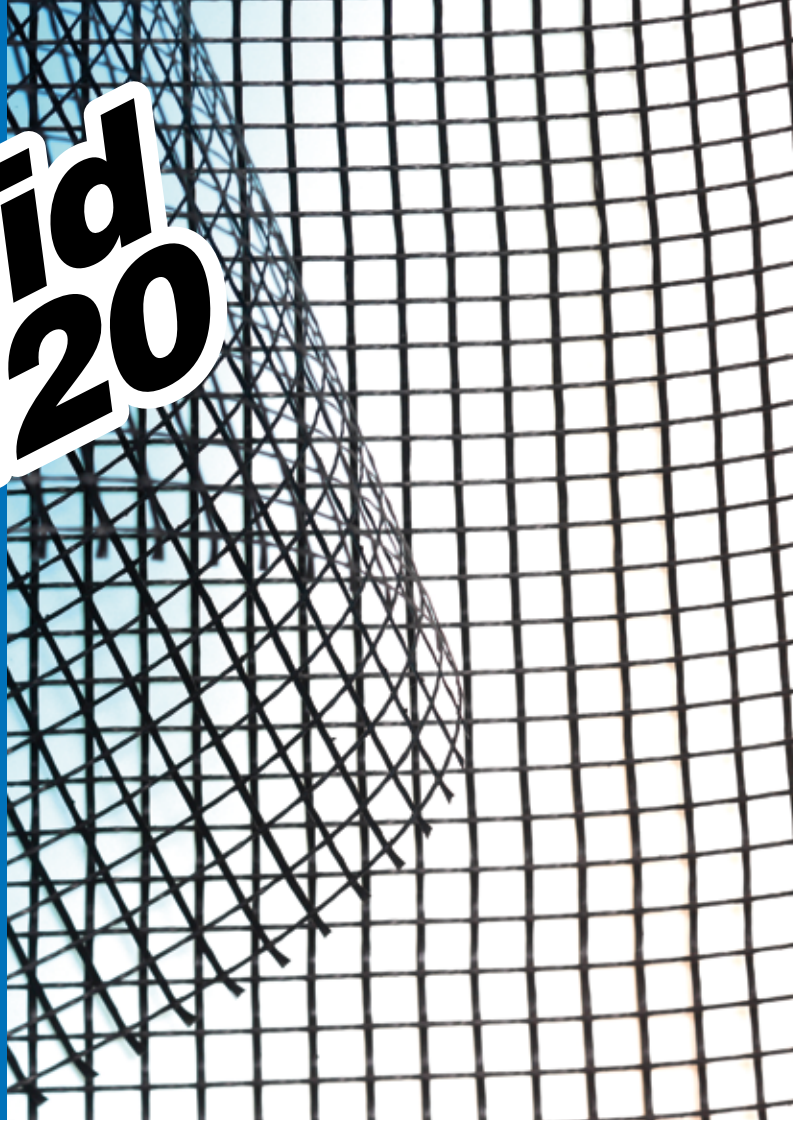
MAPEI

Mapegrid G 120



Primed alkali-resistant A.R. glass fibre mesh for localised “reinforced” structural strengthening of masonry elements

WHERE TO USE

Primed alkali-resistant A.R. glass fibre mesh used in combination with **Planitop HDM** or **Planitop HDM Maxi** (two-component ready-mixed, high ductility, pozzolanic-reaction, fibre-reinforced cementitious mortar for “reinforced” structural strengthening of masonry substrates) or **Planitop HDM Restauro** (two-component ready-mixed, high-ductility, fibre reinforced, natural hydraulic lime (NHL) and Eco-Pozzolan based mortar for “reinforced” structural strengthening of masonry substrates) for localised reinforced strengthening of masonry elements to improve the distribution of stresses acting on the surface of strengthened elements. The system may be used to reduce the vulnerability of non-structural buffer and partition walls which, because of their weight and position, could present a risk to the safety of people, including in buildings that are not seriously damaged. May also be used for “anti-collapse” systems on floor slabs. **The system complies with the “Reluis guidelines for repairing and strengthening structural elements, buffer walls and partition walls” and the approach defined in the guidelines for the approval of FRCM (Fibre Reinforced Cementitious Matrix) systems which stress the importance of obtaining approval for the entire strengthening package.**

Some application examples

- Localised structural strengthening of facing walls, applied on the internal and/or external face.
- Anti-fracture membrane to connect the edges of buffer walls, partition walls and structural cornices in elements with a reinforced concrete frame (beams, pillars and floor slabs).
- “Localised” protection for cracked and damaged structures.
- “Anti-collapse” protection on floor slabs.

