

Bioscud Artico

Elastomeric, coloured, rainproof waterproofing protection for flat roofs, bituminous layers and external surfaces; flexible even at very low temperatures, suitable for the containment of water, resistant to UV light and atmospheric agents.

Solvent-based and ready-to-use, Bioscud Artico can be applied quickly even at low temperatures on large surfaces to create a highly reflective decorative protective waterproofing (Cool Roof) with very high mechanical performance and constant flexibility even at very low temperatures.

1. Specifically designed for rainproof decorative waterproofing with permanent flexibility down to $-40\text{ }^{\circ}\text{C}$
2. Easy to apply even at low temperatures ($-5\text{ }^{\circ}\text{C}$) and extremely high environmental humidity
3. Certified for highly reflective protective decoration – Cool Roof (white colour)
4. Certified for the encapsulation of fibre-cement and asbestos-cement sheets in accordance with Italian Ministerial Decree 20/08/99
5. Solvent-based TPO copolymers with very high chemical resistance to agents and water solutions
6. Suitable for the containment of water and resistant to UV light, it does not need protection (cover)



Rating 1

- × Regional Mineral $\geq 30\%$
- × VOC Very Low Emission
- × Solvent $\leq 5\text{ g/kg}$
- ✓ Low Ecological Impact
- × Health Care

areas of application

→ Intended use:

- Decorative, exposed waterproofing under positive thrust of coverings in general, flat and pitched roofs, old pre-shaped bituminous layers, floors and slabs, canopies, flat roofs, fibre-cement roofs, gutter channels, chimney flashings, roofing details, cornices.
- Decorative, exposed waterproofing under positive thrust of fountains, tankers, reservoirs, planters, hanging gardens, green roofs and tanks (occasional contact maximum limits: HCl 10%, NaCl 10%, NaClO 4%).
- 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 the Keracem range and cement-based screeds
- old, smooth or slated pre-shaped bituminous layers aged at least 6 months
- Old TPO, EPDM and PVC layers after sanding and preliminary test (check for the absence of plasticisers)

- aluminium, steel, iron, copper, steel sheets, boards and wooden floors
- fibreglass and polycarbonate after sanding, fibre-cement slabs, dry building systems
- old liquid polyurethane and epoxy sheathings and old aluminium-based varnishes after sanding, specific cleaning and checking the adhesion with a peeling test
- floor and coverings featuring ceramic tiles, cement-based marble tiles, clinker, stone materials

Do not use

- during the hottest hours of the day and/or on excessively hot substrates
- in strong sunlight both before and during application
- if imminent rain is forecast
- 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 substrates containing polystyrene, on insulating panels, on substrates not resistant to xylene
- on old pre-shaped layers directly applied on insulating panels
- on light boards, wooden beads or canopies
- for waterproofing in negative thrust
- 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 (R.H. cement-based substrates < 3%), without superficial condensation (always wait for the substrate to dry completely 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 and missing parts, or honeycombs, and fill any uneven surfaces with suitable products; do not use Bioscud Artic to correct uneven areas and do not apply in high thicknesses.

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

Instructions for use

→ Preparation

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

The product must be stored, even on site, so as to avoid direct sunlight and heat sources.

→ Application

Waterproof the entire perimeter of the surface with Neutro Color: make connection shells near any wall-floor and wall-wall perimeter corners, in contacts with other surfaces whatever their orientation (columns, pillars, walls, ramps), thresholds, through elements, structures or systems anchored on surfaces, drains and sealing elements; apply the sealant in several coats and smooth over to create a watertight connection between the surfaces. Only apply Bioscud Artic once the cross-linking of the sealant is complete.

As an alternative option, cut 20 cm-high Bioscud TNT strips and bond them with Bioscud Artic after carefully preparing the substrate.

Waterproof the structural joints with suitable systems.

Apply Bioscud Artic using a solvent-resistant short-bristle roller, brush, hard rubber float (recommended only for rough or porous substrates) or airless (dilute using Bioscud DL according to the equipment to be used, minimum 20%), taking care to completely cover all surfaces of bonded non-woven fabric (horizontal and vertical); wait at least 4 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) as the presence of solvent may damage the not-quite-dry first coat; on the other hand, 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/m^2 of product, net of the material used for bonding Bioscud TNT (100 cm). Due to the fluidity of the product, vertical applications will have to be made in several passes to avoid leaking fresh product.

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 18 m².

