

# PREPRUFE® 300R Plus Membrane

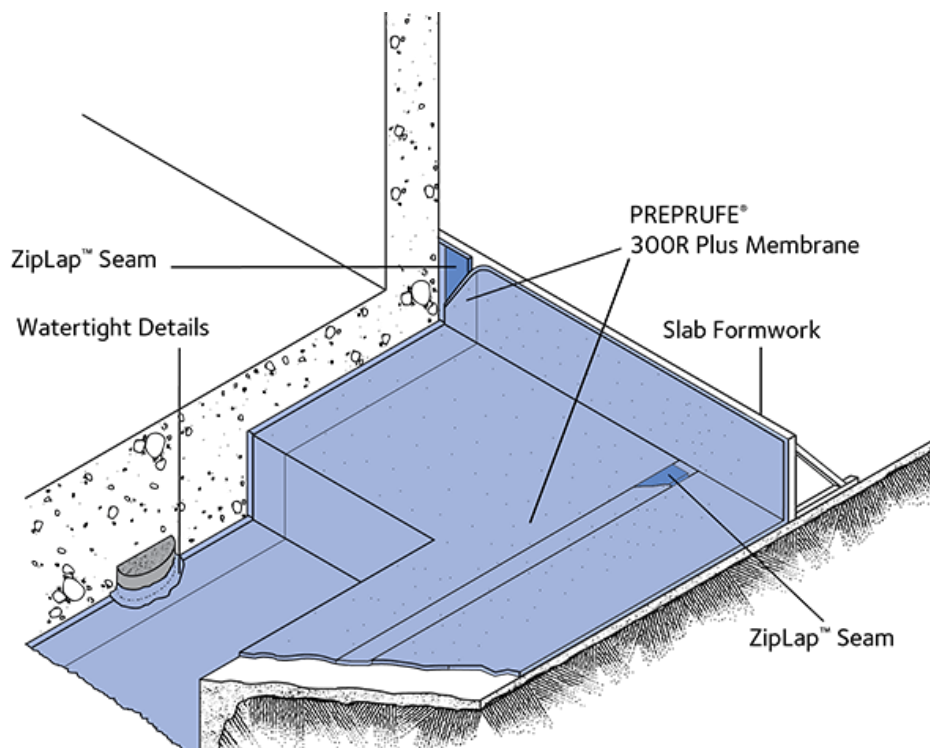
Pre-applied waterproofing membrane that bonds integrally to poured concrete for use below slabs or behind basement walls on confined sites



## Product Description

GCP Applied Technologies (“GCP”) PREPRUFE® 300R Plus membrane is a unique pre applied composite sheet comprised of a thick HDPE film, pressure sensitive adhesive, and weather resistant protective coating. Designed with ADVANCED BOND TECHNOLOGY™ and dual adhesive ZIPLAP™ seams, the PREPRUFE® Plus membrane forms a unique, integral bond to poured concrete. This integral bond is specifically designed to provide a robust barrier to water, moisture and gas and prevents both the ingress and lateral migration of water.

PREPRUFE® 300R Plus Membranes are release liner free and designed for efficient, reliable installation. PREPRUFE® 300R Plus ZIPLAP™ seams allow for an adhesive to adhesive bond at membrane sheet 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

