

ISOTECH SBS

SBS Modified Bitumen Based Waterproofing Membrane

ISOFLEX membrane is a plastomeric waterproofing membrane, manufactured from a rich mixture of bitumen and selected polymers (Styrene Butadiene Styrene) blended together to obtain excellent heat and UV resistance and waterproofing properties. The polymerized bitumen is coated on to a dimensionally stable reinforcement core of non woven spun bond polyester rot-proof fabric. The membrane has excellent mechanical properties and is highly resistant to fatigue and is designed for use in structures exposed to high temperatures.

CHARACTERISTICS

- High puncture and fatigue resistance.
- Good dimensional stability under tension.
- Good heat resistance.
- Resistant to water borne chemicals.
- Excellent resistance to positive water and vapor pressure.
- Can accommodate structural movements because of excellent flexibility.
- High tensile and tear strengths.

AREA OF APPLICATION

ISOFLEX is used as waterproofing membrane on the following structures:

- Concrete foundation and footings
- Basements
- Pile heads
- Swimming pools and water retaining structures (externally)
- Inverted roofs and parapets
- Terraces, balconies and patios
- Sunken slabs
- Bridges and tunnels
- Airport aprons and ramp areas

AREA OF APPLICATION

Ecoflex is available in two basic finishes:

- Black smooth finish with polyethylene surface for covered applications.
- Natural slate flakes surfacing for exposed application to protect from UV rays.

METHOD OF APPLICATION

The application temperature should be between 4°C to 45°C. Application procedures may vary depending on site conditions. The general recommended guidelines for the application of the waterproofing system is as follows:

A. Surface Preparation

The surface shall be cleaned thoroughly of all contaminants like dust, traces of curing compound, oil and grease. All surface imperfections, protrusions, structurally unsound and friable concrete must be removed and repaired with a suitable concrete repair mortar.

B. Priming

Apply ISOPRIM SB (solvent based primer) at 4-6 m²/l as per ASTM D41 to a clean smooth and dry surface by brush, roller or spray. Allow the primer to dry prior to the application of the membrane. As the viscosity of the primer is low, it easily penetrates into the concrete pores which promotes adhesion between the membrane and the concrete surface. In addition to that the primer also acts as a binder for the dust particles which gets accumulated on the concrete surface even after cleaning.

C. Alignment

Start the installation of all membrane plies from the low point or drains, so the flow of water is over or parallel to the plies, but never against the laps. All overlaps at the membrane seams shall be installed so as to have "up" slope laps over "down" slope laps. Begin membrane application by unrolling the roll of ISOFLEX membrane and aligning the side laps. Re-roll halfway and stand on the unrolled portion to prevent shifting. Side overlaps should be minimum of 100mm and the end overlaps 150mm.

C. Torching

ISOFLEX membranes are installed by using a cylinder fed propane gas torch. Use of hand-held roofing torch is recommended as it affords a good control. If multiple burner torching machines are utilized, care must be taken to ensure the application of uniform heat and avoid overheating the membrane. Begin torching the embossed polyethylene side of the rolled portion of the membrane. Proper torching procedure involves passing the torch flame in "L" pattern applying about 75% of the heat across the coiled portion of the roll and 25% across the substrate, including the lap area of the previously installed membrane. As the membrane is heated the embossing starts to melt away exposing a shiny bitumen surface. Roll forward the membrane and press firmly with the boot or roller against the substrate to bond well. The propane flame should be moved from side to side and up the lap edge while the membrane is slowly unrolled and adhered to the underlying surface. Subsequent shift of the roll shall be avoided after heating has begun. When complete, the remaining un-torched membrane shall be re-rolled and installed in the same manner. When one end is complete, re-roll the opposite end not yet torched and install in the same manner. As subsequent rolls are installed, heat is applied to both the roll and the exposed laps of the membrane being overlapped onto. Be sure to heat the entire roll evenly, not just the lap areas, with extra concentration at the laps.

CAUTION: Do not over torch the membrane as this will expose the reinforcement and cause damage to it.

