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PLASTIMUL 1K SUPER PLUS

One-component, solvent-free, quick-drying, low-shrinkage, high-yield, high flexibility bitumen waterproofing emulsion containing polystyrene spheres



WHERE TO USE

Plastimul 1K Super Plus is used for waterproofing underground horizontal and vertical concrete and brickwork surfaces subject to high dynamic loads.

Some application examples

Plastimul 1K Super Plus is used for:

- waterproofing foundations, basements, underground garages and tanks from the outside;
- waterproofing load-bearing walls from the outside;
- waterproofing horizontal reinforced concrete structures under screeds uncoupled from the substrate with protective sheets (in these cases, before laying the floor dressing, we recommend applying **Mapelastic** on the screed to protect it).

TECHNICAL CHARACTERISTICS

Plastimul 1K Super Plus is a ready-to-use, one-component bitumen waterproofing emulsion. It also contains polystyrene spheres which help to increase its yield, reduce shrinkage and give the product high crack-bridging capacities and considerable flexibility.

Plastimul 1K Super Plus is solvent-free, odourless, ecological (contains recycled materials), easy to work with and is resistant to aggressive substances contained in the ground.

Thanks to its thixotropic consistency it is possible to apply it in thick layers on vertical surfaces.

Plastimul 1K Super Plus meets the requirements for thick polymer-modified bitumen coatings, in compliance with EN 15814.

Thanks to a radon gas diffusion coefficient of $7.81 \cdot 10^{-13} \text{ m}^2\text{s}^{-1}$, Plastimul 1K Super Plus is certified as a passive barrier for radon gas.

Plastimul 1K Super Plus is resistant to ageing and adheres to both dry and slightly damp surfaces.

RECOMMENDATIONS

Do not use Plastimul 1K Super Plus in the following cases:

- mixed with solvents or cement/additives;
- if the temperature is lower than +5°C or higher than +30°C;

- in damp or rainy weather;
- to waterproof surfaces exposed to UV rays;
- with water in counter-pressure;
- if there is no protective drainage layer;
- if the drainage layer subjects the waterproofing layer to linear or spot loads.

APPLICATION PROCEDURE

Preparation of the substrate

The surface to be treated must be sound and perfectly clean. Horizontal surfaces (which are then buried or remain below screed level) must have a slope of at least 1% so that water can run off towards the sides or towards drainage points.

Remove cement laitance, loose and crumbling parts and all traces of traces of dust, grease, oil and form-release compounds.

Before applying **Plastimul 1K Super Plus** on masonry in general (bricks, vibro-compressed concrete blocks, etc.), make sure the surface is sufficiently even. Carefully remove from the surface all traces of mortar protruding from between the bricks or blocks and fill any gaps in the joints with **Mapegrout Fast-Set** rapid-hardening, fibre-reinforced cementitious mortar, **Mapegrout Thixotropic** shrinkage-compensated, fibre-reinforced mortar or **Mapegrout T60** if sulphate-resistant mortar is required. As an alternative, use sand/cement mortar admixed with **Planicrete** latex rubber for cementitious mixes.

Concrete surfaces, on the other hand, must have no uneven areas or gravel clusters. Repair or smooth over any rough areas with the same products from the **Mapegrout** line mentioned above.

Round off all sharp edges on horizontal and vertical surfaces with suitable power or hand tools and blend in the areas between foundations and vertical walls by forming a fillet joint made from the **Mapegrout** product chosen.

Seal any breaks in correspondence with structural joints with **Mapeband TPE** bonded to the substrate with **Adesilex PG4**.

For further details or particular waterproofing requirements please contact Mapei Technical Services Department.

Application of primer

After preparing the substrate as specified, use a roller, brush or spray to apply a coat of **Plastimul Primer** bitumen primer or **Plastimul C** concentrated bitumen emulsion for treating substrates before applying waterproofing products from the **Plastimul** line diluted 1:10 with water to even out the absorbency of the substrate.

Application of the waterproofing layer

To avoid the formation of blisters when working in direct sunlight, we recommend shading the surface or applying the product either early in the morning or in the evening.

The product may be applied with either a flat or notched trowel or by spray using a peristaltic pump.

On the bead applied to blend in the horizontal and vertical elements, apply **Plastimul 1K Super Plus** until it covers all the foundations. Work should not be interrupted when working in the corners. If work is interrupted, apply **Plastimul 1K Super Plus** down to a feather edge. When work recommences, overlap the material by 10 cm.

According to the type of use to which the structure is subjected, it may be necessary to insert **Mapenet 150** alkali-resistant glass fibre mesh between the first and second coat of **Plastimul 1K Super Plus**. Place the mesh on the first coat while it is still wet and then apply the second coat when the first one is completely dry. The table below illustrates the consumption rate for various thicknesses of product.

