

Bioscud

Coloured, multi-purpose, elastomeric rainproof waterproofing protection for flat and pitched roofs, bituminous layers and external surfaces, resistant to UV light, atmospheric agents and standing water, ideal for use in GreenBuilding. Single-component, solvent-free, safeguards the health of both operators and the environment.

Bioscud is easy to apply on large surfaces to ensure the waterproofing and the highly reflective protective decoration (Cool Roof) even of old, pre-shaped bituminous layers; it adapts to any shape, as to avoid overheating the rooms below. Certified for the encapsulation of fibre-cement and asbestos-cement slabs.



GREENBUILDING RATING®

Bioscud

- Category: Organic Mineral products
- Waterproofing



- ✓ Solvent-free
- ✓ No environmental hazard rating
- ✓ Non-toxic and non-hazardous

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

PRODUCT STRENGTHS

- Specifically intended for decorative rainproof waterproofing of flat roofs
- Certified for highly reflective protective decoration – Cool Roof (white colour) of old pre-shaped bituminous layers as well
- Certified for the encapsulation of fibre-cement and asbestos-cement sheets class A, B, C and D in accordance with Italian Ministerial Decree 20/08/99
- Water emulsion with a high level of elasticity for highly deformable substrates
- Ready-to-use, water-based, solvent-free
- Resistant to standing water, UV light and atmospheric agents, it does not need protection
- It performs continuous waterproofing avoiding the discontinuity of pre-shaped layer systems



ECO NOTES

- Water-based, limits the risk of loads that could be harmful and dangerous to the environment during storage and transportation
- Improved on-site safety guaranteed

AREAS OF USE

Use

- Waterproofing in positive thrust of concrete and reinforced concrete structures and elements: coverings in general, flat and pitched roofs, floors, slabs.
- Waterproofing in positive thrust of walls, exterior foundation walls, foundations, plinths.
- Decorative, exposed waterproofing of chimneys, canopies, gutter channels, chimney flashings, roofing details, cornices, perimeter and containment walls, façades, lift shafts and stairwells, surfaces soundproofed with polyurethane foams for protection against UV rays (not soaked).
- Protection for humidity control of concrete and reinforced concrete structures (horizontal, vertical, inclined surfaces) with high protection from carbonation (low CO₂ permeability).
- Repair and protective decoration Cool Roof (white colour) of old pre-shaped bituminous layers.
- Waterproofing of structures and elements under roofing tiles before fixing with polyurethane foam.
- Surfaces occasionally subject to foot traffic for maintenance work.

Substrates:

- concrete and prefabricated reinforced concrete or fresh concrete castings
- mineral screeds from Keracem® Eco range and cement-based screeds
- cement plasters and cement-lime mortar
- old smooth and slated bituminous layers
- aluminium, steel, iron, copper, wooden floors
- Bioscud BT cured for at least 20 days
- floor and coverings featuring ceramic tiles, cement-based marble tiles, clinker, stone materials
- fibreglass after sanding down, fibre-cement slabs, external dry building systems
- old liquid acrylic-based sheaths and old aluminium-based varnishes after checking the adhesion with a peeling test
- PVC layers, after sanding down and preliminary test (reinforce with Bioscud TNT)

AREAS OF USE

Do not use

- in case of unfavourable drying conditions or in case of impending rain
- in case of exposure to strong sunlight or on warm surfaces
- on floating or not perfectly anchored, damp, wet substrates or substrates subjected to rising damp
- on constantly trafficked surfaces, surfaces subject to heavy traffic or surfaces intended for glued heavy covering
- on lightened cement-based substrates not suitable to withstand direct loads, on insulating panels
- on old pre-shaped layers directly applied on insulating panels
- on light boards, wooden beads or canopies
- for water containment, for waterproofing under negative thrust
- when high levels of acid and base resistance is required
- where heavy objects could be dragged

INSTRUCTIONS FOR USE

Substrate requirements

Cured (dimensionally stable):

screeds in Keracem® Eco and Keracem® Eco Pronto, waiting time 24 hrs;

- concrete waiting time 6 months unless otherwise specified;
- cement-based screeds or plasters/renders waiting time 7 days per cm of thickness (good weather).

