



SITE TECHNICAL GUIDE

ECO-FRIENDLY SYSTEMS FOR ACOUSTIC INSULATION OF FLOOR SLABS



Together with nature we
can build the future.

KERAKOLL
The GreenBuilding Company

ACOUSTIC INSULATION WITH ECO-FRIENDLY PRODUCTS FOR HEALTHY LIVING



Each of us is able to give a definition of noise, whether it be the fruit of scientific knowledge or more simply of day-to-day experience. The fact that noise entering the places we live in may represent a source of disturbance that can influence our well-being is not always taken into due account.

Sound pollution in the places we live exposes us to noises that disturb our normal day-to-day activities, reducing our performance levels and ability to concentrate and, in the most severe cases, even having a negative effect on our health. Adequate acoustic comfort in our areas is a primary need, even more than it is a regulatory requirement to be complied with: it increases our quality of life and helps raise the value of our home.

Protecting our rooms from noise means safeguarding our health and making our homes more enjoyable and better to live in.

UPCYCLING

THE NEW FRONTIER OF KERAKOLL RESEARCH



Promoting sound protection in buildings for true living comfort, this has encouraged Kerakoll to look for innovative soundproofing solutions. Products with a high technological content, to continue improving and promoting true building for wellness, by means of construction systems with a low environmental impact, made from regenerated raw materials, that express a new form of design and production and evolve the idea of re-cycling. From DownCycling, in which there is a complete degradation of the characteristics of materials, which are simply re-used for applications with a low technological content, to UpCycling which, by means of modern industrial processes, generates second generation raw materials that can be re-processed, and whose high performance is used to serve new products and applications.



UpCycling represents the natural development of Kerakoll Research for GreenBuilding; by enhancing the value of resources destined as waste, it rationalises the use of energy, reduces greenhouse gas emissions and guarantees greater sustainability in the cycle of raw material production and use, limiting consumption.



The skilled work of Kerakoll's GreenLab technicians has resulted in selection of raw materials with a high technological content from pre and post consumption re-cycling. Polyester, rubber and cork, thanks to their intrinsic elasticity, strength and durability and thanks to specific industrial re-processing operations, become a new material for innovative, high performance, long lasting solutions.

innovative, high performance, long lasting solutions.

Specific studies carried out with the collaboration of Universities, Research Centres and Specialist Laboratories show that it is now possible to offer building professionals acoustic insulation options that are effective, complete and safe: Kerakoll SoundExpert systems Kerakoll SoundExpert systems.

UPCYCLING: RECYCLED RAW MATERIALS WITH A HIGH TECHNOLOGICAL CONTENT



Within that wide world that is often, indiscriminately and roughly, known as plastic, there is one recyclable raw material with a high technological content, PET. After subsequent specific processing, its properties are made available for new products.



Cork is a renewable raw material, the extraction of which has zero impact on the environment: it is obtained by removing the bark from the cork oak, an operation that guarantees survival of the plant and does not damage its ability to absorb greenhouse gasses.



The rubber granules obtained by recycling old tyres keep the properties of the original mix intact and are able to give the products in which they are used as a raw material a high density, compressive strength and flexibility.

ECO SOUND⁴⁰

RESILIENT LAYER IN REGENERATED ELASTIC FIBRE WITH DAMPING PROPERTIES FOR THE CREATION OF AN INTEGRAL ACOUSTIC INSULATION OF FLOORS. WITH VERY LOW VOLATILE ORGANIC COMPOUND EMISSIONS.

Thanks to the special thermomechanical process applied to the regenerated polyester fibres, EcoSound 40 combines high elasticity and improved damping capacity, for complete and effective acoustic insulation of flooring slabs. The mix of fibres perfected by Kerakoll research has resulted in the creation of a product in which elasticity and resistance are effectively combined and which provides long term performance, as shown by the specific test carried out at the Ecam Ricert laboratory. The selvedge with double sided adhesive means that it is possible to create a continuous insulated surface without the need for overlap.



NON-WOVEN

The unwoven fabric has the task of protecting the underlying waterproof layer. Made using spunbonded polypropylene, it guarantees the integrity of the protective film during all working phases on site, thanks to the high mechanical resistance of the fibres employed.



POLYPROPYLENE FILM

The polypropylene film prevents the water in the screed mix from penetrating into the fibrous layer, so that it retains its elasticity and, as a result, its insulating capacity.



MIX OF POLYESTER FIBRES

The mix of polyester fibres used to manufacture EcoSound 40 has been specifically designed to maximise soundproofing. They are subjected to a specific thermomechanical treatment process, in which the combined action of temperature and deformation gives suitable elasticity to allow them to act as the spring in a mass-spring-mass system. The fibres are then bound together using a special elastic resin, capable of giving the product greater damping properties (approximately three times more than traditional polyester products).

