
X-Floor®

Technical Specifications



Fluidised hydraulic binder for structural, crack-resistant screeds with high mechanical strength, normal setting time and rapid drying

Product description

Fluidised hydraulic binder to be mixed with assorted aggregates with a particle size range of 0 to 8 mm and water to produce high-strength, crack-resistant structural screeds with normal setting time and rapid drying, suitable for laying porcelain stoneware, ceramic tiles, natural stone, parquet, microcement, resins and resilient floor coverings of any type and format. Shrinkage-resistant, suitable for underfloor heating and for the installation of floating or bonded screeds in both indoor and outdoor areas; ideal for the rapid subsequent laying of ceramic tiles after 24 hours, natural stone after 2 days, and parquet, PVC, linoleum and carpet after 14 days. Creation of screeds incorporating underfloor heating coils without the need for fluidising additives. Excellent workability, even when applied using a pressure pump.

Certifications

EC1 Plus Gev Emicode
A+ Indoor air emissions
EPD Environmental Product Declaration

X-Floor® and the environment

LCA results for Global Warming Potential – Greenhouse Gases (GWP-GHG)								
Impact category	Unit	A1-A3	C1	C2	C3	C4	D	
Climate change GWP-GHG	kg CO ₂ eq	8,57 10 ⁻¹	1,70 10 ⁻³	1,63 10 ⁻²	5,29 10 ⁻⁴	3,08 10 ⁻³	-4,11 10 ⁻³	

Substrates

Screeds
Self-levelling compounds
Levelling Compounds
Existing tiles
Radiant heating systems
Concrete and reinforced concrete
Fibre-cement sheets
Lightweight panels

Uses

Interior – exterior
Floors
Overlay
Terraces and balconies
SPA and Hammam
Indoor wet areas (bathrooms, showers)
Industrial flooring
Creation of floating or bonded screeds in both indoor and outdoor areas, ideal for rapid subsequent installation.
Residential, public, commercial building

Limitations

The ambient and surface temperature must be above 5°C at the time of installation and for 12 hours after application
Do not apply to wet surfaces, damp substrates (> 5% moisture content) or those subject to rising damp
Do not apply in layers thicker than 15 cm
Do not use where negative hydraulic pressures are present
Do not leave the product exposed if it is subject to direct abrasion and/or water retention. Always opt for a covering of ceramic tiles, natural stone or mosaics
Do not add lime, cement or other foreign materials to the product
Do not mix with too much water. The mixture must have a consistency of 'damp, almost plastic-like earth'.
Do not wet the surface of the screed
Refer to national standards, such as UNI 11493

Product specifications

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

Technical Specifications

Mixing ratio	20 kg (1 bag) – 0/8 mm gravel 135–170 kg – Water < 10 l (depending on the moisture content of the aggregates)
Consistency of the mix	Damp ground
Mixing time	5–10 minutes
pH of the mixture	13
Specific gravity of the mixture	2.10 kg/dm ³
Pot life	Approx. 60 minutes
Applicable thicknesses	Bonded screeds: 20 to 40 mm
Applicable thicknesses	Floating or decoupled screeds: 40 to 80 mm
Applicable thicknesses	Maximum thickness: ≤ 150 mm
Application	Metal straight edge and trowel or mechanically
Permissible application temperatures	From +5°C to +35°C
Ready for foot traffic	12 hours
Drying time before laying ceramic tiles	24 hours
Drying time before laying natural stone	48 hours
Waiting time before laying resilient flooring and parquet	14 days
Operating temperature	From -30°C to +90°C
Cleaning of equipment	With water when the product is fresh. Mechanically once the product has hardened.
Coverage	2–2.5 kg/m ² per cm of thickness

Application Specifications

Mixing ratio	250 kg – Gravel 0/8 mm 1 m ³ - *depending on the moisture content of the aggregates	
Compressive strength after 28 days	≥ 30.0 N/mm ²	EN 1348
Moisture resistance	Excellent	EN 1348
Solvent resistance	Excellent	EN 1348
Resistance to oils	Excellent	EN 1348
Acid resistance	Low	EN 1348

