

KERAKOLL ECO-FRIENDLY LAYING SYSTEMS

LAYING GUIDE FOR FLOORS AND WALLS



Together with nature we
can build the future.

KERA**KOLL**
The GreenBuilding Company

STANDARDS, REGULATIONS, CERTIFICATES AND LABELLING

EUROPEAN STANDARDS AND REGULATIONS

EN standards are technical specifications adopted by CEN, the European Committee for Standardisation, which defines the requirements of a product. When harmonised, they are used for compliance assessment, classification and compulsory CE marking of products.

EU regulations are binding legal documents that must be applied in all parts, throughout the European Union, to apply these standards.

CE directives are legal documents that establish a goal that all EU countries have to implement and put into practice.

Examples of harmonised standards mentioned in the guide are:

EN 12004: adhesive for ceramic tiles

EN 13813: substrate preparation coats

EN 14891: waterproofing products applied as liquids, for use under ceramic tiles applied using adhesives

CLASSIFICATION OF TILE ADHESIVES UNDER EN 12004

CEMENT-BASED ADHESIVES (C)	
Basic class	Complementary/additional characteristics
C1 - Normal adhesive	E: EXTENDED OPEN TIME
C2 - Improved adhesive	T: REDUCED VERTICAL SLIP
C2F - Improved rapid setting adhesive	S1: DEFORMABLE S2: HIGHLY DEFORMABLE
DISPERSION ADHESIVES (D)	
Basic class	Complementary/additional characteristics
D1 - Normal adhesive	E: EXTENDED OPEN TIME
D2 - Improved adhesive	T: REDUCED VERTICAL SLIP
REACTION RESIN ADHESIVES (R)	
Basic class	Complementary/additional characteristics
R1 - Normal adhesive	T: REDUCED VERTICAL SLIP
R2 - Improved adhesive	

Examples of NON harmonised standards mentioned in the guide:

EN 13888: grouts for ceramic tiles

EN 14293: adhesives for fixing of solid wood flooring to the ground

EN 14259: adhesives for resilient material and textile coverings

CLASSIFICATION OF CERAMIC GROUTS UNDER EN 13888

CEMENT-BASED GROUTS		
Type	Class	Complementary/additional characteristics
CG	1 (normal)	F: RAPID
	2 (improved)	F: RAPID W: REDUCED WATER ABSORPTION A: HIGH RESISTANCE TO ABRASION
REACTIVE GROUTS		
Type	Class	Complementary/additional characteristics
RG		

EXAMPLES OF CE MARKING

CE 1170 0407	KERAKOLL S.p.A. Via dell'Artigianato, 9 41049 Sassuolo - MO - Italy - www.kerakoll.com
04 DoP n° 0052 EN 12004:2007+A1:2012 HAQ ECO RAPID Improved fast setting cementitious adhesive for all internal and external tiling	
Reaction to fire Class A1/A1 _{fl}	
Bond strength, as:	
early tensile adhesion strength	≥ 0.5 N/mm ²
initial tensile adhesion strength	≥ 1.0 N/mm ²
Durability, for:	
tensile adhesion strength after heat ageing	≥ 1.0 N/mm ²
tensile adhesion strength after water immersion	≥ 1.0 N/mm ²
tensile adhesion strength after freeze/thaw cycles	≥ 1.0 N/mm ²
Release of dangerous substances See SDS	
C2F TE	

Example of CE label for a tile adhesive

CE	KERAKOLL S.p.A. Via dell'Artigianato, 9 41049 Sassuolo - MO - Italy - www.kerakoll.com
04 DoP n° 0094 EN 13813:2002 KERATECH ECO R10 Cementitious screed material for use internally in buildings -Polymer Modified	
Reaction to fire Class E	
Release of corrosive substances CT	
Water permeability NPD	
Water vapour permeability C30	
Compressive strength F6	
Flexural strength NPD	
Wear resistance NPD	
Sound insulation NPD	
Sound absorption NPD	
Thermal resistance NPD	
Chemical resistance NPD	
Release of dangerous substances See SDS	
CT-C30-F6	

Example of CE label for a substrate preparation coat

CE 1020	KERAKOLL S.p.A. Via dell'Artigianato, 9 41049 Sassuolo - MO - Italy - www.kerakoll.com
14 DoP n° 0097 EN 14891:2012+AC:2012 AQUASTOP NANOFLEX Liquid-applied water impermeable product for external installations on walls, floors and swimming pools, beneath ceramic tiling (bonded with C2 adhesive in accordance with EN 12004)	
Initial tensile adhesion strength ≥ 0.5 N/mm ²	
Tensile adhesion strength after water contact ≥ 0.5 N/mm ²	
Tensile adhesion strength after heat ageing ≥ 0.5 N/mm ²	
Tensile adhesion strength after contact with lime water ≥ 0.5 N/mm ²	
Waterproofing No penetration	
Crack Bridging ability ≥ 0.75 mm	
Tensile adhesion strength after freeze-thaw cycles ≥ 0.5 N/mm ²	
Release of dangerous substances See SDS	
CM-O1P	

Example of CE label for a waterproofing product

CLASSIFICATION OF TILE ADHESIVES UNDER ISO EN 13007

SUBSTRATES - EXTERIOR GLUE PLYWOOD (P)	
Basic class	Complementary/additional characteristics
P1	NORMAL EXTERIOR GLUE PLYWOOD ADHESION $\geq 0,5 \text{ N/mm}^2$
P2	IMPROVED EXTERIOR GLUE PLYWOOD ADHESION $\geq 1 \text{ N/mm}^2$

REGULATIONS

For example, EU regulation N° 305/2011 sets the conditions for marketing of building products, setting the description of their performance based on essential characteristics and the use of CE marking.

DIRECTIVES

For example, directive 2004/42/CE defines and regulates the maximum solvent content in primers, paints, varnishes, etc... both solvent-based and water-based, setting specific limits for individual categories and involving the need for marking.

Direttiva 2004/42/CE - Categoria H, sottocategoria BS < 750 g/l (2010)
SLC ECO EP21 < 1 g/l COV
Directive 2004/42/EC - Category H, subcategory SB < 750 g/l (2010)
SLC ECO EP21 < 1 g/l VOC
Dyrektywa 2004/42/WE - Kategoria H, podkategoria SB < 750 g/l (2010)
SLC ECO EP21 < 1 g/l LZ0

Example of CE label for a substrate preparation coat

NATIONAL STANDARDS AND REGULATIONS

Every country has national technical standards, technical rules, codes of practice, regulations, etc... that need to be assessed before using the options proposed.