ECOSOUND 40

pet	% OF RECYCLED IN ECOSOUND 40	CO ₂ equivalent emissions saving*
100% recycled	60%	0.32 kg/m ²



PET UPCYCLING PROCESS

By means of a sophisticated processing and transformation operation, something that was destined to become waste can be converted into a new material. After passing through a selection phase, the bottles are washed and ground. The PET flakes produced in this way are melted and passed through a die, from which a new, eco-friendly and extremely versatile fibre is obtained, which can be given the properties required for subsequent applications by means of suitable technological processes.

ECO SOUND²⁴

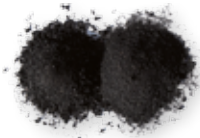
RESILIENT LAYER IN REGENERATED CORK AND RUBBER WITH ELASTIC AND DAMPING CHARACTERISTICS TO REDUCE TRANSMITTED IMPACT NOISE. WITH VERY LOW VOLATILE ORGANIC COMPOUND EMISSIONS.

The elasticity of the cork and the strength of the rubber have been combined in EcoSound 24 - a resilient layer for soundproofed floors. The individual raw materials, which come from a virtuous regeneration process, are carefully selected to give the finished product high performance and constant production characteristics. The high level of grinding, made possible by the intrinsic properties of the rubber and cork selected, give a strong and compact agglomerate that has no lacks of continuity, guaranteeing uninterrupted acoustic insulation. The even distribution of the granules, combined with their small size, ensure that the bonded system is safe and long-lasting.



RECYCLED CORK

The elasticity of the cork, guaranteed by the over 40 million cells per cm³, allows the underlay to provide efficient soundproofing from high frequency impact noise, to give better acoustic comfort.



REFINED RECYCLED RUBBER

The damping properties of the rubber combine with the elastic properties of the cork to give an effective reduction in impact noise. Its high levels of compressive strength gives the flooring long-term stability.



ECO-FRIENDLY, ORGANIC BINDER

The rubber and cork granules are bonded together using a specific binding agent, specially selected to give EcoSound 24 cohesion and flexibility, guaranteeing strength and practicality when laid.

ECOSOUND 24

CORK AND RUBBER	% OF RECYCLED IN ECOSOUND 24	CO ₂ equivalent emissions saving*
100% recycled	92%	1.33 kg/m ²



CORK UPCYCLING PROCESS

The main application connected to cork processing is the manufacture of corks for bottles, during which a high quantity of waste material with unchanged physical and mechanical properties is produced. The excess cork is selected, ground and screened, in order to divide the granules by size and density; this results in a top quality regenerated material, in which the original properties of lightness and elasticity are left unchanged.



ECOSOUND FLEX

CERTIFIED MINERAL SOUND-PROOFING SELF-LEVELLING PRODUCT, ECO-FRIENDLY FOR ACOUSTIC INSULATION OF FLOORS IN CERAMIC, NATURAL STONE AND RESIN/CEMENT-BASED RECOMPOSED MATERIALS. WITH VERY LOW VOLATILE ORGANIC COMPOUND EMISSIONS.

The flexibility of the rubber, the special mix of binders and its extremely fine grain size, the fruit of Kerakoll research and technology, are combined in EcoSound Flex to create an effective under-floor acoustic insulation that is both quick and easy to install. The damping effect of the rubber allows for a reduction in high frequency noise levels, resulting in an increase in acoustic comfort. Thanks to the bonding mix and the extremely fine grain size of the recycled minerals, EcoSound Flex allows easy creation of a continuous, perfectly level insulating layer for subsequent laying of the flooring.

ECOSOUND FLEX

rubber	% OF RECYCLED IN ECOSOUND FLEX	CO ₂ equivalent emissions saving*
100% recycled	30%	2.75 kg/m ²



MINERAL BINDERS

Thanks to the special bonding mixture perfected by the Kerakoll GreenLab research technicians, EcoSound Flex features high workability and self-levelling capacity, reduced drying times, allowing work to be completed quickly, and a high level of cohesion, guaranteeing the integrity of the flooring.



REFINED RECYCLED RUBBER

The specific regenerated rubber inert materials, selected as a result of Kerakoll research, give EcoSound Flex the damping properties that result in such high soundproofing values; thanks to their fine grain size they also allow full and continuous restoration of uneven surfaces.



RECYCLED MINERAL

The use of re-cycled natural minerals helps reduce the environmental impact associated with the extraction and processing of the raw materials.



RUBBER UPCYCLING PROCESS

Used tyres are potentially a great resource, because the raw materials used to manufacture them have a high technological content that, thanks to selective recycling and suitable processing, can be made available once more to create new products. After removing any steel present (bead breaking), the tyres are ground and refined to eliminate the textile fibres; the rubber obtained in this way is sent for grinding and pulverising to produce the desired grain sizes.