Preparation of substrates

Strips of compressible Litoside material must be installed along the entire perimeter and at any elevations in the floor (columns, beams, etc.) to act as a perimeter joint. Alternatively, compressible materials such as expanded polystyrene, cork, etc., with a thickness of 5 mm, may be used. In the case of floating or decoupled screeds, install a suitable vapour barrier (polyethylene or similar) to prevent rising damp, overlapping the sheets by at least 20 cm, sealing them with adhesive tape and extending them up the entire perimeter and around any columns for the full thickness of the screed. For bonded screeds, in accordance with standard UNI 11493-1, substrates and coatings based on concrete, cement and gypsum must be adequately cured and show no signs of excessive moisture emission, condensation, efflorescence or hydrostatic problems. Substrates must be mechanically sound and free from loose particles, grease, oil, paint, wax and rising damp. Any cracks or fissures must be sealed with CrackRepair. Pipes or ducts should not be laid beneath the thickness of the screed, as sudden changes in thickness can lead to the formation of cracks and subsidence in the screed. If this cannot be avoided, it is recommended to secure the pipes or ducts firmly and to insert reinforcement consisting of a lightweight hexagonal mesh in the area of the screed affected by the penetration. In any case, the respective technical data sheets must be consulted for correct use of the indicated products.

Preparation of the mix

The mix can be prepared using a site-based concrete mixer, a horizontal screw mixer or an automatic pressure pump such as the Turbosol.

Manual mixing with a trowel is not recommended as it does not allow for proper homogenisation of the mixture.

Mix thoroughly for at least 5–10 minutes.

Water must be added with particular care to achieve a mixture with the consistency of 'damp, almost plastic earth', which must not allow surface water to rise to the surface during the compaction and trowelling stages.

Mixing ratio:

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

X-Floor 200–300 kg – 0/8 mm fine gravel 1 m³ – Water < 100–150 l (depending on the moisture content of the aggregates)

Application

Using the resulting mixture, which has the consistency of 'damp earth', levelling strips must be created to serve as a reference for achieving a flat surface at the correct level. The levelling strips must be laid at the same time as the screed.

The mix must be compacted to minimise cavities or voids, levelled using a metal straightedge resting against the levelling strips, and trowelled to achieve a smooth, sealed surface with no standing water.

Trowelling can be carried out using either a hand trowel or a machine fitted with a rotating disc.

When pouring is interrupted due to a break in work, it is necessary to insert pieces of iron with a diameter of 5 mm and a length of approximately 30 cm into the fresh screed, spaced 20–30 cm apart.

When resuming the pour, apply the bonding slurry—consisting of 32.5 or 42.5 cement, water and Boost Pro—using a brush to form a bond between the two pours.

Again, check that the mortar has not formed a skin on the surface before applying the new mix.

Alternatively, stop the pour at a threshold, creating a construction joint that runs through the entire thickness of the screed.

Bonded screeds (thicknesses from 20 to 40 mm)

In the case of thin-bed screeds, it is essential to lay them in full adhesion to the existing substrate, which generally consists of concrete slabs or old ceramic or natural stone flooring.

In this case, after properly preparing the substrate (cleaning, degreasing, etc.) immediately before pouring the mix, apply a uniform layer of an anchoring slurry consisting of X-Floor, water and Boost Pro, mixed in the following proportions, to the substrate using a flat brush, a wide-bristle brush or a broom:

X-Floor: 3 parts by weight

Water: 1 part by weight

Boost Pro: 1 part by weight

Then apply the X-Floor mixture wet-on-wet to the bonding slurry.

Take particular care, especially in hot weather or in windy conditions, to ensure that the adhesive slurry has not formed a surface film before the screed is poured, as this would compromise adhesion.

Unbound screeds with a suitable vapour barrier in between (thicknesses from 40 to 80 mm)

The X-Floor mix is applied over a decoupling layer consisting of polyethylene sheets or similar materials, overlapped by at least 20 cm (sealed with tape) and extending up along the perimeter and at any elevations from the floor

throughout the full thickness of the screed, acting as a levelling layer and as a vapour barrier against any rising damp.

Screeds incorporating heating and cooling coils

These are floating screeds in which the heating and cooling system coils are embedded within the screed thickness.

The thickness of the screed above the system pipes must be ≥ 30 mm.

Before laying ceramic tiles, natural stone, parquet, etc., the system must undergo the start-up cycle in accordance with the provisions of standard UNI EN 1264-4.

