

MAPETHENE LT

Self-adhesive bitumen waterproofing membrane for underground structures suitable for application at temperatures down to -5°C



WHERE TO USE

Mapethene LT is a self-adhesive bitumen membrane made from a mixture of bitumen and special polymers bonded to a double laminated film of high density polyethylene (HDPE).

Mapethene LT is used to waterproof the outside of concrete, brick and block-built foundations, cellars and underground garages.

ADVANTAGES

- **Mapethene LT** is applied cold in complete safety, without using flames.
- Highly flexible; simple, quick and easy to apply.
- Adheres perfectly to substrates. Thanks to the use of **Mapethene Primer W** and **Plastimul Primer SB** it may be applied at low temperatures and on slightly damp substrates.
- Vulcanized side strip to improve water-tightness at overlaps.
- Good crack-bridging properties once applied.
- Impermeable up to a pressure of 8 bar.
- Preformed membrane; more control on its thickness during production and total uniformity of the mix.
- **Mapethene LT** membranes are impermeable to radon and methane.

TECHNICAL CHARACTERISTICS

Mapethene LT is a self-adhesive preformed bitumen waterproofing membrane made from a special mixture of bitumen admixed with polymers. When bonded to high-strength HDPE film, it forms an impermeable sheet resistant to tearing. The special mixture used to make **Mapethene LT** allows the product to be applied in the winter at temperatures as low as -5°C. In hot weather, use **Mapethene HT**, which has a special bitumen mix that has been specifically developed for application in hot conditions and is just as easy to apply.

Once it has been applied **Mapethene LT** is immediately waterproof, including sudden rainfall.

Mapethene LT does not contain solvent.

Mapethene LT meets the requirements of EN 13969 ("*Bitumen membranes to prevent rising damp from the ground*") and EN 14967 ("*Bitumen membranes for walls to prevent rising damp from the ground*").

Mapethene LT may be used to waterproof underground structures in compliance with DIN 18533 part 2, class W1-E (moisture from the ground) and class W4-E (rainwater or rising damp in walls in contact with the ground).

RECOMMENDATIONS

Do not use **Mapethene LT** in the following cases:

- during rainy weather;
- on substrates with condensation or free-standing water on the surface;
- without a protective layer if exposed to direct mechanical loads;
- transport and store **Mapethene LT** vertically.

APPLICATION PROCEDURE

Substrate preparation

Mapethene LT may be applied on concrete, solid bricks and vibro-compressed concrete blocks.

Substrates must be flat, sound and clean. Remove cement laitance, loose and crumbling parts and traces of dust, grease and form release agents with high pressure water jets and wait until all the water has dried off. Completely remove all traces of any old waterproofing layers.

If the reinforced cement structure to be waterproofed has gravel clusters or other irregularities, remove them by hand or power tools or by hydro-demolishing. Carefully clean any exposed pieces of rebar, treat them with a coat of **Mapefer 1K** anti-corrosion cementitious mortar and fill all gaps and demolished areas with **Planitop Smooth&Repair R4** quick-setting, compensated-shrinkage, thixotropic cementitious structural mortar or a suitable product from the **Mapegrout** line of mortars.

For application on the surface of bricks or blocks, on the other hand, completely remove all traces of mortar protruding from between the blocks, skim over any defects and grout any gaps in the joints with **Mapegrout 430** fine-textured thixotropic mortar or **Mapewall Render & Strengthen** high strength, natural hydraulic lime-based rendering and masonry mortar.

Then blend in all the corners between the foundations and walls and between adjacent vertical walls with the same products recommended to repair the surfaces and round off any sharp edges or corners.

Seal structural joints with **Mapeband TPE** tape bonded to the substrate with **Adesilex PG4** epoxy adhesive broadcast with **Quartz 0.5**.

After preparing the substrate as specified, apply a coat of **Mapethene Primer**, one-component, solvent-free bitumen emulsion. As an alternative at low temperatures, it is also possible to use **Mapethene Primer W** one-component, ready-mixed primer or **Plastimul Primer SB** high performance, quick-drying, solvent-based bitumen primer. The consumption rate for these types of primer varies according to the absorbency of the substrate and is generally around 150-200 g/m².

Application

Any through objects on horizontal and vertical substrates must be sealed using two pieces of **Mapethene LT** cut to shape to form a collar between the object passing through the surface and the substrate, as shown in the figures 1, 2 and 3.

When applying the membrane on horizontal surfaces, remove the first 20 cm of silicone film, line up the roll in the direction it is to be applied and unroll the **Mapethene LT**. Remove the film as you unroll the membrane so that it adheres evenly to the substrate. Joints between adjacent rolls and pieces of membrane must overlap by at least 5 cm and the vulcanized strip along the outer edge of the **Mapethene LT** will help guarantee the seal even further. Line up the membrane on the HDPE film on the roll of membrane already applied, remove the protective strip from the vulcanized strip and bond the next roll of membrane. Make sure the joints between the pieces of membrane are staggered and carefully go over the overlaps with a rubber roller.

