WHERE TO USE
Waterproofing horizontal and vertical surfaces of underground structures before pouring concrete such as:

- carparks and garages;
- underground areas in general;
- swimming pools, basins and storage tanks;
- underpasses.

Mapeproof FBT may be applied underneath foundation slabs and against diaphragms, pile walls, sheet piling and other retaining structures for excavation work.

ADVANTAGES
- Mapeproof FBT is made up of a synthetic membrane, laminated with non-woven polypropylene fabric which, once concrete has been poured, forms a monolithic bond with the concrete and remains perfectly bonded over time.
- Mapeproof FBT is a waterproofing system that becomes fully bonded to poured concrete and prevents water from migrating laterally between the foundation structure and the membrane.
- Completely watertight overlaps.
- Mapeproof FBT is cold-applied and no heat and/or naked flames are required. It is positioned before placing the steel reinforcement and pouring the concrete and does not require a protective layer.

- Easy to install: Mapeproof FBT is extremely flexible and is easy to shape during installation so that it follows the form and geometry of the substrate.

TECHNICAL CHARACTERISTICS
Mapeproof FBT is a waterproofing membrane made up of a synthetic FPO sheet tightly coupled to a layer of non-woven fabric. When it comes into contact with poured concrete it forms a tough bond with the concrete.

Mapeproof FBT is resistant to natural agents and aggressive substances normally found in groundwater and in the soil. It is highly durable and resistant to ageing from UV rays while normal site activities are being carried out.

Mapeproof FBT forms a highly effective barrier against groundwater, moisture in the ground, radon and methane.

Mapeproof FBT complies with the requirements of the standard EN 13967 (“Flexible sheets for waterproofing – Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet”).

Elements of the system
Mapeproof FBT system must be used together with other accessory products to guarantee the watertightness of all construction details that are typically found on a construction site. The products used in the system are as follows:
Vertical retaining walls prior to pouring concrete
Before applying the sheets against diaphragms or piles, hydro-blast the surfaces and level off the installation bed and the ends of the tie-rods, which should not be too rough or have large hollows, with Mapegrout T60 fibre-reinforced, controlled-shrinkage, sulphate-resistant, thixotropic mortar for restoring concrete admixed with 0.25% of Mapecure SRA. When applying the sheets against piles, these only need to be carefully hydro-blasted. Then waterproof the side walls by applying Mapeproof FBT, starting from the top of the walls and working downwards until it joins with the strip at the bottom of the walls, applied before pouring the foundation slab. Once the waterproofing system has been installed, check the overlaps and joints before pouring the concrete to make sure they are all well bonded. If any of them are poorly bonded, apply more Mapeproof FBT Tape to form a better bond.

Between each pour of concrete, the construction joint that forms must be sealed with Idrostop, hydro-expanding acrylic profile to be placed at the midpoint of the construction joint.

RECOMMENDATIONS
• Do not apply Mapeproof FBT if there is water or standing water.
• If Mapeproof FBT is accidentally damaged while carrying out normal site activities, repair the damaged area by inserting an off-cut of Mapeproof BA Tape under the area (on the regulating layer/retaining wall side) and seal the top of the damaged area with a piece of Mapeproof FBT Tape.
• Concrete must be poured over Mapeproof FBT within 5 weeks of application.

PACKAGING
Mapeproof FBT is available on pallets with 15 x 20 m² rolls (width of roll 1 metre).

STORAGE
Mapeproof FBT may be stored for 24 months if kept in its original packaging in a dry place at +10°C to +30°C. Do not stack the pallets during transport and storage.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION
Mapeproof FBT is an article that does not require a Safety Data Sheet according to current European regulations (Reg. 1906/2007/EC - REACH). When using this product it is recommended to wear gloves and safety goggles and to follow the safety guidelines for the area in which work is carried out.

PRODUCT FOR PROFESSIONAL USE.

WARNING
Although the technical details and recommendations contained in this product data sheet correspond to the best of our

– Mapeproof FBT Tape adhesive tape to form sealed joints over the top of adjacent sheets, also available in the W version for installation in winter;
– Mapeproof SA Tape adhesive tape to form sealed joints under adjacent sheets;
– Mapeproof BA Tape watertight, double-sided adhesive sheet membrane which is placed along fillet joints between horizontal and vertical surfaces and between adjacent vertical surfaces;
– Mapeproof Fix Tape double-sided adhesive tape to hold sheets in place during installation.

