

# H40<sup>®</sup> Eco Rapidflex

**Certified, eco-friendly, extra-fast setting and hardening mineral adhesive for high-performance, high-deformation laying or overlaying with no vertical slip, ideal for use in GreenBuilding. Single-component with low CO<sub>2</sub> emissions and very low volatile organic compound emissions, contains locally-sourced recycled raw materials. Recyclable as an inert material at the end of its life.**

H40<sup>®</sup> Eco Rapidflex develops high levels of deformability and returns surfaces rapidly to normal use, guaranteeing high adhesion and flexural values even on deformable substrates.



**GREENBUILDING RATING<sup>®</sup>**

**H40<sup>®</sup> Eco Rapidflex**

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

	Natural mineral content 65%	Recycled mineral content 32%	CO <sub>2</sub> /kg emission 202 g	Very low VOC emissions	Can be recycled as inert material

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

**PRODUCT STRENGTHS**

- Ideal for porcelain tiles, ceramics, large formats, low thickness slabs and stable natural stone
- Ideal for laying on suitable wood substrates
- Floors and walls, for internal and external use
- Ideal for flexible substrates
- Suitable for underfloor heating systems
- SAS and STC Technology guarantee adhesion for real on-site conditions
- Prolonged workability
- Open and adjustability time ≥ 30 min.

**ECO NOTES**

- Formulated with locally-sourced minerals meaning lower greenhouse gas emission during transportation
- Contains recycled minerals thereby reducing the damage to the environment caused by extracting pure raw materials
- Single-component; avoiding the use of plastic cans reduces CO<sub>2</sub> emissions and the need to dispose of special waste

**AREAS OF USE**

**Use**  
Laying of all types of ceramic and porcelain tiles, glass mosaic, marble and stable natural stone on floors and walls, on mineral or cement-based, deformable and non-absorbent substrates, and on underfloor heating systems. Up to 15 mm thickness.

**Materials:**

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

**Substrates:**

- mineral screeds such as Keracem<sup>®</sup> Eco Pronto, Keracem<sup>®</sup> Eco Prontoplus and Rekord<sup>®</sup> Eco Pronto
- screeds with mineral binders Rekord<sup>®</sup> Eco and Keracem<sup>®</sup> Eco
- deformable substrates
- suitable rigid, stable wooden substrates
- cement plasters and cement-lime mortar
- cement-based screeds
- prefabricated concrete or fresh concrete castings
- existing wall and floor coverings featuring glazed tiles, cement-based and resin marble floor tiles, and porcelain tiles
- underfloor heating systems
- AquaExpert waterproofing systems
- cement-based waterproofing products dispersed in a water solution
- walls in concrete blocks, cellular concrete and plasterboard

Facades, heat-radiant slabs, internal and external flooring and walls, in domestic, commercial and industrial applications and street furniture, in areas subject to thermal shock and freezing.

**Do not use**  
On gypsum-based plasters or renders and anhydrite-based screeds without the previous application of the eco-friendly water-based surface insulation product Primer A Eco; on plastic or resilient materials, metals; on substrates subject to continuous moisture rising.

## INSTRUCTIONS FOR USE

### Preparation of substrates

In general, cement-based substrates must be free of dust, oil and grease, dry and free from moisture rising, with no flaky or imperfectly anchored parts such as residues of cement, lime and paint coatings, which must be completely removed. The substrate must be stable and without cracks, must have already completed the hygrometric shrinkage curing period and must present suitable mechanical resistance levels. Uneven areas must be corrected in advance with suitable 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-absorbency 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 water-based, eco-friendly surface insulation, following the instructions provided, in order to reduce the water absorption and improve spreadability of the adhesive.

### Preparation

Prepare H40® Eco Rapidflex in a clean container, first of all pouring in a quantity of water equal to approximately  $\frac{3}{4}$  of the amount required. Gradually pour H40® Eco Rapidflex into the container, mixing the paste from the bottom upwards with a low-rev (400/min.) electrical mixer. Add more water until the desired consistency is obtained. The mixture must be of smooth consistency 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 Rapidflex is immediately ready-to-use. 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. 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 and shear strength and adhesion to the substrate.

