

# TECHNICAL DATA SHEET

## DESCRIPTION

PREPRUFE® 300R Plus membranes are unique composite sheets comprised of a thick HDPE film, pressure sensitive adhesive and weather resistant protective coating. Designed with Advanced Bond Technology™ and a dual adhesive ZipLap™, PREPRUFE Plus membranes form a unique, integral bond to poured concrete, preventing both the ingress and lateral migration of water while providing a robust barrier to water, moisture, and gas.

Release liner free and designed for efficient, reliable installation, the PREPRUFE® Plus ZipLap allows for an adhesive to adhesive bond at seam overlaps and delivers superior performance in harsh conditions without the need for specialized equipment, heat, or power.

## THE PREPRUFE R PLUS SYSTEM INCLUDES:

- **PREPRUFE® 300R Plus** — heavy-duty grade for use below slabs and on rafts (i.e. mud slabs). Designed to accept the placing of heavy reinforcement using conventional concrete spacers.
- **PREPRUFE® Tape LT** — for covering cut edges, roll ends, penetrations, and detailing (temperatures between -4°C and +30°C).
- **PREPRUFE® Tape HC** — for covering cut edges, roll ends, penetrations, and detailing (minimum 10°C).
- **PREPRUFE® CJ Tape LT** — for construction joints, and detailing (temperatures between -4°C and +30°C).
- **PREPRUFE CJ Tape HC** — for construction joints, and detailing (minimum 10°C)
- **Bituthene® LM**—for sealing around penetrations, etc.
- **Water-Bar XR or Water-Bar XR-SW**— waterstop for joints in concrete walls and floors.
- **PREPRUFE Tieback Covers** — preformed cover for soil retention wall tieback heads.

PREPRUFE® 300R Plus membranes are applied either horizontally to smooth prepared concrete, carton forms or well rolled and compacted earth or crushed stone substrate; or vertically to permanent formwork or adjoining structures. Concrete is then cast directly against the adhesive side of the membranes. The specially developed PREPRUFE® adhesive layers work together to form a continuous and integral seal to the structure.

PREPRUFE® can be returned up the inside face of slab formwork but is not recommended for conventional twin-sided formwork on walls, etc. Use BITUTHENE® self-adhesive membrane or GCP's Polymeric Liquid membrane to walls after removal of formwork for a fully bonded system to all structural surfaces.

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## TECHNICAL SPECIFICATIONS

| Test Method                      | Technical Specifications             | 300R   | 160R   | PREPRUFE Tape (LT or HC) |
|----------------------------------|--------------------------------------|--|--|--------------------------|
| N/A                              | LENGTH                               | 31.15m   | 36.8m  | 15m                      |
| N/A                              | WIDTH                                | 1.17m  | 1.17m  | 100mm                    |
| ASTM D2367                       | NOMINAL THICKNESS                    | 1.2mm  | 0.8mm  | -                        |
| N/A                              | GROSS WEIGHT                         | 50kg   | 42kg   | 2kg                      |
| N/A                              | AREA                                 | 36m <sup>2</sup>                               | 42m <sup>2</sup>                               | -                        |
| N/A                              | MINIMUM LAPS                         | 75mm   | 75mm   | 75mm                     |
|                                  | COLOUR                               | White  | White  | -                        |
| ASTM D412                        | TENSILE STRENGTH OF, FILM            | 27.6 Mpa                                       | 27.6 Mpa                                       | -                        |
| ASTM D412 modified <sup>3</sup>  | ELONGATION                           | 500%   | 500%   | -                        |
| ASTM C836 <sup>4</sup>           | CYCLING OVER CRACK @-32°C 100 CYCLES | Unaffected, Pass                               | Unaffected, Pass                               | -                        |
| ASTM E154                        | PUNCTURE RESISTANCE                  | 990 N  | 445 N  | -                        |
| ASTM D5385 modified <sup>2</sup> | RESISTANCE TO HYDROSTATIC HEAD       | 71m  | 71m  | -                        |
| ASTM E96 method B                | PERMEANCE                            | 0.01 perms (0.6 ng/(Pa x s x m <sup>2</sup> )) | 0.01 perms (0.6 ng/(Pa x s x m <sup>2</sup> )) | -                        |
| ASTM D1876 modified <sup>6</sup> | LAP PEEL ADHESION AT 22°C            | 1408 N/m                                       | 1408 N/m                                       | -                        |
| ASTM D1876 modified <sup>6</sup> | LAP PEEL ADHESION AT 4°C             | 1408 N/m                                       | 1408 N/m                                       | -                        |
| ASTM D903 modified <sup>5</sup>  | PEEL ADHESION TO CONCRETE            | 880 N/m  | 880 N/m  | -                        |
| ASTM D5385 modified <sup>1</sup> | LATERAL WATER MIGRATION RESISTANCE   | Pass at 71m of hydrostatic head pressure       | Pass at 71m of hydrostatic head pressure       | -                        |
| ASTM D1970                       | LOW TEMPERATURE FLEXIBILITY          | Unaffected at -29°C                            | Unaffected at -29°C                            | -                        |

### 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 3 mm spacer is inserted perpendicular to the membrane to create a gap. The cured block 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 PREPRUFE® membrane and allowed to cure (7 days minimum).
5. Concrete is cast against the protective coating surface of the membrane and allowed to properly dry (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm per minute at room temperature.
6. The test is conducted 15 minutes after the lap is formed (per GCP published recommendations) and run at a rate of 50 mm per minute at 22°C.

