Mapelastic TU System

**DESCRIPTION**

Mapelastic TU System is a one-component sprayable synthetic membrane made up of special polymers, according to a formula developed in MAPEI’s Research and Development Laboratories.

Mapelastic TU System is characterized by:

- high flexibility: it has a great ability to stretch and deform, thus maintaining coating integrity after substrate deformation;
- good tensile strength;
- excellent adhesive qualities with whichever support properly prepared cement-based concrete, shotcrete, etc.

Once sprayed onto the substrate, Mapelastic TU System forms a flexible barrier and support, able to minimize degrading effect of time, water, weathering, etc.

Mapelastic TU System promotes excellent water-tightness characteristics, preventing the development of water migration on both membrane interfaces.

Its properties of waterproofing and tensile strength make the product particularly suitable for underground applications. As a matter of fact, Mapelastic TU System can be applied even to slightly damp surfaces. Only in case of running water, it should be used in combination with other drainage systems.

The membrane can be sprayed between the first shotcrete layer, used as first support, and before the final lining, carried out with shotcrete or concrete. Mapelastic TU System can be used also together with steel fibre reinforced shotcrete, applied even on both sides of the membrane.

The product is ready to use and it is applied trough the use of pneumatic-powered machines. Due to its flexibility, the product can be applied even onto very irregular and complex profiles and geometry.

**WHERE TO USE**

- Waterproofing applications in tunnels: Mapelastic TU System can be applied as an intermediate layer between two shotcrete layers (“sandwich structure”).
- Waterproofing of concrete walls.
- Replacement of waterproofing sheet membranes.

**HOW TO USE**

Preparing the substrate

In order to obtain the best results, Mapelastic TU System must be sprayed onto clean and loose particles-free substrate. Therefore it is necessary to carefully remove dust, oil, grease, cement laitance, etc.
### TECHNICAL DATA (typical values)

#### PRODUCT IDENTITY

**Appearance:** green light paste / white paste

**Density (DIN 12791) (g/cm³):** 1.28 ± 0.03

**Helipath viscosity (mPa·s):** (rotor E - rpm 5) 80 000

**pH:** 9.4

**Dry solids content (%):** 66

#### FINAL PERFORMANCES

**Shore hardness (A) after 7 days at +23°C (DIN 53505):** 50-55

**Tensile strength (DIN 53504-S2) (N/mm²):**
- after 7 days at +23°C: 0.75 (elongation 340%)
- after 28 days at +23°C: 1.10 (elongation 290%)
- after 7 days at +23°C + 7 days at +70°C + 1 day at +23°C: 2.05 (elongation 170%)
- after 7 days + 7 days in water H₂O: 0.7 (elongation 400%)
- after 7 days + 7 days in saturated lime water: 0.2 (elongation 420%)

**Pull out test over concrete after 14 days at +23°C - 50% U.R. (EN 1542:2000) (MPa):** ≥ 0.75 (cohesive failure)

**Resistance to water pressure 3 mm of Mapelastic TU System (EN 14891):** 5 bar per 7 d

**Reaction to fire classification (EN 13501-1):** B, s2, d0

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**Note:** drying times are greatly affected by temperature and humidity of the substrate and the environment

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**Applying the product**
The product is ready for use and has to be sprayed through the wet system. During application, the temperature must be > +15°C. When the temperature is < +15°C, the product flexibility is reduced. The membrane thickness depends mainly on the characteristics of the support where Mapelastic TU System is sprayed. The maximum thickness of application is 5 mm.

**Cleaning**
The tools used for spraying Mapelastic TU System can be cleaned simply with water if the product is still fresh. After hardened, cleaning can be carried out only by mechanical means.

**CONSUMPTION**
The consumption for 3 mm wet film thickness, suggested for application on smooth cementitious surfaces, is about 4 kg per square meter of treated surface. It is important to underline that the consumption depends significantly on the irregularities, on roughness and on kind of substrate. Therefore the real consumption can be defined only through a preliminary test aimed to establish consumption itself, even according to the minimum thickness required on technical specifications of each project.

**PACKAGING**
Mapelastic TU System is available in 260 kg drums.

**STORAGE**
Mapelastic TU System can be stored for maximum 12 months in its original
unopened packaging in a dry place. Protect from frost.

**SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION**

Mapelastic TU System is not dangerous according to the current regulation on the classification of mixtures. It is recommended to take the usual precautions for handling chemical products.

For further and complete information about a safety use of our product please refer to our latest version of the Material Safety Data Sheet.

**PRODUCT FOR PROFESSIONAL USE.**

**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

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