When applying the membrane on vertical surfaces, we recommend cutting **Mapethene LT** according to the height of the surface to be waterproofed. Remove around 30 cm of silicone film, line up the sheet according to the direction it is to be applied and bond it to the substrate starting from the highest point. Then apply the **Mapethene LT**, making sure there is an overlap of at least 5 cm, as when applying the membrane on horizontal surfaces.

To prevent damaging the upper edge of the membrane, we suggest applying **Mapeband SA** self-adhesive butyl tape with alkali-resistant, non-woven fabric backing between the **Mapethene LT** and the substrate.

Carry out localised repairs to areas that have been accidentally damaged with pieces of **Mapethene LT** cut from the roll of membrane.



Figure 1 - First piece of Mapethene LT to be cut to suit the diameter of the member passing through the surface

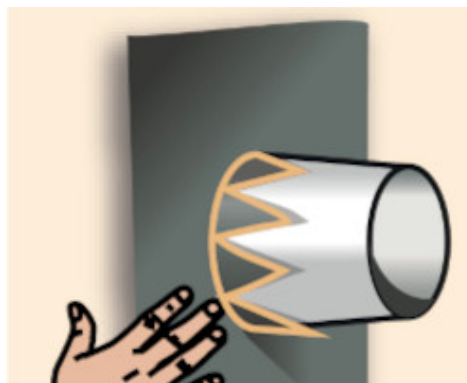


Figure 2 - Placing the first piece around the member

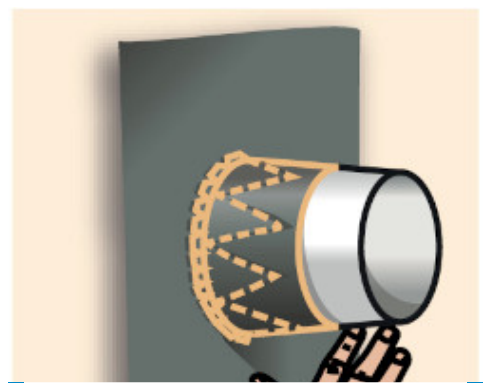


Figure 3 - Placing a second piece of Mapethene LT to form a collar around the member

Protecting the waterproofing layer

Within 48 hours of applying **Mapethene LT**, protect all waterproofed surfaces with a protective drainage membrane, such as **Polyfond Kit Drain** made by Polyglass S.p.A., which protects **Mapethene LT** when holes and trenches are filled in.

CLEANING

Clean hands with lukewarm water and tools with water or thinners.

PACKAGING

Supplied in 20 m² rolls (width 1 m) packed in a cardboard box.

STORAGE

Mapethene LT may be stored for 12 months in its original packaging. Protect from freezing weather.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapethene LT is an article and, according to current European norms and regulations (Reg. 1906/2007/CE - REACH), does not require a Safety Data Sheet. When using this product it is recommended to use protective gloves and goggles and to carefully follow all safety guidelines for the area in which work is carried out.

PRODUCT FOR PROFESSIONAL USE.

Mapethene LT: <i>flexible bitumen waterproofing membrane in compliance with EN 13969 and EN 14967 standards</i>			
TECHNICAL DATA (typical values)			
PRODUCT IDENTITY			
Width (mm):	1000 (975 + 25 vulcanised strip)		
Thickness (mm):	1.5		
Weight (kg/m ²):	1.5		
APPLICATION DATA			
Application temperature:	-5°C to +20°C		
FINAL PERFORMANCE			
Impermeable to water (bar):	8		
Radon gas diffusion coefficient (m ² s ⁻¹):	1.49 E-13		
Permeability to methane gas (ISO 7229) (ml/m ² ·24 h·atm):	360		
Performance characteristic	Reference method	Requirements according to EN 13969 and EN 14967	Performance figures for Mapethene LT
Tensile strength (N/50 mm):	EN 12311-1	value declared by manufacturer	240 ± 40
Elongation at longitudinal failure (%):	EN 12311-1		370 ± 100
Elongation at transversal failure (%):	EN 12311-1		320 ± 80
Permeability to water vapour S _D (m):	EN 1931		235
Impact strength:	EN 12691		pass; method A ≤ 200
Slip resistance of joints (N/50 mm):	EN 12317-1		230 ± 80

Flexibility at low temperatures (°C):	EN 1109		- 30
Resistance to static loads:	EN 12730		pass; method B ≤ 5
Tear strength (nail method) (N):	EN 12310-1		140 ± 40
Durability, expressed as impermeability after artificial ageing:	EN 1296, test in compliance with EN 1928	impermeability at 60 kPa	pass
Durability, expressed as impermeability after exposure to chemicals:	EN 1847, test in compliance with EN 1928	impermeability at 60 kPa	pass
Reaction to fire (Euroclass):	EN 13501-1	Euroclass	E

WARNING

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