Undamaged (remove parts or elements not perfectly adherent, verify adhesion and compatibility of any existing coatings).

Compact (to full thickness) and consistent.

Resistant and free from bleeding on the surface.

Dry, without superficial condensation (wait for the substrate to totally dry after pressure washing).

Clean: surfaces free of cement slurry, oil-based parting compounds, residues of previous processes, dust; everything that can compromise adhesion must be eliminated (when in doubt, carry out a peeling preliminary test).

Check for any moisture rising or negative thrust: vapour pressures could form at the substrate-waterproofing interface such as to cause debonding and bubbles. To check the residual humidity of substrates, it is recommended to apply a sheet of PE (minimum thickness 0.2 mm) sealed with adhesive tape in an area exposed to the sun and to check for the presence of condensation after 24 - 48 hrs.

Preparation of substrates

Restore weakened or missing parts, or honeycombs, and fill any uneven surfaces with suitable products; do not use Bioscud to correct uneven areas and do not apply in high thicknesses.

Check the presence of suitable camber and rainwater collection and disposal systems.

Preparation

The product is ready to use; if necessary, uniform consistency mixing from the bottom upwards using a low-rev (≈ 400 /min.) helicoidal agitator.

Protect the product from frost; it must be stored, even on site, so as to avoid direct sunlight and heat sources.

Application

Waterproof the entire perimeter of the surface by bonding bands of Bioscud TNT 20 cm high with Bioscud: take care of contacts with other surfaces whatever their orientation (columns, pillars, walls, ramps), thresholds, through elements, structures or systems anchored on surfaces, drains and sealing elements; in case of confined spaces and in the impossibility to bond Bioscud TNT, make connection shells in several coats with Neutro Color or make special pieces with Aquastop BT.

Waterproof the structural joints with suitable systems.

Apply Bioscud using a roller (average bristle 10 -15 mm), brush, hard rubber float (recommended only for rough or porous substrates) or airless (dilute with water according to the equipment to be used, minimum 10%), taking care to completely cover all surfaces of bonded non-woven fabric; wait at least 12 hours after applying the first coat and apply the second coat with a pass perpendicular to the first for the optimal distribution of the product. The second coat must be applied after the complete drying of the first one (environmental conditions can significantly alter durations measured under standard conditions); long waits between coats cause the reduction of the adhesion values of the next coat.

Apply two or more coats for a total of at least 2 kg/m² of product, net of the material used for bonding Bioscud TNT. Strictly follow the indications as to the minimum weight required to be applied; to check the applied weight, we recommend distributing the product cans to be applied on the surfaces at regular intervals of 5 or 20 m² per coat depending on the packaging.

The product hardens by evaporation of the water contained in the emulsion; drying times are constrained by temperature and environmental humidity in the hours following application. If the product is not perfectly dry, it risks being washed away and irreparably deteriorated by weather events or condensation. Resistance to standing water is depended on perfect drying. Once the product has hardened, the presence of any bubbles shows an excessive R.H. of the substrate; remove the bubbles, wait for the substrate to dry and reapply the product.

The stickiness of the surfaces in the moments following application is a feature of the product and does not preclude its final performance; it runs out over time and can be removed by dusting industrial talc or cement.

For all listed cases, apply two or more coats of Bioscud with total coverage ≥ 2 kg/m².

Surfaces in concrete and reinforced concrete, exterior foundation walls, foundations: on highly compact surfaces such as prefabricated and quartz cement floorings, apply Bioscud Primer (approx. 200-300 ml/m²) avoiding accumulation of water. On poorly dusting surfaces apply one coat of Bioscud diluted using water to 50% (coverage equal to approximately 300 g/m² not to be considered in the verification of the total weight to be applied).

Exterior foundation walls: mechanically break any metal spacers and carry out the preliminary treatment, cutting of the spacers and passivation with Bioscud BT FIX; repair uneven areas with suitable products. Provide adequate separation and mechanical protection systems before backfilling (waiting time ≥ 48 hrs).