*values obtained by processing Ecoinvent 3 database data, visible in the software used to calculate LCA under ISO 14040-44, combined with EPD for the sector.



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SOUNDEXPERT 1

UNDER-SCREED SYSTEM

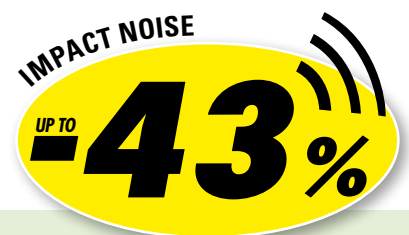


ECO-FRIENDLY, UNDER-SCREED SYSTEM FOR INTEGRAL ACOUSTIC INSULATION OF FLOOR SLABS; SPECIFIC FOR APPLICATION IN NEW BUILDS AND IN RENOVATIONS.

The new SoundExpert 1 system for acoustic insulation of floor slabs provides maximum comfort thanks to its simultaneous action both on impact noise (e.g. footsteps) and air-borne noise (e.g. radio, TV, talking...) as shown by the tests carried out by accredited sound laboratories.

Thanks to the selvedge and dual sided adhesive, laying of the SoundExpert 1 system is simple, fast and effective: the result is a continuous insulating layer, with no overlap and with no need for jointing tape. The special Tapetex perimeter joint provides the necessary desolidarisation of the screed, so as to guarantee both the absorption of thermal dilation and ensure the soundproofing effectiveness of the system; the polyethylene film with double sided adhesive allows for safe anchoring to the insulating layer.

Keracem® Eco Pronto screed which, thanks to its high mechanical strength, guarantees the structural solidity of the floor, provides a fundamental contribution to the durability of the system.



THE ADVANTAGES OF THE SOUNDEXPERT 1 UNDER-SCREED SYSTEM

A strong system: undamaged flooring, thanks to the performance of Keracem® Eco Pronto

A trial, carried out by the Kerakoll Research Centre together with the University of Modena and Reggio Emilia, has shown that the integrity of a floating screed system does not depend on the compressive strength of the resilient layer, but is guaranteed by the mechanical performance of the screed, which is directly proportional to its thickness. Thanks to the high resistance values of Keracem® Eco Pronto, the EcoSound 40 system means that a safe and effective soundproofing system can be created in just 55 mm.

A long-lasting system: not subject to deformation and remains effective over time

Long-term performance of the SoundExpert 1 system has been laboratory tested using a specific long-term test, in which 4 sound level readings were taken over 161 days following laying of the screed. The variation of just 0.5 dB with respect to the average values obtained confirmed the system's durability.

An effective system: soundproofing from both impact noise and air-borne noise

The EcoSound 40 system was found to provide effective soundproofing of both impact noise and air-borne noise. For the sake of completeness, the acoustic tests were carried out both on a concrete floor slab (normalised) and on a brick and concrete floor slab, on which performance was assessed also in the presence of an underfloor systems levelling layer and underfloor heating system, in order to reproduce the options most frequently encountered on site.



CERTIFICATION AND VALIDATION OF THE SOUNDEXPERT 1 SYSTEM

The acoustic insulation tests were carried out at the approved laboratories Ecam Ricert and Istituto Giordano. International standards UNI EN ISO 10140-1,2,3,4,5 and UNI EN ISO 717-1,2 were used as a reference for the methods, techniques for measurement and determination of the indices of evaluation that define the performance of the floor slab and the soundproofing system with which it is fitted.

As well as the tests performed on a normalised floor slab, that is to say a reinforced concrete structure with a thickness of 14 cm, it was also decided to test the behaviour of the system on a mixed brick and concrete floor slab, as this is one of those most commonly used in Italian buildings. In this way designers, building constructors and end users are given precise indications on the possible performance of the system when in place.

A floor slab that is efficiently soundproofed must be capable of reducing two distinct types of noise: impact noise and air-borne noise. SoundExpert 1, as shown by the tests carried out, is a complete soundproofing system that offers a high reduction in impact noise, ΔL_w , and helps increase general acoustic insulation capacity, ΔR_w .

SoundExpert 1 is a system with very low volatile organic compound emissions. Individual components: EcoSound 40 perimeter joint, and Tapetex have been tested using the GEV Emicode test method, and have been certified as class EC 1 Plus.



