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# X-Floor®

## Technical specifications

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**Fluid hydraulic binder for anti-fracture structural screeds with high mechanical strength, normal setting and quick drying**

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### Product description

Fluid hydraulic binder designed to be mixed with assorted aggregates of granulometry from 0 to 8 mm and water to create anti-fracture structural screeds with high mechanical strength, normal setting and quick drying, designed to receive porcelain stoneware, ceramics, natural stones, parquet, microcement, resins, and resilient floorings of any type and format.

Anti-shrinkage, suitable for underfloor heating and for creating floating or bonded screeds in indoor and outdoor areas, ideal for the subsequent installation, after a short time, of: ceramic and porcelain tiles after 24 hour, natural stone after 2 days, wood flooring, PVC, linoleum and carpet after 14 days

Development of screeds with incorporated heating coils without the need for fluidifying additives

Superior workability, including application with pressure pumps.

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### Certifications

EC1 Plus Gev Eimcode  
 A+ Emissions dans l'air interieurs  
 EPD Environmental Product Declaration

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### X-Floor® and the Environment

**LCA results for Global Warming Potential – Greenhouse Gas GWP-GHG**

Impact category	Unit	A1-A3	C1	C2	C3	C4	D
Climate change GWP-GHG	kg CO2 eq	8.80 10 <sup>-1</sup>	4.38 10 <sup>-3</sup>	1.08 10 <sup>-2</sup>	0	5.07 10 <sup>-3</sup>	-5.57 10 <sup>-3</sup>

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## Substrates

Screeds  
Self-levellers  
Levellers  
Existing tiles  
Underfloor heating systems  
Concrete and reinforced concrete  
Fibre cement slabs  
Lightweight panels

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## Uses

Interiors - exteriors  
Floors  
Overlaying  
Terraces and balconies  
SPA and Hammam  
Indoor wet areas (bathrooms, showers)  
Industrial floors  
Development of floating or bonded screeds in indoor and outdoor areas, ideal for subsequent installation in a short time.  
Residential, public, commercial building

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## Limitations

The ambient and surface temperature must be above 5°C during installation and for 12 hours after application  
Do not apply on wet surfaces, damp substrates (> 5% M.C.) or surfaces subject to rising damp  
Do not apply in thicknesses > 15 cm  
Do not use in the presence of negative hydraulic pressures  
Do not leave the product exposed if subject to direct abrasion and/or water containment. Always prefer a covering made of ceramic and porcelain tiles, natural stones or mosaics  
Do not add lime, cement or other foreign materials to the product  
Do not mix with too much water. The mix must have the consistency of "moist plastic soil"  
Do not wet the surface of the screed  
Refer to national regulations, such as Standard UNI 11493

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## Product specifications

Appearance	Powder
Colour	Grigio
Responsible packaging	20 kg recyclable bag
Shelf life	12 months in original packaging in a dry place.
Customs code	38245090

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## Technical specifications

Mix ratio	20 kg (1 bag) – Fine gravel 0/8 mm 135 - 170 kg - Water < 10 l (depending on humidity of aggregates)
Consistency of mix	Wet earth
Mixing time	5-10 minutes
pH of mix	13
Specific gravity of mix	2.10 kg/dm <sup>3</sup>
Pot life	Approx. 60 minutes
Applicable thicknesses	Bonded screeds: from 20 to 40 mm
Applicable thicknesses	Floating or unbonded screeds: from 40 to 80 mm
Applicable thicknesses	Maximum thickness: ≤ 150 mm
Application	Metal ruler and trowel or mechanically
Application temperatures	From +5°C to +35°C
Ready for light foot traffic	12 hours
Waiting time for installation of ceramic and porcelain tiles	24 hours
Waiting time for installation of natural stones	48 hours
Waiting time for installation of resilient and wood flooring	14 days
Temperature of use	From -30°C to +90°C
How to clean equipment	With water when product is fresh. Mechanically when product has set.
Consumption	2 - 2.5 kg/m <sup>2</sup> per cm of thickness

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## Specifications for application

Mix ratio	250 kg – Fine gravel 0/8 mm 1 m <sup>3</sup> - Water < 125* l	* depending on humidity of aggregates
Compressive strength after 28 days	≥ 30.0 N/mm <sup>2</sup>	EN 1348
Resistance to humidity	Excellent	EN 1348
Resistance to solvents	Excellent	EN 1348
Resistance to oils	Excellent	EN 1348
Resistance to acids	Low	EN 1348

