

## ECMASHIELD – HDPE

### FULLY BONDED, PRE-APPLIED HDPE MEMBRANE FOR WATERPROOFING OF BELOW GRADE CONCRETE STRUCTURES

#### Description

**ECMASHIELD HDPE** is a pre-applied, chemically resistant and fully bonded HDPE waterproofing membrane system for underground concrete structures. This multi-layered, composite membrane is made of a tough, resilient and high strength HDPE waterproofing membrane along with pressure-sensitive adhesive and a trafficable, weather and dirt resistant non-absorbent coating and a release liner. It fully bonds with the freshly poured concrete against it and forms a continuous and permanent bond to prevent water ingress & migration at the interface of the membrane and structural concrete.

#### Advantages

- Easy to install, cold applied membrane with no extra protection
- Non-reactive, high performance adhesive
- Weather resistant and trafficable
- Pre-applied fully bonded waterproofing system for underground structures
- Resists high hydrostatic water pressure.
- Chemically resistant, not affected by aggressive ground contaminations, salts and it protects the structure from chloride and sulfate attacks
- Not affected by differential movements and ground settlement beneath slabs as it maintains a watertight seal to the structure.

#### Uses

- Basements Rafts and Retaining Walls
- Basements with high water table
- Cut & cover tunneling.

#### Technical Specifications

Properties (ECMASHIELD HDPE)	HDPE (P)	HDPE (S)
Tensile Strength, ASTM D412 modified	≥27 MPa	≥21 MPa
Elongation at Break, ASTM D412 modified	≥ 450%	≥ 400%
Lap Peel Adhesion, ASTM D1876, modified	≥ 1500 N/m	≥ 1500 N/m
Peel Adhesion to Concrete, ASTM D903	≥ 1000 N/m	≥ 1000 N/m
Puncture Resistance, ASTM E 154 modified	≥ 1000 N	≥ 1000 N
Water Pressure Resistance, ASTM D5385	≥ 70 m	≥ 60 m
Low Temperature Flexibility, ASTM D1970	No cracks	No cracks
Dimensional Stability, ASTM 1204	<1%	<1%

**ECMASHIELD HDPE (P):** HDPE waterproofing membrane with an aggressive pressure sensitive adhesive and protective coating

**ECMASHIELD HDPE (S):** HDPE waterproofing membrane layer with self-adhesive polymer layer and a unique non-reactive, sand finish particulate layer



## Installation Guidelines

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### Surface Preparation

Prior to installation, examine the substrate and ensure a well compacted, sound and continuous substrate to eliminate movement during the concrete pour. Substrates must be continuous and smooth with no gaps or voids. It must be free of loose aggregate and sharp protrusions. The surface need not to be dry but standing water should be removed. On Vertical Surfaces, use concrete, shotcrete or plywood, etc. to achieve a uniform, sound and continuous substrate ready to receive the membrane.

**Horizontal Applications:** Place and unroll the membrane on the approved substrate with adhesive / coated side facing the concrete pour facing towards the concrete pour. End laps should be staggered to avoid a build-up of layers. Accurately position succeeding sheets to overlap the previous sheet for 75 mm. All overlaps and joints should be firmly rolled to ensure complete adhesion between layers.

**Vertical Applications:** Mechanically fasten the membrane in any convenient length vertically using nails or fasteners appropriate to the substrate with adhesive coated side facing concrete pour. Secure the top of membrane fixing 50 mm below top edge. Fixings can be made through the selvedge so that the membrane lays flat and allows firmly rolled overlaps.

All End laps to be secured by using hot air welding or, Ecmafex HDPE DST tape. Install the membrane on entire area to be covered.

**Corners:** All Internal and external corners should be formed as per the actual site detailing's and sealed with Ecmafex HDPE DST tape. Ensure that the edges of corners are covered and sealed with tape, are rolled firmly.

**Penetration Sealing:** All Pipe penetration should be sealed by grouting and double-sided Ecmafex HDPE DST tapes or with liquid applied membranes to ensure complete water tightness.

**Damage Repairs:** Identify the damaged areas and mark with a marker. Clean the area identified for damage repair and remove granules around it and apply it with Ecmafex HDPE DST tape and remove the release liner.

**Concrete Pouring:** It is recommended to pour concrete within 45 days of application of membrane. Remove printed release film before concrete pour. Concrete should be poured and compacted carefully. Never use any sharp object to consolidate the concrete.

**Removal of formwork:** In case, the membrane has been applied to removable shuttering, it is recommended that a minimum concrete compressive strength of 15 MPa has reached before the formwork is removed.

**Backfilling:** Backfilling material must be free from sharp objects and debris that could damage the ECMASHIELD HDPE membrane. It should not contain bricks, blocks or boulders larger than 50 mm.

## **Packing**

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ECMASHIELD HDPE (P/S) are supplied in 1 m x 20 m roll size in 1.2 mm/ 1.5 mm thickness

## **ECMAFLEX DST (High Adhesion Double Sided Joint Tape)**

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**ECMAFLEX DST 80** is supplied in rolls of 50 m length and 80 mm width.

**ECMAFLEX DST 120** is supplied in rolls of 50 m length and 120 mm width.

## **Shelf Life**

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Twelve months if stored in unopened original packaging under dry conditions at a temperature between 5-30° C.

## **Storage & Handling**

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ECMASHIELD HDPE membranes & DST Tapes must be stored under the shed & protect from extreme temperatures.

Do not store in direct sunlight for more than 3 days.

Rolls must be stored in upright vertical position.

Avoid stacking of rolls horizontally or in double stack position.

## **Health and Safety**

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This product is for industrial use only by trained operatives. Please refer to the Material Safety Data Sheet (MSDS) prior to the purchase and use of this product. All persons in contact with the materials should wear the appropriate protective clothing, spectacles and gloves

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