Polyproof Ultra Plus

Fully-bonded, sand coated, pressure sensitive HDPE waterproofing membrane

Pre-applied, single layer loosely laid membrane for substructural waterproofing applications

DESCRIPTION

Polyproof Ultra Plus is a fully-bonded, pre-applied, high-performance HDPE based waterproofing membrane with a reactive inorganic fine granular finish. The membrane is designed to form a chemical and mechanical bond with the freshly poured concrete, effectively becoming an integral part of the structure.

CHARACTERISTICS

- Loosely laid membrane that remains independent of structural movements and settlements
- Cold-applied, easy, and quick to install, no priming required
- Chemical bond of pressure sensitive adhesive with concrete
- Mechanical adhesion through granular sand finish
- Effectively prevents lateral water migration
- Provides a water and moisture barrier
- Allows for immediate foot traffic on site
- Temporarily UV resistant during application and steel works (45 days during hot climate)
- Excellent resistance to chemical acids, alkalis, salts, and other corrosive materials
- White solar-reflective surface

FIELDS OF APPLICATION

Underground concrete structures such as:

- Basements
- Below rafts
- Retaining walls
- Infrastructural applications (tunnels and bridges)

APPLICATION INSTRUCTIONS

The application temperature should be between 5°C to 45°C. While application procedures may vary slightly depending upon site conditions, the general recommended guidelines for the application of Polyproof Ultra Plus are as follows:

Surface preparation

All surface imperfections, protrusions, structurally unsound and friable concrete must be removed and repaired with a suitable concrete repair mortar from the Polycrete range of products. Although the surface does not necessarily need to be dry, any standing water should be eliminated prior to the installation of the membrane.

Horizontal Application

The installation of the membrane is done in a loosely laid manner on the blinding concrete to keep the system independent of structural movements. Begin installation from closer to project peripheries by placing the membrane with the adhesive side facing up towards the concrete pour. Begin membrane application by unrolling the sheet and aligning the side and end overlaps.

Vertical Application

The shoring wall shall provide a smooth surface for the application of the membrane. Align the membrane with the adhesive side facing towards the concrete pour and fix mechanically on the vertical height (e.g. with a wooden batten). Align and fix subsequent rolls using the same method and secure all overlaps. During the vertical extensions of the membrane and after the removal of the batten, cut any damaged portion of the membrane and allow sufficient overlapping margins before continuing with the mechanical fixtures on the next level.

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Overlaps

Side and end overlaps shall be a minimum of 100mm. To ensure the most secure overlap, position each sheet accurately. When overlapping, peel back and remove the liner in the selvedge area to create an adequate bond on the side overlaps. Additional pressure to secure the overlaps can be applied with a roller.

To seal end laps and cut joints, remove a 100mm granular layer by scraping it off, using a hot air gun for easier removal. Place a strip of Polyproof Ultra TSD (double sided tape) with the same width onto the exposed membrane, pressing the top layer of the overlapping membrane firmly before applying additional pressure with a roller to ensure a tight seal over the end overlaps/cut joints.

In horizontal and vertical joinery areas, membranes shall be overlapped with a minimum width of 200 mm using 2 layers of Polyproof Ultra TSD tape (side by side) followed by the application of the Polyproof EPU sealing compound. It is recommended to position the overlapping joint on the horizontal side by extending the vertical membrane downwards.

Corners

Cut Polyproof Ultra Plus to the required size of the corner and remove a 100mm granular layer by scraping it off with the aid of a hot air gun and a scrapper. Place a strip of Polyproof Ultra TSD double-sided tape onto the exposed membrane, press it firmly before adding extra pressure with a roller, and form the corner. Seal with Polyproof EPU sealing compound on the overlaps.

Membrane Termination

All membrane edges at the ground level/below ground level are to be terminated using the aluminum flashing method and are to be sealed with the Polyseal 1PU sealant.

Repair

If damages have occurred on a membrane surface due to site activities, it is recommended to remove the granules at least 100mm around the damage and patch the affected area with Polyproof Ultra Plus TS (single sided tape with sanded finish), followed by sealing the area with Polyproof EPU sealing compound around all edges.

STORAGE & SHELF LIFE

Store Polyproof Ultra Plus in dry and clean conditions and in its original, closed packaging away from sources of chemical contamination, damage, heat and sunlight. In tropical climates, store in air-conditioned rooms. Shelf life is up to 12 months if stored in accordance with the manufacturer's recommendations. Exercise caution when lifting, moving, transporting, storing & handling to avoid puncture and physical damage.

HEALTH & SAFETY

As with all construction chemical products caution should always be exercised. Protective clothing such as gloves and goggles should be worn. Polyproof Ultra Plus contains an adhesive on the surface which can stick to human skin during application. Such residues can be removed by using a cloth dipped in a suitable cleaner. Seek medical assistance immediately if any accidents occur on site

SUPPLY

Polyproof Ultra Plus	20m x 1.5m x 1.2mm, 55kg#
Polyproof Ultra Plus TS	20m x 100mm x 1mm, 2.8kg#
Polyproof Ultra TSD	20m x 100mm x 0.6mm, 1.6kg#
Polyproof EPU	2L, 2.48kg#
Polyseal 1 PU	600ml

#Approximate weight

TECHNICAL SPECIFICATION

PROPERTIES	VALUES	TEST STANDARDS
Membrane thickness, [mm]	min. 1.2	ASTM D 3767
Tensile strength*, [N/mm^2]	>28	ASTM D 412
Elongation at break*, [%]	>730	ASTM D 412
Tear strength, [kN/m]	>130	ASTM D 624
Peel adhesion to freshly poured concrete, [N/mm]	>2.9	ASTM D 903
Lap peel adhesion, [N/mm]	>1.3	ASTM D 1876
Puncture resistance, [N]	>1100	ASTM E 154
Shear Resistance of Joints, [N/mm]	12	BS EN 12317-2
Hydrostatic pressure resistance at the joints, [12bar or (120m)]	No leakage	ASTM D 5385
Lateral water migration resistance @ [12bar or (120m)]	Pass	ASTM D 5385
Flexibility at low temperature, [°C]	No crack at -25	ASTM D 1970
Application temperature, [°C]	5 to 45	
Service temperature, [°C]	-25 to 70	

* Results confirmed for product tested at longitudinal direction

**All values given are subject to 5-20% tolerance.*

Apart from the information given here it is also important to observe the relevant guidelines and regulations of various organizations and trade associations as well as the respective standards. The characteristics are based on practical experience and applied testing. Warranted properties and possible uses which go beyond those warranted in this information sheet require manufacturer's written confirmation. All data given was obtained at an ambient and material temperature of +23°C and 50 % relative air humidity at laboratory conditions unless specified otherwise. Please note that under other climatic conditions hardening can be accelerated or delayed.
The information contained herein, particularly recommendations for the handling and use of products, is based on the manufacturer's professional experience. As materials and conditions may vary with each intended application, sufficient tests are to be conducted to check the suitability of products for their intended use. Legal liability cannot be accepted on the basis of the contents of this data sheet or any verbal advice given, unless there is a case of willful misconduct or gross negligence on the part of the manufacturer.

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