

ARMOFIX MTX

TWO-COMPONENT THIXOTROPIC EPOXY RESIN
FOR STRUCTURAL BONDING OF ARMOSHIELD C
CARBON FIBRE FABRIC



ARMOFIX MTX is a two-component structural adhesive specifically designed for penetrating and grouting ARMOSHIELD C carbon fibre tapes for anti-seismic reinforcement. Thanks to its exclusive "GEL formula" **ARMOFIX MTX** ensures perfect and easy fabric saturation thus guaranteeing excellent adhesion to all substrates. It maintains cohesion and is easy to use even for overhead and vertical application.

BENEFITS

The specific characteristics of the product are:

- ✓ **HIGH BONDING CAPACITY:** ARMOFIX MTX ensures structural bonding on building materials such as concrete, masonry, wood, steel and natural stone.
- ✓ **EXCLUSIVE GEL FORMULA:** the fluid consistency of the thixotropic gel allows efficient penetration of the carbon fibre while maintaining safety and practical ease of application both vertically and overhead.
- ✓ **CAN EVEN BE APPLIED ON DAMP SUBSTRATES:** ARMOFIX MTX is relatively insensitive to moisture on the substrate hence enhancing application stability.
- ✓ **EASY TO INJECT** for grouting of bars.
- ✓ **EXTREME RESISTANCE:** ARMOFIX MTX exhibits optimum mechanical performance as regards bonding, flexural and shear strength as well as ensuring resistance to chemical and environmental attacks and being easy to use.
- ✓ **NON-TOXIC, SAFE FOR THE ENVIRONMENT AND USERS:** ARMOFIX MTX contains no Volatile Organic Compounds (VOC), nonylphenols or other substances that are harmful for the environment or the health of users.



USES

- ✓ Bonding and saturation of ARMOSHIELD C carbon fibre tapes and sheets for structural reinforcement
- ✓ Anti-seismic reinforcement of structures with FRP composite materials
- ✓ Structural reinforcement of buildings in concrete and in wood (beam heads, etc.)
- ✓ Structural bonding as in the beton-plaque technique.
- ✓ Grouting of ARMOSHIELD BC carbon bars and grouting at large.
- ✓ Vertical bonding of ARMOGRIP aramid fibre connectors.

PREPARATION OF SUBSTRATE

The application cycle for ARMOSHIELD structural reinforcement requires careful preparation of the surface on which you are working.

REQUIREMENTS OF SUBSTRATE

Before applying **ARMOFIX MTX** make sure that the surface has a minimum tear resistance of at least 1.5 MPa and is free of flaking parts and pools of water and the surface humidity does not exceed approx. 15 %.

To ensure effective application in compliance with the substrate requirements the surface must also be regular and flat with no gradients above ± 2 mm over a length of 1 m. If the substrate does not comply with these features it will be necessary to restore and / or level the surface.

CLEANING

- ▶ Remove all loose or flaking parts in the area to be repaired taking care not to damage the structures.
- ▶ Remove stains, efflorescence or soaked-in stains of oil, grease, paint, dust, dirt, concrete release agents, etc.
- ▶ When working on masonry it may be necessary to brush and dust the surface.
- ▶ On concrete surfaces in good condition simply sandblasting or sanding should be sufficient.
- ▶ The housing holes for anchoring must be clean. Pressurized water can be used to facilitate cleaning and if the substrate does not react negatively. Then dry up with dry, oil-free compressed air.
- ▶ The metal sheets must be sandblasted to SA2 standard and degreased with DILUENTE ECO.

REPAIR AND LEVELLING

Concrete

- ▶ Where the substrate is decayed it will be necessary to remove the damaged layer by bush hammering or pressure washing.
- ▶ The substrate will then be repaired by passivating the steel re-bars with DRACOSTEEL and building up the concrete with grouts from the FLUECO line and/or a coat of CONCRETE FINISHER.
- ▶ If there are cracks or crevices restore the load-bearing capacity and monolithic structure by injecting EPOX INIEZIONE RM2 or RM3 that have been specifically designed for this purpose. Wait about 1-2 weeks before installing the fibre; times will depend on the internal temperature of the premises and air ventilation.

