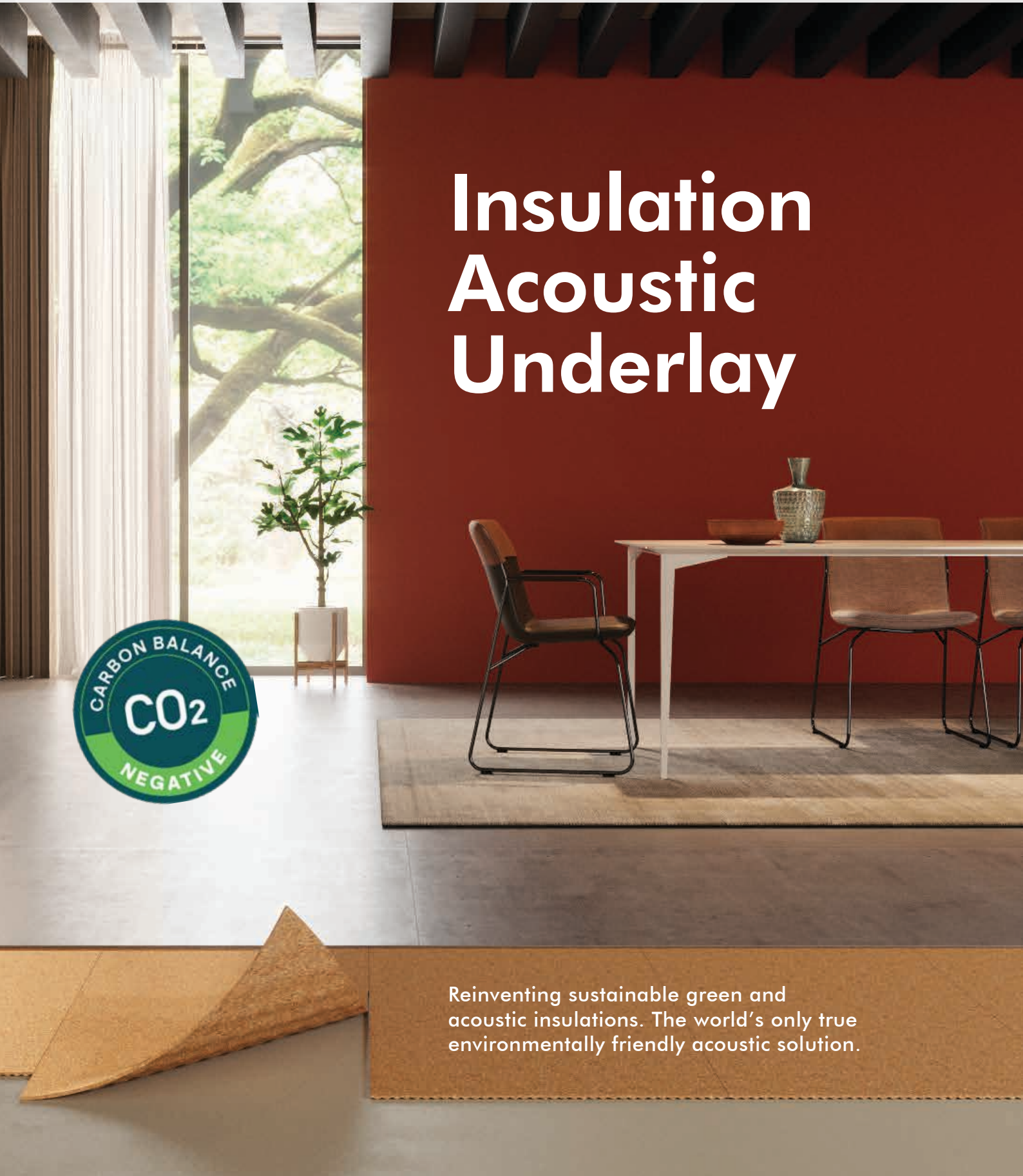
eCORK
Acoustic Underlay

PENTARCH FORESTRY®

Insulation Acoustic Underlay



Reinventing sustainable green and acoustic insulations. The world's only true environmentally friendly acoustic solution.

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Cork

AN EXCEPTIONAL RAW MATERIAL

Cork is commonly described as being the bark of the cork oak (Quercus Suber L.), which means that it is 100% natural plant tissue that covers its trunk and branches.

