

# BITUPLUS P 4270

## APP Modified Bitumen Waterproofing Membrane

BITUPLUS P4270 bitumen membranes are plastomeric waterproofing membranes, manufactured from a rich mixture of bitumen and selected polymers (Atactic Poly Propylene) blended together to obtain excellent heat & UV resistant 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

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

### FIELDS OF APPLICATION

BBITUPLUS P4270 is used as waterproofing membrane on the following structures:

- ▶ Inverted Roofs & parapets.
- ▶ Terraces, balconies & patios.
- ▶ Sunken slabs.
- ▶ Bridges & tunnels.
- ▶ Airport aprons & ramp areas.

BITUPLUS P4270 membranes in tropical regions can also be used for waterproofing of below ground concrete structures like:

- ▶ Concrete foundations & footings.
- ▶ Basements.
- ▶ Pile heads.
- ▶ Swimming pools & water retaining structures (Externally).

### APPLICATION INSTRUCTION

Application procedures may vary slightly depending upon site conditions. The general recommended guidelines for the application of the waterproofing system are as follows:

#### Surface preparation

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

#### Priming

Apply POLYPRIME SB (Solvent based primer) @ 4-6 m<sup>2</sup>/lt. as per ASTM D 41 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 promote the adhesion between the membrane and the concrete surface. In addition to that the primer also acts as a binder for the dust which gets accumulated on the concrete surface even after cleaning.

#### 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 BITUPLUS P4270 membrane and aligning the side laps. Re-roll the roll halfway and stand on the unrolled portion to prevent shifting. Side overlaps should be a minimum of 100 mm and the end overlaps 150mm.

#### Torching

BITUPLUS P4270 membranes are installed by using a cylinder fed propane gas torch. Use of hand-held roofing torches 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 of the membrane. Begin torching the embossed polyethylene side of the rolled portion of the membrane. Proper torching procedure involves passing the torch flame in an "L" pattern applying about 75 percent of the heat across the coiled portion of the roll and 25 percent 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. 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 in 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 un-bonded areas must be lifted and re-torched. Do not attempt to reseal by torching the top surface of the membrane. Up stand: Flashing details are accomplished using cut pieces of BITUPLUS P4270 membrane in combination with appropriate prefabricated flashing components. The same side lap 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 (BITUPLUS G) shall be lapped with the base membrane and taken up on the parapet wall and tucked into a groove cut into the concrete. The grooves will be sealed with a suitable mastic sealant (BITUMASTIC).

## STANDARDS

BITUPLUS P4270 membranes conform and tested to the requirements of UEAtc 2001, ASTM and BS.

## STORAGE

BITUPLUS P4270 rolls whether loose or on pallets have to be stored vertically in a covered area and protected from UV and sunlight. Damage to the membrane may be caused due to improper storage and at high temperatures.

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## SAFETY PRECAUTIONS

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.

## DISPOSAL

BITUPLUS P4270 membranes are non-hazardous, non-flammable and therefore can be disposed into any regular disposal area. However, they should be disposed 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 tough.

## SUPPLY

BITUPLUS P 4270 1m x 10m, wt 40 kg.

POLYPRIME SB 20 lt. & 200 lt.

BITUBOARD 3.2mm 2m x 0.95m, wt 6.65 kg  
6.0mm 2m x 1m, wt 12.5 kg.

Apart from the information given here it is also important to observe the relevant guidelines and regulations of various organisations and trade associations as well as the respective standards. The aforementioned characteristics are based on practical experience and applied testing. Warranted properties and possible uses which go beyond those warranted in this information sheet require our written confirmation. All data given was obtained at an ambient and material temperature of +23°C and 50 % relative air humidity unless specified otherwise. Please note that under other climatic conditions hardening can be accelerated or delayed.

The information contained herein, particularly recommendations for the handling and use of our products, is based on our professional experience. As materials and conditions may vary with each intended application, and thus are beyond our sphere of influence, we strongly recommend that in each case sufficient tests are conducted to check the suitability of our products for their intended use. Legal liability cannot be accepted on the basis of the contents of this data sheet or any verbal advice given, unless there is a case of wilful misconduct or gross negligence on our part. This technical data sheet supersedes all previous editions relevant to this product.

## HEALTH & SAFETY

BITUPLUS P4270 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.

## TECHNICAL PROPERTIES

PROPERTIES	VALUES	TEST STANDARDS
Thickness, (mm)	4.0	DIN EN 1849-1
Mass per unit area, (kg/m <sup>2</sup> )	4.0-4.3	DIN EN 1849-1
Reinforcement (polyester), (g/m <sup>2</sup> )	270	DIN EN 1849-1
Coating Asphalt	APP Modified Asphalt	
Softening Point (R&B), (°C)	>150	ASTM D 36
Penetration at 25°C, (dmm)	12-25	ASTM D 5
Tensile Strength (L/T), (N/5cm)	1100/800	DIN EN 12311-1
Elongation at Break (L/T), (%)	40-50	DIN EN 12311-1
Shear Resistance at joints (L/T), (N/5cm)	>1100/800	DIN EN 12317-1
Tear Resistance (L/T), (N)	220/240	DIN EN 12310-1
Tear Resistance (L/T), (N)	450/550	ASTM D 5147
Puncture Resistance, (N)	>1000	ASTM E 154
Resistance to Static loading, (N)	Static : L25	DIN EN 12730
Resistance to leakage at joints @5 bar	No leakage	BS EN 12390
Resistance to hydro-static pressure @5 bar	No leakage	BS EN 12390
Water Absorption, (%) (BSP)	<0.2	ASTM D 5147
Heat Resistance at 120°C	No Flow	DIN EN 52 123
Low temperature flexibility @ 0°C	No crack	DIN EN 52 123
Resistance to Aging	No Deterioration	ASTM G 53
Dimensional Stability, (%)	<0.3	DIN EN 1107-1

Manufactured in G.C.C.

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