INSTRUCTIONS FOR USE

Cement-based screeds: apply one coat of Bioscud diluted using water to 50% (coverage equal to $\approx 300 \text{ g/m}^2$ not to be considered in the verification of the total weight to be applied). In the presence of fractionizing joints and/or cracks, carry out the mechanical excavation, remove dust and seal with Neutro Color; bond 20 cm-wide strips of Bioscud TNT with Bioscud near any joint and sealed crack. To avoid the swelling of the fabric in the presence of movements, bond the entire surface of the sheet on the back in contact with the surface of the screed; take care of the soft bonding of the sheet near the joints (the sheet must follow the transverse profile and not be bonded while taut).

To conceal joints and cracks previously treated, insert the Bioscud TNT (100 cm) sheet into the first coat of Bioscud while still wet, and cover with one or more coats, waiting for the drying between coats; the use of Bioscud TNT over the whole surface avoids the application of Bioscud TNT strips as previously described.

Apply two or more coats of Bioscud until the total quantity required is reached.

Old pre-shaped bituminous sheaths: to allow the dispersion of oils and plasticizers before the overlay, the sheaths must be completely cured (at least 6 months). Mechanically remove any wrinkles, crimps, bubbles, excessive overlaps and imperfectly anchored edges; remove varnish or not perfectly anchored decorations. Restore the adhesion of corners, edges, overlaps, strips and debonded portions with Bioscud BT FIX. Prepare the substrate depending on its type and apply Bioscud reinforced with Bioscud TNT in two coats on the exposed areas.

Smooth sheaths: perform a thorough dry cleaning removing dust and environmental residues (pressure washing is recommended in the presence of oil and plasticizer residues, wait until fully dry). In the presence of old well-anchored organic or aluminium-based varnishes apply Bioscud Primer ($\approx 50\text{-}100 \text{ ml/m}^2$) avoiding accumulation of water. Apply two or more coats of Bioscud; near any cuts, holes, heavily deteriorated areas reinforce with Bioscud TNT.

Slated sheaths: perform a thorough dry cleaning by removing the poorly adhered flakes. Apply one coat of Bioscud diluted using water to 50% to fix superficial flakes. Apply two or more coats of Bioscud; near any cuts, holes, heavily deteriorated areas reinforce with Bioscud TNT.

Old ceramic and stone floorings: check the anchoring of the covering, remove any poorly bonded element and any surface coverings (wax, water-repellent products, etc.). Clean thoroughly and specifically according to the intended use of the surfaces; in the impossibility to perform chemical cleaning, perform mechanical abrasion by polishing or scarifying the surface layer, remove dust and proceed with any surface adjustment. Fill any uneven surfaces.

In the presence of substrates with high residual humidity ($\geq 5\%$ measured with a carbide hygrometer taking samples from the base of the screed) provide for the insertion of water vapour exhalers equipped with suitable anchoring systems and a waterproof connection to the extent of 1 every 15 m^2 approx.; install the exhalers 5-10 days prior to the waterproofing and verify the degree of R.H. before applying in the most distant point between two adjacent exhalers.

Apply Keragrip Eco® ($\approx 100 - 200 \text{ g/m}^2$) preventing accumulation of water.

In the presence of fractionizing joints and/or cracks, carry out the mechanical excavation, remove dust and seal with Neutro Color; waterproof by bonding 20 cm-wide strips of Bioscud TNT with Bioscud near any joint and sealed crack. To avoid the swelling of the sheet in the presence of movements, bond the entire surface of the sheet on the back in contact with the surface of the floor; take care of the soft bonding of the sheet near the joints (the sheet must follow the transverse profile and not be bonded while taut). To conceal joints and cracks previously treated, insert the Bioscud TNT (100 cm) sheet into the first coat of Bioscud while still wet, and cover with one or more coats, waiting for the drying between coats; the use of Bioscud TNT over the whole surface avoids the application of Bioscud TNT strips as previously described.

Apply Bioscud in two coats with total coverage $\geq 2 \text{ kg/m}^2$.

Once the product has hardened, the presence of any bubbles in correspondence with the joints shows an excessive R.H. of the substrate; remove the bubbles, wait for the substrate to dry and reapply the product.

