
X-Gel® S1

Technical specifications



☒☒ Deformable polymer gel (1st Gen), Fluidotixo® - C3, with low cement content for the installation of tiles, porcelain stoneware and natural stones

Product description

☒☒ Deformable polymer gel (1st generation), Fluidotixo®, formulated with low cement content (<29%) for the installation of tiles, porcelain stoneware and natural stones indoors and outdoors.

Designed for high application safety and, thanks to latest-generation features, the mixture is extremely creamy, fluid and thixotropic. It maintains its shape and thickness on floors and walls with 100% wetting power, it is resistant to vertical slip, and has an open time exceeding 40 minutes.

It develops high performance in the installation of underfloor heating and over existing surfaces, guaranteeing superior adhesion even on difficult substrates, long durability and easy application thanks to its Gel properties.

Classified C2TE S1 - EN 12004

Proprietary Gel formula

Polimeri modificati
Basso contenuto di cemento portland <29%
Leganti idraulici ingegnerizzati ibridi
Cellulose di ultima generazione su licenza propria
Alto contenuto inerti minerali

X-Gel® S1 incarna il continuo progresso scientifico di Litokol. È progettato con materie prime innovative per migliorare l'esperienza di posa, la sicurezza e ridurre l'impatto ambientale.

Powered by

LitoGel® technology
Adhesion strength - High-performance

Mixture classification

Mix class	Smoothness level	Lightness index
C1 - Thick / Paste-like	Requires more force for spreading	Standard
C2 - Medium Consistency	Does not drip, offers good workability	Standard
C3 - Fluid Thixotropic	Smooth and thixotropic	Lightweight
C4 - Dynamic Fluid Thixotropic	Highly fluid and thixotropic	Lightweight
C5 - Anti-Fatigue Fluid Thixotropic	Ultra smooth and thixotropic	Ultra lightweight

Performance Gel fluid thixotropic mixture

Class 3 - Fluidotixo® mix

Fluidotixo® mixture - Smooth, thixotropic and lightweight: it spreads easily with a trowel, it maintains its shape and thickness without dripping. Designed for professional applicators, with the same mix it is possible to achieve exceptional trowelability in the laying of floors and coverings. The Fluidotixo® mixture has a low apparent viscosity that promotes superior fluidity under the trowel and 100% wettability. Once applied, its thixotropic formula maintains its shape and thickness without dripping, both on floors and walls, ensuring a precise and controlled installation without vertical slip (T)

Performance Gel adhesive interface

Deformable High-Performance Gel

The Gel formula ensures the development of a highly performing and deformable adhesion strength, allowing for application even in difficult conditions. Its advanced performance features for corrections even several minutes after spreading, achieving an extended open time of over 40 minutes (E)

Safety - Level 1

The highly performing adhesion strength combined with the smooth, thixotropic, and lightweight Fluidotixo® mixture promotes precise, secure and controlled installation, even in complex situations or on demanding surfaces. Its workability simplifies the applicator's job, reducing the margin of error and improving efficiency on site.

Chemistry + intelligent

Low Portland cement content <29%
Very low emissions of volatile organic compounds - VOC

Certifications

EN 12004
EN 12002
ISO 13007
EC1 Plus Gev Emicode
A+ Emissions dans l'air interieurs
EPD Environmental Product Declaration

X-Gel® S1 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	5.16 10 ⁻¹	4.38 10 ⁻³	1.08 10 ⁻²	0	4.90 10 ⁻³	-5.52 10 ⁻³

Materials

Porcelain stoneware
Ceramic and porcelain tiles
Large sizes
Marble – Granite – Stone
Natural stones
Ceramic and vitreous mosaics
Terracotta - Clinker
Recomposed stone made with resin or cement
Indoor insulating and soundproof panels

Substrates

Screeds
Self-levellers
Plasters
Gypsum
Gypsum and anhydrite
Existing tiles
Underfloor heating systems
Waterproofing systems
Separation membrane
Aerated concrete
Fibre cement slabs
Concrete

Uses

Adhesive - skimming plaster
Floors - walls
Interiors - exteriors
Overlaying
Underfloor heating systems
Indoor wet areas - bathrooms and showers
Tanks, swimming pools and fountains
Terraces and balconies
SPA and Hammam

Limitations

Refer to national regulations, such as Standard UNI 11493
Ensure full bedding outdoors or in the presence of high loads
Protect the tiled surface against rain for at least 24 hours
Temperature, ventilation, substrate absorption and installation material can change the workability and setting times of the Gel
Do not add water to the mixture when it has already begun to set
Do not use on inadequately cured concrete
Do not use on gypsum or anhydrite-based substrates without first applying X-Prime®
Do not use on wood and wood-based panels
Do not use on metal, rubber, PVC or linoleum surfaces
Do not use on floors that need to quickly set for light foot traffic
Do not use on reactive waterproofing membranes of organic nature (such as RM according EN 14891)
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 customer@litokol.com

