



Mapefer 1K™

Corrosion-Inhibiting Coating for Reinforcing Steel



DESCRIPTION

Mapefer 1K is a one-component anti-corrosion coating based on unique polymers, cementitious binders and corrosion inhibitors. Mapefer 1K is specially formulated for application on clean reinforcing steel to inhibit oxidation and rust formation.

FEATURES AND BENEFITS

- High in density and alkalinity, Mapefer 1K offers excellent resistance to chloride penetration, carbon dioxide penetration and pollutants.
- Meets or exceeds performance of alternate three-component anticorrosion products, when tested at ASTM B117 standards
- Excellent workability with long pot life and extended open time
- Allows application of repair mortars for up to 14 days after application of Mapefer 1K
- Mapefer 1K brushed or oversprayed on concrete and masonry surfaces will not act as a bond breaker.

INDUSTRY STANDARDS AND APPROVALS

<u>LEED Points Contribution</u>	<u>LEED Points</u>
MR Credit 5, Regional Materials*	Up to 2 points
IEQ Credit 4.2, Low-Emitting Materials – Paints & Coatings	1 point

*Using this product may help contribute to LEED certification of projects in the categories shown above. Points are awarded based on contributions of all project materials.

WHERE TO USE

- For corrosion-inhibiting protection of reinforcing steel in concrete restoration

LIMITATIONS

- Use between temperatures of 45°F and 95°F (7°C and 35°C).
- Do not add cement or aggregates to Mapefer 1K.
- Apply Mapefer 1K to reinforcing steel immediately after removing rust and cleaning, to prevent further corrosion.
- In hot weather, do not expose the mixed material to direct sunlight during application and curing, as the pot life could be shortened.



SUITABLE SUBSTRATE

- Clean reinforcing steel

Consult MAPEI's Technical Services Department for installation recommendations regarding substrates and conditions not listed.

SURFACE PREPARATION

- Remove all corrosion and loose scale from exposed reinforcing steel. Reference International Concrete Repair Institute (ICRI) Technical Guideline #310.1R-2008 (formerly #03730) "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion," or in accordance with The Society for Protective Coatings (SSPC) guidelines.
- Mechanically abrade all exposed steel down to white metal, paying particular attention to the back of exposed steel bars. Corrosion from pits and imperfections can also be removed by vigorously brushing the metal surface to remove all possible oxidation.
- If a significant portion of cross section has been lost, replace or supplement the reinforcing steel, as recommended by an engineer, and coat with *Mapefer 1K*.
- If the concrete substrate around the application area is to be repaired, remove all delaminated, loose or spalled concrete before application of *Mapefer 1K*.
- Ensure that all substrates and ambient temperatures are between 45°F and 95°F (7°C and 35°C).

MIXING

Note: Choose all appropriate safety equipment before use. Refer to Material Safety Data Sheet (MSDS) for more information.

1. Pour 1 to 1.2 U.S. qts. (0,95 to 1,14 L) of cool, clean potable water into a clean container.
2. While slowly adding the 10-lb. bag (4,54 kg) of *Mapefer 1K*, drill-and-paddle-mix to a lump-free consistency.

PRODUCT APPLICATION

Application on steel as an anticorrosion coating

1. Read all installation instructions thoroughly before installation.
2. Apply by brush within one hour (at 73°F [23°C]) of mixing.
3. Apply in two coats of 1/32" (1 mm) each, totaling 2/32" (2 mm).
4. Apply the second coat between 2 and 24 hours of the first coat.
5. Do not apply repair mortar until *Mapefer 1K* is completely dry, usually after 6 hours at 73°F (23°C).

CURING

Protect from high winds during cure. No curing compound is required.

CLEANUP

While still fresh, remove *Mapefer 1K* from brushes and tools with water. Once hardened, it can only be removed only mechanically.

Product Performance Properties

Laboratory Tests	Results
Water mix ratio	22% to 24% – 1.06 to 1.16 U.S. qts. (1,0 to 1,10 L)
Consistency	Paste
Color	Blue
Specific gravity (kg/dm ³)	1.7 to 1.9
pH	12 to 13
Application temperature range	45°F to 95°F (7°C to 35°C)
Pot life	> 1 hour
Minimum waiting time between 2 coats	About 2 hours
Minimum time before application of repair mortar	6 to 24 hours
Adhesion to concrete	> 350 psi (> 2,41 MPa)
Adhesion to sandblasted steel	> 350 psi (> 2,41 MPa)
Minimum pull-out strength, according to RILEM RC/6, on deformed rods with 1/4" (6 mm) diameter treated with <i>Mapefer 1K</i>	> 90% the value on untreated rods
Resistance to saline fog after 120 hours (DIN 50021)	Excellent (no corrosion)
Independent testing per DIN EN ISO 6270-2, DIN 50018, DIN EN ISO 9227	No corrosion, no detachments
Independent testing to ASTM B117-07 (salt spray, 120 hours)	Pass (no defects)
Storage	In a dry place at above 41°F (5°C)

Protect containers from freezing in transit and storage. Provide for heated storage on site and deliver all materials at least 24 hours before work begins.

Shelf Life and Application Properties

Shelf life	1 year in original sealed packaging in a dry place
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CSI Division Classification

Maintenance of Concrete	03 01 00
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Packaging

Product Code	Size
276645	Carton box containing two 10-lb. (4,54 kg) bags

Approximate Product Coverage* per 10-lb. (4,54-kg) bag at 2 coats of 1/32" (1 mm) each, totaling 5/64" (2 mm)

Yield on a Flat Surface
About 15 to 18 sq. ft. (1,39 to 1,67 m ²)

Yield on Reinforcing Steel in linear feet (m)	
# 4 bar	45 (13,7)
# 5 bar	30 (9,14)
# 6 bar	27 (8,23)
# 7 bar	24 (7,32)
# 8 bar	22 (6,71)

* Coverage shown is for estimating purposes only. Actual jobsite coverage may vary according to substrate conditions and setting practices.

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RELATED DOCUMENTS

Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion	Guide #310.1R-2008 (formerly #03730)
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Refer to MAPEI's MSDS for specific data related to VOCs, health and safety, and handling of product.

STATEMENT OF RESPONSIBILITY

Before using, user shall determine the suitability of the product for its intended use and user alone assumes all risks and liability whatsoever in connection therewith. **ANY CLAIM SHALL BE DEEMED WAIVED UNLESS MADE IN WRITING TO US WITHIN FIFTEEN (15) DAYS FROM DATE IT WAS, OR REASONABLY SHOULD HAVE BEEN, DISCOVERED.**

We proudly support the following industry organizations:



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