Load according to DIN 18533	Layers applied	Wet thickness (mm)	Dry thickness (mm)	Consumption (kg/m ²)
W1-E: Ground moisture only	2 coats	3.5	3	2.3
W2.1E: Water under pressure up to 3 m	2 coats with embedded Mapenet 150	4.7	4	3.1
W3-E: Standing water (not under pressure) on floor slab covered with soil				

W4-E: Rainwater or rising damp on walls in contact with the ground

2 coats

3.5

3

2.3

Protecting the waterproofing layer

When filling the foundation trenches or applying successive protection layers **Plastimul 1K Super Plus** must be completely dry (2 days at +23°C and 50% R.H.). The drying time varies according to weather conditions, surrounding temperature, level of humidity, the thickness applied and the type of substrate.

Before filling in protect the waterproofed surfaces with suitable, protective drainage layers (see "Recommendations" section). Only use suitable material for filling in excavated trenches, such as well assorted material with no stones against the protective drainage layer compacted into a series of layers 40 to 50 cm thick.

Insulation

Insulating panels must only be applied when both coats of **Plastimul 1K Super Plus** are completely dry. Bond the panels in place with around 5-8 spots per m² of **Plastimul 2K Plus** two-component, quick-drying, low-shrinkage bitumen emulsion containing cellulose fibres.

CLEANING

Work tools may be cleaned with water before the product hardens. Once hardened, they must be cleaned using mechanical means or with a thinner.

CONSUMPTION

Approximately 0.8 kg/m² per mm of dry thickness for a seamless film applied on a flat surface. Consumption is higher if applied on uneven substrates.

Please note that, to achieve performance levels in compliance with EN 15814 standards (see final performance details in the Technical Data table), two coats of product must be applied in the thickness indicated in the standards.

PACKAGING

7.8 kg and 19.5 kg drums.

STORAGE

Plastimul 1K Super Plus may be stored for up to 12 months in a dry place at a temperature of at least +5°C.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Plastimul 1K Super Plus is not considered as dangerous according to the current regulation regarding the classification of mixtures. We recommend the use of protective gloves and goggles and to take the usual precautions for handling chemical products.

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

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

PRODUCT IDENTITY

Consistency:

paste

Colour:

black

Density (g/cm ³):	approx. 0.65
pH:	10
Brookfield viscosity (mPa·s):	40,000 (rotor 7 - rpm 20)
Dry solids content (%):	approx. 73

APPLICATION DATA

Drying time:	approx. 2 days
Application temperature range:	from +5°C to +30°C

FINAL PERFORMANCE

Radon gas diffusion coefficient (m ² s ⁻¹):	7.81 E - 13
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Main characteristics	Method	Requirements according to EN 15814	Performance results
Static crack-bridging at +4°C:	EN 15812	Class CB0: no requirement Class CB1: no damage to cracks ≥ 1 mm with dry thickness ≥ 3 mm Class CB2: no damage to cracks ≥ 2 mm with dry thickness ≥ 3 mm	Class CB2
Resistance to rain:	EN 15816	Class R0: no requirement Class R1: ≤ 24 h with wet thickness ≥ 3 mm Class R2: ≤ 8 hours with wet thickness ≥ 3 mm Class R3: ≤ 4 hours with wet thickness ≥ 3 mm	Class R3
Resistance to water:	EN 15817	1. No discolouring of water 2. No detachment of reinforcement if dry thickness ≥ 4 mm No change to the material according to EN 15817	1. No discolouring of water. 2. No detachment of reinforcement if dry thickness ≥ 4 mm No change to the material according to EN 15817
Flexibility at low temperatures (0°C):	EN 15813	No cracking	No cracking
Dimensional stability at high temperatures (+70°C):	EN 15818	No slumping or dripping	No slumping or dripping
Reduction in thickness when dry:	EN 15819	≤ 50%	approx. 14%
Reaction to fire:	EN 13501-1	Euroclass	E
Impermeability to water in pressure on a 1 mm open crack:	EN 15820	Class W1: ≥ 24 h at 0.0075 N/mm ² , dry thickness without reinforcement ≥ 3 mm Class W2A: ≥ 72 h at 0.075 N/mm ² , dry thickness with reinforcement ≥ 4 mm Class W2B: ≥ 72 h at 0.075 N/mm ² , dry thickness without reinforcement ≥ 4 mm	Class W2A

Compressive strength:	EN 15815	Class C0: no requirement Class C1: 0.06 MN/m ² , with dry thickness ≥ 3 mm Class C2A: 0.30 MN/m ² , with dry thickness with reinforcement ≥ 4 mm Class C2B: 0.30 MN/m ² , with dry thickness without reinforcement ≥ 4 mm	Class C2A
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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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