Galvanized or pre-varnished metal substrates (with a well-anchored final layer): seal any overlaps, areas of movement, irregularities or constructive defects using Neutro Color. Prepare these areas by bonding Bioscud TNT with Bioscud. Apply two or more coats of Bioscud.

On oxidised galvanized substrates remove the oxidation deposit with acid wash and rinse thoroughly.

In the presence of damaged or rusty areas it is always necessary to completely remove and proceed with the application of rust-preventive, anti-corrosive paint.

Timber substrates: fill any gaps or edges tapped between boards (non-through cracks) with Neutro Color. Sand the impregnated or painted surfaces and perform a thorough cleaning with Keragrip Eco Pulep. Apply Bioscud Primer ($\approx 250 \text{ ml/m}^2$) preventing accumulation of water. Apply Bioscud in two or more coats providing for the addition of Bioscud TNT to the first coat when it is still fresh over the entire surface.

Encapsulating coatings for the restoration of fibre-cement and asbestos-cement structures

Type A – externally exposed (structures exposed to atmospheric agents and subject to deterioration with surfacing and release of fibres)

The average thickness of the dry encapsulating coating should not be less than 0.3 mm and at no point should it be less than 0.250 mm. The last two products of the encapsulating cycle will have to be two coating products with different and contrasting colours.

Type B – internally exposed (“sound but likely to get damaged” or “damaged” internal structures)

The average thickness of the dry encapsulating coating should not be less than 0.25 mm and at no point should it be less than 0.2 mm. The last two products of the encapsulating cycle will have to be two coating products with different and contrasting colours.

Type C – non-exposed (in support of confinement operations)

The thickness of the dry encapsulating coating should not be less than 0.2 mm and no measurement should be less than this value.

Type D – auxiliary (to avoid the dispersion of fibres in the environment in support of removal operations)






The encapsulating coating must be of a contrasting colour with that of the substrate; dilute using 35% water.

For type A, type B and type C applications, apply Bioscud Primer first.

Cleaning

The removal of the fresh product is carried out with water, to reuse rolls and brushes soak them in water to avoid drying the product. To remove residues of hardened product use nitro solvents.

COLOUR CHART

white (RAL 9010)	
grey (RAL 7038)	
sand (RAL 1013)	
red (RAL 3013)	
green (RAL 6017)	

The shades shown are intended as an indication only.

SPECIAL NOTES

In climatic conditions of high humidity and/or low temperature drying times are lengthened, delaying foot traffic and significantly increasing the risk of being washed away in case of possible rainfall or in the presence of condensation. To decrease drying times, apply in several coats of max 0.5 kg/m².

In case of constant foot traffic, coat with Bioscud Traffic.

For the treatment of absorbent surfaces, such as screeds and plasters, Primer A Eco may be used as an alternative to Bioscud diluted 50% max with water as indicated in the technical data sheet.

The reinforcement with Bioscud TNT, applied on the first wet coat of Bioscud and completely covered with the second coat, significantly increases shear strength and Crack Bridging performances of the waterproofing, reducing the criticalities of the substrates. The durability of applications may be expanded by installing a reinforcement or increasing the number of coats applied, following the indications provided in the technical data sheet.

Unscheduled maintenance: to restore aesthetic and functional continuity following wear, clean carefully the surfaces and apply the product according to the methods indicated.

COOL ROOF

The use of a highly reflective covering reduces the surface temperature of the roof, especially flat roofs most exposed to direct radiation due to the incidence of sunlight in summer.

Thanks to the reduction of solar energy absorption, lower temperatures are reached in the rooms below the roof, thus reducing energy consumption of air conditioning in summer: passive cooling of the buildings occurs, with direct improvement of living and working comfort.

The reflective properties of the covering decrease over time due to the accumulation of dirt; it is recommended to periodically clean the surface and to reapply the covering when it is not possible to restore the initial whiteness.

Cool Roof waterproofing with Bioscud reduces the effects of the local "Heat Island" (difference in thermal gradient between urban and green areas), resulting in LEED scores.

