

# Nanodefense® Eco

**Certified, eco-friendly, organic, water-based, mineral waterproofing product for absorbent substrates in damp environments, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions. Safeguards the health of both operators and the environment.**

Nanodefense® Eco develops total water-resistance under positive thrust guaranteeing the protection of absorbent substrates or those subject to damp, or in constantly humid environments.



## GREENBUILDING RATING®

### Nanodefense® Eco

- Category: Organic Mineral Products
- Class: Nanotech waterproofing products for substrates
- Rating: Eco 5

	Natural mineral content 52%	Very low VOC emissions	Solvent-free	No environmental hazard rating	Non-toxic and non-hazardous

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

## PRODUCT STRENGTHS

- Suitable for subsequent laying of ceramic tiles, porcelain tiles and natural stone using mineral adhesives
- High elasticity and chemical stability
- It can be easily applied with a spreader or roller to any substrate



## ECO NOTES

- Formulated with locally-sourced minerals meaning lower greenhouse gas emission during transportation
- 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 of smooth, compact and absorbent substrates before laying ceramic coverings with adhesives.

Compatible adhesives:

- mineral adhesives and mineral adhesives with SAS technology
- single-component and two-component organic mineral adhesives
- cement-based, water-dispersed, reactive-epoxy and polyurethane two-component adhesives

For internal use. Concrete flooring, compact and smooth cement-based screeds, prefabricated concrete and fresh concrete castings, gypsum, plasterboard and gypsum brick walls, cement-based plasters and finishing products and cement-lime mortar.

### Do not use

Do not use in external applications, on wet surfaces or substrates subject to moisture rising; in environments where water is always present, baths, swimming pools and tanks.

## INSTRUCTIONS FOR USE

### Preparation of substrates

Substrates must comply with BS 5385, parts 1-5, be compact, smooth, absorbent, free from substances that reduce adhesion such as dust, oil, grease and with no loose material. Varnishes and paints must be removed completely. Substrates must be stable, non-deformable and with no cracks. Cement-based substrates must have a residual humidity  $\leq 2$  CM-%. Plasters with a gypsum base must present a residual humidity  $\leq 1$  CM-%, and screeds with an anhydrite base  $\leq 0.5$  CM-%, or  $\leq 0.3$  CM-% if an underfloor heating system is installed. Before waterproofing the substrates must be primed with Primer A Eco, eco-friendly water-based, solvent-free primer, following the instructions for use.

## INSTRUCTIONS FOR USE

### Instruction for use

Nanodefense® Eco is immediately ready for use. Before use it is advisable to remix the product inside the container to ensure the mixture is of an even consistency. Any excess adhesive can be kept for later use by sealing the container.

Apply a fine, uniform film, preferably using a roller, a steel spreader or a brush. Repeat the operation when the first coat has hardened ( $\approx 1$  hr according to the absorbency of the substrate and the temperature). The distinct light blue colour of Nanodefense® Eco allows the user to check if the surface has been completely and evenly covered.

For waterproofing of corners and expansion joints with Aquastop 120 applied using Nanodefense® Eco. For external and internal angles and for water and drainage pipeline crossings use special pre-formed pieces applied using Nanodefense® Eco.

### Tools

Spreader, roller, brush. Wash tools with water before the product hardens.

## SPECIAL NOTES

On highly absorbent substrates, apply a base coat by diluting Nanodefense® Eco with water depending on substrate absorption (max 5%). After this, apply the second undiluted coat using a steel spreader or roller to ensure the watertightness of the surface.

If necessary, Aquastop AR1 special reinforcing mesh made of alkali-resistant glass fibre can be inserted, followed by a further coat of Nanodefense® Eco.

## TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	Light blue paste	
Specific weight	$\approx 1,44 \text{ kg/dm}^3$	
Chemical nature	co-polymers dispersed in water	
Shelf life	$\approx 12$ months in the original packaging	
Warning	Protect from frost, avoid direct exposure to sunlight and sources of heat	
Pack	25 - 15 - 5 kg buckets	
Viscosity	$\approx 1100000 \text{ mPa} \cdot \text{s}$ , rotore 93 RPM 0,5	Brookfield method
Temperature range for application	from $+5 \text{ }^\circ\text{C}$ to $+35 \text{ }^\circ\text{C}$	
Dilution for base coat	$\approx 5\%$	
Minimum thickness per coat	$\approx 1 \text{ mm}$	
Minimum dry thickness per coat	$\approx 500 \mu\text{m}$	
Waiting time between 1st and 2nd coat	$\approx 1 \text{ hr}$	
Waiting time before laying:		
- min.	$\geq 2 \text{ hrs}$	
- max	$\leq 48 \text{ hrs}$	
Coverage	$\approx 1,5 \text{ kg/m}^2$	

*Values taken at  $+23 \text{ }^\circ\text{C}$ , 50% R.H. and no ventilation.*

## PERFORMANCE

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

Conformity	EC 1 plus GEV-Emicode	GEV certified 2134/11.01.02
<b>HIGH-TECH</b>		
Water-resistance	$\geq 3 \text{ bar}$	DIN 1048
Permeability to water vapour $\mu$ after 28 days	$\geq 20000$	Cert.173379 Inst. Giordano
Water absorption after 28 days	$\leq 5\%$	UNI 8202/22
Adhesion to concrete after 28 days	$\geq 1 \text{ N/mm}^2$	EN 1542
Tensile strength after 28 days:		
- adhesives Class C1	$\geq 0,5 \text{ N/mm}^2$	EN 1348
- adhesives Class C2	$\geq 1 \text{ N/mm}^2$	EN 1348
Ultimate elongation after 7 days	$\geq 90\%$	DIN 53 504
Crack bridging	$\geq 1,5 \text{ mm}$	ASTM C 1305
Working temperature	from $-40 \text{ }^\circ\text{C}$ to $+90 \text{ }^\circ\text{C}$	
Conformity	CSTB	13/12-1142

*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 apply Nanodefense® Eco as an external waterproofing covering
- use at temperatures between +5 °C and +35 °C
- it should be stored and transported at temperatures of more than +5 °C
- apply the subsequent coat only when the previous one is perfectly dry
- if necessary, ask for the safety data sheet
- for any other issues, contact the Kerakoll Worldwide Global Service - [globalservice@kerakoll.com](mailto:globalservice@kerakoll.com)

The Eco and Bio classifications refer to the GreenBuilding Rating® Manual 2013. This information was last updated in January 2013 (ref. GBR Data Report - 02.13); 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.