

# Bioflex® S1 Zero

Deformable mineral adhesive with an extremely high natural additive content for high performance bonding of porcelain tiles, ceramic tiles and natural stone, with no vertical slip and long open time. Eco-friendly. Ideal for use in GreenBuilding.



**GREENBUILDING RATING®**

**Bioflex® S1 Zero**

- Category: Inorganic mineral products
- Laying ceramic, porcelain tiles and natural stone

**rating 4**

- Natural mineral content: Grey 60.20%
- Recycled mineral content: White 31.26%
- CO<sub>2</sub>/kg emission: Grey 246 g, White 246 g
- Very low VOC emissions
- Can be recycled as inert material

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

**PRODUCT STRENGTHS**

- WITH NATURAL POLYMERS**

Bioflex® S1 Zero contains low environmental impact resins obtained through low energy consumption processes that allow the dispersion in water increasing the efficiency of the deformability performance and reducing the emission of volatile substances.
- WITH PLANT LATEX**

Bioflex® S1 Zero contains ingredients of plant origin that improve workability and open time. Bioflex® S1 Zero has an extremely low chemical additive content and does not emit dangerous substances and unpleasant odours.
- WITH MINERAL BENTONITE**

Bioflex® S1 Zero contains exclusive mineral bentonite which, on contact with the mixing water, transforms into a highly thixotropic adhesive, maintaining shape and thickness under the tile and guaranteeing unbeatably smooth spreading.

**ECO NOTES**

- Formulated with locally-sourced minerals meaning lower greenhouse gas emission during transportation
- The white version contains recycled minerals thereby reducing the damage to the environment caused by extracting primary raw materials
- Single-component; avoiding the use of plastic cans reduces CO<sub>2</sub> emissions and the need to dispose of special waste

**AREAS OF USE**

**Use**

**Substrates:**

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

**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
- Façades
- Terraces and balconies
- Swimming pools and fountains
- Saunas and spa
- Domestic
- Commercial
- Industrial
- Street furniture

\* 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).

## INSTRUCTIONS FOR USE

### Preparation of the substrate

All substrates must be level, cured, undamaged, compact, rigid, resistant, dry and free from any debonding agents and from damp rising. It is good practice to dampen highly absorbent concrete substrates or apply a coat of Primer A Eco.

### Adhesive preparation

Mixing water (EN 12004-2):

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

Mixing water on-site:

- Grey ≈ 5.5 ℓ / 1 bag
- White Shock ≈ 6.7 ℓ / 1 bag

The amount of water to be added, indicated on the packaging, is an approximate guide. It is possible to obtain mixtures with consistency of variable thixotropy according to the application to be made.

### Application

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.

Create elastic expansion joints:

- ≈ 10 m<sup>2</sup> in external applications,
- ≈ 25 m<sup>2</sup> in internal applications,
- every 8 metres in long, narrow applications.

Respect all structural, fractionizing and perimeter joints present in the substrates.

## SPECIAL NOTES

### Pre-treatment of special substrates

gypsum-based plasters/renders and anhydrite screeds: Primer A Eco.

*Please see the technical data sheet on how to use the Primer properly.*

### 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

#### Façades

The substrate should guarantee a cohesive tensile strength of  $\geq 1,0$  N/mm<sup>2</sup>. The need to call for suitable mechanical safety anchoring must be evaluated by the designer for coverings with > 30 cm side. Always apply a layer of adhesive directly on the back of the material (per India tile/stone).

Insulating and soundproofing panels applied using spot adhesion as recommended by the manufacturers.

Plasterboard and fibro-cement slabs must be firmly anchored to specific metal frames.

#### 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).

## TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Shelf life	≈ 12 months in the original packaging in dry environment. Protect from humidity	
Pack	20 kg	
Adhesive thickness	from 2 to 15 mm	
Temperature of the air, substrates and materials	from +5 °C to +35 °C	
Pot life at +23 °C		
- Grey	= 6 hrs	
- White Shock	= 6 hrs	
Open time at +23 °C:		
- Grey	= 30 min.	EN 12004-2
- White Shock	= 30 min.	EN 12004-2
Time required until fully frost-proof from +5 °C to -5 °C	≈ 12 hrs	
Foot traffic/grouting of joints at +23 °C:		
- Grey	= 24 hrs	
- White Shock	= 24 hrs	
Grouting in walls at +23 °C	≈ 12 hrs	
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 thickness:		
- Grey (mixing ratio 28%)	≈ 1.25 kg/m <sup>2</sup>	
- White Shock (mixing ratio 33.6%)	≈ 1.25 kg/m <sup>2</sup>	
<i>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 absorptency level of the substrate and of the materials laid.</i>		

## PERFORMANCE

### VOC INDOOR AIR QUALITY (IAQ) - VOLATILE ORGANIC COMPOUND EMISSIONS

Conformity	EC 1 plus GEV-Emicode	GEV certified 12703/11.01.02
Shear adhesion (porcelain tiles/porcelain tiles) after 28 days	≥ 2 N/mm <sup>2</sup>	ANSI A-118.4
Tensile adhesion (concrete/porcelain tiles) after 28 days	≥ 2 N/mm <sup>2</sup>	EN 12004-2
Durability test:		
- adhesion after heat ageing	≥ 1 N/mm <sup>2</sup>	EN 12004-2
- adhesion after water immersion	≥ 1 N/mm <sup>2</sup>	EN 12004-2
- adhesion after freeze-thaw cycles	≥ 1 N/mm <sup>2</sup>	EN 12004-2
Vertical slip	≤ 0.5 mm	EN 12004-2
Transversal deformation	≥ 2.5 mm	EN 12004-2
Working temperature	from -30 °C to +80 °C	
Conformity	C 2TES1	EN 12004

*Values taken at +23 °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 toothed spreader 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 the Kerakoll Worldwide Global Service +39 0536 811 516 - [globalservice@kerakoll.com](mailto:globalservice@kerakoll.com)

The Rating classifications refer to the GreenBuilding Rating® Manual 2013. This information was last updated in November 2020 (ref. GBR Data Report - 1220); 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 in your building yards 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.



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