- Fast, Simple and Secure – engineered for efficient jobsite application and long term waterproofing performance.
- ADVANCED BOND TECHNOLOGY™ reduces risk - develops an intimate and continuous adhesive bond to concrete proven to resist water migration between concrete substrate and the waterproofing membrane.
- PREPRUFE® ZIPLAP™ dual adhesive watertight laps - easy to execute year round even in harsh conditions; laps stay clean and dry until the seal is made.
- Reduces cost and saves time – fast installation, only 2 operator crew.
- No hidden extras - no primers, sealants, fillets or specialist equipment.
- Extended exposure time - unique UV barrier coating allows exposure up to 56 days prior to concreting (42 days in hot climate), for programme flexibility or delays.
- Lightweight, easier handling - reduced storage area and better safety vs thicker, heavier, bulky technologies. Easy roll/kick out installation reduces installation time and cost.
  - Simple system - membrane and only simple tape and liquid detailing to install the waterproofing system.
  - Easy detailing - flexible membrane in use but keeps its shape and conforms to corners and other construction details.
  - Smooth, non-absorbent surface – unlike rough textured geotextile faced membranes, smooth surface allows for cleaning before concreting to ensure intimate bonding.
  - No compartments – integral adhesive bond eliminates the need for complex welded compartments used with unbonded membranes.
  - Cold applied, single layer – no hot works, double layers or protection screed.
  - Tough HDPE waterproof geomembrane - durable, tough, chemical and gas resistant. Designed to isolate structure from salts and sulfate attack.
  - Total GCP system - full range of GCP hydrophilic and PVC waterstops are available for concrete joint protection. Can be used in combination with GCP post-applied self-adhered waterproofing systems and accessory products.
- Release liner free design expedites installation and reduces construction site waste.
- White solar reflective surface results in reduced temperature gain.
- Designed to be easily applied to permanent formwork - allows maximum use of confined sites.
- Can be trafficked immediately after application and is ready for immediate placing of steel reinforcement.
- Installed membrane is unaffected by wet jobsite conditions - cannot activate prematurely.
- Waterproofing is not reliant on confining pressures or hydration. Installed membrane is unaffected by freeze/thaw, wet/dry cycling.
- Resistant to methane and radon gasses. Specific independent laboratory test data available on request.
  - 25 Year Track Record – PREPRUFE® membranes have been used on major projects around the world for more than 25 years.

## Applications and Assessments

- Water and vapour proofing for all basement grades to BS 8102:2009 & IS 16471 : 2017
- Waterproofing civil engineering sub-structures.
- Protection of reinforced concrete structures in most aggressive ground exposures including conditions experienced in the Arabian Peninsula.
- Certifications available upon request
  - BBA Certificate No. 97/3325
  - CE 0836 Declaration of Performance
  - Mott MacDonald Special Services Report May 2001
  - Technische Hochschule Nuremberg (THN) report February 2017
  - STUVAtec report December 2016
  - International Certifications

## System Components

### Membrane

- PREPRUFE<sup>®</sup> 300R Plus Membrane – heavy-duty 1.2mm grade membrane designed for horizontal and vertical use. Designed for use below slabs and rafts (i.e. on concrete blinding (or mud slabs) and for vertical blindside1 applications. Designed to accept the placing of heavy reinforcement using conventional concrete spacers.

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<sup>®</sup> Tape HC – high temperature Tape for covering cut edges, roll ends, penetrations and detailing at elevated temperatures (min.10°C)
- PREPRUFE<sup>®</sup> CJ Tape HC – high temperature joint Tape for construction joints, and detailing in hot weather
- BITUTHENE<sup>®</sup> Liquid Membrane – for sealing around penetrations, and detailing
- PREPRUFE<sup>®</sup> Tieback Covers – preformed cover for soil retention wall tieback heads
- For a fully bonded system to conventional pre-poured concrete structural surfaces formed with two sided forms, apply BITUTHENE<sup>®</sup> Self-Adhesive Membrane or INTEGRITANK<sup>®</sup> Membrane after removal of formwork
- RE-INJECTO™ Re-Injectable injection hose – groutable injection tube for non moving construction joints and penetrations
- ADCOR<sup>®</sup> 500T/500S/Swellseal Hydrophilic Waterstop - hydro-expansive waterstop for preventing saline and brackish water entry through concrete construction joints.
- ADCOR<sup>®</sup> 550MI/ 550T-MI Post Injectable Waterstop- hydro-expansive injectable waterstop for added security of concrete construction joints.
- SERVITITE AT 200/SERVISEAL<sup>®</sup> AT 240 – co-extruded PVC waterstops for movement joints.

## Limitations of Use

- This PREPRUFE® 300R Plus data sheet is applicable specifically and only to applications in India.
- Approved uses include only those uses specifically detailed in this Product Data Sheet and other current Product Data Sheets that can be found at [gcpat.com](http://gcpat.com)
- PREPRUFE® 300R Plus membranes are not intended for any other use. Contact GCP Technical Services where any other use is anticipated or intended. Alternate approved uses must be made in writing.
- Due to local regulations and practices guidance given in this data sheet is only applicable to the countries and regions shown in the footer at the end of this document (as downloaded and printed in PDF format from this site.)
- PREPRUFE® 300R Plus Membrane is designed for use where in service temperature of membrane will not exceed 49°C. Where it is anticipated that in service temperatures may exceed 49°C contact your local GCP Representative for more information.
- PREPRUFE® 300R Plus Membrane is not designed to be used with conventional two-sided formwork.

