

FLEXIDINE TPO R 1.2 MM

Heat weldable, thermoplastic polyolefin (TPO) sheet

Product # 114.65
Version no: 16.11.23

Data
Tech

PRODUCT DESCRIPTION: FLEXIDINE TPO R 1.2 MM Membrane Membrane is a high performance, heat weldable, thermoplastic polyolefin (TPO) sheet, manufactured & supplied in specified thickness, designed for waterproofing and heat shielding roofs of new and existing buildings. FLEXIDINE TPO R 1.2 MM are reinforced with polyester scrim, encapsulated between the TPO top and bottom layers, combination of which provides high mechanical properties to the membrane ensuring superior puncture resistance, breaking & tearing strength. FLEXIDINE TPO R 1.2 MM Membrane is based on advanced polymer technology, modified for weathering and fire protection, enabling the membrane to withstand extreme temperatures across hot and humid to very cold and dry climates and remain flexible over years.

AREAS OF APPLICATION

- PEB Roofs
- Factory Sheds
- Warehouses
- Cold Storages
- Airports
- New and existing buildings
- Railway, Metro & Bus transit stations

ADVANTAGE

- Supplied in pre-manufactured standard thickness. No need to worry of thickness variation at site, unlike liquid applied systems.
- Outstanding puncture resistance, high breaking and tearing strength.
- Very high peel strength of seam joints and heat welds.
- Chlorine free, plasticizer free, phthalate free. Environmentally friendly and safe for humans.
- Exceptional resistance to heat, UV, Ozone, bacteria, chemical, acid corrosion.
- Resistance to root penetration, suitable for green roofs.
- Continuous serviceability from -30°C to 100°C – without cracking, tearing or brittleness failure.
- 100% recyclable.
- Superior puncture resistance, breaking & tearing strength.
- Membrane monolithic with the roof, providing consistent and water-tight assembly.

APPLICATION

SURFACE PREPARATION

A roof or deck is expected to be structurally sound to support and restraint the roofing system. It should also pose enough strength to withstand all anticipated loads, foot or construction traffic, rain and wind loads. It should also be able carry the weight of application workers and the equipment without showing signs of deflection at any point. The roof substrate is an insulated roof panel, that is primarily 0.5 / 0.7mm thick metal sheet on 2 sides of a PUR/PIR insulation – a sandwiched panel, primarily used for insulated buildings. These panels are low-rib with almost no corrugations. For application on panel roofs, the surface must be free of large cracks, undulations, torn roof edges and should be as smooth as possible. There should be no large holes or sharp changes in elevation of the surface.

All sharp undulations from metal fasteners or ripped roof edges must be cleared and repaired, prior to installation. Surface preparation includes, but not limited to, smoothening and filling all holes, irregularities and depressions before the system is applied. Post that, complete the moisture scan and make sure any wet surface or materials are clean and dry. Carefully sweep all roof surface to eliminate all dirt and debris. Grind and cut out large chunks or blisters on roofs. Repair cracks and holes in roof especially those larger than ¼" wide. Providing a proper slope for water to drain off is a mandatory requirement of the site, before FLEXIDINE TPO system can be installed. For PEB roof decks, the slope must conform to proper gradient for water drain-off and roof must be free from any kind of water accumulation or ponding during testing.

Corner and Joint Terminations

Cement bound surfaces must be dry, firm, offer good traction, free from loose particles, dust, dirt and additionally free of oil, grease and other impurities which can adversely affect uniform adhesion. If considered necessary, the surface should be Mechanically treated, flame scaled, milled or ground. Iron and steel must be free of rust and scale and should be free from oil, dust and grease and other dirt particles. The best method of preparation is to flame scale /Mechanically treated.

APPLYING AND LAYING

After the surface is fully prepared in accordance with the FIBREX guidelines, unpack and unroll FLEXIDINE TPO R 1.2 MM Membrane and position without stretching. Let the membrane relax for up to 30 – 45 minutes and inspect for any damages.

For application on panel roofs,

There are several ways to install TPO roofing on Insulated PEB roof panels

- **LOOSELY LAID** – where one edge of FLEXIDINE TPO R 1.2 MM membrane is adhered to the panel using suitable adhesives – anchoring the membrane to the roof, which is then overlapped with FLEXIDINE TPO R 1.2 MM membrane and heat welded. The overlap protects the adhered edge below, not exposing it to external weathering. Since this system does not puncture the insulated roof panel, there is no chance of any leakage. The roof edges of the building are covered with FLEXIDINE TPO R 1.2 MM edge trims, mechanically anchored and heat

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welded with FLEXIDINE TPO R 1.2 MM on top, preventing any wind from blowing beneath the FLEXIDINE TPO R 1.2 MM or roof.