### Application

H40® Eco Rapidflex 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 surface materials within the indicated open time, and check for suitability 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 any tile sufficiently to ensure complete and even contact with the adhesive itself. In the case of laying in environments subject to heavy traffic, in external applications, on underfloor heating systems or with materials to be smoothed on-site and with formats > 900 cm<sup>2</sup>, 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 Rapidflex can be removed from tools and covered surfaces with water before the product hardens.

## SPECIAL NOTES

**Special applications:** partial replacement of mixing water with Top Latex Eco water-based, eco-friendly elastic agent enhances the transversal deformation ability of the adhesive. 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 Worldwide Global Service.

**Elastic joints:** insert desolidarisation and elastic fractionizing joints every 20/25 m<sup>2</sup> in internal applications, every 10/15 m<sup>2</sup> in external applications and every 8 metres in long, narrow applications. Both structural joints and string-course joints on the external facade have to be marked on the coated surface.

**Underfloor heating systems:** perform the test cycle and screed heating before laying as indicated in standard UNI EN 1264-4 point 4.4.

## ABSTRACT

*Certified, high-performance laying of ceramic and porcelain tiles, marble and natural stone with eco-friendly, extra-rapid setting and hardening, single-component SAS Shock Absorbing System Technology mineral adhesive for high-deformation laying and overlaying with no vertical slip, compliant with standard EN 12004 - class C2F TES1, GreenBuilding Rating Eco 5, such as H40® Eco Rapidflex by Kerakoll Spa. Substrates must be compact, with no loose, flaky material, clean and fully cured, having already completed the curing period for hygrometric shrinkage. For laying, a \_\_\_\_ mm toothed spreader must be used for an average coverage of ≈ \_\_\_\_ kg/m<sup>2</sup>. Existing joints must be respected, create elastic fractionizing joints 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	Grey pre-mixed	
Apparent volumetric mass	≈ 1,22 kg/dm <sup>3</sup>	UEAtc/CSTB 2435
Mineralogical nature of inert material	silicate - crystalline carbonate	
Grading	≈ 0 - 500 µm	
Shelf life	≈ 6 months in the original packaging in dry environment	
Pack	Bags 25 kg	
Mixing water	≈ 6,3 l / 1 25 kg bag	
Specific weight of the mixture	≈ 1,62 kg/dm <sup>3</sup>	UNI 7121
Pot life	≥ 50 min.	
Temperature range for application	from +5 °C to +30 °C	
Maximum thickness obtainable	≤ 15 mm	
Open time	≥ 30 min.	EN 1346
Adjustability	≥ 30 min.	
Vertical slip	≤ 0,5 mm	EN 1308
Foot traffic	≈ 3 hrs	
Grouting	≈ 3 hrs on walls and flooring	
Interval before normal use	≈ 24 hrs	
Coverage *	≈ 2,5 – 5 kg/m <sup>2</sup> per mm of thickness	

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 absorptency 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

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

Conformity	EC 1-R plus GEV-Emicode	GEV certified 3470/11.01.02
<b>HIGH-TECH</b>		
Shear adhesion (porcelain tiles/porcelain tiles) after 28 days		≥ 3 N/mm <sup>2</sup> ANSI A-118.1
shear adhesion (porcelain tiles/plywood) after 28 days	≥ 1 N/mm <sup>2</sup>	CSTB
Tensile adhesion (concrete/porcelain tiles) after 28 days	≥ 3 N/mm <sup>2</sup>	EN 1348
tensile adhesion (plywood/porcelain tiles) after 28 days	≥ 1 N/mm <sup>2</sup>	EN 1348
Tensile adhesion after 6 hrs	≥ 0,5 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
- adhesion after strain cycles on plywood	≥ 1 N/mm <sup>2</sup>	SAS Timber Tested
- Transversal deformation	≥ 2,5 mm	EN 12002
Working temperature	from -40 °C to +90 °C	
Conformity:		
	C2F TE S1	EN 12004
	P2	ISO 13007

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 15 mm
- lay and press tiles onto fresh adhesive, making sure it has not formed a surface skin
- protect against direct rain and freezing for at least 12 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
- use the floating and buttering method for all external laying
- 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 2012. This information was last updated in May 2012 (ref. GBR Data Report - 06.12); 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.

Kerakoll  
Quality  
System

ISO 9001  
CERTIFIED

**KERAKOLL**  
The GreenBuilding Company

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