

Planitop Smooth & Repair

**R2-CLASS RAPID-SETTING CEMENTITIOUS
MORTAR FOR REPAIRING AND
SMOOTHING CONCRETE**



C.P. MK690930 (GB) 10/14

Just **1** product for
smoothing
and repairing
concrete
surfaces



Planitop Smooth & Repair



Application of **Planitop Smooth & Repair** by trowel



Application of **Planitop Smooth & Repair** with a finishing trowel

R2-class, rapid-setting, fibre-reinforced cementitious mortar applied in a single layer from 3 to 40 mm thick, for repairing and smoothing concrete.

- **Good maintenance of workability and rapid hardening.**
- **Highly thixotropic for easy application on both vertical and overhead surfaces, with no waste.**
- **Packed in waterproof vacuum-packed bags for better storage.**

Technical characteristics

- **Very low emission** level of volatile organic compounds (VOC) EMICODE EC1 R Plus.
- **Highly versatile**, by adding **Mapetard ES** its excellent inherent workability can be extended by a further 15-20 minutes.
- **Excellent adhesion** (≥ 1.5 MPa) to both old concrete, if roughened and wetted with water prior to application, and to rebar, especially when treated with **Mapefer** or **Mapefer 1K**, anti-corrosion re-alkalising cementitious mortar certified according to EN 1504-7 "*Corrosion protection of reinforcement*".



Smoothing **Planitop Smooth & Repair** with a straight edge



Floating the surface of **Planitop Smooth & Repair**

- **High dimensional stability** to reduce the risk of cracking and crazing during both the plastic phase and when hardened.
- **Excellent flow** to facilitate spreading with a smooth trowel.
- **Easy to create natural finishes** with a sponge float around 30 minutes after applying the product as is and after around 45-50 minutes if admixed with **Mapetard ES** (at +20°C).
- **Thermally compatible** with freeze/thaw cycles measured as adhesion according to EN 1542.
- **Low water permeability.**
- **Planitop Smooth & Repair** meets the minimum requirements of **EN 1504-3** ("Structural and non-structural repairs") for non-structural **R2-class** mortars and the requirements of **EN 1504-2** coating (C) according to principles **MC** and **IR** ("*Concrete surface protection systems*").
- The special 25 kg **vacuum-packed polyethylene bags** allow the product to be stored outside. Contact with the atmosphere and rain have no effect on the product's characteristics. Also available in cardboard boxes with four 5 kg bags.

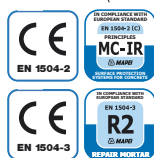
Planitop Smooth & Repair

Where to use

- Non-structural repairs and smoothing over internal and external horizontal and vertical concrete surfaces; suitable for repairing structures exposed to the open air and/or in permanent contact with water.
- Quick repairs to deteriorated parts in concrete and the corners of beams, pillars, buffer walls, cornices and the front edges of balconies.
- Quickly smoothing over surface defects in cast concrete such as gravel clusters, spacer holes, construction joints, etc. before painting the surface.
- Repairing and smoothing over concrete mouldings on civil buildings such as skirt roofs and protruding decorative elements.
- Repairing pre-cast concrete structures.

Product classification according to the minimum requirements of EN 1504-3 and 1504-2

GEV certification (EMICODE EC1 R Plus)



CE-Mark

A product that helps earn Leed award points



Exclusive Mapei technology to identify products for rapid installation of floor and wall coverings

Technical data

Product and application data

Maximum size of aggregate (EN 1015-1):	0.4 mm
Application temperature:	from +5 to +35°C
Pot life of mix:	approx. 15 minutes (*)
Minimum applicable thickness:	3 mm
Maximum applicable thickness per layer:	40 mm

Performance characteristics

Compressive strength after 28 days (EN 12190):	≥ 18 MPa
Flexural strength after 28 days (EN 196/1):	≥ 4 MPa
Compressive modulus of elasticity (EN 13412):	13 GPa
Adhesion to concrete after 28 days (EN 1542):	≥ 1.5 MPa
Thermal compatibility with freeze/thaw cycles with de-icing salts (EN 13687/1) after 50 cycles measured as adhesion according to EN 1542:	≥ 1.5 MPa
Capillary absorption (EN 13057):	≤ 0.4 kg/m² • h^{0.5}
Impermeability expressed as coefficient of permeability to free water (EN 1062-3):	W < 0.1 kg/m² • h^{0.5} Class III (low permeability) according to EN 1062-1
Permeability to water vapour – equivalent air thickness S _D (EN ISO 7783-1):	S_D < 5 m Class I (permeable to water vapour)
Reaction to fire (EN 13501-1):	Class A1
Packaging:	25 kg vacuum-packed polyethylene bags; boxes of four 5 kg bags
Consumption:	approx. 15 kg/m² per cm of thickness

(*) Adding **Mapetard ES** extends the workability time of **Planitop Smooth & Repair** by a further 15-20 minutes.