Do not apply during the hottest hours of the day and/or on excessively hot substrates in order to prevent the formation of "bubbles", do not apply in case of exposure to strong sunlight both before and during application and if imminent rain is forecast

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.

For all listed cases, apply two or more coats of Bioscud Artic with total coverage $\geq 2 \text{ kg/m}^2$.

- Surfaces in concrete and reinforced concrete: on poorly dusting substrates apply one coat of Bioscud Artic diluted with Bioscud DL to 50% (consumption equal to $\approx 300 \text{ g/m}^2$ not to be taken into account when verifying the total weight to be applied).
- Planters, green roofs and hanging gardens: apply Bioscud Artic reinforced with Bioscud TNT (100 cm) added to the first coat when it is still wet, provide a sliding layer (high density PE or PP) and a separation layer (non-woven fabric 300 g/m^2) before filling; in the presence of tall trees, provide anti-root sheet.
- Fountains, tankers, reservoirs and tanks for water containment: carry out the preliminary treatment of any metal spacers. Create a connection shell with special mortars in the wall-floor and wall-wall corners joints. When applying the product provide ventilation to facilitate drying. Do not use for the containment of drinking water, washing water containing hydrocarbons and/or solvents, sewage, when chemical resistances are required, and when the containment of water at $\text{pH} < 5$ or $\text{pH} > 7$ is required; containment of sewage is permitted provided the pH requirements are met.
- Cement-based screeds: Apply one coat of Bioscud Artic diluted using Bioscud DL to 50% (consumption equal to $\approx 300 \text{ g/m}^2$ not to be taken into account when verifying 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; cut 20 cm-high strips of Bioscud TNT (100 cm) and bond them with Bioscud Artic near any seal after carefully preparing the substrate.
To conceal joints and cracks previously treated, insert the Bioscud TNT (100 cm) sheet into the first coat of Bioscud Artic 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 applying Bioscud TNT strips as previously described.
Apply two or more coats of Bioscud Artic.
- Old pre-shaped bituminous sheathings: In order to allow oils and plasticisers to disperse before overcoating, the sheathings must be fully cured (at least 6 months); mechanically remove any creases, wrinkles, bubbles, excessive overlaps and flaps that are

Instructions for use

- not perfectly anchored; remove any paint or decorations that are not perfectly anchored. Restore the adhesion of corners, edges, overlaps, strips and debonded portions with Bioscud BT FIX. Remove any bubbling and fill uneven areas with suitable products; prepare the substrate depending on its type and apply Bioscud Artic reinforced with Bioscud TNT (100 cm) 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). Apply two or more coats of Bioscud Artic; near any cuts, holes, heavily deteriorated areas reinforce with Bioscud TNT (100 cm).
 - Slated sheathing: carry out thorough dry cleaning by removing weakly adhering flakes; apply one coat of Bioscud Artic diluted using Bioscud DL to 50% to fix surface flakes (consumption ≈ 300 g/m² not to be taken into account when verifying the total weight to be applied). Apply two or more coats of Bioscud Artic; near any cuts, holes, heavily deteriorated areas reinforce with Bioscud TNT (100 cm).
 - Old TPO, EPDM and PVC synthetic layers: comply with the directions set out in the previous paragraph; in particular:
 - EPDM synthetic layers: reinforce with Bioscud TNT (100 cm);
 - PVC synthetic layers: sand; if the substrate is damaged, worn and micro-perforated apply one coat of Bioscud Artic diluted using Bioscud DL to 50%; due to the large number of products available on the market, a preventive test is always recommended.
 - 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 m² 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 . In the presence of fractionizing joints and/or cracks, carry out the mechanical excavation, remove dust and seal with Neutro Color; cut 20 cm-high strips of Bioscud TNT (100 cm) and bond them with Bioscud Artic near any seal after carefully preparing the substrate. To conceal joints and cracks previously treated, insert the Bioscud TNT (100 cm) sheet into the first coat of Bioscud Artic while still wet, and cover with more coats, waiting for the drying between coats. The use of Bioscud TNT over the whole surface avoids applying Bioscud TNT strips as previously described. Apply two or more coats of Bioscud Artic. 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. On galvanized substrates apply Keradecor Zincover in advance (remove any oxidation deposit with acid wash and rinse thoroughly). On deteriorated or rusted metal substrates, it is necessary to completely remove loose parts and apply a water-based rust-preventing product. Apply Bioscud Artic in two or more coats by reinforcing the previously treated areas when they are still fresh using Bioscud TNT sheet (100 cm).
 - 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 one coat of Bioscud Artic diluted using Bioscud DL to 50% (coverage equal to ≈ 300 g/m² not to be taken into account when verifying the total weight to be applied). Apply two or more coats of Bioscud Artic providing for the addition of the Bioscud TNT sheet (100 cm) when it is still fresh.
 - 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

Instructions for use

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 applications A, B and C, apply in advance one coat of Bioscud Artic diluted using Bioscud DL to 50% (coverage equal to $\approx 300 \text{ g/m}^2$ not to be taken into account when verifying the total weight to be applied).

