

# Plastimul 2K Reactive

**Two-component,  
solvent-free,  
eco-compatible, bitumen  
waterproofing emulsion,  
with high elasticity and  
immediate waterproofing  
applied by airless spray**



## WHERE TO USE

**Plastimul 2K Reactive** is used mainly for waterproofing underground structures in ground where water percolates through or if there is water in pressure, including high pressure.

**Plastimul 2K Reactive** is suitable for any kind of concrete and cellular concrete surfaces, limestone, pumice, lightweight brick and breeze-block masonry, render and screeds.

**Plastimul 2K Reactive** is used for waterproofing the outside of foundations and retaining walls and for waterproofing horizontal and vertical surfaces that are not exposed.

## Advantages

- Solvent-free.
- Eco-compatible.
- Applied by airless spray.
- High daily output.
- High flexibility.
- High elongation rate > 1500%.
- Immediate resistance to rain.
- High crack-bridging capacity, even at low temperatures.
- Resistant to aggressive agents commonly found in the ground.

## TECHNICAL CHARACTERISTICS

**Plastimul 2K Reactive** is a two-component, solvent-free, highly-flexible, rapid-drying, eco-compatible, instant bitumen waterproofing emulsion, to be applied by airless spray.

**Plastimul 2K Reactive** is applied using the type of airless spray system which keeps the two components separate until they are sprayed through the nozzle. When the two components come into contact, they

react to form a highly flexible, continuous membrane which is immediately waterproof.

**Plastimul 2K Reactive** component A mixes with the reactor (component B) as it leaves the spraying lance, and starts setting and segregating most of the water to form a partially-hardened film which is immediately resistant to leaching. This process usually takes much longer with water-dispersed products.

After several hours (according to the absorption of the substrate, ambient temperature, etc.),

**Plastimul 2K Reactive** completes the curing process to form a continuous, joint-free membrane which adheres perfectly to the substrate.

Thanks to a radon gas diffusion coefficient of  $4.35 \cdot 10^{-13} \text{ m}^2 \text{ s}^{-1}$ , **Plastimul 2K Reactive** is certified as a passive barrier for radon gas.

## RECOMMENDATIONS

Do not use **Plastimul 2K Reactive** in the following cases:

- mixed with solvents;
- at ambient temperatures lower than +5°C or higher than +30°C;
- when it is raining or particularly damp;
- to waterproof surfaces which will remain exposed to UV rays;
- on surfaces subjected to negative-pressure water;
- if there is no protective drainage layer;
- if the drainage layer subjects the waterproofing layer to point 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

# Plastimul 2K Reactive



Application of Plastimul 2K Reactive



Normal bleeding on the surface of the product immediately after application

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 dust, grease, oil and form-release compounds. Before applying **Plastimul 2K Reactive** on masonry (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 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 the primer

After preparing the substrate as specified, use a roller, brush or spray to apply a coat of **Plastimul Primer SB**, solvent-based, quick-drying and high-performance bituminous primer.

## 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. When the primer is completely dry, apply **Plastimul 2K Reactive** in horizontal criss-cross bands starting from the bottom working upwards, with a gap of at least 50 cm between the substrate and the first band. Apply **Plastimul 2K Reactive** over the entire surface in a continuous layer at least 3 mm thick.

Apply **Plastimul 2K Reactive** with an airless spray gun (such as a gear-driven or piston-type spray system for two-component bituminous products) equipped with a spray lance for two-component products which

mixes the components as they leave the nozzle.

Apply **Plastimul 2K Reactive** on the fillet used to blend in the horizontal and vertical elements until it covers all the foundations. The table below indicates the consumption rates according to the thicknesses applied.

**Warning:** The setting process of **Plastimul 2K Reactive**, which starts as soon as it leaves the spraying lance, causes most of the water to rise to the surface. Bleeding on the surface of the product, therefore, is perfectly normal. If blisters form in the product when it is applied during strong direct sunlight, they must then be repaired.