APPLICATION PROCEDURE
Application of the product
Substrates must be sound and stable and may also be damp, but there must be no standing water. The surfaces on which Mapeproof FBT is to be applied must be even and have no large protruding areas or hollows.
Substrates suitable for applying Mapeproof FBT include concrete, rigid insulating panels and wooden panels.

Application of the product
Horizontal surfaces
Pour a poor concrete on the ground to create an even layer on which to apply the membrane. Place Mapeproof FBT over the horizontal surface and run it up along the side walls to form a strip wider than the thickness of the foundation slab. Overlap the sheets lengthways so that the self-adhesive edges hold them in place. Use Mapeproof FBT Tape and Mapeproof SA Tape to join the ends between each sheet as shown in figure 1. Before placing the steel reinforcement and pouring the concrete, make sure all the joints are well bonded. If any of the joints are poorly bonded, apply more Mapeproof FBT Tape to form a better bond.

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WARNING
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### TECHNICAL DATA (typical values)

#### PRODUCT IDENTITY

| Appearance/material: | Side in contact with poured concrete: white non-woven PP fabric  
|                      | Side in contact with substrate: white synthetic FPO sheet |

| Width of roll (m):  | 1 (0.9 + 0.1 of self-adhesive edging) |
| Nominal thickness (mm): | 1.7 (thickness of FPO sheet 1.2) |
| Weight (kg/m²):     | ≥ 1.3 |

#### APPLICATION DATA

| Application temperature: | +5°C to +35°C |

#### FINAL PERFORMANCE

| Watertightness (no lateral migration) according to ASTM D 5385 mod. (bar): | ≥ 7 |
| Radon gas diffusion coefficient (m³·s⁻¹): | 2.14 E-13 |
| Permeability to methane gas (ISO 7229) (ml/m²·24 h): | 110 |
| Resistance to root penetration according to CEN/TS 14416: | no penetration or perforation |

<table>
<thead>
<tr>
<th>Performance characteristic</th>
<th>Test method</th>
<th>Requirements according to EN 13967</th>
<th>Performance of Mapeproof FBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watertightness:</td>
<td>EN 1928 (method A)</td>
<td>24 hours at 60 kPa pass</td>
<td></td>
</tr>
<tr>
<td>Visual defects:</td>
<td>EN 1850-2</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Tensile strength (N/mm²):</td>
<td>EN 12311-2</td>
<td>Value declared by manufacturer</td>
<td></td>
</tr>
<tr>
<td>Elongation at failure (%):</td>
<td>EN 12310-1</td>
<td>≤ 500</td>
<td></td>
</tr>
<tr>
<td>Water vapour permeability S₀ (m):</td>
<td>EN 1931 (method B)</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Resistance to static loading (kg):</td>
<td>EN 12730</td>
<td>Method A and Method B, 20 kg load: pass</td>
<td></td>
</tr>
<tr>
<td>Resistance to tearing (nail shank) (N):</td>
<td>EN 12317-2</td>
<td>longitudinal: ≥ 600</td>
<td>pass</td>
</tr>
<tr>
<td>Joints strength (N/50 mm):</td>
<td>EN 12691</td>
<td>≥ 300</td>
<td></td>
</tr>
<tr>
<td>Resistance to impact:</td>
<td>EN 1296, test in compliance with EN 1928</td>
<td>Impermeability after 24 hours at 60 kPa</td>
<td>pass</td>
</tr>
<tr>
<td>Durability, expressed as watertightness after artificial ageing:</td>
<td>EN 1847, test in compliance with EN 1928</td>
<td>Impermeability after 24 hours at 60 kPa</td>
<td>pass</td>
</tr>
<tr>
<td>Durability, expressed as watertightness after exposure to chemicals:</td>
<td>EN 1548, test in compliance with EN 1928</td>
<td>Impermeability after 24 hours at 60 kPa</td>
<td>pass</td>
</tr>
<tr>
<td>Bitumen compatibility:</td>
<td>EN 15501-1</td>
<td>Euroclass</td>
<td>E</td>
</tr>
<tr>
<td>Reaction to fire:</td>
<td>EN 13501-1</td>
<td>Euroclass</td>
<td>E</td>
</tr>
</tbody>
</table>
knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application. In every case, the user alone is fully responsible for any consequences deriving from the use of the product.

Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

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All relevant references for the product are available upon request and from www.mapei.com