It consists of a honeycomb-like structure of microscopic cells filled with an air-like gas and coated mainly with suberin and lignin. One cubic centimetre of cork contains about 40 million cells.

Cork is also known as the "nature's foam" due to its alveolar structure. It has a closed cell structure making it lightweight, airtight and watertight, resistant to acids, fuels and oils, and impervious to rotting.

It is sustainably harvested in Portugal by specialised professionals without damaging the trunk, meaning that the tree itself lives to grow another bark layer that, in time, will be harvested once again. Over the course of its lifetime, which on average lasts 200 years, it may be stripped around 17 times meaning that cork is not only a natural material, but also a renewable and recyclable one.

Features & Benefits

- Excellent acoustic and thermal insulation
- Good resilience, excellent compressibility and recovery
- Extremely light for easy installation
- 100% natural, reusable and recyclable
- Non-toxic
- Made in Portugal

Based on the Association of Australasian Acoustical Consultants (AAAC) 'Guideline for Apartment and Townhouse Acoustic Rating'.
ecoCORK rates as 5 star product.

THE MOST VERSATILE NATURAL PRODUCT

Cork is the main raw material for the development of a portfolio of high-performance materials for multiple industries such as aerospace, panels and composites, automotive, seals and gaskets, the power industry, construction, sports surfaces, flooring, consumer goods, furnishing, and footwear.

Cork is a 100 percent natural, sustainable and highly technological material, shaped to meet the most demanding requirements. Cork also provides many other unrivalled benefits over all other standard acoustic options.

ecoCORK combines the incredible attributes of cork to provide the world's only true environmentally friendly acoustic solution.

A GIFT FROM NATURE

Cork is the outer bark of the cork oak tree (Quercus suber L.). It's a 100 percent natural, technological raw material, with unique properties that give it unrivalled character and make it valuable in several industries and multiple applications.

It is light and resistant to friction. Elastic and compressible. Impermeable to liquids and gases. Resistant to combustion. Fully biodegradable, renewable, and recyclable.

But perhaps cork's most extraordinary property can be found in its biological origins. In fact, extracting cork does not harm or even put at risk the tree that it comes from. It is removed every nine years, and not a single cork oak is cut down in the process.

Cork. Versatile. Sustainable. Technological. Matchless.

The stripping of the cork is essential for the life of the tree.

25 YEARS	The average time before the cork oak is harvested for the first time.
9 YEARS	The period of time between each cork oak harvesting.
200 YEARS	The average life expectancy of a cork oak.

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The Cork Oak

The 'Montado' (cork oak forest) is the basis of a biodiversity-generating ecosystem where the roots of the future are planted.

The cork oak tree prevents soil degradation, produces clean air, and stores carbon dioxide, a major cause of climate change.

Cork consists of a hive-like structure of microscopic cells filled with a gas similar to air and mostly coated with suberin and lignin. In its chemical composition, other compounds can also be identified, such as polysaccharides, ceroids, and tannins.

The high percentage of gas of each cell is responsible for cork's extraordinary lightness. The association of these cells, as if they were a kind of small aggregate cushions, is responsible for their compressibility and elasticity.

In a single cubic centimetre of cork, there are about 40 million cells.

