



# MapeWrap 31

**Medium viscosity epoxy resin for impregnation of Mapewrap with “dry system”**



## WHERE TO USE

**Mapewrap 31** is used for the impregnation of **Mapewrap C UNI-AX, BI-AX** and **QUADRI-AX** fabrics, when concrete and/or reinforced concrete elements need repair or reinforcement by using the “dry system”.

## TECHNICAL CHARACTERISTICS

**Mapewrap 31** is a gelatinous solvent-free epoxy resin based adhesive specially developed in the MAPEI research laboratories for the impregnation during application using the “dry system” of **Mapewrap** fabric.

**Mapewrap 31** is made up of two pre-dosed components (Part A = resin and Part B = hardener) that must be mixed together before use. After having mixed the two Parts together, **Mapewrap 31** remains workable for approximately 40 minutes at +23°C.

Once hardened, **Mapewrap 31** acquires excellent dielectric properties and high mechanical strength.

## RECOMMENDATIONS

- **Mapewrap 31** must not be used once the hardening reaction begins.
- Apply **Mapewrap 31** over the still fresh **Mapewrap 11** or **Mapewrap 12**.

## DIRECTIONS FOR USE

### Preparing Mapewrap 31

Mix the two components of **Mapewrap 31** together. Pour Part B into Part A and mix with a slow speed drill fitted with a stirrer until the resin is completely homogeneous.

Mix ratio: 4 parts by weight of Part A and 1 part by weight of Part B. Do not use partial quantities. To avoid the risk of accidental ratio errors, use the whole package.

### Applying Mapewrap 31 and placing the Mapewrap C UNI-AX, BI-AX or QUADRI-AX fabrics

Apply a uniform first coat of **Mapewrap 31** over the still fresh **Mapewrap 11** or **Mapewrap 12**, with a brush or with a short bristle roller. Immediately apply the fabric making sure it is laid without wrinkles.

After having flattened the fabric wearing protective rubber waterproof gloves, apply over the **Mapewrap C** fabrics a second coat of **Mapewrap 31** by brush or roller. Press it several times using a stiff rubber roller so the adhesive can completely penetrate through the fibres of the fabric.

Pass over the impregnated fabric with an aluminium roller with a worm screw in order to completely eliminate any air bubbles formed during the application.

### Precautions to be observed before application

No special precautions need to be taken at temperatures between +5°C and +30°C. In hot weather do not expose the material to direct sunlight and bonding should be carried out during the cooler hours.

During the winter, if applications need to be carried out outdoors at temperatures below +5°C, it is recommended that before repairing or reinforcing with **Mapewrap** fabrics, warm the substrate 24 hours before

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Application phase



Application phase

bonding and arrange for having adequate insulation systems in order to avoid any danger of frost. The thermal insulation should be maintained for at least the next 24 hours. Before use, store the product in a heated area.

## SAFETY MEASURES TO BE OBSERVED FOR THE PREPARATION AND APPLICATION OF THE PRODUCT

**Mapewrap 31**, Part A is irritant in direct contact with the eyes and skin. Part B is a strongly caustic and corrosive substance. After repeated and prolonged contact, sensitivity of the skin could be caused.

Avoid contact with skin and eyes by always wearing protective gloves and goggles while mixing and applying the two components.

In case of contact with the skin, wash with plenty of water and soap and if there should be any sensitivity of the skin, consult a doctor. In case of contact with the eyes, wash with running water and consult a doctor. Use in ventilated areas.

### Cleaning

Due to the strong adhesion of **Mapewrap 31** also on metal, it is recommended to wash the working tools with solvents (ethyl, alcohol, toluol) before the product dries.