Examples of this may be:

BS for Great Britain, **DIN** for Germany, **CSTB** for France, **UNI** for Italy, **SIA** for Switzerland, etc...

GEV-EMICODE CERTIFICATION

The EMICODE® classification system issued by GEV (the German Association controlling volatile organic compound emissions) defines products according to the quantity of VOC emitted.



TILE LAYING SYSTEMS



SYSTEM
C1

TILE LAYING ON OUTDOOR
SCREED AND CONCRETE



Page 08



SYSTEM
C2

TILE LAYING ON WOODEN
SUBSTRATES WITH HEATING
SYSTEM



Page 10



SYSTEM
C3

TILE LAYING ON OLD CERAMIC
TILES AND NATURAL STONE

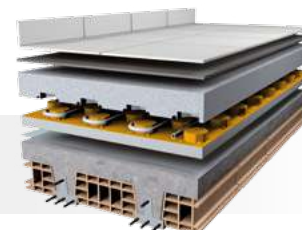


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SYSTEM
C4

TILE LAYING ON SCREED WITH
HEATING/COOLING SYSTEM



Page 14



SYSTEM
C5

TILE LAYING IN DAMP
ENVIRONMENTS AND SHOWERS
ON WOODEN SUBSTRATES



Page 16

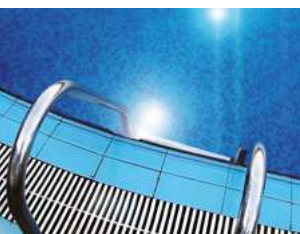


SYSTEM
C6

TILE LAYING ON TERRACES
AND BALCONIES



Page 18



SYSTEM
C7

TILE LAYING IN
SWIMMING POOL



Page 20



SYSTEM
C8

TILE LAYING ON
EXTERNAL SURFACES



Page 22



SYSTEM
C9

TILE LAYING IN AREAS
WITH HEAVY TRAFFIC

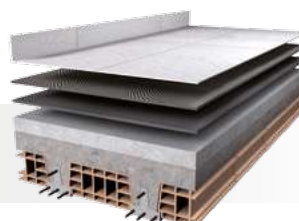


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SYSTEM
C10

LAYING OF THIN AND
LARGE SIZE TILES



Page 26

SYSTEM C1

TILE LAYING ON OUTDOOR SCREED AND CONCRETE

- Guarantees safe laying in difficult temperature and humidity conditions
- Ensures protection of the underlying structure
- Guarantees excellent resistance to changes in temperature
- High dimensional stability and durability
- Fast completion of work
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators



EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugabella® Eco Flex****CG2F WA - ISO 13007-3**

Certified, eco-friendly, naturally bacteriostatic and fungistatic, rapid setting and hardening mineral grout stabilized with pure NHL 5 natural lime mortar for extremely colour-fast joints from 2 mm to 12 mm in thickness, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



CERAMIC LAYING

Coverage
≈ 2,5 – 4 kg/m²

**H40® Eco Rapid****C2 FTE - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high-deformation laying or overlaying with no vertical slip, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



WATERPROOFING

2nd COAT - Coverage
≈ 1,15 kg/m² per mm of thickness

**Aquastop Nanoflex®****CM 01P - EN 14891**

Certified, eco-friendly, breathable, anti-alkali and chlorine-resistant, mineral membrane for the flexible waterproofing with high levels of adhesion and durability of substrates before laying with adhesives, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



Reinforcing mesh

**Aquastop AR1**

Special reinforcing mesh made of alkali-resistant glass fibre to strengthen the eco-friendly Aquastop Nanoflex® membrane.



Waterproofing of joints

**Aquastop 120**

Flexible NBR waterproof joint for perimeter and fractionizing joints in waterproofing systems. For use under ceramic and porcelain tiles and natural stone. Bonds directly using Aquastop Nanoflex®.



1st COAT - Coverage
≈ 1,15 kg/m² per mm of thickness

**Aquastop Nanoflex®****CM 01P - EN 14891**

Certified, eco-friendly, breathable, anti-alkali and chlorine-resistant, mineral membrane for the flexible waterproofing with high levels of adhesion and durability of substrates before laying with adhesives, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



SUBSTRATE

Preparation of the screed
≈ 2 – 2,5 kg/m²
per cm of thickness

**Keracem® Eco**

Certified, eco-friendly, hydraulic, normal-setting and rapid-drying mineral binder for high-performance screeds and heat-radiant slabs, ideal for use in GreenBuilding. With very low volatile organic compound emissions. Recyclable as an inert material at the end of its life.



SUBSTRATE PREPARATION

PVC sheet - anti-fracture vapour barrier

SYSTEM C2

TILE LAYING ON WOODEN SUBSTRATES WITH HEATING SYSTEM

- Guarantees safe laying on high-deformation substrates
- Optimises heating system performance
- Insensitive to changes in temperature
- Fast completion of work
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators

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EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugalite® Eco**

Certified, eco-friendly, vitrified, high-slide, easy-to-clean grout and adhesive, bacteriostatic and fungistatic, water and stain proof for joints of between 0 and 20 mm with a high level of chemical and mechanical resistance, guarantees the continuity of ceramic surfaces, ideal for use in GreenBuilding. With very low volatile organic compound emissions.



CERAMIC LAYING

Laying
≈ 2,5 – 5 kg/m²

**H40® Eco Rapidflex****C2 FTE S1 - EN 12004**

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 CO₂ 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.



SELF-LEVELLING PRODUCT

Levelling
≈ 1,7 kg/m²
per mm of thickness

**Keratech® Eco Flex****CT C20-F7 - EN 13813**

Certified, extra-rapid hardening, eco-friendly, self-levelling mineral product for the high-performance and high-deformability correction of irregular substrates, ideal for use in GreenBuilding. Low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



HEATING SYSTEM

Heating system

SUBSTRATE LEVELLING

Preparation
≈ 0,1 – 0,2 kg/m²

**Keragrip Eco**

Certified, eco-friendly, water-based adhesion promoter for compact, absorbent and non-absorbent substrates, ideal for use in GreenBuilding. Single-component, solvent-free and with very low volatile organic compound emissions. Safeguards the health of both operators and the environment.