N.B. The performance characteristics of **Planitop Smooth & Repair** admixed with **Mapetard ES** are the same as the product without admixture.

Mapetard ES



Adding **Mapetard ES** to the mixing water for **Planitop Smooth & Repair**



Adding **Planitop Smooth & Repair** to the mixing water admixed with **Mapetard ES**

Set-retarding admixture for rapid-setting cementitious mortar.

Technical characteristics

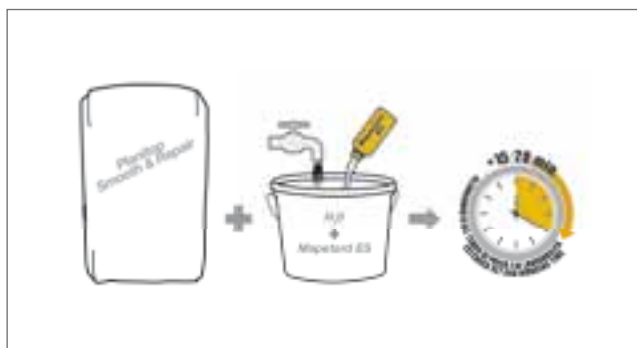
- Special chloride-free liquid admixture in watery solution to delay setting time and, as a result, extend the workability time of rapid-setting cementitious mortar such as **Planitop Smooth & Repair**.
- When **Mapetard ES** is added to the mixing water for **Planitop Smooth & Repair**, at a rate of up to one 0.25 kg canister for each 25 kg bag it extends the excellent inherent workability of the mortar by 15-20 minutes.



Mixing Planitop Smooth & Repair

Where to use

- Particularly recommended when, because of particular site conditions or high temperatures, the workability time of **Planitop Smooth & Repair** needs to be extended.



Planitop Smooth & Repair

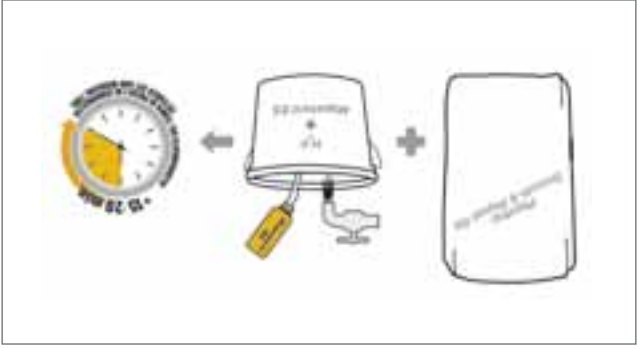


- 1** Concrete Substrate
- 2** One-component corrosion-inhibiting cement mortar ***Mapefer 1K***
- 3** R2-class, rapid-setting, thixotropic, fibre-reinforced, cementitious mortar for repairing and smoothing concrete ***Planitop Smooth & Repair***
- 4** Water-based undercoat ***Malech***
- 5** Protective elastic paint ***Elastocolor Paint***

Planitop Smooth & Repair R4



- 1** Concrete Substrate
- 2** One-component corrosion-inhibiting cement mortar **Mapofer 1K**
- 3** Structural R4-class, rapid-setting, thixotropic, fibre-reinforced, cementitious mortar for repairing and smoothing concrete **Planitop Smooth & Repair R4**
- 4** Water-based undercoat **Malech**
- 5** Protective elastic paint **Elastocolor Paint**



- Particularly recommended when, because of particular site conditions or high temperatures, the workability time of **Planitop Smooth & Repair R4** needs to be extended.
- ## Where to use

Mixing **Planitop Smooth & Repair R4**



- Special chloride-free liquid admixture in watery solution to delay setting time and, as a result, extend the workability time of rapid-setting cementitious mortar such as **Plantop Smooth & Repair R4**.
- When **Mapetard ES** is added to the mixing water for **Plantop Smooth & Repair R4**, at a rate of up to one 0.25 kg canister for each 25 kg bag, it extends the excellent inherent workability of the mortar by 15-20 minutes.

Technical characteristics

Set-retarding admixture for rapid-setting cementitious mortar.

