

# Floor Tenax SFR

## Fibre-reinforced micro-concrete (HPFRC)



Floor Tenax SFR is a pourable, plastic/fluid fast-hardening mortar, usable for smoothing and repairs with a subtle thickness (from 4 mm to 20 mm) of deteriorated flooring and for the structural repairs of reinforced concrete with increased ductility. The formulation contains ultra-fine high-strength cements, microsilica compounds with pozzolanic activity, rational granular aggregate composition curve (0.1-1.8 mm), special additives and Readymesh MR-060 brass-plated metal microfibres. The special shape coefficient and particular surface conformation of this fibre confer to the artefact on which it is applied an exceptional reduction in hygrometric shrinkage, the dissipation of tension upon heavy stresses and high thermal conductivity. The product mixes with very low water/binder ratios (<0.32).

**CUSTOMS CODE:** 3824 5090

**COMPONENTS:** Single-component

**APPEARANCE:** Powder

**AVAILABLE COLORS:** Gray

**PACKAGING AND DIMENSIONS:** Bag 25 kg

## OBTAINED CERTIFICATIONS AND REGULATIONS



## FEATURES AND BENEFITS

Floor Tenax SFR has a workability time of approximately >120 minutes, after which the gripping process is triggered followed by a progressive hardening. The hygrometric shrinkage is extremely limited, guaranteeing volumetric stability to restoration carried out. The performances that make Floor Tenax SFR unique are: • resistance to dynamic stress, • fatigue resistance, fracture energy, toughness and resistance to post-breaking strain, • very high mechanical compression strength (> 95 MPa at 28 days), • very high mechanical tensile and bending strength (> 15 MPa at 28 days), • excellent durability and resistance to chemical attacks. Recommended maximum thickness: 25 mm (flooring) 50 mm (casting in formwork) Minimum recommended thickness: 5 mm (flooring) 25 mm (casting in formwork)

## FIELDS OF APPLICATION

Floor Tenax SFR is used in structural reinforcements and repair of deteriorated floorings with limited thickness (typical applications in the range 8 - 20 mm), characterised by high performance in terms of deformation, resistance and anti-cracking resistance. The main application fields are: • repair of industrial concrete floors with walkability allowed after approximately 24 hours from casting and drive over allowed after 48-72 hours depending on the temperature at the time of application • repair of joints in industrial flooring; • laying and fixing of manhole covers; • reinforcement of floors with the low thickness estradossal hood technique; • any kind of structural repair and restoration performed with casting within formwork such as for example the cladding of pilates and beams; in this case the maximum recommended thickness can be up to 40-50 mm (for higher thicknesses we recommend the addition of Ghiaietto 6.10 with addition percentages that can vary from 20 to 40%; in these cases ask our service technical advice on the correct addition percentages). • regularization of radiant flooring substrates with coatings starting from 5 mm thick (recommended thickness from 5 to 10 mm), characterized by high values of thermal conductivity and reduction of shrinkage.

## ALLOWED SUPPORTS

Concrete - Steel - Bricks

## PREPARATION OF SUPPORTS

Application surfaces must be clean, free of dust, contamination, crumbling, inconsistencies, etc., and adequately saturated-surface-dry with water.

