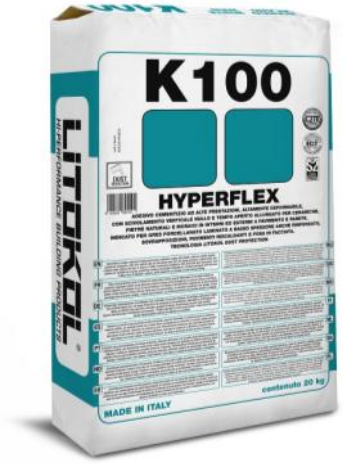
HYPERFLEX K100

One-component high-performance, highly deformable cementitious adhesive, with low emission of volatile organic compounds, no vertical slip and extended open time for the installation of ceramic tiles, stone material and mosaics on interior and exterior floors and walls. Particularly suitable for thin laminated porcelain stone installations, even if reinforced. Suitable for installation on top of existing tiles, heated floors and walls. Product developed using the new "Litokol Dust Reduction", which minimises the dust produced during mixing.



DESCRIPTION

A white or grey powder Portland cement-based adhesive, whose inert fillers with selected particle size and specific organic additives offer the product excellent water retention features, high deformation ability and non-slip properties. When mixed with water, a mortar is obtained with excellent application properties and extended open time. The product hardens without any significant shrinkage, creating excellent adhesion between ceramic tiles and substrates commonly used in the building sector.

ADVANTAGES

- Product with low emission level of volatile organic compounds (VOC), classified as EC1^{PLUS} (EMICODE) and A+ (French Regulation).
- One-component, highly deformable product (class S2 as per EN12002), eliminating the need to use a latex.
- Maintains excellent workability over time, without any bothersome thickening.
- The special additives offer the product a very creamy texture and facilitate application using a notched trowel.
- The adhesive mortar is highly thixotropic, allowing ceramic tiles and mosaics to be laid on walls without the need for plastic spacers.
- Thanks to its low specific gravity, Hyperflex K100 has an output on average more than 10-15% higher than traditional class C2 cementitious adhesives.
- The product has been developed with the new ***"Litokol Dust Reduction"*** system, which drastically reduces the amount of dust produced when mixed with water, thus improving operator working and safety conditions.

EN 12004 and EN 12002 CLASSIFICATION

Hyperflex K100 is a high-performance cementitious adhesive with no vertical slip, class C2TE extended open time as per EN 12004 and class S2 high deformation ability as per EN 12002, for interior and exterior floor and wall ceramic tiling. The product's compliance with EN 12004 regulations is reported on the Performance Declaration CPT-IT015G and CPR-IT015B, as per the European Construction Products Regulation (CPR) No. 305/2011/EU, and tested by a European body notified as per certification system 3.

PACKAGING

20 kg bags - Standard pallet 1200 kg.

INTENDED USE

The product's good deformability thanks to its high polymeric content makes it perfect for use on surfaces exposed to harsh working conditions, where frequent temperature fluctuations lead to differentiated expansion between the tiles and substrate. Typical examples include exterior walls, balconies and terraces, paved surfaces exposed to direct sunlight, etc.. In particular, Hyperflex K100 can be used to lay all types of ceramic tiles including thin, reinforced laminated porcelain stone, natural stone that is not sensitive to moisture, glass mosaics and ceramic tiles in the following environments.

Interior floors in residential and public/commercial buildings (walking areas)	
Substrates	**Longest allowable tile side (cm)**
Cement-based or Litocem/Litocem Pronto-based screeds without heating	> 120
Cement-based or Litocem/Litocem Pronto-based screeds with heating	> 120
Sulphate-based (anhydride) screeds without heating (1)	> 120
Sulphate-based (anhydride) screeds with heating (1)	> 120
Freshly poured concrete (2)	> 120
Prefabricated concrete	≤ 90
Pre-existing substrates made of existing tiles, mosaics, stone, agglomerate floors (3)	> 120
Pre-existing substrates with organic adhesive residue (4)	> 120
Substrates treated with Litoproof	> 120
Substrates treated with Hidroflex, Aquamaster, Elastocem, Coverflex	> 120

Powder adhesives

Interior floors in public/commercial and industrial buildings bearing heavy loads	
Substrates	**Longest allowable tile side (cm)**
Cement-based or Litocem/Litocem Pronto-based screeds without heating	> 120
Freshly poured concrete (2)	> 120
Prefabricated concrete	≤ 90
Pre-existing substrates made of existing tiles, mosaics, stone, agglomerate floors (3)	> 120
Pre-existing substrates with organic adhesive residue (4)	> 120
Substrates treated with Litoproof	> 120
Substrates treated with Hidroflex, Aquamaster, Elastocem, Coverflex	> 120