SOUNDPROOFING PERFORMANCE

	$L_{n,w}$ IMPACT NOISE		R_w AIRBORNE NOISE		REDUCTION OF IMPACT NOISE ΔL_w	REDUCTION OF AIRBORNE NOISE ΔR_w
	Bare floor slab	Floor slab with SoundExpert 1	Bare floor slab	Floor slab with SoundExpert 1		
NORMALISED FLOOR SLAB - Keracem® Eco Pronto screed 5 cm thick - Normalised concrete floor slab, 14 cm	81 dB	55 dB	51 dB	60 dB	26 dB	9 dB
BRICK AND CEMENT FLOOR SLAB - Keracem® Eco Pronto screed 5 cm thick - Mixed brick and cement floor slab 16+5 cm	92 dB	61 dB	49 dB	59 dB	31 dB	10 dB
BRICK AND CEMENT FLOOR SLAB - Keracem® Eco Pronto screed 5 cm thick - System levelling 6 cm 500 kg/m ³ - Mixed brick and cement floor slab 16+5 cm	92 dB	52 dB	49 dB	63 dB	40 dB	14 dB
BRICK AND CEMENT FLOOR SLAB - Keracem® Eco Pronto screed thickness 3 cm above underfloor heating elements - System levelling 6 cm 500 kg/m ³ and underfloor heating system - Mixed brick and cement floor slab 16+5 cm	92 dB	52 dB	49 dB	63 dB	40 dB	14 dB



SOUNDEXPERT 1

UNDER-SCREED SYSTEM⁽¹⁾

A1

Acoustic insulation	●●●●●
Acoustically comfortable	●●●●●
Working dimensions	●●●○○
Versatility	●●●○○

Eco-friendly, under-screed system for integral acoustic insulation of floor slabs; specific for application in new builds and in renovations.

- Reduces impact noise on brick and cement floors by up to 40 dB.
- Increases the soundproofing power of brick and cement floors by up to 14 dB.
- Can be used with underfloor heating systems.



⁽¹⁾ Check that the solutions proposed comply with national regulations and technical specifications

EXPANSION JOINTS

Coverage
see technical data sheet



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.



GROUTING

Coverage
see technical data sheet



Fugalite® Bio Parquet

Water-based resin for wood-effect grouting of wood-effect tiles. Fugalite® Bio Parquet is dermatologically-tested, with the result as hypoallergenic. Available in 12 natural shades. Guarantees the aesthetic and functional continuity of the wood-effect tiles.



TILE LAYING

Coverage per mm of thickness
Grey (mixing ratio 32%) $\approx 1.25 \text{ kg/m}^2$
White Shock (mixing ratio 33%)
 $\approx 1.25 \text{ kg/m}^2$



Biogel® No Limits

Exclusive Kerakoll geo-binder based, structural flexible multi-purpose gel adhesive for bonding all types of material, on all substrates, and for all use, even in extreme conditions. Eco-friendly.



SCREED

Coverage
 $\approx 16 - 18 \text{ kg/m}^2$ per cm
of thickness



Keracem® Eco Pronto

Certified, ready-to-use, eco-friendly, normal-setting and rapid-drying mineral screed to be covered with adhesives, ideal for use in GreenBuilding.



PERIMETER JOINT

Tapetex

Compressible, closed-cell expanded polyethylene tape for perimeter and desolidarisation joints. Suitable in the SoundExpert 1 system.



ACOUSTIC INSULATION

EcoSound 40

Resilient layer in regenerated, elasticated fibre with damping characteristics to create integral acoustic insulation of floors, with extremely low emissions of volatile organic substance.



EXISTING SUBSTRATES

The support layer must be flat, consistent and free from rough or sharp elements. Remove from the laying surface any element that might damage the underlay during subsequent phases. Level any underfloor pipes, if present. Before laying the underlay check that the systems levelling layer presents a degree of humidity compatible with the following phases.

SOUNDEXPERT 2

UNDERFLOOR SYSTEM

WITH LAYING OF CERAMIC TILES



ECO-FRIENDLY, ULTRA-THIN UNDERFLOOR SYSTEM FOR THE REDUCTION OF IMPACT NOISE ON FLOOR SLABS; SPECIFIC FOR USE IN RENOVATIONS AND SUPERIMPOSED ON EXISTING SUBSTRATES.

The new SoundExpert 2 system for reduction of impact noise allows an effective improvement in acoustic comfort, thanks to the considerable reduction in high frequency noise levels (the most disturbing to the human ear) as shown by the tests performed both on concrete and brick and concrete floor slabs.

The fine grain size of the raw materials and their well balanced mix allow laying with no “memory effect”, thus simplifying both bonded and floating laying. High adhesion joining with EcoSound Nastro guarantees the continuity of the soundproofing layer, thanks to its viscoelastic composition. Laying Tapetex Slim perimeter joint guarantees total desolidarisation of the flooring.

