

PREPRUFE® 100S

A unique, prefabricated, pre-applied waterproofing membrane that bonds integrally to poured concrete

Product Description

PREPRUFE® 100S pre-applied waterproofing membrane is a multi-layer composite waterproofing material with superior performance, including a layer of high-density PE (HDPE) film, self-adhesive polymer layer and a unique particulate layer.

PREPRUFE® 100S pre-applied waterproofing membrane can be applied on a smooth level concrete surface, qualified compacted sand-stone cushion, or used as the waterproof layer of vertical surfaces of temporary and adjacent structures. After pouring concrete directly on to the paved PREPRUFE® 100S pre-applied waterproofing membrane, the poured concrete will bond fully and permanently with PREPRUFE® 100S pre-applied waterproofing membrane.

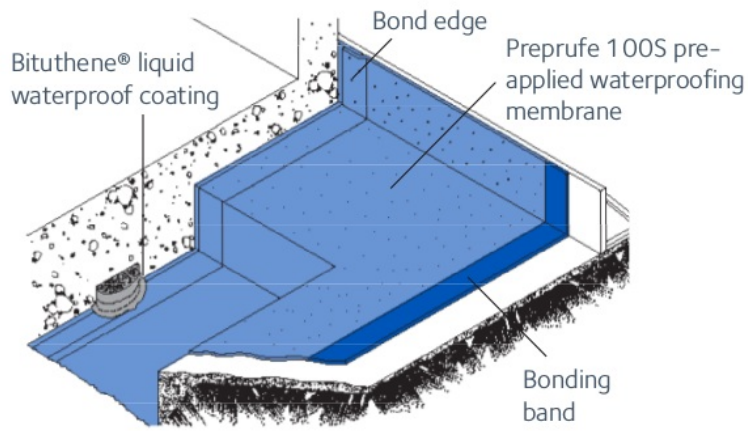
PREPRUFE® 100S pre-applied waterproofing membrane is supplied at a width of 1.0m and 1.2m. Pour concrete after the steel bars are tied up. Please contact your local GCP representative for application details.

Main Applications

- PREPRUFE® 100S is intended for use as an economical waterproofing solution for low risk basements and other less critical structures below ground. For critical projects (i.e. occupied space and sensitive environments), GCP recommends the use of PREPRUFE® Plus with dual adhesive ZipLap™ technology. See separate data sheet.

Product Advantages

- Forms permanent bond to concrete poured against it, preventing water from seeping into the gap between waterproofing membrane and the structure.
- Not affected by the displacement of the basal layer/ ground settlement beneath slabs.
- Membrane can be trafficked immediately after application.
- Cold applied - No flame or hot works permits. No specialist equipment
- Chemical resistance - protects structure from salt or sulphate and is effective in most types of soils and waters.
- Water and moisture proof -Provides protection for Basement Grades 1, 2 and 3 as per BS 8102:2009 and IS 16471:2017.
- Simple and quick to install, requiring no priming or fillets.
- Allows for foot traffic immediately after application, ready for immediate placing of reinforcing steel
- Unaffected by wet conditions.
- Fully-adhered watertight laps and detailing.
- Can be applied to permanent formwork - Maximizes use of confined sites
- Excellent bonding after UV exposure and under long-term water immersion within recommended duration.



