



# H40<sup>®</sup> Eco Flex

Eco-friendly, mineral adhesive for high-performance, high shear deformation laying or overlaying, ideal for use in GreenBuilding. Single-component with low CO<sub>2</sub> emissions and very low volatile organic compound emissions, contains recycled raw materials. Recyclable as an inert material at the end of its life.

H40<sup>®</sup> Eco Flex develops full substrate and tile back coverage ensuring high resistance to shear stress as well as total safety when tiles of all formats and thicknesses are laid even in the most demanding of applications.



## Product Strengths

- Suitable for homogeneous tiles, ceramics, large formats, low thickness slabs and stable natural stone
- Floors and walls, for internal and external use
- SAS<sup>®</sup> and STC technology guarantee adhesion in real on-site conditions
- Thicknesses up to 10 mm
- Suitable for facades
- Ideal for fixing Aquastop 100 tape in Aquaexpert System
- Open and adjustability time ≥ 30 min.



## GreenBuilding Rating

	 Mineral ≥ 60%	 Recycled Mineral ≥ 50%	 CO <sub>2</sub> ≤ 250 g/kg	 VOC Low Emission	 Recyclable
	✓	✓	✓	✓	✓
	Natural mineral content Grey 62% White 62%	Recycled mineral content Grey 34% White 62%	CO <sub>2</sub> /kg emission Grey 244 g White 244 g	Very low VOC emissions 20 µg/m <sup>3</sup>	Can be recycled as inert material

### H40<sup>®</sup> Eco Flex

- Category: Inorganic Mineral Products
- Class: Mineral Adhesives with SAS Technology
- Rating: Eco 5

## Areas of use

### Use

Laying of ceramic and homogeneous tiles of all types, stable marble and natural stone on flooring, walls and on cement-based and non-absorbent substrates. Thicknesses up to 10 mm.

### Materials:

- homogeneous tiles, low thickness slabs, ceramic tiles, klinker, cotto, glass and ceramic mosaic, of all types and formats
- natural stone, agglomerate materials and marble not subject to deformation or staining due to water absorption

### Substrates:

- cement plasters and cement-lime mortar
- cement-based screeds or screeds produced with Rekord<sup>®</sup> Eco and Keracem<sup>®</sup> Eco as binder or ready-mixed
- prefabricated concrete or fresh concrete casting
- existing flooring and coverings with glazed tiles, cement-based and resin paving, homogeneous tiles
- underfloor heating
- AquaExpert waterproofing systems
- waterproofing, cement-based products
- walls in concrete blocks, cellular concrete and plasterboard

Flooring and walls, indoor/outdoor use, in domestic, industrial and commercial applications and for street furniture, also in areas subject to thermal shock and freezing.

### Do not use

On gypsum-base plasters and anhydrite screeds without the use of Primer A Eco professional, concentrated, water-base, surface insulation product; on plastic or resilient materials, metals and wood; on substrates subject to continuous moisture rising.

## Instructions for use

### Preparation of substrates

In general, cement-based substrates must be free from dust, oil and grease, dry and free from any rising damp, with no loose, flaky or imperfectly anchored parts such as residual traces of cement, lime and paint, which must be totally removed. The substrate must be stable and without cracks, must have already completed curing hygrometric shrinkage and must present suitable mechanical resistance levels. Non-planar areas must be corrected with suitable smoothing and finishing products.

**Non-absorbent substrates:** smooth, non-absorbent substrates which are compact and well-anchored must be prepared by cleaning with products suitable for the type of dirt present. If chemical cleaning cannot be carried out, proceed with mechanical abrasion by means of shot-blasting or scarification of the superficial layer and, if necessary, correct the surface with suitable levelling products.

**High-absorption substrates:** on screeds and plasters which are highly absorbent and have dusty, flaky surfaces it is advisable to apply one or more coats of Primer A Eco professional, concentrated, water-base, surface insulation product, in accordance with the instructions, to reduce water absorption and to improve spreadability of the adhesive.

### Preparation

Prepare H40® Eco Flex in a clean container, first of all pouring in a quantity of water equal to approximately  $\frac{3}{4}$  of that which will be required. Gradually add H40® Eco Flex to the water in the container, mixing the paste from the bottom upwards with a low-rev ( $\approx 400/\text{min.}$ ) helicoidal agitator. Then add more water until the desired consistency is obtained. The mixture must be homogeneous and without any lumps. For best results, and to mix larger quantities of adhesive, a stirring device with vertical blades and slow rotation is recommended. Specific polymers with high-dispersion properties ensure that H40® Eco Flex is immediately ready for use. The amount of water to be added, indicated on the packaging, is an approximate value and will vary between the H40® Eco Flex grey and white types. It is possible to obtain mixtures with a more or less thixotropic consistency, depending on the type of application. Adding extra water does not improve the workability of the product, and may cause shrinkage in the plastic phase of drying and result in less effective final performance with a reduction in compressive strength and adhesion to the substrate.

### Application

H40® Eco Flex should be applied with a suitable toothed spreader, to be chosen according to the size and characteristics of the rear surface of the tiles. It is best to use the smooth part of the trowel to spread a fine initial layer, pressing down hard so as to obtain maximum adhesion to the substrate and to regulate water absorption, after which the thickness can be adjusted as required by tilting the spreader at an angle. Spread the adhesive over a surface area which will allow for laying of the covering materials within the indicated open time, and check for suitability of the adhesive at regular intervals. The open time may vary considerably even during the application, depending on various factors such as exposure to sunlight, air currents, absorbency of the substrate, temperature and relative humidity of the atmosphere. Press down each tile to allow for complete, uniform contact with the adhesive. In the case of laying in environments subject to heavy traffic, in outdoor locations, on underfloor heating systems or with materials to be smoothed on-site and with formats  $> 900 \text{ cm}^2$ , the double-spread technique must be used, which ensures laying procedures on fresh adhesive, 100% coverage of the rear of the tiles and maximum adhesion. In general, ceramic tiles do not require preliminary treatment, however these materials should be checked to ensure they are free from traces of residual dust or materials not properly anchored to the surface.

