

ADEMUR RETE EM30

Alkali-resistant pre-impregnated fibreglass mesh (FRP) and fibreglass “L”-connector, for structural reinforced renders on concrete and masonry. To be used in combination with ADEMUR RINFORZO 150 to create a reinforcement system for the structure with increased load-bearing capacity and more even distribution of stress.



Technical characteristics

ADEMUR RETE EM30 is an alkali-resistant fibreglass mesh with high mechanical performance. To be used in combination with ADEMUR RINFORZO 150 or ADESAN STRUTTURALE NHL, thanks to its special texture, with a mesh size of 30x30 mm, it gives the reinforced structure high ductility and more even distribution of stress.

ADEMUR RETE EM30 is characterised by:

- High flexibility so that it can be shaped at the corners of structures
- Excellent resistance to tensile strength, weather agents and chemical aggression of cement.
- High dimensional stability.
- Light and handy.

ADEMUR RETE EM30 must be used in combination with ADEMUR CONNETTORE 380x100 mm, an “L”-connector made of alkali-resistant fibreglass and thermosetting vinylester-epoxy resin.

The reinforcement system consisting of ADEMUR EM30 structural meshes is consistent with the approach defined in the Composite Reinforced Mortar (CRM) qualification guidelines, which emphasise the need to qualify the entire reinforcement package.

Applications

- Reinforced renders on brick walls, mixed masonry and continuous vertical masonry
- Compression reinforcement of continuous vertical masonry
- Reinforcement of vaults by means of reinforced caps
- Anti-deflection systems for slabs

Important warnings

- Always check in advance with a technician the type of reinforcement system depending on the masonry and the desired technical characteristics
- Always check the stability of the substrate before intervening
- Always use ADEMUR RETE EM30 in combination with ADEMUR CONNETTORE.
- Always place the mesh in the middle of the thickness of the ADEMUR or ADESAN STRUTTURALE NHL render and always with a thickness of approx. 4 cm.
- Apply an adequate number of connectors, always more than 5 connectors per square metre
- Always apply the connectors with a suitable chemical plug appropriate for the type of application/substrate.

Substrate preparation

The substrate must be completely free of render; remove every previous restoration and detaching or inconsistent parts. When reinforcing wall faces and vault inner surfaces, it is necessary to completely remove the renders, either manually or with mechanical tools. When reinforcing vault outer surfaces, it is advisable to remove floors and backfills. The operation must be continued on the underlying masonry until a clean, sound and compact substrate is obtained. When removing renders, if necessary to fill in large voids using new stone, brick and/or tuff, with physical characteristics as close as possible to the original materials. Remove loose material and dust, and wash the masonry with low pressure water; excess water must be allowed to evaporate so that the substrate to be repaired is saturated with water but the surface is dry. Compressed air can be used to speed up this operation

Drilling holes

Drill holes with a diameter of 16 mm, with an incidence of 5 holes/m² and subsequent removal of dust within the holes.

Installation of connectors

Anchoring of ADETERM CONNETTORE "L"-connectors using epoxy chemical fixing for structural loads with suitable products compatible with the substrate.

Application of the first layer of grout

Apply ADEMUR RINFORZO 150 or ADESAN STRUTTURALE NHL to the substrate as specified in the product data sheets. Proceed with applying the first layer by hand or machine to a thickness of approximately 2 cm, using a metal trowel to even out and obtain a uniform and suitably flat layer.

Application of the ADEMUR EM30 mesh

Simultaneously with the application of the first layer of grout, position the ADEMUR EM30 mesh by lightly pressing with a flat trowel to facilitate adhesion to the freshly applied render and at the same time position it inside the previously fixed connectors. ADEMUR RETE EM30 must be overlapped at the junction points by at least 15 cm between the different rolls. In the case of vaults, the overlap must be at least 40 cm.

Application of the second layer of grout

Apply the second layer of grout in quick succession in a thickness of approx. 2 cm to cover the mesh and connectors using the wet-on-wet technique.

