**POLYGARD** are APP modified bitumen reinforced roofing and waterproofing membranes for general waterproofing applications.

**DESCRIPTION**

**POLYGARD** membranes are made by saturating and coating a reinforcement core with a homogeneous thermoplastic blend of APP (atactic polypropylene), distilled bitumen and stabilizers. The mixture is carefully produced under controlled conditions to ensure its thermal stability at high temperatures and flexibility at low temperatures. **POLYGARD** membranes are impermeable to water & easy to apply.

**QUALITY ASSURANCE & MATERIAL WARRANTY**

Imperbit Membrane Industries’ Management system is registered to ISO 9001 standards & all **POLYGARD** membranes carry a 10 year material warranty. In addition to stringent regular test by IMI laboratory, our products are also tested periodically by independent laboratories.

**SURFACE FINISH AND SIZE OF ROLL**

The top surface of the membrane is covered with a thin layer of PE film or fine sand. The bottom surface is covered with printed IMI design film. The membrane are produced in thickness of 2.6, 3, 4 & 5 mm and in a standard length of 10 mtrs and 1 mtr width.

**REINFORCEMENT**

A variety of reinforcement cores are used in the production of the **POLYGARD** range, these include 180 gr./m² & 250 gr./m² spun bond polyester, fiberglass tissue and a combination of the two.

**USES**

**POLYGARD – DPC/Basesheet** membranes are ideal for general use in civil construction as a damp-proof layer or as a base sheet under cap sheets in exposed or inverted roofing systems. **POLYGARD-DPC** are available in thickness of 2.6mm & 3.0mm reinforced with 60 gr./m² GLASS FIBRE TISSUE.

**POLYGARD** membranes are ideal for general use in single or multi-layer systems. They may be used in low slope concrete roofs, balconies, multi storey car parks, for lining sewerage canals, sub-grade structures and any concrete or cemented flat surface that needs waterproofing.

**POLYGARD - DR (DOUBLE REINFORCE MEMBRANES)** are used for large roof decks where dimensional stability of the membrane is important. The combination of polyester and fibre glass tissue reinforcements ensures superior shape and dimensional stability under severe cyclic conditions.

**POLYGARD – 250** membranes are recommended for heavy duty applications.

**TOOLS FOR FIXING THE MEMBRANE**

Gas torch for welding, related cylinder, knife for trimming the membrane, a trowel with a rounded tip, marking aids and gloves.

**APPLICATION**

The surface to be waterproofed must be completely cleaned and free of dust, oil, protruding nibs, nails etc. A coat of IMI Concrete Primer is then applied to the concrete surface at the rate of 200 – 300 gr/m². The primer must be allowed to dry completely before fixing the membrane. **POLYGARD** waterproofing membranes are fixed by torch welding the underside. The membrane rolls are lined up and spread open over the area to which they are to be fixed, starting at the lowest point on a roof-deck. The rolls are laid so that they overlap each other by at least 10cms along the side lap, lap-joints should shed water towards drains. The membranes are then rolled back without changing the given orientation. They are then unrolled once again while heating the underside sufficiently to cause surface melting. End laps should be a minimum 15 cms. Avoid excessive and uneven application of heat. The lap joints should be heated from the top to produce a thin bead of molten bitumen at the seam; the bead is then smoothened out with the trowel, ensuring a properly welded joint.

**EXPOSED ROOFING SYSTEM**

For exposed application, skirting and flashings, **POLYGARD** membranes are used. These are produced with a self-protecting layer of natural or colored slate flakes. The membranes are provided with a selvedge 10cms wide that is granule-free. This facilitates the forming of lap joints. End of roll joints are made by scraping off 15cm of mineral flakes or heating 15 cms of the mineral surface sufficiently to press-in the slate and expose the bitumen. The next roll is then torched to the bitumen of the exposed area.
### TECHNICAL DATA FOR POLYGARD RANGE