→ Cleaning

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

Special notes

- In excessively hot conditions during the application of the second coat, the solvent contained in Bioscud Artic may cause the hardened first coat to soften with the risk of bubbles formation and/or blowing; do not apply during the hottest hours of the day, on excessively hot substrates and/or in strong sunlight both before and during application
- In case of constant foot traffic, apply Bioscud Traffic.
- Reinforcing using Bioscud TNT significantly increases shear strength and crack-bridging performances of the waterproofing, reducing

the criticalities of the substrates. Apply Bioscud TNT on the first wet coat of Bioscud Artic and completely cover with the second coat.

- The durability of applications may be expanded by installing a reinforcement or increasing the number of Bioscud Artic 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 with a roller as described.

colour chart

white (RAL 9010)

grey (RAL 7034)

red (RAL 3013)

green (RAL 6017)

The shades shown are intended as an indication only.

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 using Bioscud Artic reduces the effects of the local "Heat island" (difference in thermal gradient between urban and green areas), resulting in LEED scores.

Certificates and marks



Abstract

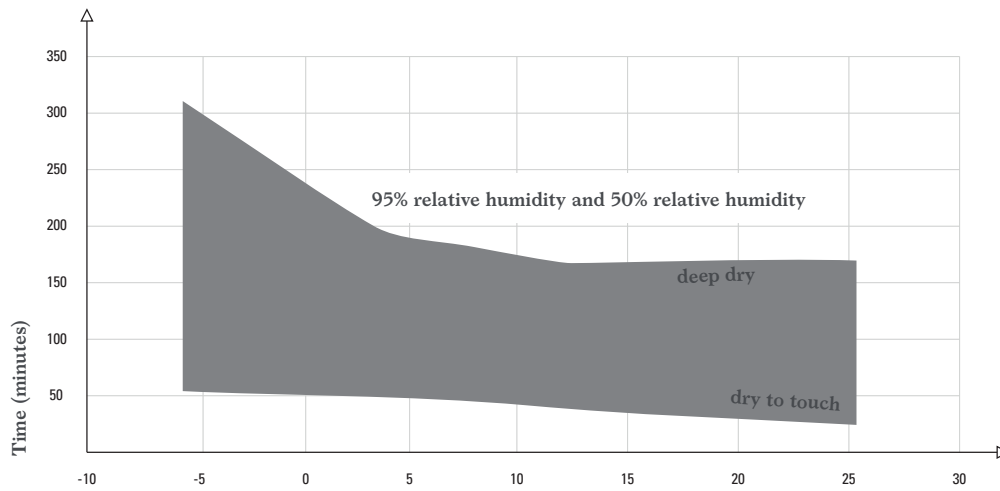
Waterproofing of the substrate – Supply and certified laying of single-component, solvent-based, coloured, elastomeric rainproof waterproofing protection; flexible even at very low temperatures, suitable for the containment of water, resistant to UV light and atmospheric agents, such as Bioscud Artic by Kerakoll Spa.

Technical Data compliant with Kerakoll Quality Standard	
Appearance	coloured paste
Colours *	white (RAL 9010) - grey (RAL 7034) - red (RAL 3013) - green (RAL 6017)
Specific weight	≈ 1.15 kg/dm ³
Chemical nature	Solvent-based thermoplastic copolymers
Mineralogical nature of inert material	crystalline carbonate
Apparent volumetric mass	≈ 1.40 ± 0.05 kg/dm ³
Solid content	≈ 57%
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	18 kg buckets
Dynamic viscosity	≈ 9000 mPas · sec (S 0.5; 20 rpm at +20° C) Brookfield method
Only to be used:	
- Temperature	from -5 °C to +35 °C
- Humidity	≤ 85%
Dust-free drying	≥ 1 hr ISO 9117-3
Time required until fully rain-proof (in windy conditions):	
- at +23 °C, 50% R.H.	≥ 1 hr
- at +10 °C, 80% R.H.	≥ 2 hrs
Waiting time between 1st and 2nd coat	≥ 4 hrs
Waiting time for complete drying	≥ 8 hrs
Minimum thickness required	≥ 0.9 mm dried product corresponding to ≈ 2 kg/m ² fresh product
Interval before normal use	≈ 24 hrs / ≈ 5 days (containment of water)
Coverage	≈ 2 kg/m ²
<small>Values taken at +23 °C, 50% R.H. and no ventilation. * RAL references are indicative.</small>	

