PowerGel® Pro Max
Technical specifications

High-power, permanently elastic, science-based epoxy gel (3rd Gen) with anti-fracture properties, Fluidotixo® - C5, designed to waterproof and firmly bond mosaics, tiles, porcelain stoneware, extra-large slabs, marble and natural stones, even unstable, of any format on any substrate

Product description

High-power, permanently anti-fracture, elastic epoxy gel (3rd generation) that prevents the formation of cracks when installing tiles, porcelain stoneware, large slabs and even unstable natural stones. Designed to simultaneously waterproof and monolithically bond any material on any substrate, ensuring the highest application safety.

Thanks to latest-generation features, the mixture is extremely creamy, smooth and thixotropic, maintaining its shape and thickness on floors and walls.

It develops ultra-high performance adhesion with subsequent gelification and anti-fracture properties, thanks to the extreme elasticity conferred by a blend of innovative polymeric thinners that decrease its elastic modulus while simultaneously increasing crack prevention in coverings.

PowerGel® Pro Max is engineered for the installation of large-format tiles and slabs of any type and size in high-traffic areas, even on cracked substrates (up to 3 mm) and substrates that are not perfectly dry (residual humidity less than 5%). The epoxy Gel helps dissipate and neutralise the movements of the substrate and the expansions of the covering, and distributes heavy loads evenly without tension.

The innovative gelification adhesion technology ensures stable and secure installation directly on single- or two-component polymeric and polymer-cement membrane Gels without generating corrosive chemical reactions that could compromise the integrity of the adhesive/waterproofing system.

Ensures monolithic structural adhesion even for applications subject to high stress, such as balconies, terraces, swimming pools and façades, allowing for direct installation and waterproofing on difficult substrates such as wood, metal PVC and fibreglass, where the use of cementitious adhesives is not suitable.

Classified R2T - EN 12004 and RM 01P - EN14891

Proprietary Gel formula

Part A
Blend of epoxy resins of different molecular weights under proprietary licence
High concentration of pure Carrara white marble micro-granules
Ultra-fine granulometry - 50-150 µm range
Blend of innovative polymeric thinners with low elastic modulus
Smart rheological stabilisers and plasticisers
Part B
Latest-generation non-corrosive polymeric linker

PowerGel® Pro Max embodies Litokol's continuous scientific progress.
It is designed with innovative raw materials to improve the installation experience and safety, and to reduce the environmental impact.

Engineered with

Superior Tension Absorption (TSA)
Crack Prevention® technology
Zherorisk® EpoxyGel technology

Mixture classification

Mix class	Smoothness level	Lightness index
C1 - Thick / Paste-like	Requires more force for spreading	Standard
C2 - Medium Consistency	Offers good workability, but drips	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

Structural gelification: a new adhesion technology
PowerGel® Pro Max introduces a new era in elastic bonding thanks to the idea of structural gelification. This process turns the adhesive into a dynamic system that can adapt during installation, stabilise during curing, and maintain high mechanical performance over time. The three-dimensional network that forms during gelification bonds the substrate and the back of the tile, creating an active and flexible ITZ zone that is resistant to cracking, cyclic stress, expansions and humidity.
Ultra-high-performance elastic anti-fracture adhesion
PowerGel® Pro Max adheres with exceptional tensile and shear bond strength, making it the ideal technical evolution for surfaces prone to deformation and for extra-large ceramic tile formats: it is perfect for large-format tiles and slabs of any type and size in high-traffic areas and on substrates with cracks (up to 3 mm).
Ensures structural gelling even on difficult and non-absorbent substrates

such as existing tiles, wood, metal, PVC and fibreglass.
Thanks to Crack Prevention® and Superior Tension Absorption (TSA) technologies, it is possible to achieve elastic anti-fracture adhesion which develops as the Gel hardens and which is maintained over time, increasing the durability of the ITZ and protecting it from tensile, compressive and shear stresses.
Engineered for the installation of moisture-unstable marble and natural stone, free from cement and water, it prevents stains and deformation.
Ensures excellent adhesion even on substrates with residual moisture up to 5% or not completely cured.

Total impermeability

PowerGel® Pro Max is an extremely practical solution, allowing for simultaneous installation and elastic waterproofing using the same material. Designed to ensure a continuous and complete barrier against water, even on non-traditional substrates, preventing infiltrations even under high water pressure conditions.

