

Mapefer 1K [NA]

Corrosion-Inhibiting Coating for Reinforcing Steel



North America [NA]

DESCRIPTION

*Mapefer*TM 1K [NA] is a one-component, anti-corrosion coating based on unique polymers, cementitious binders and corrosion inhibitors. *Mapefer* 1K [NA] is specially formulated for application on properly prepared reinforcing steel to inhibit oxidation and rust formation. This product features a very low emission of volatile organic compounds and includes an offset of greenhouse gas emissions.

CO₂ FULLY OFFSET PRODUCTS

Mapefer 1K [NA] is part of the “CO₂ Fully Offset in the Entire Life Cycle” line of products. CO₂ emissions measured throughout the life cycle of products from the Zero line in 2023, using Life Cycle Assessment (LCA) methodology, verified and certified with EPDs, have been offset through the acquisition of third-party-certified carbon credits in support of renewable energy and forestry protection projects: A commitment to the planet, to people and to biodiversity. For more details on how emissions are calculated and on climate-mitigation projects that are financed through certified carbon credits, visit www.mapei.com/us/sustainable-products.

FEATURES AND BENEFITS

- High in density and alkalinity, *Mapefer* 1K [NA] offers excellent resistance to chloride penetration, carbon dioxide penetration and pollutants.
- Meets or exceeds the 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* [NA]
- When brushed or oversprayed on concrete and masonry surfaces, *Mapefer 1K* [NA] will not act as a bond breaker.

WHERE TO USE

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

SURFACE PREPARATION

- Remove corrosion and loose scale from exposed reinforcing steel. Reference International Concrete Repair Institute (ICRI) Technical Guideline #310.1R-2008 "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 near 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 oxidation.
- If a significant portion of cross section has been lost, replace or supplement the reinforcing steel as recommended by the engineer of record and coat it with *Mapefer 1K* [NA].
- If the concrete substrate around the application area is to be repaired, remove all delaminated, loose or spalled concrete before application of *Mapefer 1K* [NA].
- Ensure that all substrate and ambient temperatures are between 45°F and 95°F (7°C and 35°C).

MIXING

Before product use, take appropriate safety precautions. Refer to the Safety Data Sheet for details.

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. (4.54-kg) bag of *Mapefer 1K* [NA], drill-and-paddle-mix to a lump-free consistency.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

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

CURING

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

CLEANUP

- While still fresh, remove *Mapefer 1K* [NA] from brushes and tools with water. Once hardened, the product can only be removed mechanically.

LIMITATIONS

- Use between temperatures of 45°F and 95°F (7°C and 35°C).
- Do not add cement or aggregates to *Mapefer 1K* [NA].
- Apply *Mapefer 1K* [NA] to reinforcing steel immediately after removing rust and after 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.

Product Performance Properties

Laboratory Tests	Results
Specific gravity	1.7 to 1.9 kg/dm ³
pH	12 to 13
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> [NA]	> 90% the value on untreated rods
Resistance to saline fog after 120 hours – ASTM B117	Excellent (no corrosion)
Resistance to chloride	1,600 hours
VOCs (Rule #1113 of California's SCAQMD)	0 g per L

Shelf Life and Product Characteristics

(before mixing)

Shelf life	1 year when stored in original, unopened packaging at 73°F (23°C) in a dry place
Storage	In a dry place at between 41°F and 95°F (5°C and 35°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.

Application Properties

Mixing ratio	22% to 24% – 1 to 1.2 U.S. qts. (0.95 to 1.14 L) of water per 10 lbs. (4.54 kg) of Mapefer 1K [NA]
Consistency	Paste
Color	Blue
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

CSI Division Classification

Maintenance of Concrete	03 01 00
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Packaging

Size	Carton box containing two 10-lb. (4.54-kg) bags
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Approximate Coverage*

per 10-lb. (4.54-kg) bag at 2 coats of 1/32" (1 mm) each, totaling 5/64" (2 mm)

On a Flat Surface

About 15 to 18 sq. ft. (1.39 to 1.67 m²)

On Reinforcing Steel

Bar Size	Coverage
#4	45 lin. ft. (13.7 m)
#5	30 lin. ft. (9.14 m)
#6	27 lin. ft. (8.23 m)
#7	24 lin. ft. (7.32 m)
#8	22 lin. ft. (6.71 m)

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

ADDITIONAL INFORMATION

Refer to the SDS for specific data related to health and safety as well as product handling.

For information on MAPEI's commitment to sustainability and transparency, as well as how MAPEI products may contribute to green building standards and certification systems, contact sustainability_USA@mapei.com (USA) or sustainability-durabilite@mapei.com (Canada).

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 nor replace requirements per the TDS in effect at the time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com. **ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.**

Before using, the user must determine the suitability of our products for the intended use, and the user alone assumes all risks and liability. **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.**

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For the most current product data and BEST-BACKEDSM warranty information,
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