

MapeWrap 21 TG

Low-Viscosity, 100%-Solids Epoxy Resin for Mechanical Saturation of MapeWrap® Fabrics



DESCRIPTION

MapeWrap 21 TG is a 100%-solids, moisture-tolerant, low-viscosity epoxy resin with an extended working time used to encapsulate the *MapeWrap* composite system fabrics via the wet layup technique. *MapeWrap 21 TG* was specially developed to saturate and encapsulate both carbon and glass fiber fabrics by way of mechanical saturation and to cure to a high-performance laminate. Once cured, the laminate provides additional strength to appropriate structural elements.

FEATURES AND BENEFITS

- 100%-solids epoxy
- Low-viscosity epoxy resin for encapsulation of all *MapeWrap* fabrics
- Moisture-tolerant
- Solvent-free and VOC-compliant
- Developed specifically for wet layup of the *MapeWrap* composite system

WHERE TO USE

- Mechanical saturation of all *MapeWrap* fabrics
- Interior and exterior horizontal, vertical and overhead surfaces
- When additional structural strengthening is required on concrete, masonry, steel and wood elements

SUITABLE SUBSTRATES

- Use on properly prepared and primed, structurally sound, fully cured concrete substrates (at least 28 days old), as well as masonry, steel and wood.

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

SURFACE PREPARATION

- Apply *MapeWrap 21 TG* to a properly prepared substrate following application of *MapeWrap Primer 1* and *MapeWrap 11* or *MapeWrap 12*. For additional surface preparation requirements, refer to the Technical Data Sheet for *MapeWrap Primer 1*.

MIXING

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

1. Combine the two components together that make up *MapeWrap 21 TG* by pouring Part B into Part A.
2. Mix with a low-speed mixer (at 400 to 600 rpm) and a standard paint-mixing paddle for about 3 minutes, until the mixture has a smooth, homogenous consistency.
3. Part A and Part B components are pre-proportioned (mixing ratio by weight: 4:1 of A:B) and should be mixed as full units. Partial mixing of Part A and Part B is prohibited.

PRODUCT APPLICATION

Read all installation instructions thoroughly before installation.

1. Automated saturation: Cut the *MapeWrap* fabric to the desired length and begin the impregnation process with an automated, mechanically driven saturation device and *MapeWrap 21 TG*. The saturation process may vary depending on the device manufacturer; however, the recommended coverage rates as listed in the "Approximate Coverage" chart below must be met.
2. When applying the products in a closed environment, provide good ventilation. For further information, carefully read the SDS of each product.
3. Repeat for additional layers of *MapeWrap* fabric as required.
4. When a coating is to be applied over the installed *MapeWrap* system, a light broadcast of oven-dried silica sand meeting ASTM C33 (or similar) must be added to the final coat of *MapeWrap 21 TG* to promote coating adhesion. Coatings, such as from the *Elastocolor*[®] product family, are required for all exterior applications and, though not required, are also often used on interior applications for aesthetic purposes. Refer to the "*MapeWrap* and *Carboplate*[®] Installation/Maintenance Guide" for additional information.

CLEANUP

- Due to the high bond strength of *MapeWrap 21 TG* on metal, be sure to clean tools with approved solvents (ethyl alcohol, toluene, etc.) before the product dries. Cured material can only be removed mechanically. Dispose of cured material in accordance with local disposal regulations.

LIMITATIONS

- Do not thin *MapeWrap 21 TG* with solvents or water.
- Apply *MapeWrap 21 TG* when the substrate and ambient temperatures are between 50°F and 90°F (10°C and 32°C).
- Do not use *MapeWrap 21 TG* if its mixed components have begun to harden before application.

Product Performance Properties

Laboratory Tests	Results
Specific gravity	0.042 lb./in ³ (1.17 g/cm ³)
VOCs (Rule #1168 of California's SCAQMD)	0 lb. per cu. ft. (0 g per L)
Adhesion to concrete at 7 days and 73°F (23°C) – ASTM C1583	> 800 psi (5.52 MPa)
Tensile strength* – ASTM D638	7,088 psi (48.9 MPa)
Tensile elongation* – ASTM D638	4.6%
Compressive strength – ASTM C579	12,200 psi (84.1 MPa)
Flexural strength – ASTM D790	8,262 psi (57.0 MPa)
Modulus of elasticity under compression – ASTM C579	290,000 psi (2 000 MPa)
Modulus of elasticity in flexion – ASTM D790	276,850 psi (1 909 MPa)

*Based on testing of cured samples at 73°F (23°C) and 50% relative humidity for 7 days

Shelf Life and Application Properties

Shelf life	2 years in original, unopened container in a covered area
Storage conditions	Store at 50°F to 90°F (10°C to 32°C). Protect from freezing in shipment.
Mixing ratio (by weight)	Part A : Part B = 4 : 1
Consistency (mixed)	Liquid
Color (mixed)	Yellow
Working time	
At 50°F (10°C)	12 hours
At 73°F (23°C)	2 hours
At 90°F (32°C)	60 minutes
Setting time	
At 50°F (10°C)	16 hours
At 73°F (23°C)	7 hours
At 90°F (32°C)	5-1/2 hours
Complete curing	7 days

Packaging

Size

Kit (Parts A and B): 1 U.S. gal. (3.79 L)

Approximate Coverage

for a 2-coat application

When used with	Amount of fabric that can be applied
<i>MapeWrap C Uni-Ax 300</i>	34 to 37 sq. ft. per U.S. gal. (0.83 to 0.91 m ² per L)
<i>MapeWrap C Uni-Ax 600</i>	23 to 25 sq. ft. per U.S. gal. (0.56 to 0.61 m ² per L)
<i>MapeWrap C Bi-Ax 230</i>	34 to 37 sq. ft. per U.S. gal. (0.83 to 0.91 m ² per L)
<i>MapeWrap G Uni-Ax 900</i>	20 to 23 sq. ft. per U.S. gal. (0.49 to 0.56 m ² per L)
<i>MapeWrap G Bi-Ax 300</i>	34 to 37 sq. ft. per U.S. gal. (0.83 to 0.91 m ² per L)

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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