Adding **Mapetard ES** to the mixing water for **Plantop Smooth & Repair R4**



Adding **Plantop Smooth & Repair R4** to the mixing water admixed with **Mapetard ES**



Mapetard ES

Technical data

Product and application data	
0.4 mm	Maximum size of aggregate (EN 1015-1):
+5 to +35°C	Application temperature:
approx. 15 minutes (*)	Pot life of mix:
3 mm	Minimum applicable thickness:
40 mm	Maximum applicable thickness per layer:
Performance characteristics	
52 MPa	Compressive strength after 28 days (EN 12190):
8 MPa	Flexural strength after 28 days (EN 196/1):
24 GPa	Compressive modulus of elasticity (EN 13412):
≥ 2 MPa	Adhesion to concrete after 28 days (EN 1542):
≥ 2 MPa	Thermal compatibility with freeze/thaw cycles with de-icing salts (EN 13687/1) after 50 cycles measured as adhesion according to EN 1542:
≤ 0.5 kg/m ² • h ^{0.5}	Capillary absorption (EN 13057):
W > 0.1 kg/m ² • h ^{0.5} Class III (low permeability) according to EN 1062-1	Impermeability expressed as coefficient of permeability to free water (EN 1062-3):
S _D > 5 m Class I (permeable to water vapour)	Permeability to water vapour – equivalent air thickness S _D (EN ISO 7783-1):
> reference concrete	Resistance to accelerated carbonation (EN 13295):
no cracks after 180 days	Crack resistance ("O-Ring Test"):
Class A1	Reaction to fire (EN 13501-1):
25 kg vacuum-packed polyethylene bags	Packaging:
approx. 17 kg/m ² per cm of thickness	Consumption:

(*) Adding **Mapetard ES** extends the workability time of **Plantop Smooth & Repair R4** by a further 15-20 minutes.

N.B. The performance characteristics of **Plantop Smooth & Repair R4** admixed with **Mapetard ES** are the same as the product without admixture.

Planitop Smooth & Repair R4

Where to use

- Structural repairs and smoothing over internal and external, horizontal and vertical concrete surfaces; suitable for repairing structures exposed to the open air and in permanent contact with water.
- Quick repairs to deteriorated parts in concrete on beams, pillars and structural members where the use of high strength (R4-class) mortar is specified. It may also be used to repair non-structural members such as buffer walls, cornices and the front edges of balconies as long as the base concrete is in good condition.
- Quickly smoothing over surface defects in cast concrete, such as deep gravel clusters, spacer holes, construction joints, etc. before painting the surface.
- Repairs and structural strengthening of concrete by integrating with mortar.
- Repairs to prefabricated concrete members and elements.
- Repairs to concrete damaged by rusty rebar due to carbonation and/or chloride penetration.

Exclusive Mapei technology to identify products for rapid installation of floor and wall coverings

Fast Track Ready

A product that helps earn LEED award points

GREEN INNOVATION

NEW!

EVI
GEV certification (EMICODE ECI R Plus)

Product classification according to the minimum requirements of EN 1504-3 and 1504-2

CE-Mark

EN 1504-3
REPAIR MORTAR
R4

EN 1504-2
REPAIR MORTAR
MC-IR

- **High dimensional stability** to reduce the risk of cracking and crazing during both the plastic phase and when hardened.
- **Excellent flow** to facilitate spreading with a smooth trowel.
- **Easy to create natural finishes** with a sponge float around 20 minutes after applying the product as is and after around 35-40 minutes if admixed with **Mapetard ES** (at +20°C).
- **Thermally compatible** with freeze/thaw cycles measured as adhesion according to EN 1542.
- **Impermeable to water.**
- **Plantop Smooth & Repair R4** meets the minimum requirements of **EN 1504-3** ("Structural and non-structural repairs") for non-structural **R4-class** mortars and the requirements of **EN 1504-2** coating (C) according to principles **MC** and **IR** ("Concrete surface protection systems").
- The special **25 kg vacuum-packed polyethylene bags** allow the product to be stored outside. Contact with the atmosphere and rain have no effect on the product's characteristics.

Application of **Plantop Smooth & Repair R4** with a finishing trowel



Floating the surface of **Plantop Smooth & Repair R4**



Planitop Smooth & Repair R4



Application of Planitop Smooth & Repair R4 by trowel

Repair R4 to create a smooth finish

- R4-class, rapid-setting fibre-reinforced structural cementitious mortar, applied in a single layer from 3 to 40 mm thick, for repairing and smoothing concrete.
- Good maintenance of workability and rapid hardening.
- Highly thixotropic for easy application on both vertical and overhead surfaces, with no waste.
- Packed in waterproof vacuum-packed bags for better storage.

Technical characteristics

- **Very low emission** level of volatile organic compounds (VOC) EMICODE EC1 R Plus.
- **Highly versatile**, by adding **Mapetard ES** its excellent inherent workability can be extended by a further 15-20 minutes.
- **Excellent adhesion** (≥ 2 MPa) to both old concrete, if roughened and wetted with water prior to application, and to rebar, especially when treated with **Mapofer 1K**, anti-corrosion, re-alkalising cementitious mortar certified according to EN 1504-7 "Corrosion protection of reinforcement".



Just
product for
smoothing
and repairing
concrete
surfaces



**R4-CLASS RAPID-SETTING STRUCTURAL
CEMENTITIOUS MORTAR FOR REPAIRING
AND SMOOTHING CONCRETE**

Planitop Smooth & Repair R4