The even distribution of granules in the underlay and the compactness with which they are bonded together, combined with the performance of Bioflex®, guarantee the highest adhesion performance (+30% compared to similar systems) for ceramic flooring, the long-term integrity of which is guaranteed by the grouts in the Fugalite® range. The high level of cohesion in EcoSound 24 make it suitable for subsequent laying of pre-finished plywood flooring with Slc® Eco L34 Plus. In the case of floating floors, the high surface density and the damping properties help reduce reflected noise.



THE ADVANTAGES OF THE SOUNDEXPERT 2 UNDER-FLOOR SYSTEM

A strong system: tested to resist stress

The durability of the SoundExpert 2 system with laying of ceramic tiles has been proven by subjecting the floor to the Robinson Test. A test capable of simulating dynamic load stress on the flooring when laid, reproducing the type of stress to which it is subjected during normal day-to-day use. The system has completed the entire test cycle without cracking or weakening.

Low thickness system: floors are soundproofed in a minimum amount of space

The SoundExpert 2 system can also be used when overlaying existing flooring, increasing acoustic insulation and improving living comfort. The reduced thickness of EcoSound 24 means it is possible to create a soundproofed floor in less than 2 cm (*).

(* according to the thickness of the finished flooring)

A system with low thermal resistance: also suitable on radiating panel systems

When designing radiating panel systems it is necessary to take into account the thermal resistance of the floor covering. The special formulation of EcoSound 24 also allows it to be used in the presence of underfloor heating systems, as can be seen from the thermal tests carried out on the system package and not on the material alone, so as to take into account the contribution of the flooring and the adhesive.



CERTIFICATION AND VALIDATION OF THE SOUNDEXPERT 2 SYSTEM

The acoustic insulation tests were carried out at the approved laboratory Ecam Ricert. International standards UNI EN ISO 10140-1,2,3,4,5 and UNI EN ISO 717-1,2 were used as a reference for the methods, techniques for measurement and determination of the indices of evaluation that define the performance of the floor slab and the soundproofing system with which it is fitted.

As well as the tests performed on a normalised floor slab, that is to say a reinforced concrete structure with a thickness of 14 cm, it was also decided to test the behaviour of the system on a mixed brick and concrete floor slab, as this is one of those most commonly used in Italian buildings. In this way designers, building constructors and end users are given precise indications on the possible performance of the system when in place.

SoundExpert 2 is a system with very low volatile organic compound emissions. Individual components: EcoSound 24, EcoSound Nastro and Tapetex Slim have been tested using the GEV Emicode test method, and have been certified as class EC 1 Plus.



SOUNDPROOFING PERFORMANCE

TEST STRUCTURE	IMPACT NOISE		AIRBORNE NOISE		REDUCTION OF IMPACT NOISE ΔL_w	REDUCTION OF AIRBORNE NOISE ΔR_w
	Bare floor slab	Floor slab with SoundExpert 2	Bare floor slab	Floor slab with SoundExpert 2		
NORMALISED FLOOR SLAB AND LAYING OF CERAMIC TILES - Laying bonded on Keracem® Eco Pronto screed, thickness 5 cm - Normalised concrete floor slab, 14 cm	82 dB	69 dB	-	-	12 dB	-
BRICK AND CEMENT FLOOR SLAB AND LAYING OF CERAMIC TILES - Laying bonded on Keracem® Eco Pronto screed, thickness 5 cm - System levelling 6 cm 500 kg/m ³ - Mixed brick and cement floor slab 16+5 cm	92 dB	68 dB	49 dB	55 dB	24 dB	6 dB
BRICK AND CEMENT FLOOR SLAB AND LAYING OF HARDWOOD FLOORS - Laying bonded on Keracem® Eco Pronto screed, thickness 5 cm - System levelling 6 cm 500 kg/m ³ - Mixed brick and cement floor slab 16+5 cm	92 dB	68 dB	49 dB	54 dB	24 dB	5 dB
BRICK AND CEMENT FLOOR SLAB AND LAYING OF HARDWOOD FLOORS - Floating laying on Keracem® Eco Pronto screed, thickness 5 cm - System levelling 6 cm 500 kg/m ³ - Mixed brick and cement floor slab 16+5 cm	92 dB	63 dB	49 dB	53 dB	29 dB	4 dB
NORMALISED FLOOR SLAB AND LAYING OF LAMINATE - Floating laying - Normalised concrete floor slab, 14 cm	81 dB	58 dB	-	-	20 dB	-



SOUNDEXPERT 2

A2

Acoustic insulation	●●●○○
Acoustically comfortable	●●●●○
Working dimensions	●●●●●
Versatility	●●●●●

UNDERFLOOR SYSTEM WITH LAYING OF CERAMIC TILES⁽¹⁾

Eco-friendly, ultra-thin underfloor system for the reduction of impact noise on floor slabs; specific for use in renovations and superimposed on existing substrates.

