IMPERMAX ST

Liquid polyurethane waterproofing membrane

DESCRIPTION

One component liquid waterproofing composition, after polymerization gives an elastomeric, cold-applied polyurethane membrane. Slightly thixotropic, low sagging product. The membrane cures in a continuous and elastic form, as a totally adhered layer. This waterproofing layer guarantees total watertightness and withstands building movements.

APPLICATION

- Balconies, terraces.
- Balts (showers), kitchens and difficult access spots.
- Flooring with light pedestrian traffic.
- Stairs, stadiums, stands Krypton Chemical for further details.
- Canals and water tanks

CERTIFICATIONS


PROPERTIES

Elastic and seamless coating, weather resistant and excellent bonding. No reinforcement usually required except at critical points.

TECHNICAL DATA

INFORMATION ON THE PRODUCT BEFORE APPLICATION

Chemical description: Solvent borne single-component aromatic polyurethane

Physical state: Liquid

Packaging: Metal cans: 6 / 10 / 25 kg

Non-volatile content (%): 85%

Flash point: 45°C (ASTM D 93)

Available colour: See available colours in the current price list

Density: 1,3 g/cm³ (20°C)

VISCOSITY

<table>
<thead>
<tr>
<th>Temp (°C)</th>
<th>Rpm</th>
<th>Viscosity (MPa/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>100</td>
<td>10000</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
<td>20000</td>
</tr>
<tr>
<td>35</td>
<td>100</td>
<td>5000</td>
</tr>
<tr>
<td>35</td>
<td>5</td>
<td>10000</td>
</tr>
</tbody>
</table>

VOC (g/L %)

VOC class as per 2004/42/EC

VOC content: 184 g/l

Product subclass: I I Solvent based single-component performance products

Limit from 01/01/2010: 500 g/l

Pot life: 4 a 6 hours (1 kg, 20°C, 50% hr)

Storage: Keep at a temperature below 30°C, away from ignition sources and moisture

Use before: Product may be used up to 12 months after manufacture in its sealed original container (Note: 9 months if white or black pigmented).

INFORMATION ON THE FINAL PRODUCT

Final state: Solid elastomeric membrane

Colour: Depending on the chosen pigmentation

Hardness (shore): 65-70A, (ISO 888)

Density of film: 1,35 g/cm³

Mechanical properties

<table>
<thead>
<tr>
<th>Elongation (%)</th>
<th>Stress (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2.0</td>
</tr>
<tr>
<td>200</td>
<td>2.8</td>
</tr>
<tr>
<td>300</td>
<td>3.0</td>
</tr>
<tr>
<td>400</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Maximum elongation: 421%

Tensile stress: 3.4 MPa

(EN ISO 527-3)

Chemical resistance: Permanent contact.

(0=worst, 5=best)

Chemical Test conditions Result

Water 24h, 25°C 5

Salt water 24h, 90°C 5

Hydrochloric acid solutions 200 g/l, 24h, 25°C 4

3 g/l, 24h, 25°C 5

Sodium hydroxide 40 g/l, 24h, 25°C 5

Acetone 24h, 25°C 1

Ethyl acetate 24h, 25°C 3

Xylene 24h, 25°C 5

Motor oil 24h, 25°C 5

Brake Fluid 24h, 25°C 2

Adhesion

Surface Force (MPa)

Concrete 2.0

Ceramics 2.6

Polyurethane Foam 1.4

UV resistance: Products includes ant UV additives. A colour change is expected due to its aromatic polyurethane composition. This discoloration does not affect its properties.

Water vapour permeability: μ=1000 (EN 1931)

20 g/m² day

Tear strength: 14 N/mm (ISO 34, -1, Method B)

Abrasion: 14,3 mg (Taber, 1000 cycles, CS-10, UNE 48250)

Termal resistance: Stable up to 140°C

Fire resistance: B roof= I (External fire exposure test)

External fire exposure test (according to BS 476:Part 3, 2004): Category EXT.F.AC

SUPPORT REQUIREMENTS

In order to achieve a good penetration and bonding, support must be:

1. Flat and levelled
2. Compact and cohesive (pull off test should include a minimum resistance of 1.4 N/mm²).
3. Even and regular pedestrian traffic.
4. Free from cracks and fissures. If any, they must be previously repaired.
5. Clean and dry, free of dust, loose particles, oils, organic residues or laitance

RECOMMENDED ENVIRONMENTAL CONDITIONS

<table>
<thead>
<tr>
<th>Temp (°C)</th>
<th>Rpm</th>
<th>Stress (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>100</td>
<td>10000</td>
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<tr>
<td>20</td>
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<td>35</td>
<td>100</td>
<td>5000</td>
</tr>
<tr>
<td>35</td>
<td>5</td>
<td>10000</td>
</tr>
</tbody>
</table>
Support temperature should be between 0°C and 40°C. At higher temperatures, specific precautionary measures must be taken. Please follow manufacturer advice.

