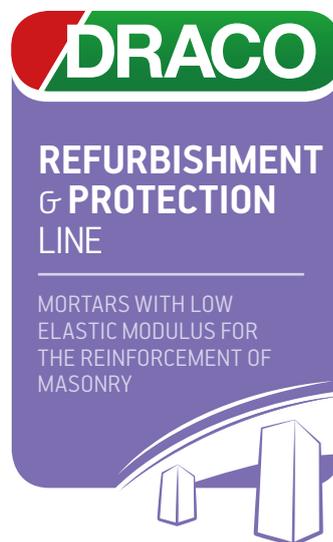


ARMOTECH MONO

ONE COMPONENT HIGHLY-DUCTILE THIXOTROPIC FIBRE-REINFORCED MORTAR ENRICHED WITH LIME AND POZZOLANA

Ideal for seismic retrofitting of non-structural elements.



ARMOTECH MONO is a high-ductile mortar with superior bonding strength enriched with lime and based on selected aggregates, binders and pozzolanic reagents for the repair and reinforcement of walls and vaults in brick, stone or tuff and concrete structural elements. It is compatible with the materials used for building walls and is hence ideal for the recovery of historical buildings. **ARMOTECH MONO** can be used in conjunction with the alkali-resistant fibreglass meshes ARMONET 350 and basalt fibre ARMONET B 250, or with the bidirectional mesh ARMONET C 170 made of carbon fibres for the anti-overturning reinforcement of walls subject to movement. The use of this product coupled with the mesh permits a uniform distribution of tensile stress caused by movement in the structure and prevents chipping and cracking.

BENEFITS

Features of the product:

- ✓ **HIGH BOND STRENGTH:** **ARMOTECH MONO** provides high bond strength to masonry, stone and tuff substrates and to porous surfaces even when subject to moderate moisture, and exposed to both shear and direct tensile strengths.
- ✓ **MECHANICAL PROPERTIES COMPATIBLE WITH MASONRY:** mechanical strengths achievable by using **ARMOTECH MONO** are compatible with masonry strengths, thereby avoiding the creation of localised stress caused by incompatibility of materials.
- ✓ **WATERPROOF AND BREATHABLE:** it permits the passage of water vapour allowing the masonry to breathe, but it blocks the ingress of water and its aggressive agents.
- ✓ **LOW ELASTIC MODULUS:** **ARMOTECH MONO** is also suitable for discontinuous structures exposed to movement, thus avoiding chipping.
- ✓ **VERSATILE AND EASY TO APPLY:** **ARMOTECH MONO** ensures excellent workability and ease of application even in vertical and overhead positions, and it is usually applied by spatula or spray.
- ✓ **EFFICIENT:** High performance per square metre compared to those of two-component products, thus allowing to handle a lower quantity of material.



AREAS OF APPLICATION

ARMOTECH MONO is ideal for:

- ▶ Consolidating and reinforcing brick, stone or tuff and masonry in general.
- ▶ Reducing and rebuilding deteriorated and flaking concrete.
- ▶ Strengthening and enhancing anti-seismic performance of masonry buffer walls and floor slabs with anti-overturning/anti-collapse system.
- ▶ Preventing and reducing fragile collapse mechanisms.
- ▶ Creating tracks for installing ARMOSHIELD carbon fibre fabric.



HOW TO USE

SUBSTRATE CLEANING

- ▶ The surface must be clean, uniform and without loose and crumbling parts, so remove them from the area to be restored taking care not to damage the structures. Clean it carefully by pressurized water.
- ▶ Remove stains, efflorescences, residues of oil, grease, varnish, dust, dirt, etc.;
- ▶ Remove any previous restoration work if irretrievably damaged or deteriorated.

SUBSTRATE PREPARATION

- ▶ Any crack, hole and empty space shall be fixed; the surface shall be uniform and the edges shall be rounded to a radius of curvature of not less than 2 cm. Remove dust, if any; as necessary, restore by using the same mortar **ARMOTECH MONO**.
- ▶ **Saturate the surface with pressurized water.** This procedure avoids mixing water absorption by the substrate, which could cause cracks and reduce the mortar adhesion capacity. This operation also permits the removal of any deposited residue. Before carrying out repairs, excess water must be completely evaporated.

MORTAR PREPARATION

Pour mixing water in a suitable container according to the suggested mixing ratio:

- 5.75÷6.25 litres of water per each 25 kg **ARMOTECH MONO** packaging.

Slowly add the product and mix for at least 4 - 5 minutes till getting a well-blended and lump-free mix. Check that all of the product has been correctly mixed and that no residues of dust have remained along the walls and on the bottom of the container. Use a low-speed mechanical stirrer to avoid dragging air into the mix.

MORTAR APPLICATION

ARMOTECH MONO can be applied by a trowel or by spray. The product shall be applied to clean surfaces, roughened and saturated with water as indicated in the previous paragraph.

When manually applying, apply at least two coats of mortar by spatula and insert between the two coats the strengthening mesh (wet-on-wet). The mesh insertion shall be done also at the edges of doors and windows, where significant stresses could be created and result in cracks. The terminal parts of the mesh shall be appropriately overlapped (about 10 cm). The **minimum thickness** to allow a correct incorporation of the mesh is **3-4 mm** per layer, the maximum thickness is about 25 mm. The second coat of mortar shall be applied using the wet-on-wet technique or after the first layer is hardened.

The thickness should be calculated by the designer depending on static requirements and according to Eurocodes. Indicatively, a thickness of about 3-4 mm per layer is sufficient for anti-overturning and anti-collapse reinforcements to enhance anti-seismic performance and, in general, for non-structural repairs.