- Reduces impact noise on brick and cement floors by up to 24 dB.
- Increases sound comfort thanks to the reduction in high frequency noise.
- Suitable for underfloor heating systems.



⁽¹⁾ Check that the solutions proposed comply with national regulations and technical specifications

EXPANSION JOINTS

Coverage
see technical data sheet

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.



GROUTING

Coverage
see technical data sheet

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 10 mm with a high level of chemical and mechanical resistance, guarantees the continuity of ceramic surfaces, ideal for use in GreenBuilding.



ECOSOUND 24 AND TILE LAYING

Coverage per mm of thickness
Grey (mixing ratio 32%) $\approx 1.25 \text{ kg/m}^2$
White Shock (mixing ratio 33%)
 $\approx 1.25 \text{ kg/m}^2$

Biogel® No Limits

Exclusive Kerakoll geo-binder based, structural flexible multi-purpose gel adhesive for bonding all types of material, on all substrates, and for all use, even in extreme conditions. Eco-friendly.



PERIMETER JOINT

Tapetex Slim

Compressible, closed-cell expanded polyethylene tape for reduced-thickness perimetric joints of desolidarisation. With very low volatile organic compound emissions.



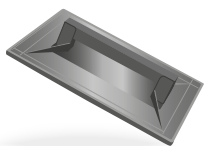
JOINT BETWEEN SHEETS

EcoSound Nastro

High-adhesion butyl damping tape, coated with alkali-resistant, non-woven polypropylene, for the sealing of joints between adjacent sheets in SoundExpert systems. With very low volatile organic compound emissions.



ACOUSTIC INSULATION



EcoSound 24

Resilient layer in regenerated cork and rubber with elastic and damping characteristics to reduce transmitted impact noise, with extremely low volatile organic compound emission levels.



EXISTING SUBSTRATES

Smooth, non-absorbent substrates which are compact and well-anchored must be prepared by chemical cleaning with products suitable for the type of dirt present. If it is not possible to perform chemical cleaning, carry out adequate mechanical abrasion.



SOUNDEXPERT 2

A3

UNDERFLOOR SYSTEM WITH

LAYING OF HARDWOOD FLOORS⁽¹⁾

Acoustic insulation	●●●○○
Acoustically comfortable	●●●●○
Working dimensions	●●●●●
Versatility	●●●●●

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- Reduces impact noise on brick and cement floors by up to 24 dB.
- Increases sound comfort thanks to the reduction in high frequency noise.
- Suitable for underfloor heating systems.



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SURFACE



Legno Large

Engineered tongue-and-groove wood planks for internal flooring and paneling, chamfer on 2 sides. Timber type Oak (*Quercus Robur*), grade "O", with birch ply support. Dimensions 70x1250x10 mm. Pre-sanded, unfinished surface, hand-worked texture.



LAYING

Coverage
 ≈ 800 – 1500 g/m²
 (Slc® spreader no. 2 – 4)

Slc® Eco L34 Plus

Certified, eco-friendly, organic, high elasticity, mineral adhesive for the high-performance laying of hardwood floors, ideal for use in GreenBuilding.



PERIMETER JOINT

Tapetex Slim

Compressible, closed-cell expanded polyethylene tape for reduced-thickness perimetric joints of desolidarisation. With very low volatile organic compound emissions.



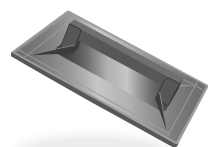
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ACOUSTIC INSULATION



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SOUNDEXPERT 3

SELF-LEVELLING SYSTEM

WITH LAYING OF CERAMIC TILES



ECO-FRIENDLY, SELF-LEVELLING SYSTEM FOR THE REDUCTION OF IMPACT NOISE ON FLOOR SLABS; SPECIFIC FOR USE IN RENOVATIONS AND SUPERIMPOSED ON EXISTING SUBSTRATES.

The new Sound Expert 3 self-levelling system, fruit of Kerakoll research, is the innovative means of creating acoustic insulation of floors made from ceramic, natural stone and resin or cement-based recomposed materials.

Acoustic tests for soundproofing against impact noise have been performed in the laboratory, both on normalised 14 cm reinforced concrete floor slab and on 16+5 cm brick and cement floor slab, with the latter giving a reduction in impact noise of up to 23 dB, which, together with the reduction in high frequency noise, translates into greater acoustic comfort. Thanks to the special mix used in EcoSound Flex, cement and re-cycled rubber based self-levelling mineral layer with extremely low volatile organic compound emissions, creating a continuous, underfloor resilient layer is much simpler.