### COVERAGE

Coverage depends on the type on fabric (unidirectional, bi-directional and quadri-directional) and the height:

| Type of fabric | Coverage (g/m <sup>2</sup> ) | Height (cm) | Coverage (g/m) |
|----------------|------------------------------|-------------|----------------|
| (UNI-AX) 300   | 1000-1100                    | 10          | 100-110        |
|                |                              | 20          | 200-220        |
|                |                              | 40          | 400-440        |

|                 |           |      |           |
|-----------------|-----------|------|-----------|
| (UNI-AX) 600    | 1500-1550 | 10   | 150-155   |
|                 |           | 20   | 300-310   |
|                 |           | 40   | 600-620   |
| (BI-AX) 230     | 1000-1100 | 20   | 200-220   |
|                 |           | 40   | 400-440   |
| (BI-AX) 360     | 1250-1400 | 20   | 250-280   |
|                 |           | 40   | 500-560   |
| (QUADRI-AX) 380 | 2000-2100 | 30   | 600-700   |
|                 |           | 48.5 | 970-1020  |
| (QUADRI-AX) 760 | 3500-3700 | 30   | 1050-1100 |
|                 |           | 48.5 | 1700-1800 |

### PACKAGING

5 kg units (Part A = 4 kg, Part B = 1 kg).

2.5 kg units (Part A = 2 kg, Part B = 0.5 kg).

### STORAGE

The product must be stored in original sealed packaging in temperatures not lower than +5°C.

FOR PROFESSIONALS.

### WARNING

*N.B. - Although the technical details and recommendations contained in this product report 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 applications: 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.*

## TECHNICAL DATA (typical values)

### PRODUCT IDENTIFICATION:

|   |  |                               |
|---|--|-------------------------------|
| <b>Customs class:</b>                                 | 3907 30 00   |                               |
| <b>Consistency:</b>                                   | <b>Part A</b><br>paste   | <b>Part B</b><br>liquid       |
| <b>Colour:</b>  | grey   | transparent yellow            |
| <b>Specific gravity:</b>                              | 1.05 g/cm <sup>3</sup>   | 1.12 g/cm <sup>3</sup>        |
| <b>Brookfield viscosity:</b>                          | 17000 cPs<br>(shaft 3 - rev. 5)  | 320 cPs<br>(shaft 2 - rev. 5) |
| <b>Storage:</b>                                       | 24 months in original sealed packaging at temperatures between +10°C and +30°C   |                               |
| <b>Hazard classification according to EEC 88/379:</b> | irritant                      corrosive<br>Before using the product, consult the "Safety measures to be observed for the preparation and application of the product" paragraph and the information described on the packaging and safety data sheet. |                               |

### APPLICATION DATA:

|  |   |
|--|---|
| <b>Mix ratio:</b>  | Part A : Part B = 4 : 1   |
| <b>Mix consistency:</b>  | gelatine paste  |
| <b>Colour of mix:</b>  | transparent yellow  |
| <b>Specific gravity of the mix:</b>                              | 1.06 g/cm <sup>3</sup>  |
| <b>Brookfield viscosity:</b>                                     | 7000 cPs (shaft 3 - rev. 5)   |
| <b>Workability</b><br>- at +10°C:<br>- at +23°C:<br>- at +30°C:  | 60 minutes<br>40 minutes<br>20 minutes                                  |
| <b>Setting time</b><br>- at +10°C:<br>- at +23°C:<br>- at +30°C: | 90 minutes<br>50 minutes<br>30 minutes                                  |
| <b>Application temperature:</b>                                  | from +5°C to +30°C  |
| <b>Complete curing:</b>  | 7 days  |
| <b>Adhesion to concrete:</b>                                     | > 3 N/mm <sup>2</sup> (after 7 days at +23°C - concrete breaking point) |
| <b>Tensile strength (ASTM D 638):</b>                            | 30 N/mm <sup>2</sup>  |
| <b>Tensile elongation (ASTM D 638):</b>                          | 1.2%  |
| <b>Compressive strength (ASTM C 579):</b>                        | 80 N/mm <sup>2</sup>  |
| <b>Flexural strength (ISO 178):</b>                              | 70 N/mm <sup>2</sup>  |
| <b>Modulus of elasticity under compression (ASTM C 579):</b>     | 3000 N/mm <sup>2</sup>  |
| <b>Modulus of elasticity in flexion (ISO 178):</b>               | 3800 N/mm <sup>2</sup>  |

**All relevant references  
of the product are available  
upon request.**

