

ECMASHIELD – TPO

UV STABLE, EXPOSURE GRADE WATERPROOFING MEMBRANE

Description

ECMASHIELD TPO is an environment friendly, weather resistant, synthetic waterproofing membrane produced by co-extruding a UV resistant elastomerized TPO/FPA thermoplastic olefin and flexible polypropylene alloy with a fibre glass reinforcement mat that makes it dimensionally stable. The membrane features contrasting color signal layer so that any damage occurring during or after installation will be immediately identified. This offers an excellent Cool Roof solution as it is available with highly REFLECTIVE WHITE TOP enhancing the reflectance and emission features giving the waterproof membrane a high Solar Reflectance Index (SRI) up to 102%. The membrane is specifically formulated for long-term weather resistance without the use of either polymeric or liquid plasticizers.

Advantages

- Environmentally friendly and stable formulation
- Excellent resistance to impact and low temperatures
- Heat welded seams for long lasting performance
- Excellent chemical resistance to acids, bases and exhaust emissions
- Exceptional resistance to heat, solar UV, ozone and oxidation
- 100% recyclable
- Heat Reflective Top, helps reducing air-conditioning costs

Uses

- Exposure grade waterproofing of flat or sloped roofs for new constructions
- Re-roofing applications subjected to foot traffic
- Cool Roof applications

Installation Guidelines

Surface Preparation: Prior to installation, examine the substrate and ensure a sound, smooth and continuous substrate with no gaps or voids. It must be free of loose aggregate and sharp edges and protrusions.

Installation: ECMASHIELD TPO membranes can applied as loosely laid or partially or fully bonded directly with substrate or can be used along with heat insulation sheets, sealing the overlapping joints with automatic heat welding machines, no adhesives or other materials are required. Recommended overlap for loosely laid or bonded membrane is 50 mm while it should be 100 mm for mechanically fastened membranes. Extra care should be taken at corners, pipe penetrations and at terminations. Design solutions and application methods are illustrated in the technical manual published by ECMAS.

ECMASHIELD TPO membrane Waterproofing systems should be laid by experienced installers authorized by ECMAS.



Patch Repairs: If mechanical damage occurs to the membrane or if a seam is found defective after probing, repair will be undertaken by welding a patch of new membrane over the damaged portion. The patch is to be larger than the repair area by minimum 50mm in all directions and corners should be round off.

Technical Specifications

TECHNICAL FEATURES ⁽¹⁾							
Features	EN Standards	U.M.	Tolerance	Values			
Standard thickness	1849-2	mm	(-5/+10%)	1,2	1,5	1,8	2,0
Density	1849-2	kg/m ²	(-5/+10%)	1,10	1,37	1,64	1,82
SRI – Solar Reflectance Index	ASTM Standard E1980	%		102 ^(*)			
Tensile properties							
• Tensile strength L/T	12311-2	N/50 mm		600/550	650/600	750/750	800/800
• Elongation at break L/T	12311-2	%		700/700			
Dimensional stability	1107-2	%		≤ 0.1			
Cold flexibility	495/5	°C		≤ -40 ⁽²⁾			
Tear resistance L/T	12310/1	N		390/290	450/400	500/450	600/550
Water vapour permeability (resistance factor μ)	1931			50.000			
Resistance to static loading	12730/B	kg		≥25			
Resistance to impact	12691/B	mm		≥1000			
Hail resistance	13583	m/s		≥30 ^(**)			
Water tightness (60kPa)	1928			Absolute			
Joint strength							
• Tensile strength	12317-2	N/cm		Compliant (specimen fails outside bond area)			
• Peeling	12316-2	N/cm		≥58			
Durability							
• Resistance to artificial UV light	1297-5000 h			No surface damage or significant changes in cold flexibility as per EN 495/5			
Heat aging in area							
• Change in tensile strength	12311-2	Δ%		-5			
• Change in elongation at break	12311-2	Δ%		-5			
Wind load resistance (wind suction test) (UEAtc)							
• Mechanically retained system	Pa			≥6000			
Reaction to fire	13501-1			Class F			
Behaviour to external fire	13501-5			Broof (t1), (t2), (t3), (t4)			
Resistance to algae and microorganisms	ISO 846 Level 2			Compliant			
Root resistance	13948			Passes the test			

Notes: (1) Tolerances as per EN 13956 and/or UEAtc Directives.
(2) Not tested at lower temperatures.

In the respective versions:
(*) Reflecta White version.
(**) Not tested at higher speeds.

Packing

ECMASHIELD TPO are supplied in standard thicknesses of 1.2 mm and 1.5 mm and 2.1 m x 25 m roll size. Also available in of 10' x 100' large sizes rolls.



Shelf Life

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

Storage & Handling

ECMASHILED TPO Rolls should be stored in a cool, dry, clean and level surface under the covered shed & protected from extreme temperatures.

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

Rolls should only be unwrapped from packaging at the time of installation.

Avoid stacking of rolls horizontally or in double stack position.

Health and Safety

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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