SUBSTRATE

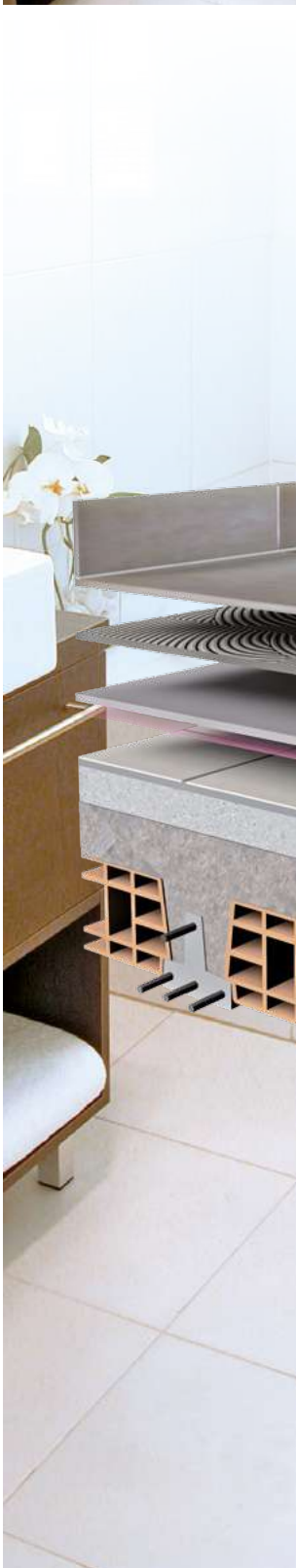
Timber panel

SYSTEM C3

TILE LAYING ON OLD CERAMIC TILES AND NATURAL STONE



- Guarantees safe laying on existing floors
- Ideal in renovation work
- Reduces operation times
- Avoids the costs and inconvenience of removal and disposal of the existing floor
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators



EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugabella® Eco Porcelana 0-5 CG2 WA - ISO 13007-3**

Certified, eco-friendly, naturally bacteriostatic and fungistatic, stabilized mineral grout containing pure natural NHL 5 lime for extremely colour-fast joints from 0 mm to 5 mm in thickness, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, contains recycled raw materials. Recyclable as an inert material at the end of its life.



CERAMIC LAYING

Laying
≈ 2,5 – 4 kg/m²

**H40® Eco Rapid****C2 FTE - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high-deformation laying or overlaying with no vertical slip, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



OPTIONAL: SUBSTRATE LEVELLING

Levelling
≈ 1,6 kg/m² per mm of thickness

**Keratech® Eco R10****CT C30-F6 - EN 13813**

Certified, extra-rapid hardening, eco-friendly, self-levelling mineral product for the high-performance, smooth finishing correction of irregular substrates, ideal for use in GreenBuilding. Low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



Preparation
≈ 0,1 – 0,2 kg/m²

**Keragrip Eco**

Certified, eco-friendly, water-based adhesion promoter for compact, absorbent and non-absorbent substrates, ideal for use in GreenBuilding. Single-component, solvent-free and with very low volatile organic compound emissions. Safeguards the health of both operators and the environment.



PREPARATION OF THE SUBSTRATE

Before levelling and/or fixing, clean the old flooring thoroughly, making sure you eliminate all traces of dirt using specific cleaning products. If in doubt, sand the surface. Fix loose elements or elements that are not perfectly fixed, and fill in any gaps with specific product

SYSTEM C4

TILE LAYING ON SCREED WITH HEATING/COOLING SYSTEM



- Guarantees excellent heat diffusion
- Optimises heating system performance
- Insensitive to changes in temperature
- Fast completion of work
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators



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2	
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EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugalite® Eco**

Certified, eco-friendly, vitrified, high-slide, easy-to-clean grout and adhesive, bacteriostatic and fungistatic, water and stain proof for joints of between 0 and 20 mm with a high level of chemical and mechanical resistance, guarantees the continuity of ceramic surfaces, ideal for use in GreenBuilding. With very low volatile organic compound emissions.



CERAMIC LAYING

Laying
≈ 2,5 – 4 kg/m²

**H40® Eco Rapid****C2 FTE - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high-deformation laying or overlaying with no vertical slip, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



SUBSTRATE

Preparation of the screed
≈ 2 – 2,5 kg/m²
per cm of thickness

**Keracem® Eco**

Certified, eco-friendly, hydraulic, normal-setting and rapid-drying mineral binder for high-performance screeds and heat-radiant slabs, ideal for use in GreenBuilding. With very low volatile organic compound emissions. Recyclable as an inert material at the end of its life.



HEATING/COOLING SYSTEM

Water-based heating/cooling system

Pre-formed, high modulus insulating panel

PVC sheet - anti-fracture vapour barrier

SYSTEM C5

TILE LAYING IN DAMP ENVIRONMENTS AND SHOWERS ON WOODEN SUBSTRATES

- Guarantees the water protection of adjacent rooms
- Suitable for renovation work
- High level of chemical stability
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators



EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugalite® Eco**

Certified, eco-friendly, vitrified, high-slide, easy-to-clean grout and adhesive, bacteriostatic and fungistatic, water and stain proof for joints of between 0 and 20 mm with a high level of chemical and mechanical resistance, guarantees the continuity of ceramic surfaces, ideal for use in GreenBuilding. With very low volatile organic compound emissions.



CERAMIC LAYING

Laying
≈ 2,5 – 5 kg/m²

**H40® Eco Tenaflex****C2 TE - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high shear deformation laying or overlaying, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, contains recycled raw materials. Recyclable as an inert material at the end of its life.



WATERPROOFING

2nd COAT - Coverage ≈ 1,5 kg/m²

**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.



Waterproofing of joints

**Aquastop 120**

Flexible NBR waterproof joint for perimeter and fractionizing joints in waterproofing systems. For use under ceramic and porcelain tiles and natural stone. Bonds directly using Nanodefense® Eco.