Prior laying of Tapetex Slim perimeter joint is a practical means of ensuring complete desolidarisation of the flooring. Subsequent laying with Bioflex® guarantees the structural continuity required to prevent damage to the flooring, and the system is completed by grout from the Fugalite® range, ensuring clean, healthy and long lasting grouting with a lower modulus of elasticity than cement-based products, thus helping to reduce noise transmission.



THE ADVANTAGES OF THE SOUNDEXPERT 3 UNDER-FLOOR SYSTEM

A safe system: soundproofed floors with no loss of continuity

It is easy to create a soundproofed floor with the SoundExpert 3 system. Even when it is necessary to soundproof irregular, articulated surfaces it is easy to create a continuous, resilient layer, guaranteeing successful acoustic insulation.

A versatile system: suitable both as an overlay on existing floors and on irregular, old substrates

Thanks to its versatility, the SoundExpert 3 System can be used whenever it is necessary to improve acoustic insulation of a floor slab. The special formulation of EcoSound Flex allows it to be applied both over existing floors and when replacing the old flooring.

A self-levelling system: flat, soundproofed surfaces in a single operation

Thanks to its high self-levelling capacity and the ability to create variable thicknesses of between 3 and 10 mm, EcoSound Flex is the ideal product to guarantee soundproofing even on irregular substrates.



CERTIFICATION AND VALIDATION OF THE SOUNDEXPERT 3 SYSTEM

The acoustic insulation tests were carried out at the approved laboratory Ecam Ricert. International standards UNI EN ISO 10140-1,2,3,4,5 and UNI EN ISO 717-1,2 were used as a reference for the methods, techniques for measurement and determination of the indices of evaluation that define the performance of the floor slab and the soundproofing system with which it is fitted.

As well as the tests performed on a normalised floor slab, that is to say a reinforced concrete structure with a thickness of 14 cm, it was also decided to test the behaviour of the system on a mixed brick and concrete floor slab, as this is one of those most commonly used in Italian buildings. In this way designers, building constructors and end users are given precise indications on the possible performance of the system when in place.

SoundExpert 3 is a system with very low volatile organic compound emissions. Individual components: EcoSound Flex and Tapetex Slim have been tested using the GEV Emicode test method, and have been certified, respectively, as class EC 1 R-Plus and EC 1 Plus.



SOUNDPROOFING PERFORMANCE

TEST STRUCTURE	$L_{n,w}$ IMPACT NOISE		R_w AIRBORNE NOISE		REDUCTION OF IMPACT NOISE ΔL_w	REDUCTION OF AIRBORNE NOISE ΔR_w
	Bare floor slab	Floor slab with SoundExpert 3	Bare floor slab	Floor slab with SoundExpert 3		
NORMALISED FLOOR SLAB AND LAYING OF CERAMIC TILES - Laying bonded on a 5 mm layer applied over Keracem® Eco Pronto screed 5 cm in thickness - Normalised concrete floor slab, 14 cm	82 dB	70 dB	-	-	12 dB	-
BRICK AND CEMENT FLOOR SLAB AND LAYING OF CERAMIC TILES - Laying bonded on a 5 mm layer applied over Keracem® Eco Pronto screed 5 cm in thickness - System levelling 6 cm 500 kg/m ³ - Mixed brick and cement floor slab 16+5 cm	92 dB	69 dB	49 dB	55 dB	23 dB	6 dB



SOUNDEXPERT 3

SELF-LEVELLING SYSTEM

A4

Acoustic insulation	●●●○○
Acoustically comfortable	●●●●○
Working dimensions	●●●●●
Versatility	●●●●○

WITH LAYING OF CERAMIC TILES⁽¹⁾

Eco-friendly, self-levelling system for the reduction of impact noise on floor slabs; specific for use in renovations and superimposed on existing substrates.

- Reduces impact noise on brick and cement floors by up to 23 dB.
- Increases sound comfort thanks to the reduction in high frequency noise.
- Allows rapid creation of a continuous isolating layer.



7

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⁽¹⁾ Check that the solutions proposed comply with national regulations and technical specifications

EXPANSION JOINTS

Coverage
see technical data sheet



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.



GROUTING

Coverage
see technical data sheet



Fugalite® Bio Parquet

Water-based resin for wood-effect grouting of wood-effect tiles. Fugalite® Bio Parquet is dermatologically-tested, with the result as hypoallergenic. Available in 12 natural shades. Guarantees the aesthetic and functional continuity of the wood-effect tiles.



TILE LAYING

Coverage per mm of thickness
Grey (mixing ratio 32%) $\approx 1.25 \text{ kg/m}^2$
White Shock (mixing ratio 33%)
 $\approx 1.25 \text{ kg/m}^2$



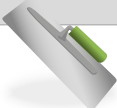
Biogel® No Limits

Exclusive Kerakoll geo-binder based, structural flexible multi-purpose gel adhesive for bonding all types of material, on all substrates, and for all use, even in extreme conditions. Eco-friendly.



