

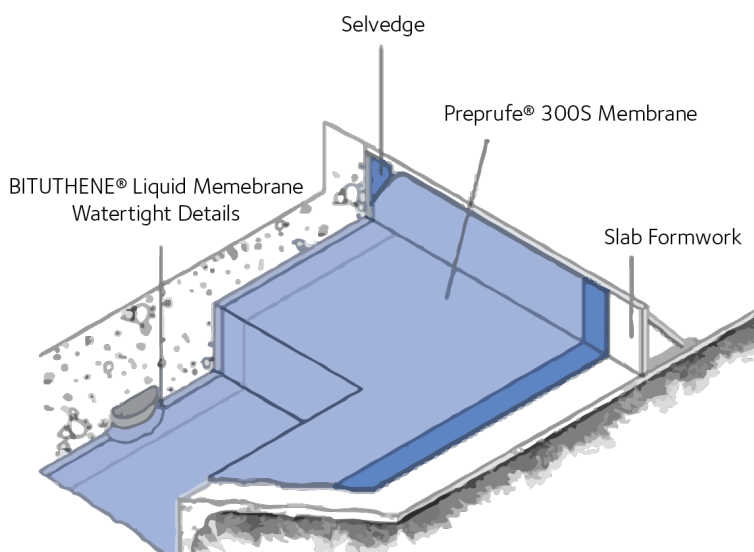
PREPRUFE® 300S

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® 300S Membranes is a unique multiple-layer composite sheet comprised of a high performance HDPE film, pressure sensitive adhesive, and weather resistant protective coating. Designed with Advanced Bond Technology PREPRUFE 300S 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. Selvedge overlaps and deliver superior performance in harsh conditions without the need for specialized equipment, heat or power.



Drawings are for illustrative purposes only.
Please refer to 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, enabling it to be unaffected by ground settlement beneath slabs
- Designed with fully adhered self-adhesive watertight seams and easy to execute detailing. Provides a barrier to water, moisture and gas physically isolating the structure from the surrounding substrate
- Installed membrane is unaffected by wet jobsite conditions - Does not activate prematurely
- Inherently waterproof as supplied. Passive non-reactive waterproofing system does not require water activation. Membrane unaffected by freeze/thaw, wet/dry cycling
- Simple and quick to install requiring no priming or fillets

- The membrane is release liner free, expedites installation and reduces construction site waste
- Can be applied to permanent formwork – allows maximum use of confined sites
- Can be trafficked immediately after installation and ready for immediate placing of reinforcement
- Chemical resistance – protects structure from salt and sulphate attack and is effective in most types of soils and waters

System Components:

Membrane

- PREPRUFE 300S 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 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)

- PREPRUFE DS Tape – two-sided, reinforced, pressure-sensitive tape for adhering to penetrations, protrusions and GCP waterproofing membranes
- PREPRUFE Tape – high temperature Tape for covering cut edges, roll ends, penetrations and detailing at elevated temperatures (between 15 °C and 49 °C)
- BITUTHENE® Liquid Membrane (LM) — for sealing around penetrations, etc.
- SWELLSEAL® waterstop for joints in concrete walls and floors
- 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 300S 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
- PREPRUFE 300S Membranes are designed for use where temperature of membrane will not exceed 49 °C
- 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 (printed) document
- PREPRUFE 300S Membranes are not designed to be used with conventional two-sided formwork. (See PREPRUFE Membranes) Technical Letter TL-0013 (AP) Forming Systems For Use with PREPRUFE

Safety and Handling

Read and understand the product label and Safety Data Sheet (SDS) for each system component. All users should acquaint themselves with this information prior to working with the products and follow the precautionary statements. SDSs can be obtained by contacting your local GCP representative or office and in some cases from our web site at gcpat.com.

Storage

- All products must be handled and stored consistent with Technical Letter TL-0030(AP)
- 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 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). 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, Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations. Please review all materials prior to installation of PREPRUFE 300S Membranes. Where documents are not available on the GCP website contact your local GCP representative for support.

Support is available on all matters by 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 300S Membranes can be applied at temperatures above 15 °C
- PREPRUFE 300S Membranes are designed for in-service temperatures below 49 °C
- For more information on cold weather application contact your local GCP representative

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 200 or 220 drainage sheet can be used to bridge voids, gaps and out of alignment prior to PREPRUFE Membrane installation.