TECHNICAL CHARACTERISTICS

Mapegrid G 120 is a special mesh made from primed, alkali-resistant A.R. glass fibres with a zirconia content of 17% in a special weave pattern which, when applied on strengthened masonry, increases its overall ductility and distributes stresses more evenly. The system adheres perfectly to substrates and its mechanical properties are such that localised stresses provoke failure in the substrate rather than at the substrate/strengthening system interface.

When used to strengthen reinforced concrete structures (e.g. structures with a reinforced concrete framework), where a strong connection is required between secondary elements (buffer and partition walls) and load-bearing structural elements (beams, pillars, etc.) with the three-fold aim of preventing them collapsing out of plane, improving their interaction with the reinforced concrete structure and

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TECHNICAL DATA (typical values)	
PRODUCT IDENTITY	
Type of fibre:	A.R. glass
Zirconia content (ZrO2) (%)	17
Weight (g/m²):	125
Mesh size (mm):	12.7 x 12.7
APPLICATION DATA	
Tensile strength (kN/m):	30
Modulus of elasticity (GPa):	72
Load-resistant area per unit of width (mm²/m):	23.51
Equivalent thickness of dry mesh (mm):	0.024
Elongation at failure (%):	1.8

limiting localised failure, **Mapegrid G 120** provides an excellent clamping effect.

ADVANTAGES

- Excellent tensile strength.
- Stable and resistant to chemical attack by cement.
- Resistant to atmospheric agents.
- High dimensional stability.
- Does not rust.
- Light and easy to handle.
- Easy to cut and adapt to the shape of the substrate.
- Quick to apply and put in service.

APPLICATION PROCEDURE

Preparation of the substrate

The surface on which **Mapegrid G 120** is to be applied must be prepared correctly. Render must be completely removed using either mechanical or manual means. This operation must be carried out right down to the underlying masonry work. Where necessary, when removing the render, large gaps must be filled with new stone, bricks and/or tuff which has physical characteristics as similar as possible to the original materials. The surface of fractures must be sealed using **Planitop HDM Maxi**.
Remove loose material and dust and wash the structure down with water.
Wet the structure to be strengthened. Excess water must be left to evaporate off so that the masonry to be repaired is saturated with water, but is left with a dry surface (s.d.s.). This operation may be speeded up by using compressed air.

Application of the strengthening system

1. Prepare the **Planitop HDM**, **Planitop HDM Maxi** or **Planitop HDM Restauro** (see the relative Technical Data Sheet).
2. Apply an even layer of **Planitop HDM**, **Planitop HDM Maxi** or **Planitop HDM Restauro** around 4-5 mm thick with a metal smoothing trowel. Level off the surface of the wall to form a sufficiently flat surface.
3. After applying the first layer of mortar, while it is still “wet”, place **Mapegrid G 120** mesh over the entire surface and press down lightly with a flat smoothing trowel so that it adheres perfectly to the mortar.

4. Apply a second even layer of **Planitop HDM**, **Planitop HDM Maxi** or **Planitop HDM Restauro** on the still “wet” first one (around 4-5 mm thick) so that it completely covers the mesh.

Adjacent sheets of **Mapegrid G 120** must overlap by at least 25 cm at their longitudinal junction points. Transverse junction points must overlap by at least 10 cm.

PACKAGING

Mapegrid G 120 is available in 0.45 m-wide by 25 m-long rolls packed in cardboard boxes.

STORAGE

Store in a dry, covered area.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Mapegrid G 120 is an article and referring to the current European regulations (Reg. 1906/2007/CE - REACH) does not require the preparation of the material safety data sheet. During use it is recommended to wear gloves and goggles and follow the safety requirements of the workplace.

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

All relevant references for the product are available upon request and from www.mapei.com

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