ABSTRACT

Waterproofing of the wall-floor joints and of the fractionizing-expansion joints – Supply and laying of polyester staple fibre non-woven fabric for the Bioscud TNT reinforcement, to be bonded with coloured, multi-purpose, elastomeric rainproof waterproofing protection for flat and pitched roofs, bituminous layers and external surfaces, resistant to UV light, atmospheric agents and standing water, such as Bioscud by Kerakoll Spa (seal in advance the fractionizing-expansion joints with Neutro Color by Kerakoll Spa).

Waterproofing of the substrate – Supply and certified laying of coloured, multi-purpose, elastomeric rainproof waterproofing protection for flat and pitched roofs, bituminous layers and external surfaces, resistant to UV light, atmospheric agents and standing water like Bioscud by Kerakoll Spa.

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	coloured paste	
Colours *	white (RAL 9010) - grey (RAL 7038) - sand (RAL 1013) - red (RAL 3013) - green (RAL 6017)	
Specific weight	≈ 1.44 kg/dm ³	
Chemical nature	water emulsion of waterproofing agents	
Mineralogical nature of inert material	crystalline carbonate	
Solid content	≥ 70%	
Shelf life	≈ 18 months from production in the original sealed packaging	
Warning	protect from frost and avoid direct exposure to sunlight and store away from sources of heat	
Pack	20 / 5 kg buckets	
Dynamic viscosity	≈ 10,000 mPas	Brookfield method
Only to be used:		
- temperature	from +5 °C to +35 °C	
- humidity	≤ 80%	
Dust-free drying	≥ 6 hrs	ISO 9117-3
Waiting time between 1 st and 2 nd coat	≥ 12 hrs	
Minimum thickness required	≥ 1 mm dried product corresponding to ≈ 2 kg/m ² fresh product	
Interval before normal use	≈ 24 h / ≈ 7 days (stagnant water)	
Coverage	≈ 2 kg/m ²	

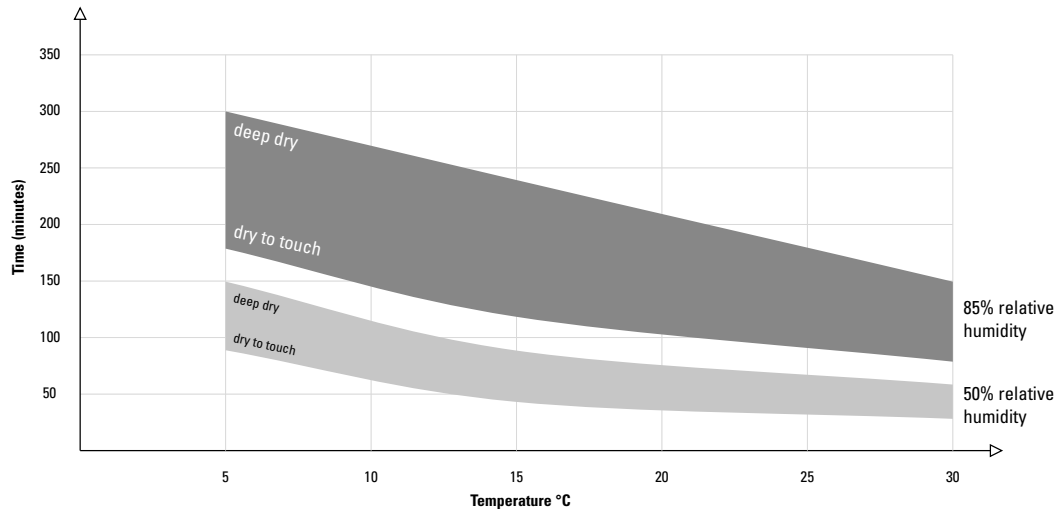
Values taken at +23 °C, 50% R.H. and no ventilation.

* RAL references are indicative.