MECHANICALLY FASTENED – where the FLEXIDINE TPO R 1.2 MM membrane is mechanically anchored in the roof panels using fasteners and washers, which are then overlapped with FLEXIDINE TPO R 1.2 MM membrane and heat welded. The overlap completely encapsulates the fastener, which is not exposed to any external weathering – ensuring no water, heat seeps into the insulated panel. The roof edges of the building are covered with FLEXIDINE TPO R 1.2 MM edge trims, mechanically anchored and heat welded with FLEXIDINE TPO R 1.2 MM on top – thus completely encapsulating the system, preventing any wind from blowing beneath the FLEXIDINE TPO R 1.2 MM or roof.

Installation Methodology

Mechanically Fastened

Step 1: Unroll the membrane, spread it over the roof and allow it to remain in this position for approximately 30 minutes to 45 minutes to relieve stresses induced in the process of manufacture and storage.

Step 2: Cut membrane to required size and kept ready for the installation.

Step 3: Lay the membranes such that the membrane installation starts from the lowest point of the slope, gradually moving upwards enabling overlaps to shed water easily, without restrictions. All overlap edges shall be 50mm while building edge end laps over edge FLEXIDINE TPO R 1.2 MM will be 100mm. FLEXIDINE TPO R 1.2 MM Membrane is designed as exposed grade and has UV and weathering resistance and can be left exposed without any protection.

Step 4: Anchor the membrane on to the roof deck using fasteners and washers designed for mechanically fastening membrane over the substrate. Membrane is to be held in place properly to avoid wrinkles and air bubble pockets, making sure by firmly pressing the membrane down.

Step 5: Laps are to be heat welded using automated weld machine or hand-held weld gun, depending on the site condition. Roll with a PU roller to ensure seams and laps are secure. Check the seams with a seam probe to verify complete welding of edges.

Step 6: Termination of membrane around roof edges: Mechanically fasten the TPO edge profile onto roof edge using fasteners and washers. The edge profile must cover the edge L properly, ensuring no gaps for wind movement below the profile. Then heat weld the membrane completely overlapping and encapsulating the edge profile and fasteners. This will ensure safety from wind uplift.

Step 7: Termination of membrane around vertical upstands: Around upstands, the membrane is mechanically fastened on the vertical surface and aluminium strips are fastened to hold the membrane in place. The strips are overlapped with FLEXIDINE TPO R 1.2 MM - further heat welded and edges are sealed with FIBREX Epoxy / PU sealant

Step 8: All corners, edges are overlapped with corner joints and heat welded in place for securing the membrane and protecting corners from weakening / loosen over time.

Loosely Laid, Partially Adhered

Step 1: Unroll the membrane, spread it over the roof and allow it to remain in this position for approximately 30 minutes to 45 minutes to relieve stresses induced in the process of manufacture and storage.

Step 2: Cut membrane to required size and kept ready for the installation.

Step 3: Lay the membranes such that the membrane installation starts from the lowest point of the slope, gradually moving upwards enabling overlaps to shed water easily, without restrictions. All overlap edges shall be 50mm while building edge end laps over edge FLEXIDINE TPO R 1.2 MM will be 100mm. FLEXIDINE TPO R 1.2 MM Membrane is designed as exposed grade and has UV and weathering resistance and can be left exposed without any protection.

Step 4: Apply FIBREX adhesive. Use a trowel and create a bedding thickness of 1.5 to 2 mm of adhesive over the roof panel, making sure that the adhesive is contacted well with the roof within open time of the adhesive.

Step 5: Laps are to be heat welded using automated weld machine or hand -held weld gun, depending on the site condition. Roll with a PU roller to ensure seams and laps are secure. Check the seams with a seam probe to verify complete welding of edges.

Step 6: Termination of membrane around roof edges: Mechanically fasten the TPO edge profile onto roof edge using fasteners and washers. The edge profile must cover the edge L properly, ensuring no gaps for wind movement below the profile. Then heat weld the membrane completely overlapping and encapsulating the edge profile and fasteners. This will ensure safety from wind uplift.

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CLEAN UP

Clean all tools immediately after use with Fibrex Paint Remover. Do not allow material to harden.

