

# Bioflex S1

Deformable mineral adhesive for high performance bonding of porcelain tiles, ceramic tiles and natural stone, with no vertical slip and long open time.



## Rating 5

1. With Natural Polymers
2. Extended open time
3. Very low-VOC emissions

- ✓ Regional Mineral  $\geq 60\%$
- ✓ Recycled Regional Mineral  $\geq 30\%$
- ✓ CO<sub>2</sub> Emission  $\leq 250$  g/kg
- ✓ VOC Low Emission
- ✓ Recyclable

## Areas of application

### → Use

#### Substrates:

- Cement-based screeds and mortars
- Anhydrite screeds <sup>(1)</sup>
- Lime and cement-based plasters/renders
- Concrete
- Cellular concrete
- Plasterboard
- Gypsum and anhydrite <sup>(1)</sup>
- Heating systems
- Waterproofing products
- To overlay existing floors
- Fibro-cement slabs
- Thermal insulation panelling systems
- Insulating panels

*(1) After application of Active Prime Fix or Active Prime Grip*

#### Materials:

- Ceramic tiles
- Porcelain tiles
- Large size
- Terracotta
- Klinker
- Marble and natural stone
- Various mosaics
- Insulating and soundproofing panels

### Uses:

- Floors and walls
- For internal use - External
- Overlaying
- Facades
- Terraces and balconies
- Swimming pools and fountains
- Saunas and spa
- Domestic
- Commercial
- Industrial
- Street furniture

### Do not use:

- On wood, metal, plastics, resilient materials, substrates subject to vibrations
- On screeds, plasters/renders, concrete not yet cured and affected by important drying shrinkage
- On organic-based waterproofing products (such as RM according to EN 14891).

## Instructions for use

→ The instructions for use are referred, where prescribed, to Italian Standard UNI 11493 "Laying of ceramic tiles on floors and walls. Instructions for planning, laying and maintenance".

→ Preparation of the substrate (UNI 11493 - point 7.3)

All substrates must be level, cured, undamaged, compact, rigid, resistant, dry and free from any debonding agents and from damp rising (x UK) - All surfaces must be leveled, cured, undamaged, compact, rigid, dry, free from any loose particles and rising dampness (x INDIA). It is best to dampen highly absorbent cement-based substrates before the application or apply one coat of Active Prime Fix or Active Prime Grip.

→ Preparation

Mixing water (EN 12004-2):

- Grey ≈ 26.5% – 29.5% by weight
- White Shock ≈ 32% – 35% by weight

Mixing water on-site:

- Grey ≈ 7 l / 1 x 25 kg bag
- White Shock ≈ 7.5 l / 1 x 25 kg bag

The amount of water indicated on the packaging is indicative. It is possible to obtain mixtures with consistency of variable thixotropy according to the application to be made.

→ Application (UNI 11493 - points 7.9/11)

To guarantee maximum adhesion it is necessary to apply a layer of adhesive sufficient to cover the entire back of the coating material.

Large, rectangular sizes with sides > 60 cm and low thickness sheets may require adhesive to be applied directly to the back of the material.

Check samples to make sure the adhesive has been transferred to the back of the material.

Respect structural, fractionizing, and perimeter joints present in the substrates. Abide by local existing provisions when creating elastic expansion joints.

Standard UNI 11493 – joints must divide the surface into areas of the following sizes:

- ≈ 10 m<sup>2</sup> in external use
- ≈ 25 m<sup>2</sup> in internal use

→ Cleaning

Clean the tools and any residues of the product from the surfaces using water while the adhesive is still fresh. Once hardened, the adhesive can only be removed by mechanical means.

## Special notes

### → Materials and special substrates

- Marble and natural stone: materials that are subject to deformation or staining due to water absorption require a quick-setting or reactive adhesive.

Marble and natural stone in general may have characteristics that vary even with reference to materials of the same chemical and physical nature. For this reason it is essential you consult Kerakoll Global Service to request specific indications or to carry out a test on a sample of the material.

In the absence of specific indications from the manufacturer, natural stone slabs with reinforcement layers, in the form of resin coating, polymer mesh, matting, etc. or treatments (for example damp courses, etc.) applied on the laying surface must be tested in advance to ensure they are compatible with the adhesive. Check for the presence of any really consistent traces of rock dust created during cutting, and remove them if found.

- Waterproofing products: adherent and floating polymer sheets, liquid bitumen and tar-based sheets or membranes require application of a laying screed on top.

### → Special applications

- Facades (UNI 11493 - point 7.13.7):  
The substrate should guarantee a cohesive tensile strength of  $\geq 1,0 \text{ N/mm}^2$ . The need to call for suitable mechanical safety anchoring must be evaluated by the designer for coverings with  $> 30 \text{ cm}$  side. Always apply a layer of adhesive directly on the back of the material (per India tile/stone).
- Insulating and soundproofing panels must be bonded according to the manufacturers' instructions.
- Plasterboard and fibro-cement slabs must be firmly anchored to specific metal frames.