1st COAT - Coverage ≈ 1,5 kg/m²

**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.



SUBSTRATE LEVELLING

Levelling
≈ 1,7 kg/m² per mm of thickness

**Keratech® Eco Flex****CT C20-F7 - EN 13813**

Certified, extra-rapid hardening, eco-friendly, self-levelling mineral product for the high-performance and high-deformability correction of irregular substrates, ideal for use in GreenBuilding. Low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



Preparation
≈ 0,1 – 0,2 kg/m²

**Keragrip Eco**

Certified, eco-friendly, water-based adhesion promoter for compact, absorbent and non-absorbent substrates, ideal for use in GreenBuilding. Single-component, solvent-free and with very low volatile organic compound emissions. Safeguards the health of both operators and the environment.



SUBSTRATE

Timber panel on floor / Backer Board panel on wall

SYSTEM C6

TILE LAYING ON TERRACES AND BALCONIES

- Guarantees safe laying in difficult temperature and humidity conditions
- Ensures protection of the underlying structure
- Guarantees excellent resistance to changes in temperature
- Complete hydrophobicity
- Fast completion of work
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators

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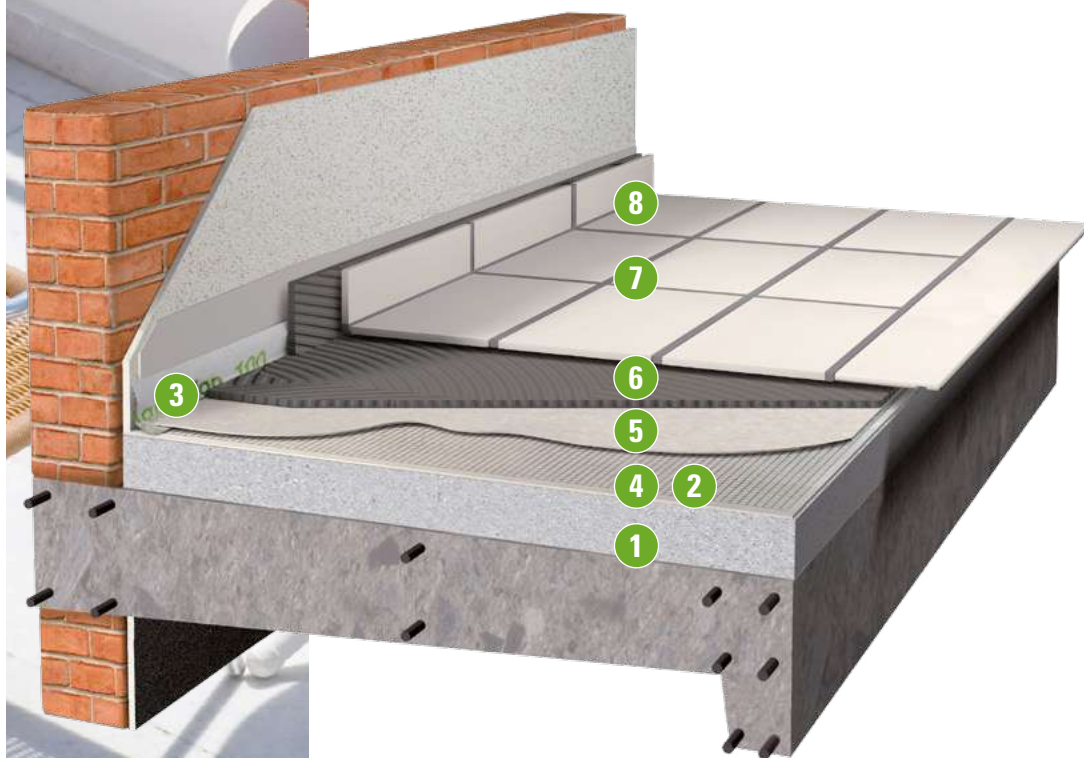
3



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EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugabella® Eco Flex****CG2F WA - ISO 13007-3**

Certified, eco-friendly, naturally bacteriostatic and fungistatic, rapid setting and hardening mineral grout stabilized with pure NHL 5 natural lime mortar for extremely colour-fast joints from 2 mm to 12 mm in thickness, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



CERAMIC LAYING

Laying
≈ 2,5 – 5 kg/m²

**H40® Eco Rapidflex****C2 FTE S1 - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high shear deformation laying or overlaying, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, contains recycled raw materials. Recyclable as an inert material at the end of its life.



WATERPROOFING

2nd COAT - Coverage
≈ 1,15 kg/m² per mm of thickness

**Aquastop Nanoflex®****CM 01P - EN 14891**

Certified, eco-friendly, breathable, anti-alkali and chlorine-resistant, mineral membrane for the flexible waterproofing with high levels of adhesion and durability of substrates before laying with adhesives, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



Reinforcing mesh

**Aquastop AR1**

Special reinforcing mesh made of alkali-resistant glass fibre to strengthen the eco-friendly Aquastop Nanoflex® membrane.



Waterproofing of joints

**Aquastop 120**

Flexible NBR waterproof joint for perimeter and fractionizing joints in waterproofing systems. For use under ceramic and porcelain tiles and natural stone. Bonds directly using Aquastop Nanoflex®.



1st COAT - Coverage
≈ 1,15 kg/m² per mm of thickness

**Aquastop Nanoflex®****CM 01P - EN 14891**

Certified, eco-friendly, breathable, anti-alkali and chlorine-resistant, mineral membrane for the flexible waterproofing with high levels of adhesion and durability of substrates before laying with adhesives, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



