	White	White	
Thickness	1.2 mm	0.8 mm	ASTM D3767
Peel Adhesion to Concrete	880 N/m	880 N/m	ASTM D903 <sup>4</sup>
Resistance to Hydrostatic Head	Pass at 71m	Pass at 71m	ASTM D5385 <sup>2</sup>
Lateral Water Migration Resistance	Pass at 71m of hydrostatic Head	Pass at 71m of hydrostatic Head	ASTM D5385 <sup>1</sup>
Low Temperature Flexibility	Unaffected at -29°C	Unaffected at -29°C	ASTM D1970
Puncture Resistance	890 N <sup>7</sup>	445 N <sup>7</sup>	ASTM E 154
Elongation	400% minimum	400% minimum	ASTM D412 <sup>3</sup>
Tensile Strength, Film	27.6 Mpa	27.6 Mpa	ASTM D412
Crack Cycling @ -23°C 100 cycles	Pass	Pass	ASTM C836 <sup>6</sup>
Lap Peel Adhesion	880 N/m	880 N/m	ASTM D1876 <sup>5</sup>
Permeance to Water Vapour Transmission (HDPE side exposed)	<0.1 perms (5.74 ng/(Pa x s x m <sup>2</sup> ))	<0.1 perms (5.74 ng/(Pa x s x m <sup>2</sup> ))	ASTM E96, method B
Water Absorption	0.5%	0.5%	ASTM D570
Resistance to impact (Al board(mm)-MLV)	≥400	≥250	EN 12691
Durability of water tightness against ageing/degradation	Pass	Pass	EN 1296 EN 1928 Method B
Durability of water tightness against chemicals at 60kPa	Pass	Pass	EN 1847 Method B EN 1928 Method B
Compatibility with bitumen	Pass	Pass	EN 1548
Resistance to static loading	≥20 Pass	≥20 Pass	EN 12730



\*MDV: the Manufacturers Declared Value: \*\* MLV: the Manufactured Limiting Value: \*\*\* No Declared Performance

All declared values are based in test results determined under laboratory conditions and with product samples taken from original stock.

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 later 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 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 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 50 mm per minute.
6. Test conducted at -23°C
7. Independent Laboratory Test Values available on request

[th.gcpat.com](http://th.gcpat.com) | Thailand customer service: 66 2 030 9700

Australia 1800 855 525 New Zealand 0800 552 235 China Mainland +86 21 3158 2888 Hong Kong +852 2675 7898 India +91 124 488 5900 Indonesia +62 21 893 4260 Japan +81 3 5226 0231 Korea +82 32 820 0800 Malaysia +60 3 9074 6133 Philippines +63 49 549 7373 Singapore +65 6265 3033 Thailand +66 2 709 4470 Vietnam +84 8 3710 6168

We hope the information here will be helpful. It is based on data and knowledge considered to be true and accurate, and is offered for consideration, investigation and verification by the user, but we do not warrant the results to be obtained. Please read all statements, recommendations, and suggestions in conjunction with our conditions of sale, which apply to all goods supplied by us. No statement, recommendation, or suggestion is intended for any use that would infringe any patent, copyright, or other third party right.

PREPRUFE®, BITUTHENE®, SILCOR® AND HYDRODUCT® are trademarks, which may be registered in the United States and/or other countries, of GCP Applied Technologies, Inc. This trademark list has been compiled using available published information as of the publication date and may not accurately reflect current trademark ownership or status.

© Copyright 2019 GCP Applied Technologies, Inc. All rights reserved.

GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140, USA

This document is only current as of the last updated date stated below and is valid only for use in Thailand. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on [www.th.gcpat.com](http://www.th.gcpat.com). Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

Last Updated: 2019-03-05

[th.gcpat.com/solutions/products/preprufe-pre-applied-waterproofing-solutions/preprufe-300r-160r](http://th.gcpat.com/solutions/products/preprufe-pre-applied-waterproofing-solutions/preprufe-300r-160r)