BENEFITS OF CORK OAK

1 PREVENTS SOIL DEGRADATION

2 IMPROVES SOIL PRODUCTIVITY

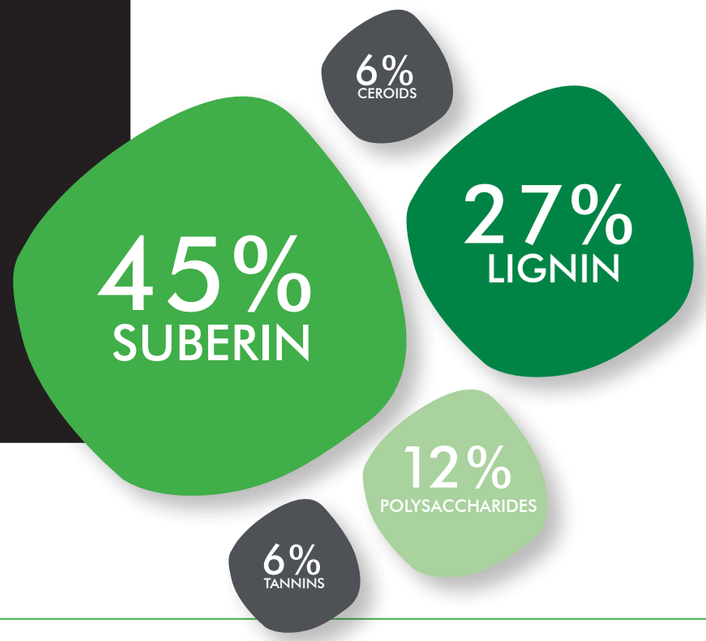
3 REGULATES THE HYDROLOGICAL CYCLE

4 FIGHTS DESERTIFICATION

5 ABSORBS AND STORES CARBON DIOXIDE OVER VERY LONG PERIODS OF TIME

6 FIGHTS CLIMATE CHANGE

7 GENERATES HIGH LEVELS OF BIODIVERSITY



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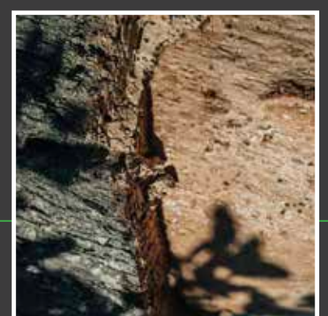
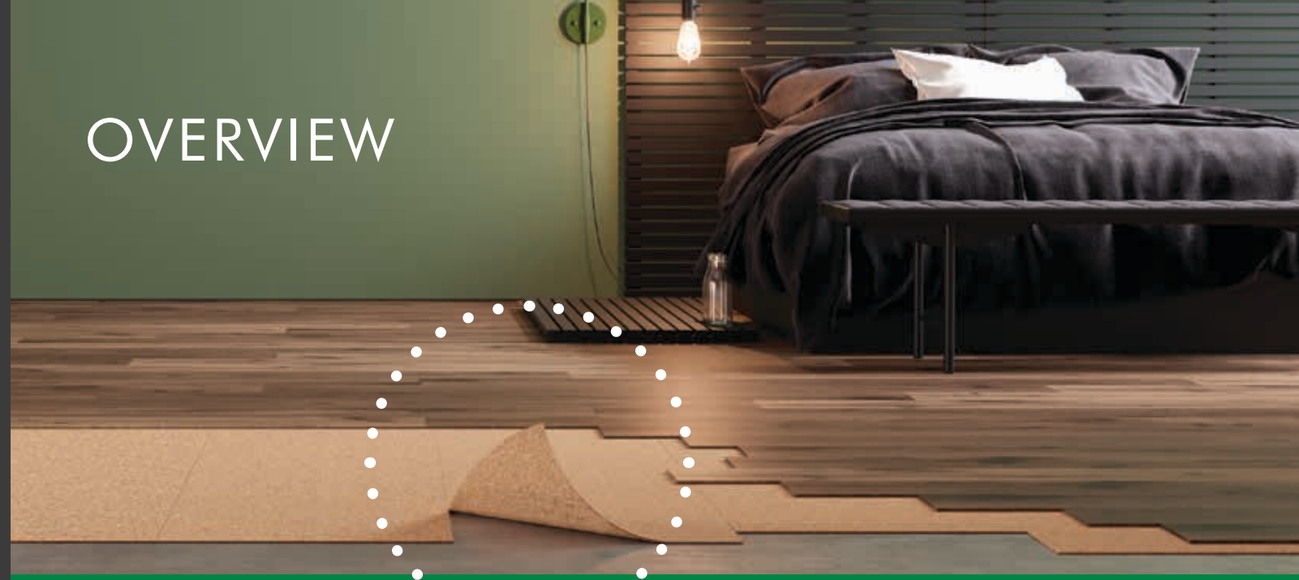
OTHER FEATURES

- EASY INSTALLATION
- NON TOXIC
- COMPATIBLE WITH ALMOST ALL ADHESIVES
- GREAT FEELING UNDERFOOT
- FOR USE UNDER ALL FLOOR TYPES
- LIGHTWEIGHT
- 5 STAR RATING (AAAC)
- STRESS CRACK PROTECTION
- THERMAL INSULATION

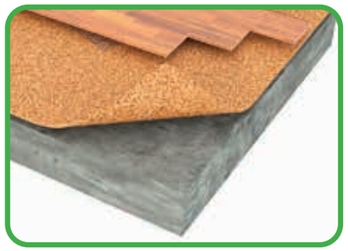


OVERVIEW

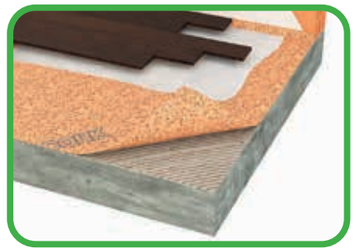


Underlay

ECOCORK HAS SOLUTIONS FOR DIFFERENT TYPES OF FINAL FLOORING



TIMBER/VINYL
Glue down or floated



LAMINATE
Floated

TILES
Flexible tile adhesion

ecoCORK CAN ALSO BE USED OVER UNDERFLOOR HEATING.