Product specifications

Appearance	Hydrolysed gel in powder
Colour	White - Grey
Responsible Packaging	20 kg recyclable bag
Preservation	12 months in original packaging in a dry place
Customs code	38245090

Technical specifications

Compliance	EN 12004 – ISO 13007	C2 TE S1
Initial adhesion after 28 days	≥ 1.0 N/mm ²	EN 1348
Adhesion after water immersion	≥ 1.0 N/mm ²	EN 1348
Adhesion after heat action	≥ 1.0 N/mm ²	EN 1348
Adhesion after freeze/thaw cycles	≥ 1.0 N/mm ²	EN 1348
Open time	≥ 0.5 N/mm ² after 30 minutes	EN 1346
Slip	≤ 0.5 mm	EN 1308
Transverse deformation	> 2.5 mm	EN 12002
Resistance to humidity	Excellent	
Resistance to alkalis	Excellent	
Resistance to solvents	Excellent	
Resistance to acids	Low	
pH of mix	13	
Specific gravity	1.55 kg/dm ³	

Specifications for application

Mixture class	Class 3 - Fluidotix®
Preparing the Grey Gel mix	Water = 30-33% ~ 6,0-6,6 l / 20 kg
Preparing the White Gel mix	Water = 31-34% ~ 6,2-6,8 l / 20 kg
Mix curing time	5 minutes
Duration of mixture	6-8 hours
Applicable thicknesses	From 1 to 15 mm
Open time	> 40 minutes

Bonding time	> 40 minutes
Application	Notched trowel suitable for the format and for the substrate
Application temperatures	From +5°C to +35°C
Waiting time for grouting	Wall: 6-8 hours – Floor: 12 hours
Ready for light foot traffic	12 hours
Ready for use	5 days – Swimming pools: 14 days
Temperature of use	From -40°C to +90°C
How to clean equipment	With water when product is fresh. Mechanically when product has set.
Consumption	3.5 mm trowel: ~ 1.8 kg/m ²
Consumption	6 mm trowel: ~ 2.5 kg/m ²
Consumption	8 mm trowel: ~ 3 kg/m ²
Consumption	10 mm trowel: ~ 3.5 kg/m ²
Consumption	Back-buttering: ~ 5 kg/m ²
Notes	Data detection at temperature +23 °C, R.H. 50% and with no wind. May vary depending on the specific conditions of the installation site.

Substrate preparation

In accordance with Standard UNI 11493-1, the substrates must be mechanically resistant and free of friable parts, and clear of grease, oils, paints, waxes and rising damp.

Cement plasters must have a curing time of at least one week per cm of thickness.

Cementitious screeds must have a total curing period of at least 28 days or be made with the innovative anti-fracture screeds, X-Floor and X-Floor Pro.

Create slopes on balconies or pavements with the latest-generation anti-fracture levelling compound HydroLevel® 1-30.

Particularly dusty, porous and absorbent substrates must be treated with X-Prime®, an innovative primer and consolidating product.

Smooth and compact substrates such as polished concrete, old ceramic or marble tiles, must be treated with the latest-generation adhesion promoters, X-Activator® or X-Activator® Grip, after thorough cleaning with the specific detergent X-Cleaner® Scrub.

In anhydrite screeds, check for the presence of a suitable vapour barrier in order to prevent rising damp.

Use a carbide hygrometer to check that the residual humidity is less than 0.5% and 0.3% for heating screeds.

The surface must be sanded and isolated with X-Prime®.

Any cracks or fissures must be sealed with CrackRepair.

In any case, the respective technical data sheets must be consulted for the correct use of the indicated products.

Preparing the mixture

To fully appreciate the superior smoothness and thixotropy of the innovative epoxy Fluidotixo® Gel mixture, it is advisable to mix the product according to the indicated mixing ratio.

Pour the right quantity of water into a container and slowly add the product, mixing with a mechanical mixer until a creamy, homogeneous, lump-free mixture is obtained.

Let the mixture rest for about 5 minutes, during which the polymeric Gel development is completed: the hydraulic binders, fillers and cellulose hydrate uniformly, air micro-bubbles incorporated during mixing are eliminated, and the polymers begin their activation process.

Briefly remix to obtain the smooth, thixotropic, ultra-light Fluidotixo® Gel

consistency, easy to apply on both floors and walls.

Application

To ensure the perfect adhesion of the Gel to the substrate, 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.