SUBSTRATE

Preparation of the screed
≈ 2 – 2,5 kg/m²
per cm of thickness

**Keracem® Eco**

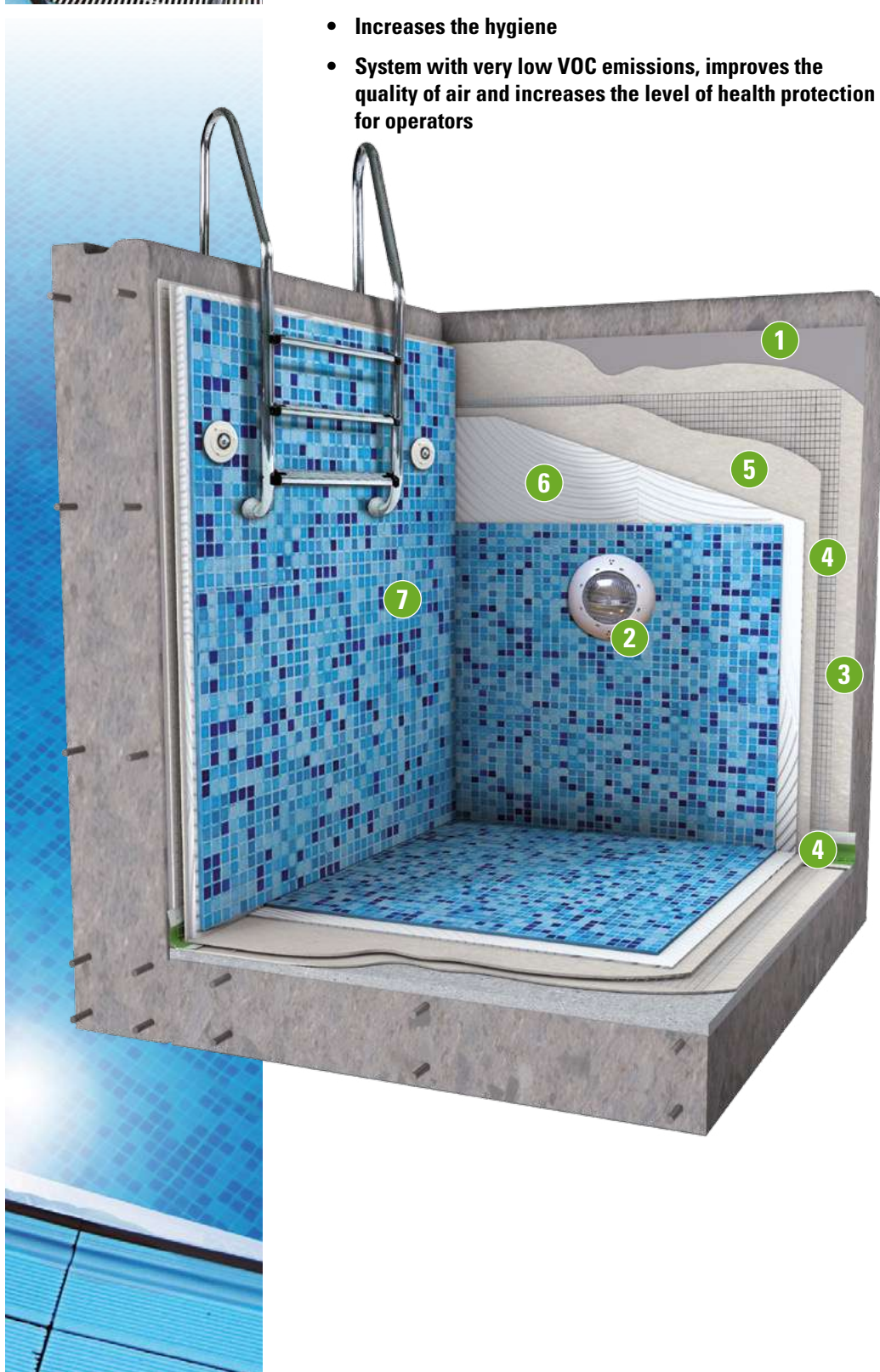
Certified, eco-friendly, hydraulic, normal-setting and rapid-drying mineral binder for high-performance screeds and heat-radiant slabs, ideal for use in GreenBuilding. With very low volatile organic compound emissions. Recyclable as an inert material at the end of its life.



SYSTEM C7

TILE LAYING IN SWIMMING POOL

- Ensures safe laying under continuous immersion
- It is not affected by aggressive water
- Increases the hygiene
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators



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GROUTING

Coverage
see coverage table on
page 29

**Fugalite® Eco**

Certified, eco-friendly, vitrified, high-slide, easy-to-clean grout and adhesive, bacteriostatic and fungistatic, water and stain proof for joints of between 0 and 20 mm with a high level of chemical and mechanical resistance, guarantees the continuity of ceramic surfaces, ideal for use in GreenBuilding. With very low volatile organic compound emissions.



CERAMIC LAYING

Laying
≈ 2,5 – 5 kg/m²

**H40® Eco Tenaflex****C2 TE - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high shear deformation laying or overlaying, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, contains recycled raw materials. Recyclable as an inert material at the end of its life.



WATERPROOFING

2nd COAT - Coverage
≈ 1,15 kg/m² per mm of thickness

**Aquastop Nanoflex®****CM 01P - EN 14891**

Certified, eco-friendly, breathable, anti-alkali and chlorine-resistant, mineral membrane for the flexible waterproofing with high levels of adhesion and durability of substrates before fixing with adhesives, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



Reinforcing mesh
Waterproofing of joints

**Aquastop AR1**

Special reinforcing mesh made of alkali-resistant glass fibre to strengthen the eco-friendly Aquastop Nanoflex® membrane.

Aquastop 120

Flexible NBR waterproof joint for perimeter and fractionizing joints in waterproofing systems. For use under ceramic and vitrified tiles and natural stone. Bonds directly using Aquastop Nanoflex®.



1st COAT - Coverage
≈ 1,15 kg/m² per mm of thickness

**Aquastop Nanoflex®****CM 01P - EN 14891**

Certified, eco-friendly, breathable, anti-alkali and chlorine-resistant, mineral membrane for the flexible waterproofing with high levels of adhesion and durability of substrates before fixing with adhesives, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



≈ 10 m (joint 5x5 mm) with 1 290 ml cartridge

Aquastop Nanosil

Eco-friendly rigid neutral silane sealant for waterproof sealing of hydraulic and electric systems, through elements and construction elements in pools, ideal for GreenBuilding.



PREPARATION OF THE SUBSTRATE

Lay round coves between wall and wall, wall and floor and in all corners

WALL LEVELLING

Levelling ≈ 1,15 kg/m² per
mm of thickness

**Keralevel® Eco LR****CT C20-F6 - EN 13813**

Certified, rapid hardening, eco-friendly, mineral levelling product for the high-performance, high-thickness correction of irregular substrates, ideal for use in GreenBuilding. Low CO₂ 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.