Use a sponge or metal trowel to uniform the surface. The trowelling shall be carried out when the mortar becomes turgid, that is when a slight pressure of the fingers leaves their impression without sinking. The waiting time required before carrying out this operation depends on surrounding weather conditions in terms of temperature, relative humidity, exposure to the sun and windiness. The trowelling is always needed not only to smooth the surface, but also to avoid as much as possible cracking phenomenon caused by plastic shrinkage. The mortar can also be applied by spray or plastering machines.

CURING

ARMOTECH MONO is specifically designed to control cracking phenomenon caused by plastic shrinkage resulting from an improper curing in the first 24-48 hours after installation. To ensure a correct humid curing even in dry climate or when surfaces are exposed to excessive wind or sunlight, it is recommended the use of sprayed water or the curing compound PROBETON CURING N.

ARMOTECH MONO



PRECAUTIONS IN HOT CLIMATES

- ▶ Store **ARMOTECH MONO** away from direct sunlight;
- ▶ carry out the work in the early hours of the morning, and stop working when the sun is strongest. It is better to resume working in the late afternoon, as long as the structure has been wet continuously for at least 6 hours before work starts;
- ▶ to achieve optimum performance from **ARMOTECH MONO** you should ensure proper curing by applying PROBETON CURING N by spray or by brush.



PRECAUTIONS IN COLD CLIMATES

- ▶ Store **ARMOTECH MONO** in a heated environment where possible;
- ▶ do not use the product at temperatures below 0 °C;
- ▶ start working in the later hours of the morning;
- ▶ make sure that the substrate is not frozen.

PACKAGING AND STORAGE

ARMOTECH MONO is packaged into 25 kg bags

If the product is stored properly in its original packaging, indoors in a dry location, it maintains its original features for one year.



PRODUCT FEATURES

APPEARANCE	Powder
COLOUR	Gray
MAXIMUM DIAMETER OF AGGREGATE	< 0,5 mm
CHLORIDE CONTENT OF FRESH MORTAR - UNI EN 1015-17	0,023%
PACKAGING	25 kg bag
STORAGE	12 months

Excellent performance levels are reached at 20°C and 50% RH. Hardening and laying times may vary throughout the winter period. Strictly comply with the specified mixing ratio and do not use the content of open or damaged bags.

APPLICATION DATA

COLOUR OF MIX	Gray
MIXING WATER	5.75÷6.25 l per 25 kg bag (23-25%)
WORKABILITY - UNI EN 13395-1	170 mm (thixotropic)
DENSITY OF MIX - 1015-6	1970 kg/m ³
APPLICATION TEMPERATURE RANGE	+5°C ÷ +35°C
POT LIFE OF MIX	Approx. 30 minutes (20 °C - 50% R.H.)
CONSUMPTION	1,6 kg/m ² per mm of thickness

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FINAL PERFORMANCE - 23% MIXING WATER (+20°C - 50% R.H.)

PERFORMANCE CHARACTERISTIC	TEST METHOD	REQUIREMENTS ACCORDING TO EN 1504-3 FOR R2-CLASS MORTAR	PRODUCT PERFORMANCE
COMPRESSIVE STRENGTH	EN 12190	≥ 15 MPa (after 28 days)	6,9 MPa after 1 day 12,5 MPa after 3 days 16,6 MPa after 7 days 21,7 MPa after 28 days
FLEXURAL STRENGTH	EN 196-1	None	2,6 MPa after 1 day 3,4 MPa after 3 days 5,5 MPa after 7 days 6,5 MPa after 28 days
COMPRESSIVE MODULUS OF ELASTICITY	EN 13412	None	12 GPa
BOND STRENGTH ON CONCRETE (substrate type MC 0,40 w/c ratio = 0,40) according to EN 1766	EN 1542	≥ 0,8 MPa (after 28 days)	> 1,5 MPa
CAPILLARY ABSORPTION	EN 13057	≤ 0,5 kg/m ² ·h ^{0,5}	< 0,5 kg/m ² ·h ^{0,5}
THERMAL COMPATIBILITY measured as bond strength according to EN 1542 on cls MC 0,4 UNI EN 1766 - Freeze-thaw cycles with de-icing salts	EN 13687-1	≥ 0,8 MPa (after 50 cycles)	> 0,8 MPa
REACTION TO FIRE	EN 13501-1	Euroclass	B-s1 d0
PERFORMANCE CHARACTERISTIC	TEST METHOD	REQUIREMENTS ACCORDING TO EN 998-2	PRODUCT PERFORMANCE
COMPRESSIVE STRENGTH AFTER 28 DAYS (MPa)	EN 1015-11	Declared class >20 MPa for M20 class	M20 Class
BOND STRENGTH	EN 1052-3	tabular value	0,15 MPa
BOND STRENGTH TO SUBSTRATE (brickwork) (ARMOTECH MONO + ARMONET 350)	EN 1015-12	not required	Cohesive substrate failure Failure mode (FP) = A
WATER ABSORPTION	EN 1015-18	declared value	< 0,3 kg/m ² ·h ^{0,5}
PERMEABILITY TO WATER VAPOUR	EN 1015-19	declared value	≤ 60 μ
BULK VOLUME	EN 1015-10	Range	1970 kg/m ³
THERMAL CONDUCTIVITY	EN 1745 table A. 12	tabular value	P = 50% λ _{10, dry} 0,67 (W/mK)

Legal notice - SLCMP version dated 01.03.2017

In the technical specifications herein, Draco Italiana s.p.a. used the indicators therein specified, with the relevant standards.

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