



# MapeWrap 31 SP

**Medium viscosity epoxy resin for impregnation of MapeWrap**



## WHERE TO USE

MapeWrap 31 SP is used for the impregnation of MapeWrap fabrics for use in structural repair, strengthening and upgrading applications.

## TECHNICAL CHARACTERISTICS

MapeWrap 31 SP is a gelatinous solvent-free epoxy resin based adhesive specially developed in the MAPEI research laboratories for the impregnation of MapeWrap fabric.

MapeWrap 31 SP 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 SP remains workable for approximately 60 minutes at +30°C.

Once hardened, MapeWrap 31 SP acquires excellent dielectric properties and high mechanical strength.

## RECOMMENDATIONS

- MapeWrap 31 SP must not be used once the hardening reaction begins.

## DIRECTIONS FOR USE

### Preparing MapeWrap 31 SP

Mix the two components of MapeWrap 31 SP 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: 3 parts by weight of Part A and 1 part by weight of Part B. When using partial mix, the individual components must be weighed using a digital weighing scale. To avoid the risk of accidental ratio errors, use the whole package.

### Applying MapeWrap 31 SP and placing the MapeWrap fabrics

Apply a uniform first coat of MapeWrap 31 SP over the still fresh MapeWrap Primer 1 SP, with a brush or with a short bristle roller. Immediately apply the MapeWrap fabric making sure it is laid without wrinkles.

After having flattened the fabric wearing protective rubber waterproof gloves, apply over the MapeWrap C or G fabrics a second coat of MapeWrap 31 SP by roller. Press it several times using a ribbed roller so the adhesive can completely penetrate through the fibres of the fabric and to completely eliminate any air bubbles formed during the application.



# MapeWrap 31 SP



Application phase



Application phase

## Precautions to be observed before application

No special precautions need to be taken at temperatures between +5°C and +35°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 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.

## Cleaning

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

## PACKAGING

20 kg units  
(Part A = 15 kg, Part B = 5 kg).

## STORAGE

The product must be stored for 24 months in original sealed packaging in temperatures not lower than +5°C.

## SAFETY MEASURES FOR PREPARATION AND APPLICATION

**MapeWrap 31 SP**, Part A is irritant to eyes and skin. Part B is corrosive and may cause serious burns and is furthermore harmful when inhaled.

Both Part A & B may cause allergic reactions to those predisposed. Wear protective clothes, gloves and goggles. In case it comes in contact with the eyes, wash with plenty of water and seek medical advice. **MapeWrap 31 SP**, Part A and B are dangerous to aquatic organisms - avoid releasing into the environment.

For further and complete information about a safety use of our product, please refer to our latest version of the Material Safety Data Sheet.

## CONSUMPTION

Consumption depends on the type on fabric (uni-directional, bi-directional and quadri-directional) and the height:

### MapeWrap C (CARBON fabrics)

Type of fabric	Consumption (g/m <sup>2</sup> )	Width (cm)	Consumption (g/m)
UNI-AX 300 or UNI-AX HM 300	600-800	10	60-80
		20	120-160
		40	240-320
UNI-AX 600 or UNI-AX HM 600	800-1000	10	80-100
		20	160-200
		40	320-400
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

### MapeWrap G (GLASS fabrics)

Type of fabric	Consumption (g/m <sup>2</sup> )	Height (cm)	Consumption (g/m)
UNI-AX 900	900-1000	30	270-300
		60	540-600
QUADRI-AX 1140	1300-1400	30	390-420
		48.5	630-680

PRODUCT FOR PROFESSIONAL USE.

## WARNING

*Although the technical details and recommendations contained in this product data sheet 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 application: 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.*

**Please refer to the current version of the Technical Data Sheet, available from our website [www.mapei.com.sg](http://www.mapei.com.sg).**

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

## TECHNICAL DATA (typical values)

### PRODUCT IDENTIFICATION

	Part A	Part B
<b>Consistency:</b>	gel	liquid
<b>Colour:</b>	yellow to dark amber	dark brown
<b>Specific gravity (g/cm<sup>3</sup>):</b>	1.05	1.10
<b>Brookfield viscosity (mPa.s):</b>	7,000 (shaft 6 - rev. 10)	300 (shaft 2 - rev. 5)

### APPLICATION DATA

<b>Mix ratio:</b>	Part A : Part B = 3 : 1 by weight
<b>Mix consistency:</b>	gelatinous paste
<b>Colour of mix:</b>	yellow to amber
<b>Specific gravity of the mix (g/cm<sup>3</sup>):</b>	1.14
<b>Brookfield viscosity (mPa.s):</b>	2,800 (shaft 3 - rev. 5)
<b>Workability:</b> - at +10°C: - at +20°C: - at +30°C:	120 minutes 90 minutes 60 minutes
<b>Application temperature:</b>	from +5°C to +35°C
<b>Complete curing:</b>	7 days
<b>Adhesion to concrete (MPa):</b> After 7 days at +23°C	> 3 (concrete breaking point)

### PERFORMANCE DATA

<b>Tensile strength (ASTM D 638) (MPa):</b>	61
<b>Tensile modulus of elasticity (ASTM D 638) (MPa):</b>	2,300
<b>Tensile strain (ASTM D 638) (%):</b>	4
<b>Compressive strength (ASTM D 695) (MPa):</b>	86
<b>Flexural strength (ASTM D 790) (MPa):</b>	136
<b>Modulus of elasticity under compression (ASTM D 695) (MPa):</b>	796
<b>Modulus of elasticity in flexion (ASTM D 790) (MPa):</b>	6,300

**MapeWrap<sup>®</sup>  
31 SP**

(FAR EAST)

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**1009-6-2012**