Masonry

- ▶ Any existing cracks must be injected with a product from the ARMOLIME line before installation.
- ▶ Any cracks or damage that are large enough to compromise the continuity of the masonry of the building must be repaired with reinforcing ties by inserting carbon rods that will be cemented in with ARMOFIX MT or with ARMOLINE grout.
- ▶ If the masonry is subject to cortical weakness and / or crumbling we recommend treating it with the silicate reinforcement agent ARMOSTONE. Any required re-pointing of seams can be carried out using ARMOLIME TS.ù

Preparation of grout lines for housing the fabrics.

In order to apply the tapes on a flat surface with sufficient mechanical strength it is always advisable to build layers with a shrinkage-compensating thixotropic mortar such as FLUECO 40 T or FLUECO 80T2 (the latter is more suitable where the structures are subject to deformation) .

PRIMING

The following step involves the application of the primer ARMOPRIMER 100 by brush or roller on a dry substrate. If the surface is weak and porous use the solvent phase primer PRIMER ES40. Apply the adhesive within 16 hours of applying the primer.

APPLYING THE ADHESIVE

PREPARATION OF COMPONENTS

ARMOFIX MTX is composed of:

- A – base formulate
- B - hardener

Blend components A and B with a spatula or with a low speed drill with paddle, or with a suitable mechanical agitator to obtain a uniform mixture. Avoid partial use of contents of the component packs as this could lead to incorrect proportions when mixing and impede hardening.

APPLICATION

Laying of fabrics or reinforcement sheet: **ARMOFIX MTX** is applied using a spatula on a clean, dry surface within 24 hours of the application of ARMOPRIMER 100. Apply a first layer of **ARMOFIX MTX** resin adhesive at a thickness of approx. 1mm. Then place the ARMOSHIELD C tapes on the surface as indicated in the project and carefully apply a light pressure with your hands, taking care lay the tapes straight and avoid the formation of wrinkles.

To ensure the adhesive penetrates well into the tape fabric press down hard with the special ARMOROLLER spiked roller.

Laying of grouting bar: Use an adjustable-pressure injection pump for thixotropic fluids to extrude the product into the hole. Inject the resin from the bottom of the hole to avoid dragging air and fill the cavity by about 3/4. Adjust the amount of injected product to ensure filling the grouting collar. Then introduce the bar and remove any excess resin.

PRECAUTIONS

- ▶ Use rubber gloves and goggles both while working and while cleaning tools.
- ▶ Avoid contact of skin, eyes, etc. with the resin. In case of accidental contact, wash thoroughly with soap and water.
- ▶ Proper adhesion may be impeded if the substrate is damp.
- ▶ If the size of the grouting collar exceeds 1 cm, use our epoxy plaster ARMOFIX MTL or EPOBETON C for flooring.

CONSUMPTION

Laying of fabrics or reinforcement sheet: The consumption values of ARMOFIX MTX strictly depend on the features of the substrate and on the type of fabric. In general, 1.1 - 1.5 kg/m² of ARMOFIX MTX resin is recommended for bonding and impregnating a layer of ARMOSHIELD C fabric.

Laying of grouting bar: Depending on the porosity of the cavity to be grouted, theoretically 1.1 kg/dm³ is required.

PACKAGING AND STORAGE

ARMOFIX MTX is available in drums:

4 kg + 1 kg = (A + B) **5 kg**

8 kg + 2 kg = (A + B) **10 kg**

If kept in its original packaging and properly stored under cover in a dry place, the product maintains its characteristics for a year.





PRECAUTIONS IN HOT CLIMATES

- ▶ Store ARMOFIX MTX away from direct sunlight;
- ▶ Carry out the work in the cooler hours of the day;
- ▶ Do not use the product when the ambient temperature is higher than 35°C.



PRECAUTIONS IN COLD CLIMATES

- ▶ Protect ARMOFIX MTX from frost;
- ▶ Do not use the product at temperatures below 10°C;
- ▶ Carry out the work in the warmer hours of the daytime and in an ambient temperature of at least 5°C.