## Protecting the waterproofing layer

When filling the foundation trenches or applying successive protection layers, **Plastimul 2K Reactive** must be completely dry. Complete drying takes place after 2 days at +23°C and 50% R.H. Drying times are affected by climatic conditions (temperature, humidity, wind, etc.), the thickness applied and the type of substrate.

Protect waterproofed surfaces with protective material. Waterproofing membranes applied on horizontal surfaces must be protected with geotextile (with a puncture resistance of at least 1500 N) followed by a protective layer of at least 3 cm of thickness.

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.

## Cleaning

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

## CONSUMPTION

Approximately 1.30 kg/m<sup>2</sup> 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

- Component A: 30 kg drums, and 1000 kg tanks.
- Component B: 25 kg tanks.

Load in compliance with DIN 18533 standard	Wet thickness (mm)	Dry thickness (mm)	Consumption (kg/m <sup>2</sup> )
W1-E: Ground moisture only	3.9	3	3.9
W2.1-E: Water in pressure up to 3 m	5.3	4	5.3
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	3.9	3	3.9

## TECHNICAL DATA (typical values)

### PRODUCT IDENTITY

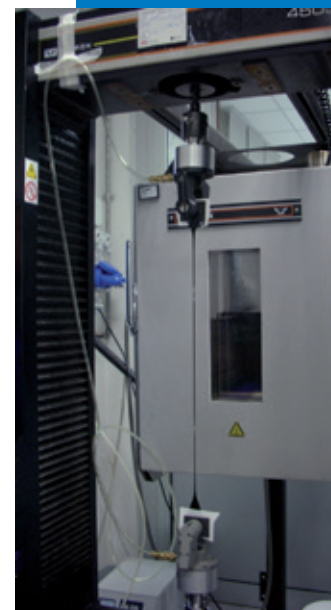
	component A	component B
Consistency:	liquid	liquid
Colour:	black	colourless
Density (g/cm <sup>3</sup> ):	approx. 1	approx. 1.1
pH:	11	6.5
Brookfield viscosity (mPa·s):	500-600 (rotor 4 - 20 RPM)	11 (rotor 1 - 100 RPM)
Dry solids content (%):	59	10

### APPLICATION DATA

Mixing ratio:	10 : 1
Application temperature:	from +5°C to +30°C

### FINAL PERFORMANCE

Radon gas diffusion coefficient (m <sup>2</sup> s <sup>-1</sup> ):	4.35 E-13		
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 h with wet thickness ≥ 3 mm Class R3: ≤ 4 h 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 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. 24%
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 <sup>2</sup> , dry thickness without reinforcement ≥ 3 mm Class W2A: ≥ 72 h at 0.075 N/mm <sup>2</sup> , dry thickness with reinforcement ≥ 4 mm Class W2B: ≥ 72 h at 0.075 N/mm <sup>2</sup> , dry thickness without reinforcement ≥ 4 mm	Class W2B
Compressive strength:	EN 15815	Class C0: no requirement Class C1: 0.06 MN/m <sup>2</sup> , with dry thickness ≥ 3 mm Class C2A: 0.30 MN/m <sup>2</sup> , with dry thickness with reinforcement ≥ 4 mm Class C2B: 0.30 MN/m <sup>2</sup> , with dry thickness without reinforcement ≥ 4 mm	Class C2B



Maximum stroke of a dynamometer without observing failure of the sample



Empirical test of Plastimul 2K Reactive's high flexibility and resistance to punch loads



# Plastimul 2K Reactive

## STORAGE

Plastimul 2K Reactive 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 2K Reactive comp. A can cause damage to the organs if used for lengthy or repeated periods. Plastimul 2K Reactive comp. B is irritant for the skin and eyes. During use wear protective gloves and goggles and take the usual precautions for handling chemicals. In case of contact with the eyes or skin, wash immediately with plenty of water and seek medical attention. 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.

## 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](http://www.mapei.com)

## LEGAL NOTICE

*The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.*

*The most up-to-date TDS can be downloaded from our website [www.mapei.com](http://www.mapei.com).*

**ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.**

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**



Foundation wall waterproofed with Plastimul 2K Reactive



Application of Plastimul 2K Reactive



BUILDING THE FUTURE