The trowel notch size must be chosen according to the format of the material to be installed and the substrate.

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 outdoors, in swimming pools or in particularly stressed areas.

To ensure the complete transfer of the Gel to the back of the tiles, they must be laid on the still-fresh adhesive with adequate pressure.

The open time in standard temperature and humidity conditions is approximately 40 minutes.

Very warm or windy climates, or particularly absorbent substrates may drastically reduce it to a few minutes. It is therefore recommended to regularly check that the adhesive has not skinned over.

In accordance with Standard UNI 11493-1, the tiles must be installed with joint widths suitable for their size (at least 2 mm).

Respect any control or structural joints and create adequate expansion, separation and perimeter joints.

Special Applications

Marble, natural and recomposed stones

Materials subject to deformation or stains due to water absorption require a quick-setting, self-curing Gel such as FastGel® or FastGel® S1+ (C2F - EN 12004) or a reactive Gel such as PowerGel® Pro Max (R2 - EN 12004).

Marble and natural stones, even if similar in nature, may have different features.

In case of doubt, contact the Litokol Technical Help Service for detailed information or to perform a laboratory test.

Natural stone slabs with reinforced backing (resin, mesh, etc.) or specific treatments (for example anti-rising damp, etc.), unless otherwise prescribed by the manufacturer must be tested for compatibility with the adhesive.

Before installation, check for any traces of dirt or material deposits on the back of the slabs.

If so, these must be removed.

Underfloor Heating Systems

After at least 4 days from the installation of the X-Floor® or X-Floor® Pro anti-fracture screed, the heating system can be used with a variable supply water temperature between +20°C and +25°C, kept constant for at least 3 days.

Then set the maximum design temperature and hold it for another 4 days.

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

Swimming pools

In accordance with Standard UNI 11493 – 7.13.3, swimming pool tiling must be designed considering mechanical, thermo-hygrometric, and chemical stresses: continuous contact with chemically treated water (even in winter) and frequent sanitation interventions.

In concrete structures, adequate composition must be guaranteed (UNI 11104 – EN 206) and the correct curing time must be respected (at least 6 months, UNI 11493 - 7.3.1).

It is essential to waterproof the external part of the structure, adopting

preventive measures against possible infiltrations, which could cause the detachment of the waterproofing layer applied inside the tank, for example on drains along the side walls of excavations or waterproofing consisting of osmotic mortars.

Rectify and even out surfaces with HydroLevel®, a quartz-reinforced structural levelling compound with controlled anti-fracture expansion.

Waterproof the surfaces of the tank with the elastic, watertight, and anti-fracture Gel membrane SafetyGel® with 6-Dimensional Elasticity technology, or with the breathable tri-polymeric waterproof Gels enhanced with quartz microspheres from the HydroPad® line with 4-Way Flex technology.

Seal critical points such as construction joints with HydroStop, and through-pipes for recirculation, filtration, drainage and lighting systems with HydroPixel®.

It is advisable to perform a hydraulic seal test before installing the covering.

Always apply adhesive to the back of the material as well (back-buttering) to achieve a full adhesive bed, guarantee total force transfer and the durability of the system.

Grouting, sealing and maintenance

For grouting, the decorative grouts X-Color® 0-6 or X-Color® 2-12 and the ready-to-use polymeric mortar FillGood® EVO can be used.

To create waterproof, highly colour-stable joints with greater chemical-mechanical resistance, use the decorative epoxy Gels from the Starlike® line. For the elastic sealing of expansion, control and perimeter joints, use sealants from the Pixel 3D line.

For end-of-construction washing, cleaning, maintenance and surface protection, use specific Litokol detergents from the X-Cleaner and Starlike® Care lines.

Warnings

Due to its high adhesion, it is advisable to wash tools and any product residues from the surfaces with water before the Gel sets.

Once the reaction is complete and the Gel has hardened, it can only be removed mechanically.

Information regarding safety

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

PRODUCT FOR PROFESSIONAL USE

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,

Item specification

The installation, both indoors and outdoors, in accordance with Standards UNI 11493-1 and 11714-1, of floors and wall coverings made from all types of ceramics—porcelain stoneware, single-fired, double-fired, clinker, and terracotta—dimensionally stable and non-staining stone material and mosaics, will be carried out using a deformable, first-generation polymeric Gel, formulated with low cement content (<29%), which is fluid and thixotropic and maintains its shape and thickness unchanged on floors and walls with 100% wetting power, which is resistant to vertical slip, has an extended open time of over 40 minutes and is classified as C2 TE S1 according to Standard EN 12004: X-Gel® S1 by Litokol Lab SpA.

Data sheet **n. 031**

Revision **n. 2**

Date: **02 26**

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