Interior walls in residential, public/commercial and industrial buildings	
Substrates	**Longest allowable tile side (cm)**
Lime/cement-based plaster	> 120
Gypsum-based plaster (1)	> 120
Freshly poured concrete (2)	> 120
Prefabricated concrete	> 120
Pre-existing substrates made of existing tiles, mosaics, stone (3)	> 120
Substrates treated with Litoproof	> 120
Substrates treated with Hidroflex, Aquamaster, Elastocem, Coverflex	> 120
Fibrocement and cement-based panels	> 120
Waterproof and non-waterproof gypsum board (5)	≤ 90
Elements in autoclaved aerated concrete (6)	≤ 90
Thermal insulated and soundproof panels - Lightweight panels	≤ 120

Exterior floors in residential, public/commercial and industrial buildings	
Substrates	**Longest allowable tile side (cm)**
Cement-based or Litocem/Litocem Pronto-based screeds without heating	> 120
Freshly poured concrete (2)	> 120
Prefabricated concrete	≤ 90
Pre-existing substrates made of existing tiles, mosaics, stone, agglomerate floors (3)	> 120
Substrates treated with Aquamaster, Elastocem, Coverflex	> 120
Resin-treated substrates, treated on the surface with a dry-shake finish of quartz	> 120

Exterior walls	
Substrates	**Longest allowable tile side (cm)**
Lime/cement-based plaster	> 120
Freshly poured concrete (2)	> 120
Prefabricated concrete	> 120
Pre-existing substrates made of existing tiles, mosaics, stone, agglomerate floors (3)	≤ 60
Substrates treated with Aquamaster, Elastocem, Coverflex	> 120
Fibrocement panels	≤ 90

Key

(1) After treatment with Primer C or Primer X94 Maximum humidity = 0.5%
(2) Curing time: minimum 6 months.
(3) After cleaning and degreasing with a water and caustic soda solution.
(4) After treatment with Litofix.
(5) After treatment with Primer C or Primer X94 for non-waterproof gypsum board.
(6) After treatment with Primer X94

INSTALLATION PLANNING
The only way to guarantee the long-lasting performance of ceramic installations is to properly plan the process. We therefore recommend that national regulations currently in force in each country be carefully read, for example UNI 11493:2013 for Italy, which provides all necessary instructions regarding the choice of materials, correct planning, use and installation, so as to ensure all quality, performance and durability standards are safely met. When laying large-sized tiles or thin laminated porcelain stone slabs, we recommend paragraphs 7.13.8 and 7.13.9 of regulation UNI 11493 be carefully read. Moreover, certain producers of thin slabs provide installation manuals indicating the adhesive classes that need to be used depending on the size, characteristics and intended use of the slabs.
Some of the general precautions that need to be followed are provided as an example:
Substrates - Before installation, check that the substrates are clean, free of loose fragments, properly dried and cured, flat and level, and that mechanical resistance requirements based on the intended use have been met.
Worksite conditions - Check the suitability of temperature, humidity, light conditions etc. at the time of the product's application.
Materials - Check that all materials used for tiling (ceramic materials, levelling systems, adhesives, sealants, waterproofing products, etc.) are suitable for the intended use and have been correctly stored.
Expansion joints - Check that elastic perimeter seals, expansion joints, divider and structural joints have been properly designed and included. Divider joints are normally needed for 20/25 m^2 sections in interiors, and 9-15m^2 sections in exteriors. For exteriors, make sure joints are properly waterproofed and grouted.
Back-buttering - For exterior installations, large-size tiles, floors with intense or heavy traffic, vibrating supports and situations exposed to high temperature fluctuations, the adhesive mortar must be applied to both the substrate and the back of the tiles so as to obtain a full layer of adhesive without any air pockets.
Joints - In any type of ceramic tiling the joints must have a suitable width, which will be based on the following parameters:
• type, format and size tolerance of tiles;
• thermal expansion coefficients of materials constituting the installation;
• mechanical properties of installation materials;
• position and trajectory of joints;
• mechanical properties of substrate;
• environment of use and expected operating conditions.
Butt joints **are not allowed.** Any plastic spacers must be removed before grouting.

MIXING RATIO
HYPERFLEX K100 20 kg. (1 bag) –**WATER** 6.6 - 7 l (33-35%)

MIX PREPARATION
Pour the right quantity of water into a clean container and slowly add the powder, stirring with an electric drill fitted with a mixing paddle until obtaining a smooth and consistent lump-free paste. Leave the paste to settle for about 5 minutes and then briefly stir again for a few seconds.

