



STRUTTURA FLUIDO - FL 470

MONOCOMPONENT, SUPERFLUID, AIR-EXPANDING, SHRINKAGE-COMPENSATED STRUCTURAL MORTAR WITH SYNTHETIC FIBERS, FOR THE RESTORATION OF CONCRETE ELEMENTS.

COD. FL470-25
25 kg bag



STRUTTURA FLUIDO – FL 470 is a structural mortar suitable for the restoration, repair, thickening, and/or consolidation of concrete, reinforced concrete, and pre-stressed reinforced concrete elements in infrastructure works, including roadways, railways, civil, industrial, and hydraulic structures.

It features high fluidity, absence of bleeding (exudation of mixing water due to segregation), high compressive and flexural strengths, a high elastic modulus, and excellent adhesion to metal elements and concrete.

It is used for interventions on any type of reinforced concrete structure, for horizontal pours or within formwork, for restoring degraded concrete thicknesses, or for increasing the cross-section of beams, columns, slabs, etc. It should be applied in the presence of structural reinforcements or well-anchored welded mesh.

It can be applied both by pouring and pumping using appropriate plastering machines, in thicknesses ranging from 10 mm to 50 mm.

STRUTTURA FLUIDO - FL 470

INSTRUCTIONS FOR USE

Average consumption	20.2 kg/m ² per each cm of applied thickness
Mixing water	13 - 15 % (3.25 - 3.75 liters per 25 kg bag)
Granulometry	≤ 3.0 mm (EN 12192-1)
Minimum thickness per layer	10 mm
Maximum thickness per layer	50 mm
Application temperature	+ 5 °C / + 35 °C
Pot life of the mixture	60 min
Packaging	25 kg paper polyethylene bag
Storage	12 months in original packaging, intact, protected from moisture.

PERFORMANCE CHARACTERISTICS

STRUTTURA FLUIDO - FL 470 meets the performance requirements set by the European standard **EN 1504-3** for structural mortars of class **R4**, type **CC**.

Properties	Value	Testing
Density of the hardened product	2.25 kg/L	EN 12190
Chloride ion content	≤ 0,05 %	EN 1015-17
Bleeding	Absent	UNI 8998
Expansion controlled in water	≥ 0.6 mm/m	UNI 8147 (Method A)
Expansion controlled in air	≥ 0.4 mm/m	UNI 8147 (Modified Method B)
Elastic modulus	≥ 29.4 GPa	EN 13412
Adhesion to concrete at 28 days	≥ 2.0 MPa	EN 1542
Thermal compatibility - Freeze-thaw cycles with de-icing salts - after 50 cycles (measured as adhesion according to EN 1542)	≥ 2.0 MPa	EN 13687-1
Thermal compatibility - Weather cycles (thermal shock) - after 30 cycles (measured as adhesion according to EN 1542)	≥ 2.0 MPa	EN 13687-2
Thermal compatibility - Dry thermal cycles - after 30 cycles (measured as adhesion according to EN 1542)	≥ 2.0 MPa	EN 13687-4
Capillary absorption	≤ 0.1 kg·m ⁻² ·h ^{-0.5}	EN 13057
Thermal conductivity (λ) - tabulated value	1.17 W/m·K	EN 1745
Compressive strength at 1, 7, and 28 days	≥ 30 / 55 / 75 MPa	EN 12190
Flexural strength at 1, 7, and 28 days	≥ 6.0 / 9.0 / 10.0 MPa	EN 196-1
Resistance to accelerated carbonation	Test passed	EN 13295
Reaction to fire	Class A1	EN 1504-3
Crack resistance	No cracks at 180 days	0-Ring test

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METHOD OF USE

PREPARATION OF THE SUBSTRATE

During reparation operations, ensure that the contact surfaces of the substrate are clean, cohesive, free of debris, dust, oils, grease, and traces of paint. If the application surface is smooth, it must be roughened beforehand and effectively.