Membrane Application

PREPRUFE 300S 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 (on the side-lap) and PREPRUFE Tapes (including PREPRUFE Tape and PREPRUFE DS Tape) are manufactured with a disposable plastic release liner that 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 300S Membrane only

PREPRUFE 300S Membrane can be applied horizontally to smooth prepared concrete or well rolled and compacted earth or crushed stone substrate. Place the PREPRUFE 300S Membrane with the adhesive side facing the concrete pour and HDPE film side facing the substrate. End laps should be staggered to avoid a buildup of layers. When installing over carton forms, contact your local GCP representative.

Accurately position succeeding sheets to overlap the previous sheet 75 mm along the selvedge. Leave the release liner strip on the membrane until overlap procedure is completed, followed by removing release liner. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. End-laps should be secured with PREPRUFE Tape, either PREPRUFE Tape or PREPRUFE DS Tape. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller.

Notes: PREPRUFE 300S 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 300S 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. To aid in the vertical installation, we recommend to apply double-sided PREPRUFE DS Tape from GCP Applied Technologies at roll ends and cut edges by peeling off release paper and fix the adhesive side onto one piece of PREPRUFE 300S and then peel off the other side of release paper to overlap another piece of PREPRUFE 300S. Membrane must be shingle overlapped a minimum of 75mm at all roll ends and cut edges. Roll firmly to ensure complete adhesion without creases or voids. Apply either PREPRUFE Tape or PREPRUFE DS Tape centered over the lap edges and roll firmly.

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 300S Membranes are not recommended for use with conventional twin-sided formwork. (See PREPRUFE Technical Letter TL-0013 (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 either PREPRUFE Tape or PREPRUFE DS Tape in hot climates centered over the lap edges and roll firmly. Immediately remove the 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 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 or areas with fish-mouth. 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. Alternatively, PREPRUFE DS Tape can be used and placed in between membrane to membrane. Use heavy, hand pressure or a hand roller to maximise adhesion. Chamfer the corners of membrane to prevent fish-mouth formation. 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 300S Membrane and PREPRUFE Tape. The PREPRUFE membrane surface must be free of contaminants, dirt and debris and all standing water prior to placement of the 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. Following proper American Concrete Institute guidelines or respective national concrete standards, concrete must be placed carefully and consolidated properly to avoid damage to the membrane. Never use a sharp object to consolidate the concrete. Provide temporary protection from concrete splash over for areas of the PREPRUFE membrane that are adjacent to the concrete pour.

It is also important that concrete mix is designed, placed and compacted properly to ensure no segregation or excessive bleeding. This is critical for achieving desired bonding between concrete and PREPRUFE membranes, especially for membranes installed on vertical surfaces. Extra precautions are needed for concrete with slump value higher than 130mm as it is prone to have segregation and bleeding issues especially under lower ambient temperature.

Removal of Formwork

A minimum concrete compressive strength of 3000 psi (20 N/mm²) or minimum 3 days, whichever is later, 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 embrane must be protected from damage with an approved protective course.

Supply

Membrane

DIMENSIONS (NOMINAL)	PREPRUFE® 300S MEMBRANE
Roll size (see note #1)	1.2 m x 20 m
Roll Area	24m ²
Roll Weight (weight may vary +/- 1kg)	33 kg
Minimum side and end laps	75 mm
Overlap Allowance: when calculating coverage account for the minimum side & end lap	

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

Ancillary Products

The most current supply information for ancillary products can be found at the local sites within gcpat.com.

Physical Properties (ASTM Test Data Typical Values)

	300S	STANDARD
	Color	White
Thickness	1.2 mm	ASTM D3767
Peel Adhesion to Concrete	880 N/m	ASTM D903 ⁴
Lateral Water Migration Resistance	Pass at 71m of hydrostatic Head	ASTM D5385 ¹
Puncture Resistance	1000 N ⁷	ASTM E 154
Elongation	400% minimum	ASTM D412 ³
Tensile Strength, Film	27.6 Mpa	ASTM D412
Crack Cycling @ - 23 °C 100 cycles	Pass	ASTM C836 ⁶
Lap Peel Adhesion	880 N/m	ASTM D1876 ⁵
Permeance to Water Vapour Transmission (HDPE side exposed)	<0.1 perms (5.74 ng/(Pa x s x m ²))	ASTM E96, method B
Water Absorption	0.5%	ASTM D570

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. Elongation of Membrane is run at a rate of 50 mm per minute
3. 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
4. The test is conducted 15 minutes after the lap is formed and run at a rate of 50 mm per minute
5. Test conducted at -23°C
6. Independent Laboratory Test Values available on request

gcpat.com | For technical information: asia.enq@gcpat.com

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Last Updated: 2025-05-15

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