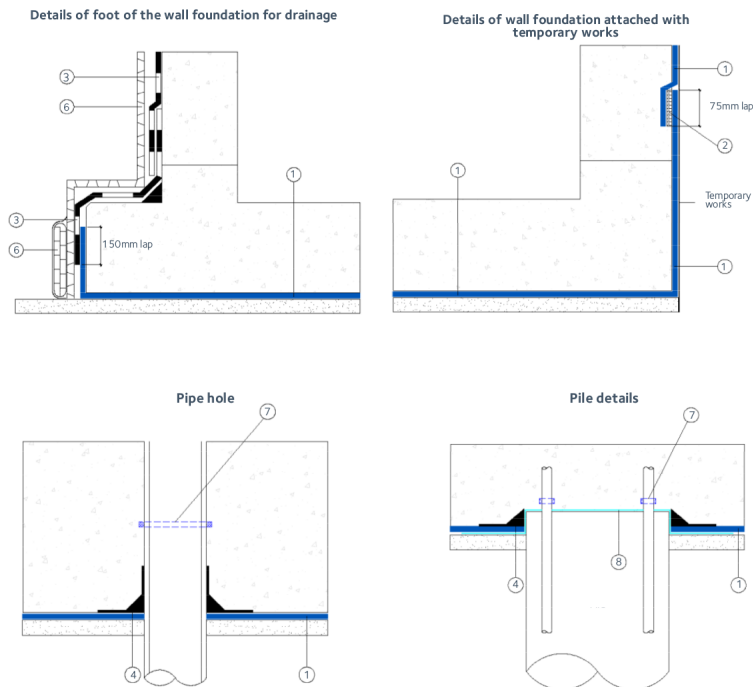
Installation

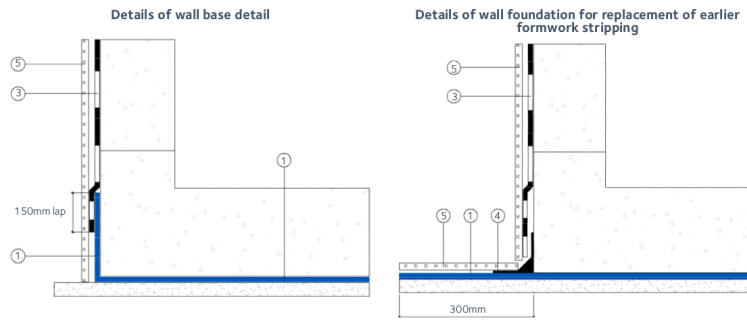
Substrate Preparation

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 12mm.

HYDRODUCT® drainage composites can provide the membrane with a good surface and facilitate underground structural drainage.





1. PREPRUFE® 100S Pre-Applied Waterproofing Membrane
2. PV 100 Tape OR MS Fixer OR Preprufe DLM
3. BITUTHENE® 3000HC Self-Adhesive Waterproofing Membrane
4. BITUTHENE® Liquid Membrane
5. SERVIPAK® Flex O3 Protection Board
6. HYDRODUCT® Drainage Sheet
7. BENTORUB® Salt swellable waterstop

Physical Properties

Property	Typical Value	Test Method
Colour	White	
Thickness	1.2mm	ASTM D 3767
Tensile Strength, Film	25Mpa	ASTM D 412 Modified
Elongation	400%	ASTM D 412 Modified
Low Temperature Flexibility	-25°C, Pass	ASTM D 1970
Lateral Water Migration Resistance and Resistance to Hydrostatic Head	>70M	ASTM D 5385 Modified
Crack Cycling	Pass	ASTM C 836 / ASTM C 1305 Modified
Peel Adhesion to Concrete	800N / m	ASTM D 903 Modified
Lap peel adhesion	800N / m	ASTM D 1876 ⁵
Puncture Resistance	800N	ASTM E 154

1. ASTM D412 modified: testing speed is 50mm/min.

2. ASTM D5385 modified: 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. ASTM C836/C1305: Test conducted at -23°C;

4. ASTM D903: Concrete is cast against the particulate surface of the Membrane and allowed to properly cure (7 days minimum). Peel adhesion of Membrane to concrete is measured at a rate of 100 mm per minute.

5. The test is conducted 15 minutes after the lap is formed and run at a rate of 2 in. (50 mm) per minute at 72°F (22°C).

Typical test values represent average values from samples tested.

Horizontal Blinding

The substrate must be free of loose aggregate, voids and sharp protrusions. Avoid curved or rounded substrates. The surface does not need to be dry, but standing water must be removed.

Vertical Sheet Piling

Use concrete, plywood, insulation or other approved facing to sheet piling to provide support for the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 12mm out of alignment.

Membrane Installation

When placing PREPRUFE® 100S pre-applied waterproofing membrane, overlap the bonding edge. Use a steel roller to press the bonding edge firmly to ensure complete bonding and to achieve continuity. PREPRUFE® 100S pre-applied waterproofing membrane can be applied at -4°C and above. When installing PREPRUFE® 100S waterproofing membrane in cold or marginal weather, the bonding edge may be heated appropriately with hot air gun or similar devices to remove moisture in order to enhance bonding.

PREPRUFE® 100S Waterproofing Membrane

Place the membrane PE film side to the substrate with particulate layer side up, facing the concrete pour. End laps should be staggered to avoid buildup of layers. Accurately position succeeding sheets to overlap the previous sheet 75mm along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller. Any initial tack will quickly disappear.