Additionally, it is always necessary to remove any rust from exposed or protruding reinforcements using a wire brush or sandblasting. Treat the exposed rebar with **INTEGRA FERRO - FR 718** or **INTEGRA FERRO - FR 720** (passivating slurries from **Fibre Net SpA**) applied in two coats. Prior to application, the substrate surface must be cleaned and saturated with pressurized water.

Ensure the removal of any patches of the substrate that are detaching from the main structure. A few hours prior to application, thoroughly moisten the substrate by filling the formwork with water and eliminating it until the surface film disappears, just before performing the intervention.

MIXING

Do not begin mixing the product if the ambient temperature or the support temperature is below 5 °C or above 35 °C. For small quantities, mixing can be done using a low-speed drill with a whisk. For larger quantities, use a drum mixer. **STRUTTURA FLUIDO - FL 470** must be mixed with approximately 3.25 - 3.75 liters of clean water for each 25 kg bag; mixing should continue for 4 - 5 minutes until a homogeneous, lump-free, and sufficiently fluid, mixture is obtained. Never exceed the maximum amount of water.

It is recommended to add **INTEGRA SPECIAL - SRA 513**, a liquid curing additive with very low chloride content, at a rate of 1% of the mortar's weight to the mixing water. This additive reduces shrinkage and promotes the curing of the mortar.

APPLICATION

STRUTTURA FLUIDO - FL 470 can be applied either by pouring and pumping in thicknesses ranging from 10 to 50 mm. For thicknesses greater than 100 mm, contact the technical department of Fibre Net.

The product can be applied manually by pouring or pumping. When pouring into formwork, ensure that the formwork does not absorb water from the mortar (treat with a suitable release agent), and verify the correct positioning of reinforcements and formwork in relation to the structure's geometry and the required cover thickness. To prevent the formation of trapped air bubbles, it is always recommended not to pour from opposite sides.

In cases where the application requires thicknesses between 50 and 100 mm, especially for large surfaces areas, it is advisable to add clean aggregate with a maximum diameter of 16 mm (gravel sizes 4 - 8 mm, 6 - 12 mm, or 8 - 16 mm), in an amount of 33% by weight of the total dry mixture.

Before applying **STRUTTURA FLUIDO - FL 470**, the substrate must be thoroughly cleaned, saturated with water, and free of surface water film.

SMOOTHING:

During application, the product can be smoothed using a leveling bar to ensure homogeneous distribution, especially on large surfaces and with complex reinforcements.

FINISHING

After the product has set, protect the application by covering it with a damp cloth or polyethylene sheet placed on the exposed surface during the first 24 hours, or by spraying a mist of water on the surface at regular intervals during the first 24 - 48 hours following the application.

SAFETY INSTRUCTIONS

During handling and application, wear protective clothing and gloves, safety goggles, and dust masks. In case of skin contact, wash with soap and water. In case of eye contact, rinse immediately with water and seek medical attention if irritation persists. For safety information and for the use and storage of the product, the user should refer to the latest Safety Data Sheet.

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WARNINGS

Do not apply at temperatures below +5 °C or above +35 °C.
Do not apply on frozen substrates or substrates at risk of freezing in the following 24 hours.
Do not apply on gypsum, inconsistent or crumbling substrates.
Do not remix the mixture if the product is in the process of hardening, as this may result in the loss of its characteristics.
Do not apply on large surfaces without providing separation joints.
Do not allow the product to dry excessively and/or too quickly, and avoid application in the presence of strong winds and excessive direct sunlight.

SPECIFICATION VOICE

STRUTTURA FLUIDO - FL 470 – a premixed, single-component, superfluid cementitious mortar with compensated shrinkage, offering high mechanical strength and excellent adhesion to the substrate. It is fiber-reinforced with synthetic and inorganic fibers for the restoration, repair, or thickening of concrete, reinforced concrete, and pre-stressed concrete elements by pouring. The product complies with the performance requirements set by **EN 1504-3** for structural mortars of class **R4**, type **CC**. The product must also meet the requirements detailed in the "**Performance Characteristics**" table.

For further information regarding specifications, cost analysis, construction details, and maintenance plans, please contact the Technical Department of Fibre Net SpA.

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