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## Substrate preparation

Along the entire perimeter and in correspondence with any elevations (columns, beams, etc.), Litoside compressible bands must be applied, acting as a perimeter joint. Alternatively, it is possible to use similarly compressible materials such as expanded polystyrene, cork, etc. with a thickness of 5 mm. In the case of floating or unbonded screeds, create a suitable vapour barrier (polyethylene or similar) against rising damp, overlapping the sheets by at least 20 cm and sealing them with adhesive tape, folding them up along the entire perimeter and in the presence of any elevations for the entire thickness of the screed. In the case of adhesive screeds, in accordance with Standard UNI 11493-1, concrete, cement and gypsum-based substrates and coverings must be adequately cured and show no signs of excessive humidity, condensate, efflorescence or hydrostatic problems. The substrates must be mechanically resistant and free of friable parts, and clear of grease, oils, paints, waxes and rising damp. Any cracks or fissures must be sealed with CrackRepair. Pipework and ducting laid under the screed should be avoided insofar as sudden changes in thickness may cause cracks and subsidence in the screed. If it cannot be avoided, it is recommended to firmly secure the pipes or ducts and to insert a light hexagonal reinforcing mesh in the part of the screed affected by the crossing. In any case, the respective technical data sheets must be consulted for correct use of the indicated

products.

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## Preparing the mixture

The mix can be prepared with a cement mixer, horizontal auger mixer or automatic pressure pump such as Turbosol.

Manual mixing using a shovel is not recommended, as this will prevent the proper homogenisation of the mix.

Mix thoroughly for at least 5-10 minutes.

The water must be measured carefully to obtain a mix with a “wet, almost plastic, earth” consistency which, in the compacting and tamping phase, must not create surface water.

Mix ratio:

X-Floor 20 kg (1 bag) – Fine gravel 0/8 mm 170 - 210 kg - Water < 10 l (depending on humidity of aggregates)

X-Floor 200 - 300 kg – Fine gravel 0/8 mm 1 m<sup>3</sup> - Water < 100 - 150 l (depending on humidity of aggregates)

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## Application

Once the obtained mix has a “wet earth” consistency, level bands must be created and used as a reference to ensure a flat, level surface. The level bands must be created at the same time as the screed.

The mix must be compacted so as to reduce cavities and voids, levelled using a metal ruler rested on the level bands and trowelled to obtain a smooth and closed surface without any rising water.

Trowelling can be performed with either a manual trowel or single disc machine.

When the pour is interrupted because the works are stopped, iron sections with diameter 5 mm and length approx. 30 cm must be inserted in the thickness of the fresh screed, spaced about 20-30 cm apart.

When casting the concrete, the bonding slurry made of 32.5 or 42.5 cement, water and Boost Pro, must be applied with a brush to connect the two castings.

Also in this case, check that the slurry has not skinned over before pouring the new mix.

Alternatively, stop the pour near a threshold and create a construction joint for the entire thickness of the screed.

### **Bonded screeds (thickness from 20 to 40 mm)**

Screeds with reduced thickness must be bonded to the existing substrate, generally consisting in a concrete slab or existing ceramic or natural stone coverings.

In this case, after properly preparing the substrate (cleaning, degreasing, etc.) and just before pouring the mix, use a brush, large brush or broom to apply an even layer of bonding slurry made with X-Floor, water and Boost Pro, dosed in the following proportion:

X-Floor: 3 parts by weight

Water: 1 part by weight

Boost Pro: 1 part by weight

The apply the X-Floor mix wet-on-wet to the bonding slurry.

In the case of warm climates or wind, pay extra attention that the bonding slurry has not skinned over before pouring the screed, as this will compromise its adhesion.

### **Unbonded screeds with interposition of a suitable vapour barrier (thickness from 40 to 80 mm)**

The X-Floor mix is applied on a separation layer made of polyethylene sheets or similar, overlapping by at least 20 cm (sealed with tape) and turned up along the perimeter and on any surface elevations for the entire thickness of the screed, and works as a water flow reducing layer and vapour barrier against any rising damp.

#### **Screeds with incorporated heating-cooling coils**

They are floating screeds with a heating-cooling system coil incorporated into their thickness.

The screed above the system pipework must have a thickness  $\geq 30$  mm.

Before installing the ceramics, natural stones, wood flooring, etc., the system must run a heating cycle as per UNI EN 1264-4.

#### **Floating screeds on a layer of acoustic or thermal insulation**

In this case, the thickness and reinforcement are to be calculated based on the compressibility of the underlying materials.