## MODE OF USE

- The support must be prepared by mechanical scarification or hydro-scarification for a depth of not less than 6 mm. The scarification of the support is an absolutely necessary operation to ensure sufficient grip of the coating applied. In the case of localized patches or repairs, cut the contours at right angles with an angle grinder.
- The support must not have traces of oils, greases, detergents.
- The support must be in good condition, clean, coarse, without crumbling parts or dust (suction of all dust and debris with an adequately equipped vacuum system). Wash the surface with pressurized water. Saturate the support with water before applying and eliminate any excess water on the surface.
- Application temperature: 5°C to 30°C.
- We strongly recommend the use of a vertical axis mixer with planetary or double horizontal helical movement, both for effective mixing of fibre-reinforced reinforcement and for optimal performance of site operations.
- MIXING: mix the entire contents of the bag with potable water in the measure of 11% - 12.5% referred to the total weight of the mortar (about 2.75 - 3.13 lt per 25 kg bag) creating a homogeneous mixture. Mixing time: approximately 4 minutes with high-efficiency mixer.
- In the case of large thicknesses (e.g.: manhole repairs) use compaction with a vibrating needle or tamp it down in a very intense way.
- Level the surface with a vibrating screed on the prepared templates.
- The surface must be protected after application by polyethylene sheets or anti-evaporation treatments. The latter should be sprayed on the restored surface as soon as the hardening phase begins (provide anti-evaporation treatments only if no other protective or aesthetic-protective applications are planned above: contact our technical service for advice on the most indicated surface protection methods and on the type of product that can be used as a curing compound). In the case of thicknesses exceeding 20 mm, Floor Tenax SFR must be laid out, supported and floated on a suitable sub-base only with appropriate measures to ensure the structural adhesion and anchoring to the support itself. The methods of anchorage suggested include: laying with a special epoxy resin for structural construction joints (Syntech RGS or Syntech Pavisheer); or positioning a galvanized steel net with 5x5 cm mesh and 2 mm wire, which is spaced from the support plane of half the expected thickness of Floor Tenax SFR and anchored to the same by "L"-shaped connectors fixed in holes resinated with Syntech Profix or fixed by nailing with "nail guns". Provide a cover with wet TNT and waterproof sheet as soon as the surfaces are walkable and keep the surfaces covered for at least 48 hours. It is always important to carry out preliminary tests to check the appropriateness of the product, depending on specific requirements. It is recommended to treat carefully the curing of the shotcrete for a few days, through continuous flushing of water or covering the same with a length of cloth made of polyethylene (winter period) or awning in non-woven fabric impregnated with water (spring/summer).

## APPLICATION METHODS

Finishing trowel - Pump - Spatula - Straight edge

## TOOL CLEANING

Water

## KEY FEATURES

↔ Max. recommended thickness: 50 mm

☉ Mix with water: 11 - 12.5 %

🌡 Temperature of use: +5 / +30 °C

➔ Min. recommended thickness: 8 mm

🕒 Shelf-life: 12 months



## TECHNICAL SPECIFICATIONS

EN 12190

Compressive strength after 12 hours **8 N/mm<sup>2</sup>**

EN 12190

Compressive strength after 7 days > **80 N/mm<sup>2</sup>**

EN 196-1

Flexural strength at 1 day > **8 N/mm<sup>2</sup>**

EN 196-1

Flexural strength after 28 days > **14 N/mm<sup>2</sup>**

fR1 medium\_ average residual strength after cracking (0.5 mm) EN 14651 **4.5 MPa**

UNI EN 1015-6

Density **2270 kg/m<sup>3</sup>**

Toughness class EN 14651 **4a**

Resistance to the limit of proportionality (average value) EN 14651 **7.1 MPa**

Thermal conductivity **2.3 W/mK**

EN 12190

> **50 N/mm<sup>2</sup>**

EN 12190

Compressive strength after 28 days > **105 N/mm<sup>2</sup>**

EN 196-1

Flexural strength after 7 days > **12 N/mm<sup>2</sup>**

Breaking load longitudinal **5 N/mm<sup>2</sup>**

fR3 medium\_ average residual strength after cracking (2.5 mm) EN 14651 **2.3 MPa**

UNI EN 13057

Capillary absorption **0.38 kg•h<sup>0.5</sup>/m<sup>2</sup>**

UNI EN 1542

Bonding force > **2.5 N/mm<sup>2</sup>**

EN 13412

Static elastic modulus **35000 N/mm<sup>2</sup>**

UNI EN 13892-3

Wear resistance **0.8 cm<sup>3</sup>/50cm<sup>2</sup>**

## CONSUMPTION

Approximately 21 kg/m<sup>2</sup> of Floor Tenax SFR for every centimetre of thickness to be implemented (approximately 2100 kg per cubic metre).

## STORAGE AND CONSERVATION

Store the product in its original packing, in a fresh and dry environment, avoiding frost and direct sunlight. Inadequate storage of the product may result in a loss of rheological performance. Protect from humidity.

## PHOTO GALLERY



## ADDITIONAL CONTENT



## WARNINGS AND PRECAUTIONS

The general information, along with any instructions and recommendations for use of this product, including in this data sheet and eventually provided verbally or in writing, correspond to the present state of our scientific and practical knowledge. Any technical and performance data reported is the result of laboratory tests conducted in a controlled environment and thus may be subject to modification in relation to the actual conditions of implementation.

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