SYSTEM C8

TILE LAYING ON EXTERNAL SURFACES

- It waterproofs any surface, old or new, damp or dry, cracked or subject to dimensional variations.
- It compensates for hygrometric shrinkage and thermal deformation stress.
- It reduces on-site working times: waterproofing and laying of the coating without waiting, withstands foot traffic immediately.
- Solves the problem of respecting substrate joints.

8



7



6



5



4



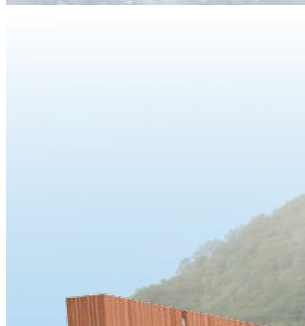
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2



1



EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugabella® Eco Porcelana 0-5 CG2 WA - ISO 13007-3**

Certified, eco-friendly, naturally bacteriostatic and fungistatic, stabilized mineral grout containing pure natural NHL 5 lime for extremely colour-fast joints from 0 mm to 5 mm in thickness, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, contains recycled raw materials. Recyclable as an inert material at the end of its life.



CERAMIC LAYING

Laying
≈ 2,5 - 4 kg/m²

**H40® Eco Rapid****C2 FTE - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high-deformation laying or overlaying with no vertical slip, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



WATERPROOFING

Waterproofing of joints

**Aquastop 120**

Flexible NBR waterproof joint for perimeter and fractionizing joints in waterproofing systems. For use under ceramic and vitrified tiles and natural stone. Bonds directly using Aquastop Fix.



Coverage ≈ 0,8 kg/m²

**Aquastop Fix**

Certified, eco-friendly, mineral sealant for water-resistant, high-adhesion sealing, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions. Recyclable as an inert material at the end of its life.



23 m² with 1 20 m roll

**Aquastop Green**

Uncoupling and anti-cracking waterproof membrane with high adhesion for balconies, terraces and horizontal surfaces before laying ceramic tiles or natural stone; creates a waterproof surface even when overlaid on substrates that are cracked, have not been perfectly cured or might contain vapour pressure due to residual substrate moisture content.



Laying
≈ 2,5 - 4 kg/m²

**H40® Eco Rapid****C2 FTE - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high-deformation laying or overlaying with no vertical slip, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



SUBSTRATE

Substrates: screeds, marble floor tiles, natural stone floorings anchored to the substrate, fibre-cement and plaster-board panels anchored to the substrate. Check mechanical performance and substrates integrity; check the surface cleaning.

SYSTEM C9

TILE LAYING IN AREAS WITH HEAVY TRAFFIC



- Guarantees safe laying in areas subject to high levels of stress
- Ensures high resistance to static and dynamic loads
- Fast completion of work
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators



EXPANSION JOINTS

Coverage
see coverage table on
page 29



Fugabella® Eco Silicone

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29



Fugabella® Eco Flex

CG2F WA - ISO 13007-3

Certified, eco-friendly, naturally bacteriostatic and fungistatic, rapid setting and hardening mineral grout stabilized with pure NHL 5 natural lime mortar for extremely colour-fast joints from 2 mm to 12 mm in thickness, ideal for use in GreenBuilding. Single-component with very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



CERAMIC LAYING

Laying
≈ 2,5 – 5 kg/m²



H40® Eco Rapidflex

C2 FTE S1 - EN 12004

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 CO₂ 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.



SUBSTRATE

Preparation of the screed
≈ 2 – 2,5 kg/m²
per cm of thickness



Keracem® Eco

Certified, eco-friendly, hydraulic, normal-setting and rapid-drying mineral binder for high-performance screeds and heat-radiant slabs, ideal for use in GreenBuilding. With very low volatile organic compound emissions. Recyclable as an inert material at the end of its life.



SYSTEM C10

LAYING OF THIN AND LARGE SIZE TILES

- Guarantees safe laying of thin elements
- Ensures high resistance to compression
- Suitable for renovation work
- Reduces operation times
- System with very low VOC emissions, improves the quality of air and increases the level of health protection for operators



EXPANSION JOINTS

Coverage
see coverage table on
page 29

**Fugabella® Eco Silicone**

Eco-friendly, silicone, acetic, anti-mould organic sealant with a high level of elasticity for expansion-deformation joints, ideal for use in GreenBuilding. Solvent-free, safeguards the health of both operators and the environment.



GROUTING

Coverage
see coverage table on
page 29

**Fugalite® Eco**

Certified, eco-friendly, vitrified, high-slide, easy-to-clean grout and adhesive, bacteriostatic and fungistatic, water and stain proof for joints of between 0 and 20 mm with a high level of chemical and mechanical resistance, guarantees the continuity of ceramic surfaces, ideal for use in GreenBuilding. With very low volatile organic compound emissions.

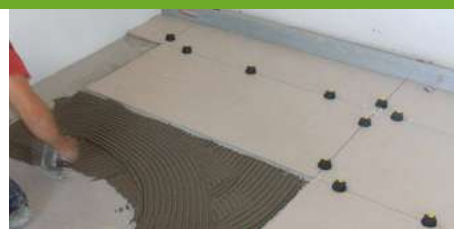


CERAMIC LAYING

Laying
≈ 2,5 – 4 kg/m²

**H40® Eco Flex****C2 E - EN 12004**

Certified, eco-friendly, mineral adhesive for high-performance, high shear deformation laying or overlaying, ideal for use in GreenBuilding. Single-component with low CO₂ emissions and very low volatile organic compound emissions, contains recycled raw materials. Recyclable as an inert material at the end of its life.



LEVELLING

Levelling
≈ 1,6 kg/m² per mm of
thickness

**Keratech® Eco R10****CT C30-F6 - EN 13813**

Certified, extra-rapid hardening, eco-friendly, self-levelling mineral product for the high-performance, smooth finishing correction of irregular substrates, ideal for use in GreenBuilding. Low CO₂ emissions and very low volatile organic compound emissions, recyclable as an inert material at the end of its life.



SUBSTRATE

Preparation of the screed
≈ 2 – 2,5 kg/m²
per cm of thickness

**Keracem® Eco**

Certified, eco-friendly, hydraulic, normal-setting and rapid-drying mineral binder for high-performance screeds and heat-radiant slabs, ideal for use in GreenBuilding. With very low volatile organic compound emissions. Recyclable as an inert material at the end of its life.