SPECIFICATIONS

Product Code	ecoCORK-MF3	ecoCORK-MF5
Thickness (mm)	3	5
Width (m) x Length (m)	0.5 x 1	0.5 x 1
Carton size - Sheets/m^2	100sh/50m^2	60sh/30m^2
Performance (Lnt,w)**	45	44

**Based on average performance, refer to complete testing for different scenarios

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PRODUCT DETAILS

Product Description

ecoCORK is produced in Portugal from a blend of different sized cork grains. These specialised cork grains are then compressed to a certain density to maximize the products acoustic performance. **ecoCORK** is a non-toxic, natural and environmentally friendly product. It does not absorb water or support the growth of mould in moist situations, provides thermal insulation and stress crack protection for floor coverings, and is also fire retardant.

ecoCORK is also lightweight making transport and handling of the product on site easier for the installer.

ecoCORK can either be floated over the sub-floor or direct stuck using a number of different methods and brands to suit many different floor coverings.

Based on the Association of Australasian Acoustical Consultants (AAAC) 'Guideline for Apartment and Townhouse Acoustic Rating', **ecoCORK** rates as 5 star product!

THERMAL PROPERTIES

Thermal Conductivity: 0,038 W/mo K
Thermal Resistance: 0,132 m2o K/W

PHYSICAL AND MECHANICAL PROPERTIES

Specific Weight: 150-200 kg/m3
Tensile Strength: > 200 KPa
Compression (0.7MPa): 30%
Recovery after 0,7MPa: > 70%
Durability: Lifetime of the building

ACOUSTIC BENEFIT

NON GLUED LAMINATE FLOORS	 ΔL_w = 20dB
NON GLUED TIMBER FLOORS	 ΔL_w = 24dB
GLUED DOWN TIMBER FLOORS	 ΔL_w = 26dB

TESTING RESULTS

Test	Type	ecoCORK	Slab	Improvement	L'nT,W
Test 1	Engineered Timber Adhered – 15mm	MF3	200mm Concrete Ceiling	12dB	57
Test 2	Engineered Timber Adhered – 10mm	MF3	140mm Concrete Ceiling	26dB	52
Test 3	Engineered Timber Floated – 15mm	MF5	200mm Concrete Ceiling	16dB	53
Test 4	Engineered Timber Floated – 13.5mm	MF5	190mm Concrete Ceiling	17dB	48

Disclaimer

This Acoustic test is provided 'as is' without any representation or guarantees, express or implied. ecoCORK Acoustics Australia "eCORK" makes no representations or guarantees in relation to this Acoustic Test or the information and materials provided herein. The information and data collected herein are based on industry accepted testing methods. It is intended as descriptive of the performance characteristics and capabilities of eCORK acoustic underlays and does not certify for a specific project. Although all efforts are taken to include accurate up to date information, without prejudice to the generality of this paragraph, eCORK does not guarantee or warrant that the information in this Acoustic Test is complete, true, accurate or non-misleading. This Acoustic Test was provided solely for information purposes. You should not act upon information without consulting eCORK or an appropriate Acoustical Consultant. Whilst these tests provide expected results, the performance of the product can vary depending on many variables such as but not limited to building design, floor materials and density, room layout and installation method.