TECHNICAL SPECIFICATIONS

PROPERTY	ASTM D 6878	FLEXIDINE TPO R 1.2 MM
Nominal Thickness mm; ASTM D751	0.99 Min	1.2 ± 10%
Thickness Over Scrim %; ASTM D 7635	> 30% of total thickness	35% Min
Typical Weight Kg/m ²	NA	1.28 ± 10%
Breaking Strength LBF; MD/TD; ASTM D 751 GRAB METHOD	220 Min	225 Min 300 Max
Elongation at Break %, MD/TD; ASTM D 751	15% Min	15 Min 25 Max
Tearing Strength LBF; MD/TD; ASTM D 751 Procedure B	55 Min	55 Min 100 Max
Brittleness Point °C; ASTM D 2137	-40°C	Pass
Linear Dimensional Change %; 6hrs @ 70°C; ASTM D 1204	± 1% Max	< 1%
Ozone Resistance 100 pphm, 168 hrs; ASTM D 1149	No Cracks @ 7% Magnification	Pass
Water Absorption % ; 66 hrs @ 70°C TOP; ASTM D471	± 3% Max	< 3.0%
Factory Seam Strength LBF; ASTM D 751 GRAB METHOD	66 Min	66 Min 80 Max
Water Vapour Permeance Perms; ASTM E96, Procedure B	No requirement	0.10 Max
Puncture Resistance LBF; FTM 101C	No requirement	250

Properties after Heat Ageing 32weeks @ 115°C; ASTM D 573	Retention	Pass
1.Breaking Strength (LBF)	90% Min	
2.Elongation Retention (%)	90% Min	
3.Weight change (%)	± 1.0 Max	
4.Tearing Strength (LBF)	60% Min	
Weather Resistance KJ/(m ² .mm); ASTM G155	10,080 Min	> 21,600
Field Seam Strength LBF; ASTM D 751 GRAB METHOD	No requirement	40 Min 60 Max
Solar Reflectance Index	No requirement	100
Reflectivity ASTM C1549	No requirement	0.79
Emissivity ASTM C1371	No requirement	0.909

CHEMICAL RESISTANCE

Chemical	Observation
bitumen	resistance
water	resistance
sea water	resistance
Waste water	resistance
Uv radiation	resistance
Hydrolysis	resistance
Micro organism	resistance
pH	pH = 2 to 10 (below 30°C) pH = 5 to 10 (below 40°C) pH = 6 to 8 (below 60°C)
Acids	Limited resistance
Alkalies	Limited resistance
organic solvents (Ester, Ketone and similar).	Limited resistance

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

PACKAGING

FLEXIDINE TPO R 1.2 MM available in 2*20 mtr roll with 1.2 mm thickness.

STORAGE

Store FLEXIDINE TPO R 1.2 MM membranes at temperatures between + 10° C and + 35° C and in dry, clean conditions and in their original, closed wrapping away from sources of chemical contamination, damage, ignition sources and open flame. Shelf life is beyond 5 years. Exercise caution when lifting, moving, transporting, storage & handling to avoid puncture and physical damage.

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NOTE

The information supplied in this datasheet is based upon extensive experience and is given in good faith in order to help you. Our company policy is one of continuous Research and Development; we therefore reserve the right to update this information at any time without prior notice. We also guarantee the consistent high quality of our products; however as we have no control over site conditions or the execution of the work, we accept no liability for any loss or damage which may arise as a result thereof.

HEALTH AND SAFETY

This material is intended to be used by trained professionals with proper equipment's. The following safety measures are recommended:

- Wear protective gloves, clothing, goggles, hearing protection for noise reduction and hard hats for falling debris.
- Do not eat, drink or smoke while in active contact with these materials.
- Avoid skin contact.
- Wash hands thoroughly with soap and cool water.
- Never wash the skin with a solvent.
- Anyone experiencing difficulty breathing when working with these materials or showing an allergic reaction should seek fresh air immediately and consult a physician if symptoms persist.

DISCLAIMER:

Fibrex Construction Chemicals products though are guaranteed against defective materials and manufacture and are sold subject to its standard terms and conditions of sale, copies of which may be obtained on request. Fibrex Construction Chemicals wishes to clarify that any advice, recommendation, specification or information is accurate and correct, though it cannot, at any time assume any liability either directly or indirectly arising from the use of its products. This is because it has no direct or constant control over where or how its products are applied, and whether or not in accordance with the advice specification, recommendation or information given by it.

FIBREX OTHER PRODUCTS – WE DO