TILE ADHESIVE SELECTOR

COLOUR CHART FOR GROUTS AND SEALANTS

COVERAGE TABLES

TILE ADHESIVE SELECTOR								
TILES	CERAMIC	PORCELAIN	NATURAL STONE	QUARRY	TERRACOTTA	MOSAICS	COMPOSITE	QUARTZ
SUBSTRATE								
Interior Walls								
Gypsum Plaster	A*	A*	A*	A*	A*	A*	D*	D*
Gypsum Plasterboard	A*	A*	A*	A*	A*	A*	D*	D*
Cement: Sand Render	A	A	A	A	A	A	D	D
Concrete Blocks	A	A	A	A	A	A	D	D
Tile on Tile	A	A	A	A	A	A	D	D
Tile Backer Boards fixed to Timber Framework	A	A	A	A	A	A	D	D
Tile Backer Boards fixed to Solid Substrates e.g. Blockwork/Brick	A	A	A	A	A	A	D	D
Plywood & Calcium Silicate boards	B*	B*	B*	B*	B*	B*	D*	D*
Interior Floors								
Sand/Cement Screed	A	A	A	A	A	A	D	D
Concrete	A	A	A	A	A	A	D	D
Anhydrite/Gypsum Screed	A*	A*	A*	A*	A*	A*	D*	D*
Flooring Grade Asphalt & Bitumen	C**	C**	C**	C**	C**	C**	D**	D**
Tile on Tile	A	A	A	A	A	A	D	D
Existing Vinyl Tiles/Sheet Vinyl	A**	A**	A**	A**	A**	A**	D**	D**
Plywood Overlay	E	E	E	E	E	E	D	D
Chipboard Overlay (18 mm Min)	F	F	F	F	F	F	D	D
T & G Floorboards	F	F	F	F	F	F	D	D
Floating Floors	A	A	A	A	A	A	D	D
Metal/Steel	G	G	G	G	G	G	G	G
Tile Backer Boards fixed to Timber substrates	A	A	A	A	A	A	D	D
Tile Backer Boards fixed to Solid surfaces e.g. sand/cement screed	A	A	A	A	A	A	D	D
Electric Underfloor Heating	A	A	A	A	A	A	D	D
Underfloor Heated Screeds	A	A	A	A	A	A	D	D
Uncoupling Membrane	A	A	A	A	A	A	D	D
Exterior Walls & Floors								
Concrete Blocks	A	A	A	A	A	A	G	G
Cement: Sand Render	A	A	A	A	A	A	G	G
Tile on Tile	A	A	A	A	A	A	G	G
Sand/Cement Screed	A	A	A	A	A	A	G	G
Concrete	A	A	A	A	A	A	G	G

* After applying Primer A Eco

** After applying Keragrip Eco

GROUP	PRODUCTS	CHARACTERISTICS
A	H40® Eco Flex	Normal setting cement-based adhesive
	H40® Eco Tenaflex	Normal setting cement-based adhesive
	H40® Eco Rapid	Rapid setting cement-based adhesive - Grey
	H40® Eco Rapidflex	Rapid setting cement-based adhesive - Grey
	H40® Eco Marmorex	Rapid setting cement-based adhesive - White
B	H40® Eco Tenaflex	Normal setting cement-based adhesive
	H40® Eco Rapid	Rapid setting cement-based adhesive - Grey
	H40® Eco Rapidflex	Rapid setting cement-based adhesive - Grey
	H40® Eco Marmorex	Rapid setting cement-based adhesive - White
C	H40® Eco Flex	Normal setting cement-based adhesive
	H40® Eco Rapid	Rapid setting cement-based adhesive - Grey
	H40® Eco Rapidflex	Rapid setting cement-based adhesive - Grey
	H40® Eco Marmorex	Rapid setting cement-based adhesive - White
D	H40® Eco Rapid*	Rapid setting cement-based adhesive - Grey
	H40® Eco Rapidflex*	Rapid setting cement-based adhesive - Grey
	H40® Eco Marmorex*	Rapid setting cement-based adhesive - White
	Superflex Eco	Two-component organic adhesive
E	H40® Eco Rapid	Rapid setting cement-based adhesive - Grey
	H40® Eco Rapidflex	Rapid setting cement-based adhesive - Grey
	H40® Eco Marmorex	Rapid setting cement-based adhesive - White
F	H40® Eco Rapidflex	Rapid setting cement-based adhesive - Grey
G	Superflex Eco	Two-component organic adhesive

* Mixed with Top Latex Eco.

WEIGHT RESTRICTIONS FOR TILING ON TO WALLS

WALL SUBSTRATES	MAXIMUM WEIGHT OF TILING PER m ²
Gypsum Plaster	20 kg/m ² This is equivalent to ceramic tiles with a maximum thickness of 8 mm or natural stone tiles with a maximum thickness of 7 mm
Gypsum Plasterboard Direct (without a plaster skim)	32 kg/m ² This is equivalent to ceramic tiles with a maximum thickness of 12,5 mm and natural stone tiles with a maximum thickness of 10 mm
Plywood (WBP)	Up to 30 kg/m ²
Foam-cored tile-backing Boards*	Up to 60 kg/m ² Dependant upon the type and thickness of the board
Fibre-cement boards*	Up to 60 kg/m ² Dependant upon the type and thickness of the board
Gypsum Fibre boards*	Approximately 35-40 kg/m ²

* The weights quoted includes both the tile and adhesive.