### Cleaning

Residual traces of H40® Eco Flex can be removed from tools and covered surfaces with water before the product has hardened.

## Special notes

**Special applications:** replacement of mixing water with Top Latex Eco professional, elastomeric latex enhances the adhesive's capacity for transversal deformation. The real necessity for deformability of the laying system must be verified, as use of an excessively deformable adhesive together with highly-rigid substrates and laying materials may cause breakage and early, unexpected yielding of the covering materials when placed under heavy and concentrated strain or loads. To define the percentage of Top Latex Eco to be added, on the basis of the various factors related to the system, consult the Kerakoll India Global Service.

**Elastic joints:** provide desolidarisation joints and elastic fractionizing joints for areas of 20/25 m<sup>2</sup> in indoor applications, 10/15 m<sup>2</sup> in outdoor applications and for every 8 metres length in the case of long, narrow applications. Structural and string-course joints have to be marked on the external façade.

## Abstract

*High-performance application of ceramic tiles, homogeneous tiles, marble and natural stone must be carried out with the SAS (Shock Absorbing System) Technology professional adhesive with high resistance and high deformability, compliant with EN 12004 – class C2 E, such as H40® Eco Flex manufactured by Kerakoll. The substrate must be compact, free from any flaky, loose parts and must be clean and cured, having already completed the shrinkage stage. For application, a \_\_\_ mm toothed spreader must be used for a coverage of  $\approx$  \_\_\_ kg/m<sup>2</sup>. Existing joints must be respected and elastic fractionizing joints must be created for every \_\_\_ m<sup>2</sup> of continuous surface. Ceramic tiles must be laid with joint-gap spacers with a width of \_\_\_ mm.*

Technical data  
Compliant with Kerakoll  
Quality Standard

Appearance	White or grey pre-mixed	
Apparent volumetric mass:		
- H40® Eco Flex white	≈ 1,26 kg/dm <sup>3</sup>	UEAtc/CSTB 2435
- H40® Eco Flex grey	≈ 1,33 kg/dm <sup>3</sup>	UEAtc/CSTB 2435
Mineralogical nature of inert material	Silicate-crystalline carbonate	
Grading	≈ 0 - 800 μm	
Shelf life	≈ 12 months in the original packaging in dry environment	
Packaging	Bags 25 kg	
Mixing water:		
- H40® Eco Flex white	≈ 7,7 l / 1 bag 25 kg	
- H40® Eco Flex grey	≈ 6,5 l / 1 bag 25 kg	
Specific weight of the mixture:		
- H40® Eco Flex white	≈ 1,5 kg/dm <sup>3</sup>	UNI 7121
- H40® Eco Flex grey	≈ 1,67 kg/dm <sup>3</sup>	UNI 7121
Pot life	≥ 4 hrs	
Temperature range for application	from +5 °C to +35 °C	
Maximum thickness obtainable	≤ 10 mm	
Open time	≥ 30 min.	EN 1346
Adjustability	≥ 30 min.	
Foot traffic	≈ 24 hrs	
Grouting	≈ 8 hrs on walls / ≈ 24 hrs on floors	
Interval before normal use	≈ 7 days	
Coverage *	≈ 2,5 - 4 kg/m <sup>2</sup>	

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 absorbcency level of the substrate and of the materials laid.  
(\* ) Can vary depending on the irregularity of the substrate and the format of the tile.

Performance  
High-Tech

Shear adhesion after 28 days:		
- Homogeneous tile/homogeneous tile	≥ 2,5 N/mm <sup>2</sup>	ANSI A-118.1
Tensile adhesion after 28 days:		
- Concrete/homogeneous tile	≥ 2,5 N/mm <sup>2</sup>	EN 1348
Durability test:		
- Adhesion after heat ageing	≥ 2,5 N/mm <sup>2</sup>	EN 1348
- Adhesion after water immersion	≥ 1 N/mm <sup>2</sup>	EN 1348
- Adhesion after freeze-thaw cycles	≥ 1 N/mm <sup>2</sup>	EN 1348
- Adhesion after straining cycles	≥ 1 N/mm <sup>2</sup>	SAS Technology
Working temperature	from -40 °C to +90 °C	
Conformity	C2 E	EN 12004
	C2 E CSTB	(156-213)-355
	EC 1 GEV-EMICODE	GEV Cert. 1847/11.01.02

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 10 mm
- lay and press tiles onto fresh adhesive, making sure it has not formed a surface film
- protect against direct rain and freezing for at least 24 h
- the temperature, ventilation and absorption of the substrate and covering materials may vary the adhesive workability and setting times
- use a toothed spreader suitable for the format of the tiles
- use the double-spread technique for all outdoor laying
- if necessary, ask for the safety data sheet
- for further information please consult the Kerakoll India Global Service +91 93 2404 5205 - info@kerakollindia.com

This information was last updated in June 2010; please note that additions and/or amendments may be made over time by KERAKOLL SpA; for the latest version, see www.kerakoll.com. The Eco rating data refers to the GBR Data Report 02/2010. 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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