Special informational note: PREPRUFE® 160R Plus Membrane is a companion product that is not sold or marketed for use in India.

## 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](http://gcpat.com) web site or by contacting your local GCP representative for support.

## Storage and Shelf Life

- Complete shelf life and storage requirements can be found in [PREPRUFE® Technical Letter #TL-0030 "Shelf Life/Storage and Handling of GCP Waterproofing"](#) at [gcpat.in](http://gcpat.in)
- Use on a first in first out basis
- Store in dry conditions off ground under tarps or otherwise protected from rain, ground moisture , covered from direct sunlight & stored vertically.

## 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 detailed 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). Review the most recent product information, including without limitation Product Data Sheets, Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations. It is important to review all support materials prior to installation of PREPRUFE<sup>®</sup> 300R Plus Membrane.

Support is also available on all matters 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 in country GCP representative.

## Temperature Requirements

- PREPRUFE<sup>®</sup> 300R Plus Membrane can be applied at temperatures of -4°C or above.
- PREPRUFE<sup>®</sup> 300R Plus membranes are designed for in-service temperatures below 120°F (49°C).

## Suitable Substrates and Substrate preparation

Suitable substrates include properly prepared:

- concrete blinding
- well compacted sand on rolled crushed stone
- rigid insulation
- clay heave boards
- permanent formwork
- removable formwork
- 19 mm plywood based on availability in the region
- HYDRODUCT<sup>®</sup> drainage sheets
- Adjacent sub-structures

### 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 applied 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. HYDRODUCT<sup>®</sup> 200 or 220 drainage sheet can be used to bridge voids, gaps and out of alignment up to 50mm prior to PREPRUFE<sup>®</sup> 300R Plus membrane installation.

#### Installation - General

Please refer to PREPRUFE<sup>®</sup> (300R Plus) Membrane Application Manual for detailed instructions.

PREPRUFE<sup>®</sup> 300R Plus membranes have coloured ZIPSTRIPS<sup>™</sup> at the top and bottom of the seam area on the edge of the roll. Both ZIPSTRIPS<sup>™</sup> cover an aggressive adhesive. Once the yellow ZIPSTRIP<sup>™</sup> on the top of the membrane and the blue ZIPSTRIP<sup>™</sup> on the bottom of the membrane are removed, a strong adhesive to adhesive bond is achieved in the overlap area. This PREPRUFE<sup>®</sup> ZIPLAP<sup>™</sup> provides an enhanced sealing of the overlaps in harsh conditions combined with a fast and easy way of execution without specialised equipment, heat or power.

#### Horizontal substrates –

PREPRUFE<sup>®</sup> 300R Plus membrane 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 HDPE film side to the substrate with the yellow ZIPSTRIP<sup>™</sup> facing towards the concrete pour. End laps must be staggered to avoid a buildup of layers. (note that all end laps and cut overlaps must be sealed using PREPRUFE<sup>®</sup> Tape) Leave the yellow and blue ZIPSTRIPS<sup>™</sup> on the membrane until overlap procedure is completed. When placement of the membrane is completed remove ZIPSTRIPS<sup>™</sup>. Allowing the two adhesive layers to contact each other and form the ZIPLAP<sup>™</sup> bond.

Accurately position each succeeding sheet to overlap the previous sheet 75 mm along the marked selvedge with the blue ZIPSTRIP<sup>™</sup> on top of the yellow ZIPSTRIP<sup>™</sup>. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back and remove both the yellow and blue ZIPSTRIPS<sup>™</sup> 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<sup>®</sup> 300R Plus 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<sup>®</sup> self-adhered membrane, or SILCOR<sup>®</sup> fluid-applied membrane, or INTEGRITANK<sup>®</sup> fluid applied membrane to all vertical structural surfaces after removal of formwork.

#### Vertical substrates –

PREPRUFE<sup>®</sup> 300R Plus membranes can be applied vertically to permanent formwork or adjoining structures. Mechanically fasten the membrane vertically using fasteners appropriate for the substrate with the yellow ZIPSTRIP<sup>™</sup> facing towards the concrete pour. The membrane may be installed in any convenient length. Fastening should be made through the selvedge within 12mm of the leading edge of the membrane using a small and low profile head fastener so that the membrane lays flat and allows firmly rolled overlaps.