## Certificates and marks



\* Émission dans l'air intérieur Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).

## Abstract

High-performance laying of ceramic and porcelain tiles, mosaic, marble and natural stone with deformable mineral adhesive for high-adhesion laying with no vertical slip, compliant with standard EN 12004 - class C2 TE S1, GreenBuilding Rating 5, such as Bioflex S1 by Kerakoll Spa. Substrates must be compact, with no loose, flaky material, clean and fully cured, having already completed the curing period for hygrometric shrinkage. A \_\_\_ mm toothed spreader must be used for an average coverage of  $\approx$  \_\_\_ kg/m<sup>2</sup>. Existing joints must be respected, create elastic fractionizing joints every \_\_\_ m<sup>2</sup> of continuous surface. Tiles must be laid with joint-gap spacers with a width of \_\_\_ mm.

<b>Technical Data compliant with Kerakoll Quality Standard</b>		
Appearance	White or grey pre-mixed powder	
Pack	25 kg	
Shelf life	≈ 12 months from production in the original sealed packaging, protect from humidity	
Thickness	from 2 to 15 mm	
Temperature range for application	from +5 °C to +35 °C	UNI 11493 - 8.3
Pot life at +23 °C:		
- Grey	≈ 6 h	
- White Shock	≈ 7 h	
Open time at +23 °C (BIII tile):		
- Grey	≥ 45 mins.	EN 12004-2
- White Shock	≥ 50 min.	EN 12004-2
Open time at +35 °C (BIII tile):		
- Grey	≥ 15 min.	
- White Shock	≥ 30 min.	
Foot traffic/grouting of joints at +23 °C:		
- Grey	≈ 20 h	
- White Shock	≈ 20 h	
Foot traffic/grouting of joints at +5 °C:		
- Grey	≈ 50 h	
- White Shock	≈ 55 h	
Grouting in walls at +23 °C	≈ 15 h	
Ready for use at +23 °C / +5 °C:		
- light foot traffic	≈ 2 / 3 days	
- heavy traffic	≈ 3 / 7 days	
- swimming pools (+23 °C)	≈ 14 days	
Coverage per mm of thickness	≈ 1,25 kg/m <sup>2</sup>	

Values taken at +23 °C, 50% R.H. and no ventilation. Data may vary depending on specific conditions at the building site, i.e. temperature, ventilation and absorbcency level of the substrate and of the materials laid.

**Performance****VOC Indoor Air Quality (IAQ) - Volatile organic compound emissions**

Conformity	EC 1 plus GEV-Emicode	GEV certified 6363/11.01.02
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**HIGH-TECH**

Shear adhesion (porcelain tiles/porcelain tiles) after 28 days	$\geq 2 \text{ N/mm}^2$	ANSI A-118.4
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Tensile adhesion (concrete/porcelain tiles) after 28 days	$\geq 2 \text{ N/mm}^2$	EN 12004-2
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**Durability test:**

- Adhesion after heat ageing	$\geq 1 \text{ N/mm}^2$	EN 12004-2
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- adhesion after water immersion	$\geq 1 \text{ N/mm}^2$	EN 12004-2
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- adhesion after freeze-thaw cycles	$\geq 1 \text{ N/mm}^2$	EN 12004-2
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Vertical slip	$\leq 0,5 \text{ mm}$	EN 12004-2
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Transversal deformation	$\geq 2,5 \text{ mm}$	EN 12004-2
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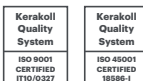
Working temperature	from $-30 \text{ }^\circ\text{C}$ to $+80 \text{ }^\circ\text{C}$	
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Conformity	C2 TE S1	EN 12004
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Values taken at  $+23 \text{ }^\circ\text{C}$ , 50% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

## Warning

- Product for professional use
- abide by any standards and national regulations
- do not use the adhesive to correct substrate irregularities greater than 15 mm
- protect from direct rainfall for at least 24 hrs
- the temperature, ventilation and absorption of the substrate and covering materials, may vary the adhesive workability and setting times
- use the right size of notched trowel for the format of the tile or slab
- guarantee a full-bed in all external laying operations
- if necessary, ask for the safety data sheet
- for any other issues, contact Kerakoll Technical Customer Service:  
+ 39 0536.811.516  
[www.kerakoll.com/contatti](http://www.kerakoll.com/contatti)



The Rating classifications refer to the GreenBuilding Rating Manual 2012. This information was last updated in December 2023 (ref. GBR Data Report – 12.23); please note that additions and/or amendments may be made over time by KERAKOLL SpA; for the latest version, see [www.kerakoll.com](http://www.kerakoll.com). KERAKOLL SpA shall therefore be liable for the validity, accuracy and updating of information provided only when taken directly from its institutional website. The technical data sheet given here is based on our technical and practical knowledge. As it is not possible for us to directly check the conditions of your building site and the execution of the work, this information represents general indications that do not bind Kerakoll in any way. Therefore, it is advisable to perform a preliminary test to verify the suitability of the product for your purposes.