

# MAPEWRAP EQ SYSTEM

Strengthening system for load-bearing facing walls and secondary elements

## PRODUCTS USED IN THE SYSTEM:

MapeWrap EQ System, MapeWrap EQ Net

## WHERE TO USE

The system is recommended for repairing and strengthening load-bearing facing walls and secondary elements in order to improve stress distribution and increase the ductility of strengthened elements subject to stresses and loads.

### Some application examples

- Structural reinforcement of structural facing walls applied on the internal and/or external face.
- To reduce the seismic vulnerability of internal and external secondary partition walls.
- Reinforcement to prevent the collapse of brick-cement floors.

## TECHNICAL CHARACTERISTICS

**MAPEWRAP EQ SYSTEM** is a combination of bi-directional reinforcement made from glass fibre mesh with a surface treatment of alkali-resistant, polyurethane-based primer, such as **MAPEWRAP EQ NET**, and a one-component, ready-mixed, water-based adhesive in polyurethane dispersion with very low emission of volatile organic compounds (VOC), such as **MAPEWRAP EQ ADHESIVE**.

The system also forms a perfect bond with rendered substrates, as long as they are solid and compact, and have a “containment” effect on elements typically prone to brittle fracture.

## ADVANTAGES

- Excellent tensile strength.
- Stable and resistant to chemical aggression from cement.
- Resistant to atmospheric agents.
- High dimensional stability.
- Does not rust.
- Light and easy to handle.
- Easy to cut and fold to suit the shape of the substrate.
- Quick application, elements are soon ready for service.

## RECOMMENDATIONS

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All workers must use protective gloves and goggles and anti-solvent safety masks. Once opened, **MAPEWRAP EQ ADHESIVE** remains workable for around 7 days if closed and sealed air-tight. Do not use the product once the hardening process has commenced.

## APPLICATION PROCEDURE

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### Preparation of the substrate

Surfaces on which **MAPEWRAP EQ SYSTEM** is to be applied must be prepared as specified. Remove any paint down to the existing render by sanding; vacuum off all traces of dust. Remove any render not perfectly adhered to the substrate. After removing the render, fill any large gaps in the surface with material having physical characteristics that are as similar as possible to the original material. In the case of floor slabs with damaged hollow-core blocks, it is recommended to replace the elements with EPS panels or a similar material. Repair any cracks in the surface by sealing them with **PLANITOP HDM MAXI** (refer to the Technical Data Sheet). Wait until the mortar is fully cured before applying **MAPEWRAP EQ SYSTEM**.

If the substrate needs to be consolidated, treat the surface with **PRIMER 3296** diluted with water at a rate of 1:1 at least 4 hours prior to application of the system.

In the case of substrates containing gypsum, it is recommended to treat the surface with **PRIMER G** (refer to the relative Technical Data Sheet). Before applying **MAPEWRAP EQ SYSTEM**, make sure the substrate is clean and dry.

### Preparation of MAPEWRAP EQ ADHESIVE

**MAPEWRAP EQ ADHESIVE** is a one-component product supplied ready-mixed.

### Application of the first layer of MAPEWRAP EQ ADHESIVE

Apply a first, even layer of **MAPEWRAP EQ ADHESIVE** with a brush or roller.

### Application of MAPEWRAP EQ NET fabric

Immediately apply the **MAPEWRAP EQ NET** fabric over the adhesive and spread and flatten it out by hand (always wear waterproof rubber gloves when carrying out this operation), making sure there are no folds or creases, then go over the surface several times with a **MAPEWRAP ROLLER** so that the adhesive completely penetrates into the fibres of the fabric.

### Application of the second layer of MAPEWRAP EQ ADHESIVE

Apply a second layer of **MAPEWRAP EQ ADHESIVE** while the first layer is still wet. Go over the surface with a **MAPEWRAP ROLLER** to eliminate any air bubbles trapped in the fabric during the previous steps.

### Joints

Overlap the edges of adjacent sheets of **MAPEWRAP EQ NET** by at least 10 cm. The system must be applied to a height of at least 10 cm onto elements and surfaces at right angles to the surface to be strengthened.

## FINISHING COAT

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24 hours after applying **MAPEWRAP EQ SYSTEM**, skim the surface with **PLANITOP 200**.

## PRECAUTIONS TO BE TAKEN BEFORE APPLICATION

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No special precautions need to be taken if the temperature is between +5°C and +30°C. In hot weather, do not expose the product to direct sunlight and apply the adhesive during the cooler hours of the day. In cold weather, if the product is applied outside and the temperature is lower than +5°C, it is recommended to heat the substrate to be repaired or strengthened with **MAPEWRAP EQ SYSTEM** at least 24 hours before bonding the fabric and to use a suitable insulating system to prevent the risk of freezing. The substrate must then be kept insulated for at least the next 24 hours. Store the product in a warm place before use.

## CLEANING

MAPEWRAP EQ ADHESIVE is highly adhesive, and it is recommended to clean tools with a solvent (such as ethanol, toluene, etc.) before it sets.

## PACKAGING AND STORAGE

MAPEWRAP EQ NET is supplied in 50 m x 1 m wide rolls packed in cardboard boxes. Store the product in a dry, covered area.

MAPEWRAP EQ ADHESIVE is available in 2 and 6 kg drums. The product will keep 12 months in its original packaging and at a temperature not below +5°C.