Accurately position succeeding sheets to overlap the previous sheet 75 mm along the marked selvedge with the blue ZIPSTRIP™ on top of the yellow ZIPSTRIP™.

Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Peel back and remove the release liner covering both the yellow and blue ZIPSTRIPS™ in the overlap area to achieve an adhesive to adhesive bond at the overlap. Roll firmly to ensure a watertight seal.

Note that PREPRUFE® 300R Plus membranes must not be used with conventional two-sided formwork.

#### Alternate Vertical Wall Waterproofing Options

GCP also offers alternatives to pre-applying PREPRUFE® 300R Plus to vertical formwork. For conventional application to walls after formwork removal use BITUTHENE® 8000HC Membrane- self-adhesive sheet waterproofing membrane or INTEGRITANK® spray applied seamless waterproofing membrane. See separate data sheets and installation instructions and drawings for further information at [gcpat.com](http://gcpat.com) or contact your GCP representative.

#### Roll ends and cut edges –

Overlap all roll ends and cut edges to a minimum 75 mm overlap 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 HC centered over the lap edges and roll firmly. Immediately remove tinted plastic release liner from the tape.

#### Internal & External Corners and Penetrations

Refer to the most current detail drawings and instructions available at [gcpat.com](http://gcpat.com) or from your local sales representative.

#### Membrane Repair

Inspect the membrane before installation of reinforcement steel, formwork and final placement of concrete. If needed the membrane can be easily cleaned by low pressure power washing as 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 membrane must 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

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

PREPRUFE® Plus membranes can be applied to slab perimeter formwork, pile caps, etc. Once concrete is poured the formwork must remain in place until the concrete has gained sufficient compressive strength to develop the surface bond with PREPRUFE® 300R Plus Membrane. A minimum concrete compressive strength of 20 N/mm<sup>2</sup> is recommended prior to stripping formwork supporting PREPRUFE® 300R Plus membranes. Premature stripping may result in loss of adhesion between the membrane and concrete.

## Supply

DIMENSIONS (NOMINAL)	PREPRUFE® 300R PLUS MEMBRANE
Roll size <sup>1</sup>	1.17 m x 31.15 m
Roll weight <sup>1</sup>	49 kg
Minimum side and end laps <sup>2</sup>	75 mm

Note1: Individual roll length and weight may vary +/- 1%

Note 2: Overlap Allowance: Be sure to account for the minimum side & end laps (overlaps) when calculating coverage

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

## Physical Properties

PROPERTY	TYPICAL VALUE 300R PLUS TEST VALUE	STANDARD TEST METHOD
Colour	White	
Thickness	1.2 mm	ASTM D3767
Peel Adhesion to Concrete	880 N/m	ASTM D903 <sup>4</sup>
Resistance to Hydrostatic Head	Pass at 71m	ASTM D5385 <sup>2</sup>
Lateral Water Migration Resistance	Pass at 71 m of hydrostatic head	ASTM D5385 <sup>1</sup>
Low Temperature Flexibility	Unaffected at -29°C	ASTM D1970
Puncture Resistance	890 minimum <sup>7</sup>	ASTM E 154
Elongation	400% minimum	ASTM D412 <sup>3</sup>
Tensile Strength, Film	27.6 MPa	ASTM D412
Crack Cycling at -23°C 100 cycles	Pass	ASTM C836 <sup>6</sup>
Lap Peel Adhesion	1408 N/m	ASTM D1876 <sup>5</sup>
Permeance to Water Vapor Transmission (HDPE side exposed)	<0.1 perms/ (5.74 ng/(Pa x s x m <sup>2</sup> ))	ASTM E96, method B
Water Absorption	0.5%	ASTM D570
Resistance to impact (Al board (mm) - MLV)	≥400	EN 12691
Durability of water tightness against ageing/degradation	Pass	EN 1296 EN 1928 Method B
Resistance to tearing (Nail Shank)- unreinforced sheets (N) - MLV	≥450	EN 12310-1
Durability of water tightness against chemicals at 60kPa	Pass	EN 1847 Method B EN 1928 Method B
Compatibility with bitumen	Pass	EN 1548
Resistance to static loading	≥20 Pass	EN 12730

Methane permeability, Radon Diffusion	Independent laboratory reports available on request	
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\*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<sup>®</sup> 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



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Last Updated: 2026-03-26

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