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## AREA OF USE

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

## INSTRUCTIONS FOR USE

### Surface 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.

### Membrane installation

The most current application instructions, detail drawings and technical letters can be viewed at [gcpat.com](http://gcpat.com). For other technical information contact your local NURALITE representative.

PREPRUFE® Plus membranes have coloured zip strips at the top and bottom of the seam area on the edge of the roll. Both zip strips cover an aggressive adhesive. Once the green zip strip on the top of the membrane and the blue zip strip on the bottom of the membrane is removed, a strong adhesive to adhesive bond is achieved in the overlap area. This PREPRUFE® ZipLap™ provides an enhanced sealing of the overlaps in harsh conditions combined with a fast and easy way of execution without specialized equipment, heat, or power.

PREPRUFE® Plus membranes can be applied at temperatures of -4°C or above. When installing PREPRUFE® Plus product in cold or marginal weather conditions <4°C the use of PREPRUFE® Tape LT is recommended at all laps and detailing. PREPRUFE® Tape LT should be applied to clean, dry surfaces and the release liner must be removed immediately after application. Alternatively, PREPRUFE® Plus Low Temperature (LT) membrane is available for low temperature applications. Refer to PREPRUFE® Plus LT data sheet and GCP tech letter 16 for more information.

### Horizontal substrates

Kick out or roll out the membrane HDPE film side to the substrate with the green zip strip facing towards the concrete pour. End laps should be staggered to avoid a build-up of

layers. Leave green and blue zip strips on the membrane until overlap procedure is completed.

Accurately position succeeding sheets to overlap the previous sheet 75 mm along the marked selvedge with the blue zip strip on top of the green zip strip. Ensure the underside of the succeeding sheet is clean, dry, and free from contamination before attempting to overlap. Peel back and remove both the green and blue zip strips 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.

Refer to GCP Tech Letter 15 for information on suitable rebar chairs for PREPRUFE® products.

## Vertical substrates

Mechanically fasten the membrane vertically using fasteners appropriate for the substrate with the green zip strip facing towards the concrete pour. The membrane may be installed in any convenient length. Fastening can be made through the selvedge 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 zip strip on top of the green zip strip.

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

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

## Details

Detail drawings are available at <https://www.nuralite.co.nz>

## 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 allow to dry. Repair small punctures (12 mm or less) and slices by applying PREPRUFE® Tape centred over the damaged area. Repair holes and large punctures by applying a patch of PREPRUFE® Plus membrane, which extends 150 mm beyond the damaged area. Seal all edges of the patch with PREPRUFE® Tape.

Any areas of damaged adhesive should be covered 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. All PREPRUFE® Tape must be rolled firmly, and the tinted release liner removed. Alternatively, use a hot air gun or similar to

activate the adhesive using caution not to damage the membranes and firmly roll lap to achieve continuity.

## Pouring of Concrete

Ensure the plastic release liner is removed from all areas of PREPRUFE® Tape.

It is recommended that concrete be poured within 56 days (42 days in hot climates) of application of the membrane. Following proper Australian / New Zealand standards or industry guidelines, 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 over splash for areas of the PREPRUFE® membrane that are adjacent to a concrete pour.

## Removal of Formwork

PREPRUFE® membranes 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 sufficient compressive strength to develop the surface bond.

PREPRUFE® membranes are not recommended for conventional twin sided wall forming systems, see GCP Tech Letter 13 for information on forming systems used with PREPRUFE® products.

A minimum concrete compressive strength of 20 N/mm<sup>2</sup> is recommended prior to stripping formwork supporting PREPRUFE® membranes. Premature stripping may result in displacement of the membrane and/or spalling of the concrete.

Refer to GCP Tech Letter 17 for information on removal of formwork for PREPRUFE® products.

## Specification Clauses

PREPRUFE® 300R Plus membranes shall be applied with its protective coating presented to receive fresh concrete to which it will integrally bond. Only GCP Applied Technologies approved membranes shall be bonded to PREPRUFE® products. All PREPRUFE® system materials shall be supplied by NURALITE Waterproofing Ltd, and applied strictly in accordance with their instructions. Specimen performance and formatted clauses are also available.

**NOTE:** Use PREPRUFE® Tape to tie-in GCP's Polymeric Liquid membrane with PREPRUFE product.

## Protection system

In order to prevent damages, PREPRUFE® must be protected with NURADRAIN protection board where applicable as soon as possible.

## INDICATIONS AND IMPORTANT RECOMMENDATIONS

PREPRUFE should not be applied when temperature is below -4° without consultation with the NURALITE representative.

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Must be stored in a dry place protected from rain, sun, heat, and cold temperatures.

Full application instructions are covered in the PREPRUFE Method Statement, and PREPRUFE® details.

## SAFETY, STORAGE & HANDLING INFORMATION

Do not stack pallets

Store indoors

Refer to relevant SDS (Safety Data Sheet). Complete rolls should be lifted and carried by a minimum of two persons.

## TRANSPORT CLASSIFICATION

N/A

*The information in this product data sheet is based on our experience and testing. It represents the latest information available at the time of printing, but no guarantee of its accuracy is made or implied, nor responsibility taken for use to which this information may be put. We reserve the right to alter or up-date information parameters and formulations at any time without notice.*

PREPRUFE  
300R PLUS & 160R PLUS