D. Sealing

Heat both the overlaps and use round tipped trowel to seal the overlap. Adequate heat is confirmed when a uniform flow of melted bitumen compound flows evenly like a bead that oozes from the applied membrane's edges. Excess compound should be smoothed and pressed into the seam using a heated trowel. Any

unbonded areas must be lifted and re-torched. Do not attempt to reseal by torching the top surface of the membrane.

E. Up Stand

Flashing details are accomplished using cut pieces of **ISOFLX** membrane in combination with appropriate prefabricated flashing components. The same side up and end lap rules apply to flashing details as to field membrane. All angles and abutments should be sealed with extra care to ensure full bonding. An appropriate flashing membrane **ISOFLX** shall be lapped with the base membrane and take up on the parapet wall and tucked into a groove cut into the concrete. The grooves will be sealed with a suitable mastic sealant (**ISOMASTIC**).

ISOFLX membranes conform and tested to the requirements of UEAtc 2001 and ASTM.

STORAGE & SHELF LIFE

ISOFLX membrane rolls, loose or on pallets have to stored vertically in a shaded area, neatly covered by a thick fabric and tied securely in a manner that will minimize exposure to sunlight and UV. Do not stack pallets on top of each other. The shelf life is 12 months if stored as per recommendations. Excessive exposure to sunlight, UV and other sources of heat will result in considerable deterioration of the product and reduce its shelf life.

Any naked flame should be kept well away from the gas cylinders. When ignited the torch should be watched at all times. The torch should not be rested on finished roofing. Extreme care should be taken when working near combustible materials or items which might be scorched by the gas flame.

HEALTH & SAFETY

ISOFLX membranes are non-hazardous, non-flammable and therefore can be disposed off in any regular disposal area. However, they should be disposed off only after wrapping with paper, plastic or cloth as the modified bitumen has a tendency to soften under heat and pressure which would make further handling very touch.

ISOFLX membranes contain a tacky bitumen compound which when applied can stick to human skin. Such stains can be removed by using a cloth dipped in a light solvent. In case the bitumen gets stuck to a sensitive area it is advised to get medical attention.

PACKAGING

ISOFLX	3mm - 1m x 10m, 30 rolls / pallets. 4mm - 1m x 10m, 23 rolls / pallets 5mm - 1m x 10m, 16 rolls / pallets
ISOPRIM SB / ISOSOL	20 litres pail and 200 litres drum
ISOMASTIC	20 kg pail

TECHNICAL SPECIFICATION

Properties	Values			Test Standards
Thickness, mm	3.0, 4.0, 5.0	4.0, 5.0	4.0, 5.0	UEAtc, ASTM D5147
Reinforcement (polyester), g/m ²	180	200	250	UEAtc, MOAT 31, Paraf
Coating asphalt	Styrene Butadiene Styrene Polymer Modified Asphalt			
Softening point (R & B), °C*	115			ASTM D36
Penetration @ 25°C, 0.1mm*	20 - 40			ASTM D5
Tensile strength (l/t), N/5cm	800/600	850/650	1100/800	UEAtc
Elongation @ break (l/t), %	40/50	45/50	50/55	UEAtc
Shear resistance at joints (l/t), N/5cm	800/600	850/650	1100/800	UEAtc
Tear resistance (l/t), N	450/350	500/450	600/500	ASTM D5147
Puncture resistance, N	700	1000	1100	ASTME 154
Resistance to static loading	L ₃	L ₄	L ₄	UEAtc
Resistance to water pressure @ 5 bar	No leakage			BSEN 12390
Water absorption (BSP), %	0.2			ASTM D5147
Heat resistance @ 80°C	No flow			UEAtc
Low temperature flexibility	0 to -5°C			UEAtc, ASTM D 5147
Resistance to ageing	No deterioration			ASTM G 154, UEAtc
Dimensional stability, %	< 0.3			UEAtc, ASTM D5147

All values given are subject to 5-20% tolerance. *Compound properties (Tested during manufacturing process.)