Floating screeds on a layer of acoustic or thermal insulation

In this case, thicknesses and reinforcement must be calculated based on the compressibility of the underlying materials.

Joints

Joint dimensions must be determined at the design stage, taking into account the following factors: type of screed, architectural layout, presence of discontinuities, type and size of the flooring to be laid, environmental conditions, and intended use of the flooring.

Expansion joints are designed to accommodate the normal contraction and expansion of the hardened screed and are generally installed at: thresholds, floor areas exceeding 40 m², rooms with a longest side exceeding 8 metres, the presence of discontinuities, and sudden changes in the dimensions of the floor.

The UNI 11493 standard recommends the creation of expansion joints measuring 5x5 m to 6x4 m for indoor areas and 3x3 m to 4x2.5 m for outdoor areas; the creation of these expansion joints involves mechanical cutting, to be carried out as soon as the screed is ready for cutting (no later than 24 hours), and must cover at least one-third of the thickness, taking care not to cut through the reinforcement where present; any structural joints must, of course, be respected during the screed pouring phase.

Residual moisture

Type of covering to be laid	Maximum permissible residual moisture
Ceramic tiles	3%
Natural stones not sensitive to moisture	3%
Resin-based composites	3%
Parquet, PVC, Rubber, Linoleum	2%
Resin floors	Follow the manufacturer's instructions

Flooring installation

The application of finishes may be carried out at least 12 hours after the final coat under standard conditions. The installation of ceramic tiles, natural stone or mosaics shall be carried out using high-performance gels based on Litokol technology, which guarantee complete force transfer, consistent system performance and total safety. To ensure perfect adhesion of the adhesive gel, apply a thin, even coat of the mixture using the smooth side of the trowel and, immediately afterwards, apply the desired thickness using the notched side. In accordance with the UNI 11493-1 standard, use the double-coating technique, applying the gel to the back of the tiles as well to ensure they are fully saturated during installation in areas where the substrate may be subject to movement or expansion, outdoors, in swimming pools or in areas subject to particularly high stress. In accordance with the UNI 11493-1 standard, tiles must be laid with joints of a width appropriate to their size (minimum 2 mm). For grouting outdoors and in damp areas, we recommend using Starlike® Pro or Starlike® Easy. Respect any contraction or structural joints and provide suitable expansion, decoupling and perimeter joints.

Warnings

Apply the product at temperatures between +5°C and +40°C
Protect the waterproofing from heavy rain for the first 2 hours after application

In hot weather, store the product packs in a cool place away from direct sunlight before use

Due to the high adhesion, it is recommended to wash tools and remove any product residue from 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 the screed has been laid, the heating system can be started up with a supply water temperature of between +20°C and +25°C, maintaining this temperature constantly for at least 3 days; the system should then be set to the maximum design temperature and maintained at this level for a further 4 days.

At the end of this cycle, allow the screed to return to room temperature and lay the covering (see standard EN 1264-4).

Do not use for applications not listed on this technical data sheet

For further information, please contact Litokol's Technical Customer Service on +39-0522-622811 or via customercare@litokol.com

Safety Information

For the safe use of our products, please refer to the latest version of the Safety Data Sheet, available at www.litokol.com

PRODUCT FOR PROFESSIONAL USE

Legal notices

The information and specifications set out in this technical data sheet are based on our best experience. However, as we are unable to directly influence site conditions or the execution of the works, these are general

guidelines which do not in any way bind our Company. We therefore recommend carrying out a preliminary test to verify the product's suitability for the intended use; in any case, anyone intending to use it is required to determine whether or not it is suitable for the intended use and, in any event, assumes all liability that may arise from its use. Always refer to the latest updated version of the Technical Data Sheet, available on the website www.litokol.com

Specification item

The screed will be laid using an X-Floor-type hydraulic mineral binder, suitable for laying ceramic tiles after 24 hours and parquet flooring after 4 days. Mix ratio: ____ kg/m³ of aggregate with a mixed grain size ranging from 0 to 8 mm; mixing water ≤ 50% of the binder. Includes the supply and installation of expandable expanded polyethylene strips for decoupling joints, the division of the surface into large sections, and finishing with a trowel or steel disc. Average coverage ≈ ____ kg/m²

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