<table>
<thead>
<tr>
<th>Properties</th>
<th>POLYGARD DPC/Base sheet</th>
<th>POLYGARD - 4F</th>
<th>POLYGARD</th>
<th>POLYGARD DR</th>
<th>POLYGARD 250</th>
<th>Method of Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reinforcement core</td>
<td>60 gr./m² Glass fibre tissue</td>
<td>60 gr./m² Glass fibre tissue</td>
<td>180 gr./m² Polyester</td>
<td>180 gr./m² Polyester + 60 gr./m² Glass fibre tissue</td>
<td>250 gr./m² Polyester</td>
<td>UEAtc , ASTM D 5147</td>
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<tr>
<td>Nominal thickness of membrane</td>
<td>2.6 &amp; 3</td>
<td>4</td>
<td>3, 4 &amp; 5</td>
<td>4 &amp; 5</td>
<td>4 &amp; 5</td>
<td>UEAtc , ASTM D 5147</td>
</tr>
<tr>
<td>Tensile Strength N/5cm</td>
<td>Longitudinal 300</td>
<td>400</td>
<td>800</td>
<td>880</td>
<td>1000</td>
<td>UEAtc</td>
</tr>
<tr>
<td></td>
<td>Transversal 200</td>
<td>200</td>
<td>500</td>
<td>620</td>
<td>850</td>
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<tr>
<td>Tensile Strength kN/m</td>
<td>Longitudinal 4</td>
<td>6</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>ASTM D 5147</td>
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<tr>
<td></td>
<td>Transversal 3</td>
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<td>9</td>
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<td>15</td>
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<td>Elongation %</td>
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<td>40</td>
<td>40</td>
<td>45</td>
<td>UEAtc , ASTM D 5147</td>
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<tr>
<td></td>
<td>Transversal 3</td>
<td>3</td>
<td>45</td>
<td>42</td>
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<tr>
<td>Tear Strength (N)</td>
<td>Longitudinal 150</td>
<td>200</td>
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<td>480</td>
<td>550</td>
<td>ASTM D 5147</td>
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<tr>
<td></td>
<td>Transversal 100</td>
<td>150</td>
<td>300</td>
<td>350</td>
<td>450</td>
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<tr>
<td>Puncture resistance (N)</td>
<td>250</td>
<td>300</td>
<td>800</td>
<td>880</td>
<td>1000</td>
<td>ASTM E 154</td>
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<tr>
<td>Resistance to Hydrostatic pressure</td>
<td>&gt;4 bar(&gt;40M)</td>
<td>&gt;7 bar(&gt;70M)</td>
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<td></td>
<td></td>
<td>DIN 1048, ASTM D 5385</td>
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<tr>
<td>Flexibility at low temperature</td>
<td>- 2° C</td>
<td>UEAtc</td>
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<td>Softening Point *</td>
<td>155° C</td>
<td>UEAtc , ASTM D 36</td>
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<td>Penetration @25° C *</td>
<td>20 dmm</td>
<td>UEAtc , ASTM D 5</td>
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<td>Heat resistance @ 100°C</td>
<td>No Flow</td>
<td>UEAtc</td>
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<td>Water absorption @ 24 hrs.</td>
<td>&lt; 0.2 %</td>
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<td></td>
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<td>ASTM D570</td>
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* Compound Properties (Tested during manufacturing process)

The technical data given here are the average results of tests carried out in our laboratory on the POLYGARD membrane. IMI reserves the right to change or modify the data without prior notice. All reasonable care has been taken in compiling the data that to the best of our knowledge is accurate and true. All recommendations are made in good faith. POLYGARD membranes are warranted to be free from manufacturing defects for a period of 10 years. No responsibility can be accepted by us and no warranty is implied with regard to any of the recommendations made in this data sheet, since the conditions of actual use and the labour involved are beyond our control.

POLYGARD membranes are not affected by chlorides, sulphates & phosphates as well as dilute acids found in ground water.

**HANDLING PRECAUTIONS:** POLYGARD membranes have no health hazard when used with our standard application recommendations. IMI CONCRETE primer contains a flammable solvent with flash point of 42°C. Use primer in well ventilated areas away from sources of direct heat or ignition. Inhalation must be avoided and the use of protective clothing, rubber gloves, goggles and barrier cream is recommended. Do not use solvent to clean skin. After work clean hands with soap and warm water or suitable mild detergent. Obtain immediate medical advice if redness or skin irritation appears. In case of mouth or eye contact, flush immediately with fresh water and seek medical advice.

**Storage:**
Rolls must be kept up right at all times, in a covered well-ventilated storage area, away from sources of direct heat. If ambient temperatures at storage site fall below 15°C, the rolls should be exposed to warmer temperatures of 15°C to 40°C for periods of upto 2 hours prior to use to facilitate unrolling of the membranes. If stacking is necessary, ensure that rigid sheet of plywood is placed between the pallets. Do not stack more than 2 high. POLYGARD membrane has a shelf life of 12 months from the date of production, if stored in a cool, dry store in original unopened packing.

**Packing Configuration:**
3P-PBS/SAND 28 rolls per pallet
4P-F-PBS/SAND/DR 23 rolls per pallet
4P MINERAL 20 rolls per pallet
5P-PBS/MINERAL/DR 16 rolls per pallet

Nominal roll length for above products = 10 mtrs 
For POLYGARD DPC- 20 rolls per pallet and 20 mtrs length

**Indicative Loading Capacity for 4mm thickness:**
552 Rolls per 40 ft Trailer / 468 Rolls per 20 ft Container

**Product generic name:**
APP XM-3P-PBS/SAND
APP XM-4P/F-PBS/SAND
APP XM-4P/F-MINERAL
APP XM-5P-PBS/MINERAL

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‡ This technical data sheet supersedes all previous publications pertaining to this product