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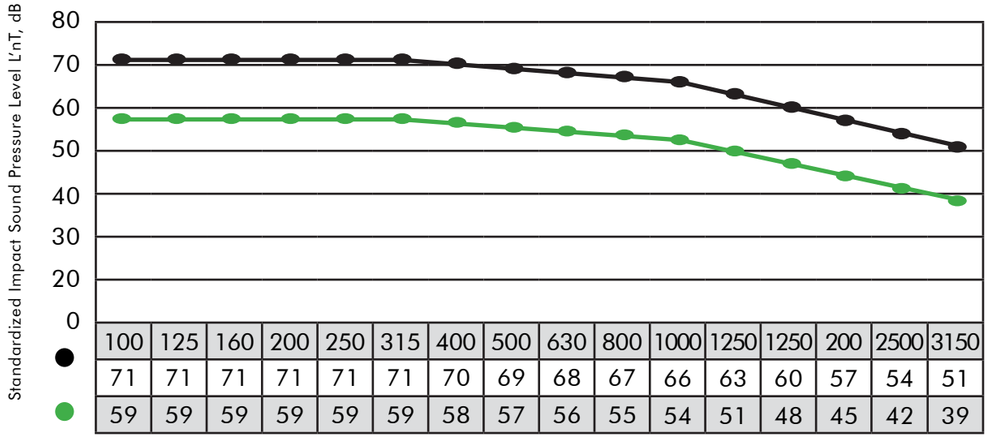
ACOUSTIC TEST

Engineered Timber Adhered Over **ecoCORK-MF3**

Constructions: 200mm Concrete slab. Concrete ceiling below. No suspended ceiling.
15mm Engineered Timber, adhered over **ecoCORK-MF3** 3mm Acoustic Underlay.

1



	100	125	160	200	250	315	400	500	630	800	1000	1250	1250	200	2500	3150
●	71	71	71	71	71	71	70	69	68	67	66	63	60	57	54	51
●	59	59	59	59	59	59	58	57	56	55	54	51	48	45	42	39

Results

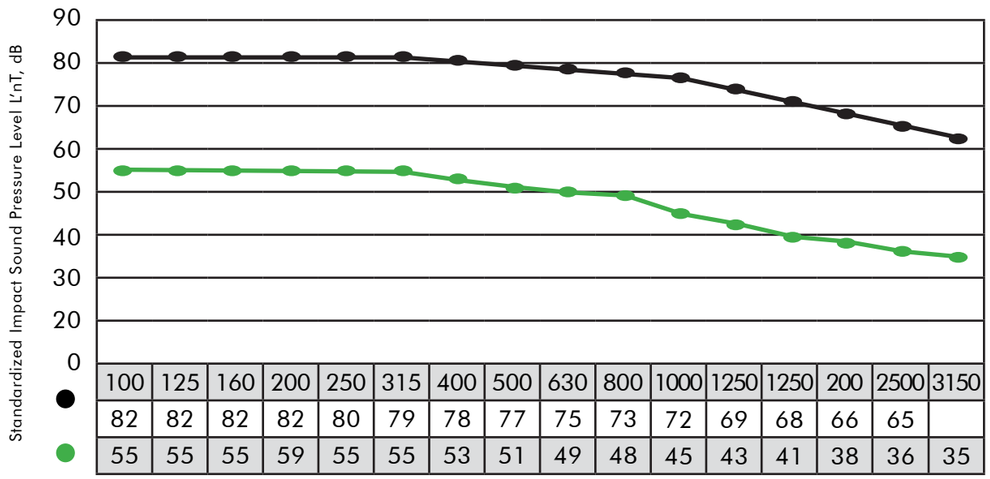
● Bare Slab ● 15mm Eng eCORK-MF3

Bare Slab L'nT,w	eCORK-MF3 L'nT,w	Improvement	BCA Compliance	AAAC Rating
69	57	12 dB	YES	3 Star

Engineered Timber Adhered Over **ecoCORK-MF3**

Constructions: 140mm Concrete slab. Concrete ceiling below. No suspended ceiling.
10mm Engineered Timber, adhered over **ecoCORK-MF3** 3mm Acoustic Underlay.

2



	100	125	160	200	250	315	400	500	630	800	1000	1250	1250	200	2500	3150
●	82	82	82	82	80	79	78	77	75	73	72	69	68	66	65	
●	55	55	55	59	55	55	53	51	49	48	45	43	41	38	36	35

