



# TPG

## Double Reinforcement APP Modified Bitumen Membrane

### Introduction

TPG membranes are made with a double reinforcement of non woven polyester and fiberglass. The fiberglass is set on top of the polyester to grant better UV resistance and high dimensional stability, when compared to the single reinforced membrane.

TPG is recommended in the waterproofing works where severe stress could be present.

### Description:

TPG membranes 4 or 5 mm thick are manufactured from bitumen modified with atactic polypropylene (APP). The compound is a mixture of distilled bitumen plastomers and elastomers which gives ultimate elastomeric results and high flexibility at very low temperature of -10 °C, and the ability to withstand high temperatures.

Membrane is reinforced by two carrier mats, 200 g/m<sup>2</sup> non-woven polyester and 80/m<sup>2</sup> fiberglass. The non-woven fabric gives the superior mechanical resistance to stand fatigue and tear caused by different superficial movements of adjoining layers, while the inorganic reinforcement gives the membrane outstanding dimensional stability.

The underside is finished with burn-off polyethylene film, and the upper side can be either smooth or sand.

### Advantages:

- High dimensional stability.
- High resistance to thermal aging.
- High puncture resistance.
- Hydrostatic pressure resistance.
- Load strain resistance.

### Application:

- To fix the sheet to the substrate, use a propane gas burner to melt off the polyethylene film and a thin layer of bitumen while unrolling and laying the membrane.
- Side laps 100 mm and end laps 150 mm. Smoothen the overlaps with a hot round-tipped trowel.
- Excessive heating may damage the reinforcement.
- The membrane maybe loosely laid, partially or fully bonded, depending on the structure and the specifications.

### Field of Application:

TPG membranes are designed for use in heavy duty applications such as underground foundations, basements, retaining walls, tunnels, reservoirs, anti-earthquake foundation, multi-story car parks, etc. And where toughness, dimensional stability and impact resistance are required.



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## Technical Specifications

Property	Result	Test Method
Dimension, m/roll	1x10	
Thickness, mm	4 or 5	ASTM D5147
Weight per roll, Kg	48 or 58	UEAtcMOAT 30
Reinforcement	Nonwoven spunbonded polyester 200 g/m <sup>2</sup> and Reinforced fiberglass mat 80 g/m <sup>2</sup>	BS 747
Penetration at 25°C, dmm	20 ±10	ASTM D5
Softening point, °C	150 ±10	ASTM D36
Heat Resistance	No flowing after 2 hours at 140 °C.	UEAtcMOAT 30
Cold Pliability	No cracking at -10 °C	UEAtc MOAT 27
Tensile Strength, N/5cm		ASTM D5147 & D146
Long.	850	
Transv.	650	
Ultimate Elongation, %		ASTM D146
Long.	40	
Transv.	40	
Tear Strength, N.		ASTM D4073
Long.	550	
Transv.	470	
Water Absorption, %.	<1	ASTM D5147
Static Indentation Resist	Not perforated at 25 kg. (Class L4)	BS 747
Water Pressure Resistance	No leakage at 1000 mm water head/24 hrs	UEAtc MOAT 27
Water Vapor Transmission	0.2 g/m <sup>2</sup> per day	ASTM E96
Resistance to Chemicals	Resistant to alcohol, salt solutions, dilute acids and alkalies.	

- Acceptable deviation according to UEAtc. , ASTM D6164 or ASTM D6222
- This Technical Data is the average results of tests, measurements and trials carried out by LAMA's own laboratory and RSS laboratories according to international standards such as ASTM, B.S and UEAtc.
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