Smart gelification for a new-generation ITZ interface

The gelification process of PowerGel® Pro Max represents a decisive technological evolution compared to traditional systems. During curing, the Gel develops a three-dimensionally reactive micro-network that allows for nanometric adaptation to the micro-irregularities of the substrate, optimising the Interfacial Transition Zone (ITZ). This smart behaviour allows for cohesive and diffused adhesion, improving mechanical strength at critical points and reducing the risk of delamination even under dynamic stress or prolonged thermal cycles. The programmed gelification creates an elastic-monolithic hybrid interface, capable of absorbing and redistributing stresses without compromising structural integrity. This makes the system superior with respect to industry standards, with higher anti-fracture and waterproofing performance, even on unstable substrates or substrates with residual moisture.

Chemistry + intelligent

Oxirane-free. Does not contain C12-C14 (Oxirane, mono C12-14-alkyloxy methyl derivs)
Not dangerous for the applicator
Not dangerous for the environment
Not dangerous for transport - AFR Free
Non-corrosive and non-toxic

Certifications

EN 12004
EN 14891
ISO 13007
EC1 Plus Gev Emicode
A+ Emissions dans l'air interieurs
EPD Environmental Product Declaration

PowerGel® Pro Max 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	1,65	4.38 10^{-3}	1.18 10^{-2}	0	5.03 x 10^{-2}	-2.16 10^{-2}

Materials

Porcelain stoneware
Ceramic and porcelain tiles
Large sizes
Laminated stoneware slabs
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
Skim coats
Plasters
Gypsum
Gypsum and anhydrite
Existing tiles
Concrete
Underfloor heating systems
Waterproofing systems of any nature
Separation membrane
Aerated concrete
Fibre cement slabs
Concrete
Wood
Metal
PVC
Fibreglass

Uses

Adhesive - Waterproofing
Floors - walls
Interiors - exteriors
Overlaying
Underfloor heating systems
Indoor wet areas - bathrooms and showers
Tanks, swimming pools, fountains
Terraces and balconies
SPA and Hammam
Façades
Industrial floors
Residential, public, commercial and street furniture
Areas subject to high traffic and high stress

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.

Ambient temperature and humidity can change the workability and setting times of the Gel.
Do not add water, lime, cement or other foreign materials to the mixture.
Respect the mixing proportions.
Do not use on floors that need to quickly set for light foot traffic.
In the case of applications at temperatures around +10°C, it is advisable to add EpoxyGel Booster. (Dosage: 2 x 50g packs of EpoxyGel Booster x 5 Kg PowerGel® Pro Max. 1 x 200g pack of EpoxyGel Booster x 10 Kg PowerGel® Pro Max)
In the case of direct bonding to fibreglass or PVC substrates, preliminary sanding is necessary.
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

Product specifications

Appearance	Part A: White Gel
Appearance	Part B: Polymeric liquid
Colour	Ultra Bianco
Responsible Packaging	5 and 10 kg post-consumer recycled plastic buckets (Monopack A + B)
Preservation	36 months in original packaging in a dry place. Keep away from frost
Customs code	35069190

Technical specifications

Compliance	**EN 12004 – ISO 13007**	**R2 T**
Initial shear adhesion strength	≥ 2.0 N/mm^2	EN 12003
Shear adhesion strength after water immersion	≥ 2.0 N/mm^2	EN 12003
Shear adhesion strength after thermal shock	≥ 2.0 N/mm^2	EN 12003
Open time	≥ 0.5 N/mm^2 after 60 min	EN 1346
Slip	≤ 0.5 mm	EN 1308
Deformability	Highly deformable	
Resistance to humidity	Excellent	
Resistance to alkalis	Excellent	
Resistance to solvents	Excellent	
Resistance to acids	Low	

Compliance	**EN 14891**	**RM 01 P**
Initial adhesion	≥ 0.5 N/mm^2	UNI EN 14891-A.6.2
Adhesion after water immersion	≥ 0.5 N/mm^2	UNI EN 14891-A.6.3
Adhesion after thermal ageing	≥ 0.5 N/mm^2	UNI EN 14891-A.6.5
Adhesion after freeze/thaw cycles	≥ 0.5 N/mm^2	UNI EN 14891-A.6.6
Adhesion after contact with limewater	≥ 0.5 N/mm^2	UNI EN 14891-A.6.9
Adhesion after contact with chlorinated water	≥ 0.5 N/mm^2	UNI EN 14891-A.6.7
Water impermeability in 1.5 bar positive pressure	No penetration and increase in weight < 20 g	UNI EN 14891-A7
Crack-bridging capacity in normal conditions	≥ 0.75 mm	UNI EN 14891-A.8.2
Crack-bridging capacity at low temperature (-5°C)	≥ 0.75 mm	UNI EN 14891-A.8.3