Roll Ends and Cut Edges

Overlap all roll ends, corners and cut edges by a minimum 75mm and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary.

Remove loose particulates from the surface of the PREPRUFE® 100S pre-applied waterproofing membrane lower part of lap by brush and scraper, use a hot air gun to remove particulates and adhesive from the overlap area of 80mm when using PV 100 Tape.

Apply PV 100 Tape from GCP Applied Technologies by peeling off release liner and fix one adhesive side onto the lower part of lap where particulates and adhesive have been removed. Roll firmly to ensure complete adhesion without creases or voids. Peel off the other layer of release liner and apply the upper part of PREPRUFE® 100S membrane lap onto the PV 100 adhesive tape. Roll firmly to ensure complete adhesion.

Alternatively, remove all floating particulates from the surface of PREPRUFE® 100S by brush. Apply MS Fixer OR Preprufe DLM from GCP Applied Technologies along a 75mm strip on first membrane granular surface roll end. Use a metal spatula to spread MS Fixer covering 75mm x 1m surface homogeneously. Overlap the other (end/cut edge) roll directly on MS Fixer prepared surface and roll firmly to ensure complete adhesion without creases or voids.

Contact your local GCP Technical Services representative to use suitable method in your region. Refer to separate detailed method statement.

Pouring of Concrete

The concrete must be poured within 30 days of application of the membrane. During pouring, take care when vibrating concrete to avoid damaging the waterproofing materials.

Formwork Removal

PREPRUFE® 100S pre-applied waterproofing membrane can be applied to removable formwork, such as slab perimeters, elevator and lift pits, etc. Once the concrete is poured the formwork must remain in place until the concrete has gained 20 N/mm² compressive strength to develop the surface bond. PREPRUFE® 100S pre-applied waterproofing membrane is not recommended for conventional twin-sided wall forming systems.

As a guide, to reach the minimum compressive strength stated above, a structural concrete mix with an ultimate strength of 40 N/mm² will typically require a cure time of approximately six days at an average ambient temperature of -4°C, or two days at 21°C. Please contact your local GCP representative for more details.

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® 100S membrane is not intended for any other use. Contact GCP Technical Services where any other use is anticipated or intended.
- PREPRUFE® 100S membrane is designed for in-service temperatures below 120°F (49°C)
- PREPRUFE® 100S membrane should not be used with conventional two-sided formwork. (See PREPRUFE® Technical Letter #TL-0013 “Forming Systems for use with PREPRUFE® Membranes”)
- Note that because of local regulations, test standards and customs, product literature and offerings may be different in various locations. If you have any questions or comments, please contact your local customer service office.

Supply

	PREPRUFE® 100S	PV 100 Tape	MS Fixer
Thickness	1.2mm		
Roll Size	1.0m x 25m 1.2m x 20m	80mm X 20m	400cc/ sausage
Packaging	1 roll	16 rolls/ box	20 sausage/ box
Roll Weight	40kg	1kg	600g/ sausage
Edge/End Laps	75mm	75mm	75 mm

Application with BITUTHENE® Membrane and Joints

If PREPRUFE® 100S pre-applied waterproofing membrane is applied together with BITUTHENE® membranes, or for areas such as construction joints, allow for another 150mm-wide overlap so as to protect PREPRUFE® 100S pre-applied waterproofing membrane from being contaminated. This 150mm-wide membrane can offer overlap with the follow-up waterproofing membrane that is installed.

Safety and Handling

Users must 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.

Storage

- Observe one-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 PREPRUFE® Technical Letter #TL-0030 Shelf Life/Storage and Handling of GCP Waterproofing

Temperature Requirements

- PREPRUFE® 100S membrane can be applied at temperatures of 25 °F (-4 °C) or above.
- PREPRUFE® 100S membrane is designed for in-service temperatures below 120 °F (49 °C).

Technical Services

For assistance with working drawings for projects and additional technical advice, please contact GCP Applied Technologies.

gcpat.ae | United Arab Emirates customer service: +971 4 5139560

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

Emirates Chemicals LLC., P. O. Box 5006, Office 2104, 21 Floor, The Exchange Tower, Opp. JW Marriott Marquis Hotel, Business Bay, Dubai – United Arab Emirates

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