#### **Joints**

Joint sizing must be determined during the design phase, taking into account the following factors: screed type, architectural situation, presence of discontinuity elements, type and format of the flooring to be installed, environmental conditions and intended use of the flooring.

Control joints are designed to accommodate the normal contractions and expansions of the hardened screed and are usually made at: thresholds, flooring with a surface area greater than 40 m<sup>2</sup>, rooms with the longest side exceeding 8 metres, the presence of discontinuity elements, or a sudden change in the flooring dimensions.

Standard UNI 11493 suggests creating control joints ranging from 5x5 m to 6x4 m for indoor environments and from 3x3 m to 4x2.5 m for outdoor environments; the creation of these joints involves mechanical cutting, which should be done as soon as the screed is ready for incision (no later than 24 hours) and it must involve at least 1/3 of the thickness, taking care not to cut into any reinforcement if present; any structural joints must, of course, be respected during the screed casting phase.

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## **Residual humidity**

Type of covering to be installed	Permissible relative ambient humidity
Ceramic and porcelain tiles	3%
Moisture stable natural stones	3%
Resin agglomerates	3%
Wood, PVC, Rubber, Linoleum	2%
Resin floors	Follow the manufacturer's instructions

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## Covering installation

Coverings can be installed after at least 12 hours have passed since the last coat in standard conditions. The installation of ceramic tiles, natural stones or mosaics will be carried out with ultra-high performance science-based Gels by Litokol, which ensure the complete transfer of forces, continuous system performance and total safety. To ensure the perfect adhesion of the adhesive Gel, apply a scratch coat of the mixture using the smooth side of the trowel, and then straight after apply the desired thickness with the notched side. In accordance with Standard UNI 11493-1, use the back-buttering technique, applying the Gel also on the back of the tiles to ensure complete wetting during installation in environments where the substrate might be subject to movements or expansion, outdoors, in swimming pools or in particularly stressed areas. In accordance with Standard UNI 11493-1, the tiles must be installed with joint widths suitable for their size (at least 2 mm). For grouting outdoors and in humid environments, it is recommended to use Starlike® Pro or Starlike® Easy. Respect any control or structural joints and create adequate expansion, separation and perimeter joints.

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## Warnings

Apply the product at temperatures between +5°C and +40°C  
Protect the waterproofing against rain for the first 2 hours after application  
In warm climates, keep the packaged product in a cool and dry place away from the sun before use

Due to its high adhesion, it is advisable to wash tools and any product residues from the surfaces with water before the Gel hardens. Once the reaction is complete and the Gel has hardened, it can only be removed mechanically.

Underfloor heating: at least 4 days after installing the screed, it is possible to start the heating system with a supply water temperature between +20°C and +25°C, keeping it constant for at least 3 days, then set it to the maximum design temperature, keeping it constant for 4 more days.

At the end of this cycle, bring the screed back to ambient temperature and install the covering (see standard EN 1264-4).

Do not use the product for applications not indicated in this technical data sheet

For further information, contact the Litokol Technical Help Service at +39-0522-622811 or via [customercare@litokol.com](mailto:customercare@litokol.com)

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## Safety information

For the safe use of our products, refer to the latest version of the Safety Data Sheet, available on the website [www.litokol.com](http://www.litokol.com)  
PRODUCT FOR PROFESSIONAL USE

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## Legal notes

The information and provisions contained in this technical data sheet reflect our best experience. Given the impossibility of directly intervening on the conditions of the work site and execution of the works, they represent indications of a general nature, which are in no way binding for our Company. It is therefore recommended to perform a spot test in order to

check the suitability of the product for the intended use. In any case, those who intend to use the product must establish whether or not it is suitable for the intended use, and in any case assume all liability for any consequences resulting from such use. Always refer to the latest updated version of the technical data sheet, available on the website [www.litokol.com](http://www.litokol.com)

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## Item specification

The installation screed will be created with a mineral hydraulic binder such as X-Floor, suitable for installing ceramic tiles after 24 hours and parquet after 4 days. Dosage \_\_\_\_ kg/m<sup>3</sup> of aggregate with assorted granulometry from 0 to 8 mm, mixing water ≤ 50% of the binder. Including supply and installation of deformable bands in expanded polyethylene for separation joints, division of the surface into large sections and finishing with a sponge trowel or steel disc. Average yield ≈ \_\_\_\_kg/m<sup>2</sup>

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