PRODUCT CHARACTERISTICS

APPEARANCE	Paste
CONSISTENCY	thixotropic
DENSITY	Comp. A: 1.06 kg / l - Comp. B: 0.94 kg / l
SPECIFIC GRAVITY (A+B)	1.067 kg / l
SHELF LIFE	12 months
PACKAGING	4 kg + 1 kg drums - 8 kg + 2 kg drums

APPLICATION DATA 20° C - 65% RH

MIX COLOUR	White
DENSITY - UNI EN 12190	1025 kg/m ³
WORKABILITY	40 min
SETTING TIME (OUT OF TOUCH)	approx. 50 min.
COMPLETE CURE	7 days
APPLICATION TEMPERATURE	+10 ° C to + 35 ° C
THICKNESS OF APPLICATION	approx. 1 mm
CONSUMPTION FOR GLUING AND SATURATION	1.1 to 1.5 kg/m ² (depending on the type of fabric)
GLUING OF CARBON BARS	1.1 kg/dm ³

TECHNICAL SPECIFICATIONS

Apply the thixotropic structural epoxy resin ARMOFIX MTX to concrete, masonry and wood surfaces for bonding and saturation of ARMOSHIELD C carbon fibre fabrics. ARMOFIX MTX will be used in accordance with the recommendations of the manufacturer, **Draco Italiana S.p.A.** who will provide technical assistance upon request.

Specifications:

4.0.1 - Preparation of concrete substrates

4.0.2 - Preparation of masonry substrates

4.1 - Laying the ARMOSHIELD C carbon fibre fabric

FINAL PERFORMANCE 20° C - 65% RH

CHARACTERISTICS	TEST METHOD	MINIMUM REQUIREMENTS	PRODUCT PERFORMANCE
MODULUS OF ELASTICITY IN COMPRESSION	EN 13412	≥2000 N/mm ²	3.2 GPa
MODULUS OF ELASTICITY UNDER BENDING	EN ISO 178	≥2000 N/mm ²	3.1 GPa
COEFFICIENT OF THERMAL EXPANSION	EN 1770	≤100 × 10 ⁻⁶ per K	25 × 10 ⁻⁶ /K
TOTAL LINEAR SHRINKAGE FOR STRUCTURAL BONDING AGENTS	EN 12617-1	≤0.1%	0.03%
GLASS TRANSITION TEMPERATURE	EN 12614	≥ 40 ° C	83 ° C
DURABILITY (TEMPERATURE - HUMIDITY CYCLES)	EN 13733	compressive shear load > tensile strength of concrete no failure of steel test sample	Meets specifications
PERFORMANCE REQUIREMENTS FOR STRENGTHENING WITH STEEL PLATE			
SHEAR STRENGTH	EN 12188	≥12 MPa	20.3 MPa
BOND STRENGTH		50° ≥50 MPa	42 MPa
INCLINED SHEAR STRENGTH	EN 12188	60° ≥60 MPa 70° ≥70 MPa	53 MPa 78 MPa
PERFORMANCE REQUIREMENTS OF THE ADHESIVE FOR CONCRETE AND MORTAR			
COMPRESSIVE STRENGTH	EN 12190	≥30 MPa	80 MPa
SHEAR STRENGTH	EN 12615 MPa	≥6	>6 MPa
BONDING ON CONCRETE MC (0.40)	EN 1766 - EN 12636	Cohesive failure of support on concrete substrate	Meets specifications
OPEN TIME ON CONCRETE MC (0.40)	EN 1766 - EN 12189	Declared by the manufacturer	40 min

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.

Please check if this Sheet and the figures therein contained apply to the product batch you are interested in or if they have been overridden by any later release. If in doubt, check whether this Sheet matches the one applicable at the time of finalising the sales agreement, at www.draco-edilizia.it, and/or contact our Engineering Department.

No advice provided by our staff, either verbally or in writing at your request, about the potential applications of the Products shall be binding under the sales agreement or shall be considered an integral part of the agreement. Such advice is based on our experience and on the best available practical and/or scientific knowledge; as such, it shall not be binding or conditional on the buyer or user. Please try our products first to find out whether they are fit for your intended use or application; in any case, you shall be solely responsible for your choice.