Classic Collection

Design Collection

Colors Collection

	Fugabella® Eco Porcelana 0-5	Fugabella® Eco Flex	Fugalite® Eco	Fugabella® Eco Silicone	Colour Fastness* GS _c (Daylight) Standard EN ISO 105-A05	
					Fugabella® Eco	Fugalite® Eco
01 White	●		●	●	5	1,5
02 Light Grey	●		●	●	4,5	1
03 Pearl Grey	●	●	●	●	4,5	1
04 Iron Grey	●	●	●	●	4,5	1,5
05 Anthracite	●	●	●	●	4	2
06 Black	●	●	●	●	3,5	2,5
07 Jasmin	●		●	●	4,5	1
08 Bahama Beige	●	●	●	●	4,5	1
09 Caramel	●		●	●	4,5	1,5
10 Terracotta	●		●	●	4,5	2
11 Brown	●		●	●	4	2,5
12 Walnut	●	●	●	●	4	2,5
51 Silver	●		●	●	4,5	1,5
50 Pergamon	●		●	●	4,5	1,5
46 Ivory	●		●	●	4,5	1
45 Limestone	●	●	●	●	4,5	1
52 Dove Grey	●		●	●	4,5	1,5
44 Cement Grey	●	●	●	●	4,5	1
48 Coffee	●		●	●	3,5	2,5
38 Husky	●		●	●	3	1
47 Mediterranean	●		●	●	3	1
15 Ocean	●		●	●	3	1
41 Eucalyptus	●		●	●	5	1,5
49 Moss	●		●	●	5	2
20 Magnolia	●		●	●	4,5	1,5
27 Sunset	●		●	●	4,5	1,5
21 Red	●		●	●	4	4
23 Yellow	●		●	●	2	1
Extra-fine white			●			1

Legend from 5 to 4 high colour fastness; for internal and external use from 3,5 to 3 good colour fastness; for internal and external use from 2,5 to 1 limited colour fastness; for internal use

MINERAL GROUTS

grammes/m ² - joint width 1 mm				
	Format	Thickness	FUGABELLA® ECO PORCELANA 0-5	FUGABELLA® ECO FLEX
Mosaic	2x2 cm	3 mm	≈ 535	≈ 580
	5x5 cm	4 mm	≈ 295	≈ 320
Tiles Marble	30x60 cm	4 mm	≈ 40	≈ 40
	60x60 cm	4 mm	≈ 25	≈ 30
	20x20 cm	8 mm	≈ 150	≈ 165
	30x30 cm	9 mm	≈ 115	≈ 125
	40x40 cm	10 mm	≈ 95	≈ 105
	30x60 cm	10 mm	≈ 95	≈ 100
	60x60 cm	10 mm	≈ 65	≈ 70
	20x20 cm	14 mm	≈ 260	≈ 285
	30x30 cm	14 mm	≈ 225	≈ 190
Terracotta	30x30 cm	15 mm		≈ 205
Klinker	12,5x24,5 cm	12 mm		≈ 295

ORGANIC SEALANTS

Linear metres of joints sealable with one 310 ml cartridge of Fugabella® Eco Silicone						
Depth	Width	6 mm	8 mm	10 mm	15 mm	20 mm
5 mm		≈ 10,4 m	≈ 8 m	≈ 6,2 m	—	—
7 mm		—	≈ 5,6 m	≈ 4,4 m	≈ 3 m	—
10 mm		—	—	≈ 3 m	≈ 2,1 m	≈ 1,6 m
15 mm		—	—	—	≈ 1,4 m	≈ 1,1 m
20 mm		—	—	—	≈ 1,1 m	≈ 0,8 m

ORGANIC MINERAL GROUTS

grammes/m ² - joint width 1 mm			
	Format	Thickness	FUGALITE® ECO
Mosaic	2x2 cm	3 mm	≈ 530
	5x5 cm	4 mm	≈ 290
Tiles Marble	30x60 cm	4 mm	≈ 40
	50x50 cm	4 mm	≈ 30
	60x60 cm	4 mm	≈ 25
	100x100 cm	4 mm	≈ 15
	20x20 cm	8 mm	≈ 150
	30x30 cm	9 mm	≈ 110
	40x40 cm	10 mm	≈ 90
	30x60 cm	10 mm	≈ 90
	60x60 cm	10 mm	≈ 60
	60x90 cm	10 mm	≈ 50
	100x100 cm	10 mm	≈ 35
	120x120 cm	10 mm	≈ 30
	20x20 cm	14 mm	≈ 260
	30x30 cm	14 mm	≈ 170
Klinker	30x30 cm	15 mm	≈ 185
	12,5x24,5 cm	12 mm	≈ 270

If an estimated coverage value has not been given, it means the joint width/depth ratio is outside the specified limits and the joint cannot be sealed.

* Samples were exposed for 500 hours to a light spectrum equivalent to natural sunlight at midday, at the height of the summer on the earth's surface in the northern hemisphere. Differences in clarity, saturation and hue as compared to the reference sample kept in the dark in standard conditions are measured.

The resulting colour difference ΔE_c is used to calculate the grey scale intensity values for colour fastness (GS_c), expressed in a range from 5 (maximum fastness) to 1.

Important: the human eye cannot distinguish colour differences in the 5 to 3 range.

Special notes

National standards, requirements and regulations may have an influence on the choice of product and on coverage.

Abide by any standards and national regulations.

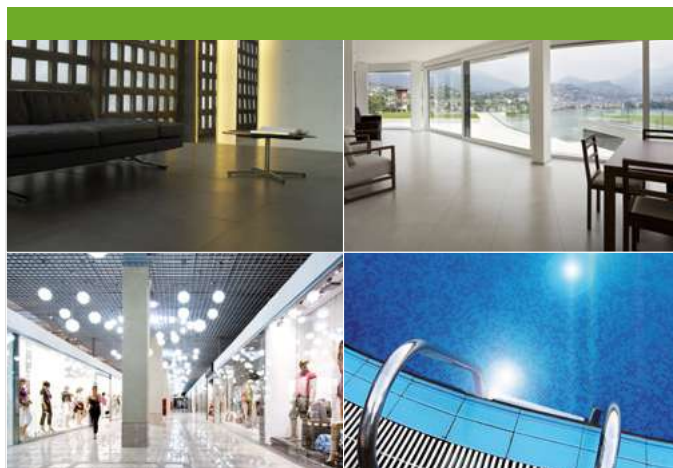
For special cycles and uses, or cycles and uses different from those indicated, always refer to the technical information for individual products.

As it is not possible to intervene directly on site conditions and on execution of the works, the indications provided in this guide refer exclusively to the technical characteristics of the products supplied, and not to the work required to install them.

The user is always required to assess on site to ensure that the products are suitable for the use to which they are put, always following the indications on the technical documentation and on the packaging.

Make sure that the products are not tampered with and that they are stored as indicated on the packaging and in the technical information.

Kerakoll eco-friendly laying systems



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