Results

● Bare Slab ● 15mm Eng eCORK-MF3

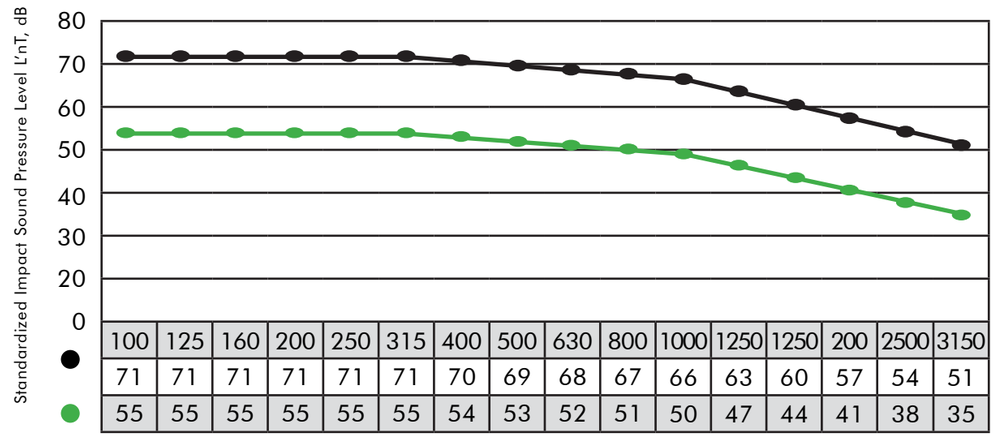
Bare Slab L'nT,w	eCORK-MF3 L'nT,w	Improvement	BCA Compliance	AAAC Rating
78	52	26 dB	YES	5 Star

ACOUSTIC TEST

Engineered Timber Floated Over **ecoCORK-MF5**

Constructions: 200mm Concrete slab. No suspended ceiling.
15mm Engineered Timber, floated over **ecoCORK-MF5** 5mm Acoustic Underlay.

3



	100	125	160	200	250	315	400	500	630	800	1000	1250	1250	200	2500	3150
●	71	71	71	71	71	71	70	69	68	67	66	63	60	57	54	51
●	55	55	55	55	55	55	54	53	52	51	50	47	44	41	38	35

Results

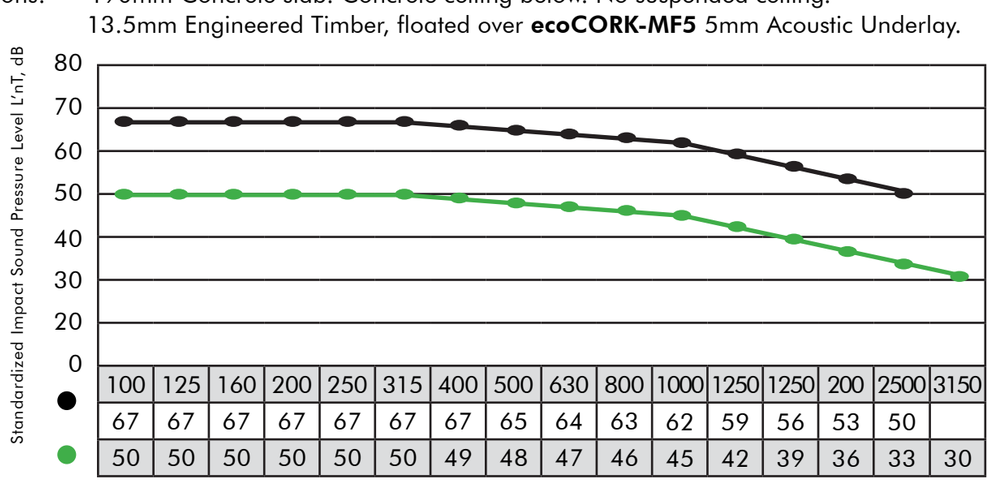
● Bare Slab ● 14mm Eng eCORK-MF5

Bare Slab L'nT,w	eCORK-MF5 L'nT,w	Improvement	BCA Compliance	AAAC Rating
69	53	16 dB	YES	4 Star

Engineered Timber Floated Over **ecoCORK-MF5**

Constructions: 190mm Concrete slab. Concrete ceiling below. No suspended ceiling.
13.5mm Engineered Timber, floated over **ecoCORK-MF5** 5mm Acoustic Underlay.

4



	100	125	160	200	250	315	400	500	630	800	1000	1250	1250	200	2500	3150
●	67	67	67	67	67	67	67	65	64	63	62	59	56	53	50	
●	50	50	50	50	50	50	49	48	47	46	45	42	39	36	33	30

Results

● Bare Slab ● 14mm Eng eCORK-MF5

Bare Slab L'nT,w	eCORK-MF5 L'nT,w	Improvement	BCA Compliance	AAAC Rating
65	48	17 dB	YES	4 Star

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