

MAXSHIELD[®] HDPE SF

Pre-Applied, Fully Bonded HDPE Waterproofing Membrane with Sand Finish



MAXSHIELD[®] HDPE SF is a multi-layer composite waterproofing membrane consisting of a layer of high density PE film, self-adhesive polymer layer, a unique particulate protective layer and the release liner. It is a pre-applied and a fully bonded HDPE membrane which exhibits exceptional waterproofing performance.

MAXSHIELD[®] HDPE SF develops an integral permanent bond with the poured concrete after placing and tying reinforcement so as to prevent both water ingress and lateral migration.

Uses

MAXSHIELD[®] HDPE SF is ideal for use in the below mentioned areas:

- Basement Waterproofing
- All below grade concrete structures
- RCC Podiums
- Confined surfaces
- Cut and cover tunnels for metros, subways, canals, underpasses, etc.
- Car Parks
- Roads & Bridges
- To protective underground layers from harmful and aggressive gases.
- Underground Metro Passes

Benefits

- Protects structures against water ingress and lateral water migration
- Watertight laps and physical isolation of the structure from the ground due to continuous bond to poured concrete.
- Simple application- No primer or fillet required
- Highly resistant to chemicals, chlorides, sulphates, aggressive ground conditions, freeze-thaw, etc.
- Moisture Impermeable
- Exceptional puncture resistance, high breaking and tearing strength, with very high peel-off strength at seam joints and heat welds
- Environmentally friendly
- Excellent heat and UV resistance
- Resistance to root penetration, suitable for green roofs

Technical Support

Thermax provides a free technical advisory service supported by a team of specialists in the field.

Properties

Membrane Thickness	~ 1.2 mm, 1.5 mm
Service Temperature	-30°C to 100°C
Tensile Properties	
Tensile Strength, MPa ASTM D412, Modified	> 25 min
Membrane Elongation at Break, % ASTM D412, Modified	> 500
Linear Dimensional Change, % 6hrs @ 70°C ASTM D 1204	1% Max.
Peel Adhesion to Concrete, N/mm ASTM D903, Modified	1.5
Tearing Strength, Kg/cm ASTM D 412	130
Puncture Resistance, N ASTM E154	1000
Resistance to Hydrostatic Head, m ASTM D5385	71
Brittleness Point, °C ASTM D 2137	-30°C

Instructions for Use

Surface Preparation

The long term durability of any waterproofing system is determined by the adhesive bond achieved between the waterproofing membrane and the substrates. It is most important therefore, that the substrates are correctly prepared prior to application.

All Surfaces

All surfaces must be sound and solid to facilitate proper installation of the membrane to eliminate movement during the concrete pour. The surface must be uniform and smooth and free of irregularities. Gaps or voids in the surface greater than 12mm should be eliminated.

Horizontal Concrete Blinding (PCC)

Smooth and uniform surface is a must. In any case curved or rounded substrates must be avoided. Unsound aggregates and sharp lumps must be eliminated. Standing water must be removed before application of the HDPE membrane. However, the surface need not be dry.

Vertical Sheet Piling

Surface should be prepared and made uniform for membrane installation using either of guniting, concrete, plywood or other suitable material. MAXSHIELD[®] HDPE SF can then be used for blind side waterproofing.

Application of MAXSHIELD[®] HDPE SF

The following steps elaborate the installation of fully bonded HDPE waterproofing membrane, MAXSHIELD[®] HDPE SF, on a blinded concrete surface for under-raft slab and confined retaining wall-

Laying of Membrane: With the white HDPE side facing down towards the substrate, roll out the HDPE membrane on the prepared surface. Make sure not to build up layers by staggering the end laps. For overlaps, subsequent sheets must be precisely placed 75mm over the self-adhesive selvedge. The release liner must be left over the selvedge until the overlap is complete so as to facilitate easy overlap process. Always make sure to have overlap clean surfaces both on the bottom of the subsequent sheet and the top of the release liner to bond the two layers, peel back the release liner placed at the selvedge gradually while using a steel roller to release any entrapped air and to even out any creases created during the procedure.

For bonding the non-selvedge ends, use a double-sided tape to ensure a watertight system.

Note: In case of damp conditions, to remove moisture, the selvedge is gently warmed using a hot air gun. This improves its adhesion to the substrate.

Vertical Binding: Level the surface before proceeding to membrane installation. With the white HDPE side on the leveled surface, mechanically fasten the membrane using flat headed fixings at 600mm centres to fix the membrane in position. The top of the membrane is to be secured by either using a batten or fixing 50mm below the top edge to ensure that the membrane is flat against the substrate. The subsequent membrane can be laid over the already fixed selvedge so as to allow firmly rolled overlaps. Always make sure to have overlap clean surfaces both on the bottom of the subsequent sheet and the top of the release liner to

bond the two layers, peel back the release liner placed at the selvedge gradually while using a steel roller to release any entrapped air and to even out any creases created during the procedure.

Roll Ends and Cut Edges

A minimum 75mm of overlap should be allowed at roll ends and cut edges. Clean the surface using a damp cloth to ensure that the surface is free of any contamination. Fixer/Tape has to be applied to the non-selvedge joint along the 75 mm width. To ensure uniformity, use a metal spatula to spread the fixer/tape. Over the applied fixer/tape, place the succeeding sheet to overlap over the 75mm width. Press down firmly using a steel roller to ensure a continuous bond without creases.

Damage Repair Procedure

After bottom bar laying, membrane must be inspected for damage. To repair the damage area, use an oversized patch of the membrane and place it using on the cleaned surface to be repaired using a fixer. For minor damages, placing a double sided tape or just fixer is sufficient to treat it. After finishing the reinforcement cage, the membrane must be reinspected for any damage. In cases where MAXSHIELD[®] HDPE SF is to be overlapped further, it should be covered with Tarpaulin.

Membrane Installation

MAXSHIELD[®] HDPE SF when applied to the surface must be a continuous bond which can be achieved using steel rollers while treating overlaps. The application temperature must be maintained greater than -5°C at all times.

For cold weather installations, pre-heat the bonding edge of MAXSHIELD[®] HDPE SF using hot air gun or other such methods.

Note

Application must be carried out by Thermax authorized applicator for best results. In the event of any doubt upon any critical parameter it is advisable to seek clarification from our technical representative and refer to our Method Statement.

MAXSHIELD[®] HDPE SF

Precautions

- Avoid applications in temperatures below -5°C.
- Avoid applications in cold weather without taking precautions as mentioned in the methodology.

Health and Safety Instructions

Wear suitable protective clothing, gloves and eye protection. Do not use solvent. MSDS Safety data sheet is available with our technical department and can be sent on specific request.

Protect the fully executed waterproof membrane after installation to avoid damages. Do not walk on the waterproof course wearing spike during construction.

Storage

Store away from direct sunlight in a dry condition in their original, closed wrapping away from sources of chemical contamination, ignition sources and open flame. Shelf life is beyond 5 years.

Packing

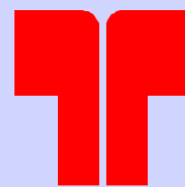
MAXSHIELD[®] HDPE SF is supplied in rolls of 1.2 and 1.5 mm thickness of 20m length in widths of 1.2m and 1.5m.

Other Segments:

- Concrete Admixtures • Surface Treatments • Grouts & Anchors • Repair & Rehabilitation
- Protective Coatings • Industrial Flooring • Waterproofing • Sealants • Adhesives

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