Drying

Drying times according to ASTM d 5859-03 (dry-time test)

50% relative humidity			95% relative humidity		
Temperature (°C)	dry to touch	deep dry	Temperature (°C)	dry to touch	deep dry
+30 °C	30 min.	3 hrs	+30 °C	30 min.	3 hrs
+15 °C	45 min.	3 hrs	+15 °C	45 min.	3 hrs
+5 °C	1 hr	3.5 hrs	+5 °C	1 hr	3.5 hrs
-5 °C	1 hr	5.5 hrs	-5 °C	1 hr	5.5 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	≥ 500%	ISO 527-1
- break warp (+23 °C)	≥ 500%	ISO 527-1
- break warp (-5 °C)	≥ 220%	ISO 527-1
- break warp (-20 °C)	≥ 108%	ISO 527-1

Adhesion:

- on concrete	≥ 3 MPa	EN 1542
- on sheet metal	≥ 2 MPa	EN 1542
- on ceramic flooring	≥ 6 MPa	EN 1542

Resistance to static load (punching)	20 kg (rigid and soft substrates)	EN 12730
Impact resistance	IR 20	EN 6272-2
Cold flexibility	-40 °C	EN 1109
Fire classification	Broof (t2) (t3)	EN 13501-5

Performance		
HIGH-TECH		
Working temperature	from -40 °C to +90 °C	
Covering for the protection of concrete surfaces compliant to standard EN 1504-2		
Conformity	PI-MC-IR	EN 1504-2(C)
CO ₂ permeability	S _D > 50 m	EN 1062-6
Permeability to water vapour	class II, 5 m ≤ SD ≤ 50 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 (in the presence of de-icing salts)	≥ 0.8 MPa	EN 13687-3
- thunderstorm cycles (thermal shock)	≥ 0.8 MPa	EN 13687-3
Exposure to environmental atmospheric agents	no visible defect	EN 1062-11
Dynamic Crack-Bridging at -20 °C	class A5	EN 1062-7
Encapsulation of asbestos-cement slabs pursuant to Ministry of Health Decree 20/08/99		
class A	Suitable	Socotec 2197FE/20 job order
class B	Suitable	Socotec 2197FE/20 job order
class C	Suitable	Socotec 2197FE/20 job order
class D	Suitable	Socotec 2197FE/20 job order
Adhesion (a)	≥ 1.3 MPa ^(a)	EN 24624
Adhesion after freeze/thaw	≥ 1.2 MPa ^(a)	EN 4624
Adhesion after sun/rain	≥ 1.1 MPa ^(a)	UNI 10686
Accelerated UVB aging/condensation and water-resistance	no appearance of humidity	UNI 10686
Accelerated UV ageing	no appearance of humidity	UNI 10686
Resistance to washing	≥ 5000 cycles	EN 24624
(a) substrate cohesive breaking		
Cool Roof		
White Bioscud Artic:		
- solar reflectance	0.846 (Cool Roof DM 26/06/15 SR > 0,65)	ASTM C 1549-09
- solar absorption	0.154	ASTM C 1549-09
- emissivity	0.909	EN 15976/2011
- Solar Reflectance Index (SRI)	106.4 – 106.0 – 105.8	ASTM E 1980-01
Solar reflectance certificate - Cool Roof	Suitable	Unimore ETR-20-0458 Cert.

Warning

- Product for professional use
 - abide by any standards and national regulations
 - protect from rain and condensation for 2 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

Kerakoll Quality System ISO 9001 CERTIFIED 1710/0327	Kerakoll Quality System ISO 14001 CERTIFIED 18586-E	Kerakoll Quality System ISO 45001 CERTIFIED 18586-I
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The Rating classifications refer to the GreenBuilding Rating Manual 2013. This information was last updated in March 2022 (ref. GBR Data Report - 03.22); please note that additions and/or amendments to this information 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.