DRYING

DRYING TIMES ACCORDING TO ASTM D 5859-03 (DRY-TIME TEST)

50% relative humidity			85% relative humidity		
Temperature (°C)	Dry to touch	Deep dry	Temperature (°C)	Dry to touch	Deep dry
+30 °C	30 min.	1 hr	+30 °C	80 min.	2.5 hrs
+15 °C	45 min.	1.5 hrs	+15 °C	2 hrs	4 hrs
+5 °C	1.5 hrs	2.5 hrs	+5 °C	3 hrs	5 hrs



PERFORMANCE

HIGH-TECH

Water-resistance:

- watertightness	≥ 0.6 bar	EN 1928
- 1.5 bar per 7 days	no penetration	EN 14891

Elongation:

- at F max	≥ 106%	ISO 527-1
- break warp (+23 °C)	≥ 263%	ISO 527-1
- break warp (-5 °C)	≥ 15%	ISO 527-1

Adhesion:

- on concrete	≥ 2.00 MPa	EN 1542
- on sheet metal	≥ 0.8 MPa	EN 1542

Resistance to static load (punching) 15 kg on soft substrates (EPS): EN 12730

Cold flexibility -10 °C UNI 1109

Fire classification B_{roof} (t2) (t3) EN 13501-5

Working temperature from -10 °C to +90 °C

PERFORMANCE

Resistance to hailstorms

On soft support (EPS):

- damage speed	≥ 32 m/s	EN 13583
- intensity class TORRO (H1-H9)	H6 (grains: golf balls, damages: broken roof tiles, smashed cars)	

On rigid support (steel):

- damage speed	≥ 41 m/s	EN 13583
- intensity class TORRO (H1-H9)	H7 (grains: tennis ball, damages: scratched metal roofs, solid bricks)	

Covering for the protection of concrete surfaces compliant to standard EN 1504-2

CO ₂ permeability	S _D > 50 m	EN 1062-6
Permeability to water vapour	class I – S _D < 5 m	EN 7783-1 EN 7783-2
Capillary absorption and water permeability	w < 0.1 kg/m ² h ^{0.5}	EN 1062-3
Direct tensile adhesive strength concrete products	> 0.8 MPa	EN 1542

Thermal compatibility:

Freeze/thaw cycles without

immersion in de-icing salts	≥ 0.8 MPa	EN 13687-3
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Exposure to environmental atmospheric agents	no visible defect	EN 1062-11
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Crack Bridging:

- at +23°C	A5 class (static) - B 4.1 class (dynamic)	EN 1062-7
- at 0 °C	class A5	EN 1062-7
- at -5 °C	class A5	EN 1062-7
- at -10 °C	class A2	EN 1062-7

Conformity	PI-MC-IR	EN 1504-2(C)
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Encapsulation of asbestos-cement slabs pursuant to Ministry of Health Decree 20/08/99

- class A	Suitable	Cert. 355502 Inst. Giordano
- class B	Suitable	Cert. 355503 Inst. Giordano
- class C	Suitable	Cert. 355504 Inst. Giordano
- class D	Suitable	Cert. 355072 Inst. Giordano

Adhesion	≥ 2.5 MPa	EN 4624
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Adhesion after freeze/thaw	≥ 2.5 MPa	EN 4624
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Adhesion after sun/rain	≥ 2.5 MPa	EN 4624
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Accelerated UVB ageing

/condensation and water-resistance	undamaged	UNI 10686
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Accelerated UV ageing	no chalking	ASTM G 154-06
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Resistance to washing	> 5000 cycles	EN 24624
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Cool Roof

Bioscud White:

- solar reflectance	0.734 (Cool Roof DM 26/06/15 SR > 0.65)	ASTM C 1549-09
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- solar absorption	0.266	ASTM C 1549-09
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- emissivity	0.874	EN 15976/2011
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- Solar Reflectance Index (SRI)	89.1 – 90.1 – 90.7	ASTM E 1980-01
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Solar reflectance certificate - Cool Roof	Suitable	Cert. Unimore EELAB n. ETR-18-0247
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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
- protect from rain and condensation for 24 hrs
- Resistance to standing water is depended on perfect drying after application
- do not add binders or other materials to the product
- do not apply on dirty, loose, warm surfaces or surfaces exposed to strong sunlight, or in case of impending rain
- 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

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. 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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