SELF-LEVELLING ACOUSTIC

Coverage $\approx 0.9 \text{ kg/m}^2$ per mm
of thickness



EcoSound Flex

Certified mineral sound-proofing self-levelling product, eco-friendly for acoustic insulation of floors in ceramic, natural stone and resin/cement-based recomposed materials, ideal for use in GreenBuilding. With very low volatile organic compound emissions.



PERIMETER JOINT

Tapetex Slim

Compressible, closed-cell expanded polyethylene tape for reduced-thickness perimetric joints of desolidarisation. With very low volatile organic compound emissions.



CONSOLIDATION

Coverage $\approx 0.15 - 0.25 \text{ kg/m}^2$



Primer A Eco

Certified, eco-friendly, water-based surface isolation for dry, absorbent mineral/cement/gypsum or anhydrite-based substrates, ideal for use in GreenBuilding. Reduces and regulates the absorption of highly porous substrates.



EXISTING SUBSTRATES

Totally clean away any loose, flaky or imperfectly anchored parts. The substrate must be stable, non-deformable and with no cracks and have already completed the hygrometric shrinkage curing period.

EcoSound 40

Resilient layer in regenerated, elasticated fibre with damping characteristics to create integral acoustic insulation of floors, with extremely low emissions of volatile organic substance.

Laying of floating screed on a layer of EcoSound 40 allows a reduction in the impact noise transmitted through the flooring and increases the acoustic insulation.



Code	Pack	Pallet
07336	30 m ² roll	180 m ²



- Reduces impact noise on brick and cement floors by up to 40 dB
- Increases the soundproofing power of brick and cement floors by up to 14 dB
- Fast, safe laying, thanks to the non-woven fabric and the adhesive selvedge

EcoSound 24

Resilient layer in regenerated cork and rubber with elastic and damping characteristics to reduce transmitted impact noise, with extremely low volatile organic compound emission levels.

Laying of a floor on the EcoSound 24 layer allows reduction of the impact noise transmitted through the flooring. Ideal for renovation work, also when overlaying.



Code	Pack	Pallet
08841	15 m ² roll	300 m ²



- Reduces impact noise on brick and cement floors by up to 24 dB
- Increases sound comfort thanks to the reduction in high frequency noise
- Suitable for underfloor heating systems

EcoSound Flex

Certified mineral sound-proofing self-levelling product, eco-friendly for acoustic insulation of floors in ceramic, natural stone and resin/cement-based recomposed materials, ideal for use in GreenBuilding. With very low volatile organic compound emissions.

Laying of EcoSound Flex allows rapid creation of an unbroken resilient layer. Ideal in renovation work.



Code	Pack	Pallet
08974	15 kg	900 kg

Coverage	Shelf life
≈ 0.9 kg/m ² per mm of thickness	≈ 12 months



- Reduces impact noise on brick and cement floors by up to 23 dB
- For internal applications, thicknesses from 3 to 10 mm

GREENBUILDING RATING®



RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

Tapetex

Compressible, closed-cell expanded polyethylene tape for perimeter and desolidarisation joints. Suitable in the SoundExpert 1 system.

Thanks to the practical polyethylene band with double-sided adhesive, Tapetex guarantees coupling when laying the mineral screed on EcoSound 40, polyethylene or PVC sheets.



Code	Pack
05000	10x50 m



- Easy to apply using the lower adhesive side
- Guarantees desolidarisation of the screed and floor
- Height 100 mm, thickness 8 mm

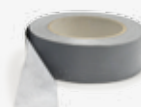
EcoSound Nastro

High-adhesion butyl damping tape, coated with alkali-resistant, non-woven polypropylene, for the sealing of joints between adjacent sheets in SoundExpert systems. With very low volatile organic compound emissions.

EcoSound Nastro, practical and quick-to-apply, guarantees continuous acoustic insulation.



Code	Pack
08001	14x10 m



- With high adhesive power
- Very reduced thickness
- Height 40 mm

Tapetex Slim

Compressible, closed-cell expanded polyethylene tape for reduced-thickness perimetric joints of desolidarisation. Suitable in the SoundExpert 2 and SoundExpert 3 systems. With very low volatile organic compound emissions.

Tapetex Slim, thanks to its adhesive back and high levels of mouldability, is both practical and simple to apply.



Code	Pack
08002	5x25 m



- Practical and simple to apply
- Guarantees desolidarisation of the flooring
- Height 30 mm, thickness 3 mm

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Products for professional use. For information on the product safety data, refer to the corresponding sheets provided in accordance with the law along with the health labelling on the packaging.

Acoustic insulation systems



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SYSTEMS

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ACOUSTIC