Specifications for application

Mix ratio	Part A: 92.6 parts by weight
Mix ratio	Part B: 7.4 parts by weight
Consistency of mix	Epoxy gel
Specific gravity of mix	1.70 kg/dm^3
Duration of mixture	> 60 min
Applicable thicknesses	From 1 to 15 mm
Open time	> 60 min
Bonding time	> 60 min
Application	Notched trowel suitable for the format and for the substrate
Application temperatures	From +10°C to +30°C
Waiting time for grouting	Wall: 12 hours – Floor: 24 hours
Ready for light foot traffic	12 hours
Ready for use	5 days - Swimming pools 7 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 old ceramic or marble tiles, metal, PVC and fibreglass, must be cleaned 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 dust must be removed.
Any cracks or fissures must be sealed with the same epoxy gel, PowerGel® Pro Max.
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 Gel mixture, it is advisable to mix the product according to the indicated mixing ratio.
Cut off a corner of the bag containing the polymeric catalyst - part B - and pour it into the container of part A.
The entire contents of the bag should be emptied out by rolling it up and gradually pressing the bag from the sealed side towards the side that has been cut.
Polymerisation starts when the epoxy part is mixed with the hardener: this reaction creates new chemical bonds, generating the three-dimensional network which is the technological core of the solid and flexible structure of the epoxy Gel.
This step is crucial, as a non-homogeneous mixture could compromise its final properties such as hardness, and thermal and chemical resistance.
For this reason, it is recommended to mix with a low-speed electric mixer (approx. 300 rpm) until a creamy, homogeneous, lump-free mixture is obtained; this also helps to avoid overheating the mass, which would reduce the workability times.
Scrape the sides and the bottom of the container using a trowel or float to retrieve any uncatalysed product residues.
Briefly remix to obtain the easy-to-apply Gel consistency for both floor and wall applications.
Hand mixing is not recommended.

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, on façades 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 workability time in standard temperature and humidity conditions is greater than 60 minutes.
Very warm climates or high-temperature storage can drastically reduce it, so it is recommended to apply the material within the allowed temperature range and store it in an indoor environment.
In accordance with Standard UNIT 11493-1, the tiles must be installed with joint widths suitable for their size.
Respect any control or structural joints and create adequate expansion, separation and perimeter joints.

Special Applications

High-Resistance and Anti-Fracture elastic waterproofing

In the case of single-step waterproofing and installation of ceramic materials or mosaics in shower enclosures and indoor wet areas, at least 1 mm of Gel must first be applied to the relevant area using a smooth trowel. After setting (about 12-24 hours), spread the product using a notched trowel to install the ceramic materials.

For outdoor waterproofing, apply a layer of at least 1 mm of Gel onto the area to be waterproofed using a smooth trowel and, one the gelification has occurred (approximately 12-24 hours), apply a second 1 mm layer using the same method. The ceramic material can be installed after about 24 hours using a notched trowel.

Marble, natural and recomposed stones

Unstable marble or natural stones subject to deformation or stains due to water absorption require an ultra-high-performance epoxy gel like PowerGel® Pro Max (R2T- 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.) require an ultra-high-performance epoxy Gel like PowerGel® Pro Max (R2T- EN 12004).

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

After at least 4 days from the installation of the X-Floor® o 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® 1-30, 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.

If the swimming pool consists of a metal structure, it is possible to waterproof the tank using PowerGel® Pro Max as the waterproofing agent.

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.

Façades

For exterior wall installations (H>3 m) where tiled surfaces are subject to high levels of tension in expansion joints due to the variations in air temperature and relative humidity and considering the safety risks posed by any eventual detachments, it is recommended to consult Litokol's Technical Help Service in order to precisely define the safest type of installation.
In accordance with Standard UNI 11493 – 7.13.7, follow these general guidelines: the installation substrate must guarantee a cohesive tensile strength of ≥ 1,0 N/mm^2.
In the case of masonry substrates made of bricks/clay blocks, lightweight blocks, etc., direct installation is not allowed; instead, installation on plaster conforming to the specifications mentioned above is required.
For coverings with side > 30 cm the designer must evaluate the potential need to use suitable mechanical fasteners for safety purposes.
Control and expansion joints must be provided as specified in sections 7.11.1.2 and 7.11.1.3.
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 because of gelification, 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, available on the website www.litokol.com

Item specification

The installation, both indoors and outdoors, in accordance with Standards UNI 11493-1 and 11714-1, and the waterproofing of floors and wall coverings made from all types of mosaics, tiles, porcelain stoneware, slabs, marble and natural stones on any substrate, will be carried out using an epoxy Gel with permanent anti-fracture elasticity, classified as R2T according to Standard EN12004 and RM01P according to Standard EN14891: PowerGel® Pro Max by Litokol Lab SpA.

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