Air temperature must be between 0°C and 30°C. High moisture conditions can lead to bubble formation under the membrane surface.

APPLICATION GUIDELINES

If needed, the product may be thinned with up to 10% of Rayston solvent, as a viscosity adjustment. Never use universal or unknown solvents (e.g. white spirit or alcohols). Mix preferably by hand without mechanical means.

Apply by roller, brush, spreader or airless equipment. It is useful to apply in 2 differently coloured coats, at 1 kg/m² each. Although not strictly necessary, it is strongly recommended to use entirely the product of the container. If there is some product left, ensure it is completely sealed after use.

Use a spiked roller immediately after spreading in order to reduce bubbling.

CURING TIME

Curing time is dependent on the environmental conditions. Curing rate increases with temperature and humidity rises. The following table gives a rough estimation of the curing time under diverse conditions for a 1 mm coat.

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>RH (%)</th>
<th>Dry to touch (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>60</td>
<td>30-35</td>
</tr>
<tr>
<td>35</td>
<td>12</td>
<td>8-9</td>
</tr>
<tr>
<td>35</td>
<td>50</td>
<td>4</td>
</tr>
</tbody>
</table>

RETURN TO SERVICE

Always conditions the membrane achieves up to 90% of its final properties in 3 days. Usually walking time is 1 or 2 days. Final hardness is not achieved until 10 or 15 days. It is preferable to wait this time before contact with water is allowed.

TOOL CLEANING, CLEANING AND MAINTENANCE

Liquid Impermax ST can be cleaned with Rayston Solvent, acetone and alcohols. Once hardened, it cannot be dissolved.

A maintenance work must be carried out regularly on the treated roofs according to the intended use.

This work includes the following tasks:

- Leaf removal
- Grass, dirt, moss and other vegetation removal
- Keeping storm water system in good working order.
- Ensure gratings are in place, in order to prevent gutter obstructions.
- Verification of possible damages due to improper use.

If aesthetic appearance of the roof is an important issue, it is essential to regularly clean the surface with water (some mild detergent may be added), according to the use.

It may be necessary to reapply decorative layers (Impertrans, Colodur) if they are worn out due to traffic, weather, corrosion, etc.

For stain removal, a surface treatment with Rayston solvent, acetone or isopropyl alcohol may be attempted. Strong acids are totally inadequate. Some solvents may damage the membrane. If this happens, the affected area has to be cut and repaired with a new Impermax ST application.

FAQ

<table>
<thead>
<tr>
<th>Problem</th>
<th>Question</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suitable solvent?</td>
<td>Some thinning solvents are not suitable</td>
<td>Apply a second coat using only Rayston Solvent as a diluant</td>
<td></td>
</tr>
<tr>
<td>Does not cure</td>
<td>Too diluted</td>
<td>An excess of solvent slows the curing rate</td>
<td>Use less diluted product</td>
</tr>
<tr>
<td>Temperature?</td>
<td>Normal at low temperatures</td>
<td>Below 15°C use of accelerators is advised</td>
<td></td>
</tr>
</tbody>
</table>

SAFETY

Impermax ST contains isocyanates and flammable solvents. Always follow the instructions provided in the material safety data sheet and take the precaution described there. As a general rule, a suitable ventilation must be ensured and all ignition sources must be avoided. This product is intended to be used only for the uses and in the way here described. This product is to be used only by industrial or professional users. It is not suitable for DIY-type uses.

ENVIRONMENTAL PRECAUTIONS

Empty containers must be handled taking the same precautions as if they were full. Containers must be considered as hazardous waste, to be transferred to an authorized waste manager. If there is some residual product in the containers, do not mix it with other substances without checking for possible dangerous reactions.

OTHER INFORMATION

The information contained in this DATA SHEET, as well as our advice, both written as verbal or provided through testing, are based on our experience, and they do not constitute any product guarantee for the installer, who must consider them as simple information.

We recommend to study deeply all information provided before proceeding to the use or application of any of our products, and strongly advise to conduct tests “on-site” in order to determine their convenience for a specific project.

Our recommendations do not exempt of the obligation of installers to deeply study the right application method for these systems before use, as well as to conduct any preliminary tests as possible should any doubt arise. The application, use and processing of our products are beyond our control, and therefore under the exclusive responsibility of the installer. In consequence, the installer will be the only responsible of any damage derived from the partial or total in-observation of our indications, and in general, of the inappropriate use or application of these materials.

This data sheet supersedes previous versions.