## TECHNICAL DATA

### TECHNICAL DATA FOR MAPEWRAP EQ NET FABRIC (typical values)

#### PRODUCT DETAILS

Type of fibre:	primed E-type glass fibre
Appearance:	balanced bi-directional fabric
Weight (g/m <sup>2</sup> ):	286

#### APPLICATION DATA

Equivalent thickness of dry fabric(mm <sup>2</sup> /m):	57.00
Tensile strength (N/mm <sup>2</sup> ):	> 1.620
Tensile strength (N/5 cm):	> 4.600
Tensile modulus of elasticity (GPa):	42
Elongation at failure (%):	4

### TECHNICAL DATA FOR MAPEWRAP EQ ADHESIVE (typical values)

#### PRODUCT DETAILS

Consistency:	gel
Colour:	milky white
Density (g/cm <sup>3</sup> ):	1.10
Dry solids content(%):	35
EMICODE:	EC1 Plus – very low emission
Consumption (kg/m <sup>2</sup> ):	0.5-0.6

#### APPLICATION DATA (at +23°C - 50% R.H.)

Brookfield viscosity (mPa s):	200,000 (rotor 3 - 1 rev)
Application temperature:	+5°C to +30°C
Tensile strength (DIN 53504) (N/mm <sup>2</sup> ):	5.25
Tensile modulus of elasticity (DIN 53504) (N/mm <sup>2</sup> ):	0.55
Maximum tensile elongation (DIN 53504) (%):	1,200
Peel strength (brickwork) (EN 1348) (N/mm):	1.1
Peel strength (concrete) (EN 1348) (N/mm):	2.1
Peel strength (cured render treated with Primer 3296) (EN 1348) (N/mm):	≥ 1.5
Peel strength (gypsum-based render treated with Primer G) (EN 1348) (N/mm):	≥ 1.2

System reaction to fire (EN 13501-1):	Bs1d0
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# SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**MAPEWRAP EQ NET** is an article and referring to the current European regulations (Reg. 1907/2006/CE - REACH) does not require the preparation of the Safety Data Sheet. During use, it is recommended to wear protective gloves and goggles and follow the safety requirements of the workplace.

**MAPEWRAP EQ ADHESIVE** is not considered hazardous according to current norms and guidelines regarding the classification of mixtures. It is recommended to use protective gloves and goggles and to take the usual precautions for handling chemicals.

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

PRODUCT FOR PROFESSIONAL USE.

## WARNING

*Although the technical details and recommendations contained in this manual correspond to the best of our knowledge and experience, all the above information must, in all cases, be taken as merely indicative and subject to confirmation after long-term, practical applications. For this reason, anyone who intends using this system must ensure beforehand that it is suitable for the envisaged application. In all cases, the user alone is fully responsible for any consequences deriving from the use of this system.*

**Always refer to the latest, updated version of the Technical Data Sheet available on the company website [www.mapei.com](http://www.mapei.com)**

## SYSTEM SPECIFICATIONS

Repair and strengthening of load-bearing facing walls and secondary elements in order to improve stress distribution and increase the ductility of strengthened elements subject to stresses and loads by applying a strengthening system (such as **MAPEWRAP EQ SYSTEM** by MAPEI S.p.A.) comprising two-directional reinforcement made up of glass fibre fabric with a surface treatment of alkali-resistant polyurethane-based primer (such as **MAPEWRAP EQ NET**) bonded to the substrate with one-component water-based adhesive (such as **MAPEWRAP EQ ADHESIVE**).

The bi-directional reinforcement must have the following characteristics:

Type of fibre:	primed E-type glass fibre
Appearance:	balanced bi-directional fabric
Weight (g/m <sup>2</sup> ):	286
Equivalent thickness of dry fabric (mm <sup>2</sup> /m):	57.00
Tensile strength (N/mm <sup>2</sup> ):	> 1.620
Tensile modulus of elasticity (GPa):	42
Elongation at failure (%):	4

The adhesive must have the following characteristics:

Density of mix (kg/m <sup>3</sup> ):	1.100
Brookfield viscosity (mPa·s):	200.000 (rotor 4 - 1 rev)
Tensile strength (N/mm <sup>2</sup> ):	5.25 (DIN 53504)
Tensile modulus of elasticity (N/mm <sup>2</sup> ):	0.55 (DIN 53504)
Tensile elongation (%):	1.200 (DIN 53504)
Peel strength (brickwork) (N/mm):	1.1 (EN 1348)
Peel strength (concrete) (N/mm):	2.1 (EN 1348)
Peel strength (render treated with <b>PRIMER 3296</b> ) (N/mm):	≥ 1.5
Peel strength (gypsum-based render treated with <b>PRIMER G</b> ) (N/mm):	≥ 1.2
System reaction to fire (EN 13501-1):	Bs1d0



Removal of old paint from the substrate



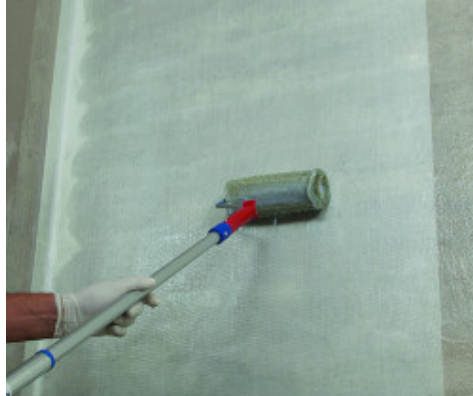
Application of the first layer of MAPEWRAP EQ ADHESIVE



Application of MAPEWRAP EQ NET reinforcement fabric on walls



Application of MAPEWRAP EQ NET reinforcement fabric on ceilings



Application of the second layer of MAPEWRAP EQ ADHESIVE



Skimming the surface with PLANITOP 200

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