Specifications

Meshes made of A.R. alkali-resistant, pre-impregnated fibreglass (FRP) for structural "reinforced" renders on concrete and masonry structures, giving the reinforced structures high ductility, increased load-bearing capacity and a more uniform distribution of stress (e.g. ADEMUR RETE EM30 by ADESITAL S.p.A.). The monolithic fixing of the mesh shall be carried out by means of preformed "L"-connectors in alkali-resistant fibreglass and thermosetting vinylester-epoxy resin (e.g. ADEMUR CONNECTOR by ADESITAL S.p.A.). The system shall be used for the structural reinforcement of stone, brick, tuff and mixed masonry works in combination with a transpiring plaster and masonry grout based on natural hydraulic lime for structural renders (e.g. ADEMUR RINFORZO 150 by ADESITAL S.p.A.) or a pre-mixed grout, free of cement, based on natural hydraulic lime (NHL) and environmental-friendly pozzolana (e.g. ADESAN STRUTTURALE NHL by ADESITAL S.p.A.). Alkali-resistant fibreglass meshes shall have the following characteristics:

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|-----------------------------|--------------------------|----------------------|
| Average thickness | 2 mm | CNR DT 200 R1/2013 |
| Section of the single bar | 2.37 mm ² | CNR DT 200 R1/2013 |
| Nominal fibre area | 0.395 mm ² | CNR DT 200 R1/2013 |
| Resistant section | 55.92 mm ² /m | CNR DT 200 R1/2013 |
| Bars/metre | 33 | |
| Single bar tensile strength | 3.20 KN | ISO 527-4,5:1997 (E) |
| Ultimate elongation | 4% | ISO 527-4,5:1997 (E) |
| Tensile elastic module | 33,000 N/mm ² | ISO 527-4,5:1997 (E) |

ADEMUR RETE EM30 technical data

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|-----------------------------|-----------------------------|----------------------|
| Appearance | Alkali-resistant fibre mesh | |
| Colour | Blue | |
| Weight | 420 g/m ² | ISO 3374:2000 (E) |
| Mesh dimensions | 30x30 mm | CNR DT 200 R1/2013 |
| Average thickness | 2 mm | CNR DT 200 R1/2013 |
| Section of the single bar | 2.37 mm ² | CNR DT 200 R1/2013 |
| Nominal fibre area | 0.395 mm ² | CNR DT 200 R1/2013 |
| Resistant section | 55.92 mm ² /m | CNR DT 200 R1/2013 |
| Bars/metre | 33 | |
| Single bar tensile strength | 3.20 KN | ISO 527-4,5:1997 (E) |
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| Tensile elastic module | 33,000 N/mm ² | ISO 527-4,5:1997 (E) |

ADEMUR CONNETTORE technical data

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|-----------------------------------|-----------------------------|------------------------|
| Appearance | Alkali-resistant fibreglass | |
| Thermo-setting resin | Epoxy-vinylester | |
| Fibre density | 2.55 g/cm ³ | ISO 1183 |
| Resin density | 1.1 g/cm ³ | ISO 1183 |
| Resin distortion temperature (Tg) | >100°C | ASTM - E - 1640 |
| Length | 380x100 mm | |
| Equivalent bar diameter | 7 mm | App. B CNR DT 203/2006 |
| Equivalent section area | 38 mm ² | App. B CNR DT 203/2006 |
| Tensile strength | >32 KN | CNR DT 203/2006 |
| Ultimate elongation | >1.5% | App. B CNR DT 203/2006 |
| Tensile elastic module | >35,000 N/mm ² | App. B CNR DT 203/2006 |

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| ADEMUR RETE EM30 packages ADEMUR CONNETTORE | Rolls of 25 m, 1-m wide 100-pcs box |
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Warning: The above indications and rules correspond to our best experience, but shall be deemed as merely indicative and shall be confirmed by exhaustive practical tests; thus, before using the product, the operator shall determine if it is suitable for its intended use and shall undertake every responsibility resulting from its use. PROFESSIONAL USE ONLY.