APPLICATION
Spread the paste onto the substrate using the smooth part of the trowel to create a layer approximately 1 mm thick. Immediately afterwards, comb the product onto the surface using the notched part of the trowel. The trowel notch size will depend on the size of the tiles. In any case, consider that 65-70% of the reverse side of tiles needs to be covered for interior installations, and 100% for exterior installations or floors subject to heavy traffic. In exterior installations, areas subject to high stress or areas where thin laminated porcelain stone slabs are installed, it is recommended to also apply the adhesive to the back of the tiles (back-buttering method).
The tiles must be placed on the adhesive and pressed firmly to ensure good contact. The product's open time in normal temperature and humidity conditions is 30 minutes. In very warm or windy climates, or in the case of particularly absorbent substrates, the open time may be drastically reduced to just a few minutes. It is therefore recommended to regularly check that the adhesive has not skinned over. If this occurs, the surface of the adhesive will need to be combed again using the trowel. Tiles must be laid with joints of a suitable width. During installation, take any expansion, perimeter, divider or structural joints into account. The tiled surface must be protected for at least 24 hours against any water infiltration, and for approximately 5-7 days against any frost and direct sunlight. In the case of mosaics mounted on adhesive paper or film, this must not be removed until at least 24 hours after installation once the adhesive has properly hardened, to prevent the detachment of the tiles.

GROUTING
Joints can be grouted after approximately 6-8 hours in wall installations and after 24 hours in floor installations. Cementitious grouts can be used such as **Litochrom 0-2,Litochrom 1-6,Litochrom 3-15,** water-reacting polyurethane resin-based grouts such as **Starlike®Monomix,** or two-part epoxy grouts such as **Expoxystuk X90 or Starlike®.**

WARNINGS
• Do not add lime, cement or other foreign materials to the product.
• Apply the product at a temperature between +5°C and +35°C.
• Respect the mixing ratio.
• For exterior wall installations where tiled surfaces have a high vertical slip (> 3m) 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 the Litokol S.p.A technical help service in order to precisely define the safest type of installation.
• Do not apply the product directly onto plastic, elastic, wooden, metal materials or resin-treated substrates without a dry-shake finish of quartz. In these cases, treat the substrates beforehand with the Prepara Fondo one-component adhesion promoter.
• If laying glass mosaics metalized on the back, always perform an initial test to check for the appearance of any oxidation due to the alkaline pH of the adhesive. If in doubt, contact the Litokol S.p.A technical help service.
• Do not use the product to create layers more than 5 mm thick.
• Do not use the product on floors that need to be quickly walked on.
• Do not use the product for applications not stated in this technical data sheet.
• If in doubt, contact the Litokol S.p.A technical help service.

SAFETY INFORMATION
Consult the Material Safety Data Sheet, available on request.
PRODUCT FOR PROFESSIONAL USE

ITEM SPECIFICATION
Interior and exterior ceramic floor and wall coverings, including large-sized tiles, natural stone that is not sensitive to moisture, thin laminated porcelain stone, also with glass fibre mat reinforcement applied to the back, glass mosaics or ceramic tiles, will be installed using an improved cementitious adhesive with no vertical slip and class C2TE extended open time as per standard EN 12004, with class S2 high deformation ability as per standard EN 12002 type Hyperflex K100 by Litokol S.p.A.

Powder adhesives

PRODUCT IDENTITY	
Appearance	Powder
Colour	White or Grey
Customs code	38245090
Solid residue	100%
Specific gravity of powder	1.15 kg/dm^3
Preservation time	12 months in original packaging in a dry place.

APPLICATION DATA	
Mixing ratio	Water = 33-35% (6.6-7 litres of water per 20 kg bag)
Mix consistency	Creamy thixotropic mortar
Mix curing time	5 minutes
Mix pH	13
Specific gravity of mix	1.47 kg/dm^3
Life of mixture	Approx. 8 hours
Application	Trowel notch
Allowed temperatures of application	From +5°C to +35°C
Time before grouting	Wall: 6 - 8 hours - Floor: 24 hours
Walk on time	24 hours
Commissioning	7 days
Temperature of use	From -30°C to +80°C
How to clean equipment	With water when product is fresh. Mechanically when product has hardened.
Consumption	6 mm trowel: 2.1 kg/m^2 10 mm trowel: 3.5 kg/m^2 Back-buttering: 4.5 kg/m^2

PERFORMANCE		
Initial tensile adhesion strength after 28 days	≥ 1,0 N/mm^2	EN 1348
Tensile adhesion strength after water immersion	≥ 1,0 N/mm^2	
Tensile adhesion strength after heat action	≥ 1,0 N/mm^2	
Tensile adhesion strength after freeze/thaw cycles	≥ 1,0 N/mm^2	
Slip resistance	≤ 0,5 mm	EN 1308
Open time	≥ 0,5 N/mm^2 dopo 30 minuti	EN 1346
Deformation ability	≥ 5 mm	EN 12002
Alkali resistance	Excellent	
Solvent resistance	Excellent	
Acid resistance	Scarce	

Although the information provided in this technical data sheet is accurate to the best of our knowledge and experience, it is intended purely as a guideline.
The user must carry out preliminary practical tests for each specific job and is solely responsible for the final result.

Data sheet no. 15
Revision no. 1
Date: October 2016

LITOKOL®
HI-PERFORMANCE BUILDING PRODUCTS

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