BIOFLEX® S1

Grey

White Shock formula

eco4®

eco5®

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.

FEATURES AND ADVANTAGES

with Natural Polymers

BIOFLEX® S1 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 Mineral Bentonite

BIOFLEX® S1 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.

with Plant Latex

BIOFLEX® S1 CONTAINS INGREDIENTS OF PLANT ORIGIN THAT IMPROVE WORKABILITY AND OPEN TIME. BIOFLEX® S1 HAS AN EXTREMELY LOW CHEMICAL ADDITIVE CONTENT AND DOES NOT EMIT DANGEROUS SUBSTANCES AND UNPLEASANT ODOURS.

GREENBUILDING RATING®

- Category: Inorganic Mineral Products
- Class: Mineral adhesives for ceramic tiles and natural stone
- Rating: Grey Eco 4 / White Eco 5

	Regional Mineral ≥ 60 %	Recycled Regional Mineral ≥ 30 %	CO_2 ≤ 250 g/kg	Low Emission IAQ VOC Indoor Air Quality	Recyclable
eco4 Grey	✓		✓	✓	✓
eco5 White	✓	✓	✓	✓	✓
	Natural mineral content Grey 65% White 65%	Recycled mineral content White 65%	CO_2/kg emission Grey 217 g White 217 g	Very low VOC emissions	Can be recycled as inert material

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

- The GreenBuilding Rating® is a dependable and reliable evaluation method for measuring and improving the environmental performance of building materials.

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_2 emissions and the need to dispose of special waste

COMPLIANCE AND CERTIFICATIONS

CE 1599 0407	**KERAKOLL S.p.A.** Via dell'Artigianato, 9 41049 Sassuolo - MO - Italy - www.kerakoll.com
15 DoP n° 0304 EN 12004:2007+A1:2012 BIOFLEX S1 Improved cementitious adhesive for all internal and external tiling	
Reaction to fire	Class A1
Bond strength, as: initial tensile adhesion strength	≥ 1,0 N/mm²
Durability, for: tensile adhesion strength after heat ageing tensile adhesion strength after water immersion tensile adhesion strength after freeze/thaw cycles	≥ 1,0 N/mm² ≥ 1,0 N/mm² ≥ 1,0 N/mm²
Release of dangerous substances	See SDS

CO_{2eq} Carbon Footprint VERIFIED

1,86 Grey

2,28 White

$kgCO_2eq/m^2$

CLASS C2 TE S1 — CHARACTERISTICS — EN 12004 STANDARD

GEV-EMICODE EC 1 PLUS very low emission

ÉMISSIONS DANS L'AIR INTÉRIEUR A+ (A+ A B C)

CONTRIBUTES TO LEED POINTS

* 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).

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MATERIALS AND SUBSTRATES

The combination of substrates, materials and uses indicated may not always be possible to achieve. It is essential that you consult the individual product technical sheets to check their suitability. Anything that is not foreseen in this list must be requested directly from Kerakoll Global Service.

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 FORMATS
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
MARINE

PREPARATION AND USE

The indications for use refer to the general principles of application to a high professional standard. Abide by any standards and national regulations.

- **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 1348)

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

Mixing water on-site

Grey	≈ 7 ℓ / 1 bag
Shock White	≈ 7.5 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 m² in external applications,
- ≈ 25 m² in internal applications,
- every 8 metres in long, narrow applications.

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

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SAFE LAYING ON SITE

The SAFE LAYING ON SITE method has the aim of testing adhesives both using relevant standards and in some of the most extreme conditions that can be met on site, using rigorous scientific methods and some of the most modern technology currently available in the Kerakoll® GreenLab.

WORKABILITY

Pack	25 kg
Shelf life	≈ 12 months in the original packaging Protect from humidity
Adhesive thickness	from 2 to 15 mm

Coverage per mm thickness:

Grey (mixing ratio28%)	≈ 1,20 kg/m²
White Shock (mixing ratio 33,6%)	≈ 1,25 kg/m²

Temperature of the air, substrates and materials
from +5 °C to +35 °C

Pot life at +23 °C

Grey	≈ 6 hrs
Shock White	≈ 7 hrs

Open time at +23 °C (BIII tile):

Grey	≥ 45 min.	EN 1346
Shock White	≥ 50 min.	EN 1346

Open time at +35 °C (BIII tile):

Grey	≥ 15 min.	EN 1346
Shock White	≥ 30 min.	EN 1346

Time required until fully frost-proof (BIa tile)

from +5 °C to -5 °C	≈ 10 hrs

Foot traffic/grouting of joints at +23 °C:

Grey	≈ 20 hrs
Shock White	≈ 20 hrs

Foot traffic/grouting of joints at +5 °C:

Grey	≈ 50 hrs
Shock White	≈ 55 hrs

Grouting in walls

+23 °C	≈ 15 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

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**

Facades
The substrate should guarantee a cohesive tensile strength of ≥ 1,0 N/mm². 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).

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PERFORMANCE

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

Conformity	EC 1-R plus GEV-Emicode	GEV certified 6363/11.01.02
Shear adhesion (porcelain tiles/porcelain tiles) after 28 days	≥ 2 N/mm²	ANSI A-118.1
Tensile adhesion (concrete/porcelain tiles) after 28 days	≥ 2 N/mm²	EN 1348
Durability test:		
- adhesion after heat ageing	≥ 1 N/mm²	EN 1348
- adhesion after water immersion	≥ 1 N/mm²	EN 1348
- adhesion after freeze-thaw cycles	≥ 1 N/mm²	EN 1348
Vertical slip	≤ 0,5 mm	EN 1308
Transversal deformation	≥ 2,5 mm	EN 12002
Working temperature	from -30 °C to +80 °C	

Values taken at +23 °C, 50% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

GENERAL NOTICES

- **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 Global Service +39-0536.811.516 - globalservice@kerakoll.com

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Kerakoll Quality System ISO 9001 CERTIFIED IT10/0327
Kerakoll Quality System ISO 14001 CERTIFIED IT242729/UK
Kerakoll Quality System BS 18001 CERTIFIED IT255412/UK

KERAKOLL
The GreenBuilding Company

KERAKOLL S.p.a.
Via dell'Artigianato, 9 - 41049 Sassuolo (MO) Italy
Tel +39 0536 816 511 - Fax +39 0536 816 581
info@kerakoll.com - www.kerakoll.com

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