

SOUND INSULATION SLAB

Acoustic insulation for internal walls and floors



SOUND INSULATION SLAB

ROCKWOOL Sound Slab is used to create quiet, peaceful and comfortable spaces in both residential and commercial environments.

Being made from stone, ROCKWOOL insulation absorbs sound waves and reduces vibration due to its density, a non-directional fibre orientation and an open porous structure; trapping and preventing sound waves from traveling through it. ROCKWOOL insulation is also non-combustible, able to withstand temperatures in excess of 1000°C.





Description

ROCKWOOL Sound Insulation Slab has been designed for use in internal and separating walls and floors, reducing noise from adjacent properties, and from other rooms within the same dwelling.

Noise is reduced by ROCKWOOL Sound Slab in two distinct ways, firstly by reducing the transmission of sound waves through the air, and secondly through damping of vibration based impact noise travelling through a structure. Details of the level of sound reduction that can be achieved are outlined in the application section below.

Sound Insulation Slab is made from stone wool and is non-combustible, awarded the highest Euroclass fire rating of A1, able to withstand temperatures of above 1000°C. As well as acting as a barrier to fire, ROCKWOOL stone wool insulation also emits no toxic smoke.

Advantages

- Provides noise reduction - Quiet Mark™ approved
- Non-combustible stone wool with a Euroclass A1 fire rating
- Water repellent and vapour permeable - resists rot and mould
- Patented FLEXI Edge® for friction fitting
- Quick and easy to install, no gaps and minimal waste
- Dimensionally stable and durable, maintaining performance over time
- Produced from sustainable, renewable volcanic rock

Applications

Installation of ROCKWOOL Sound Slab is made quick and easy with the patented FLEXI Edge®, which enables friction fitting without the need for cutting, and without leaving performance sapping gaps. The durability and dimensional stability of stone wool means that ROCKWOOL insulation stays firmly in place without support.

Performance

Building regulations – Acoustics: Approved document E

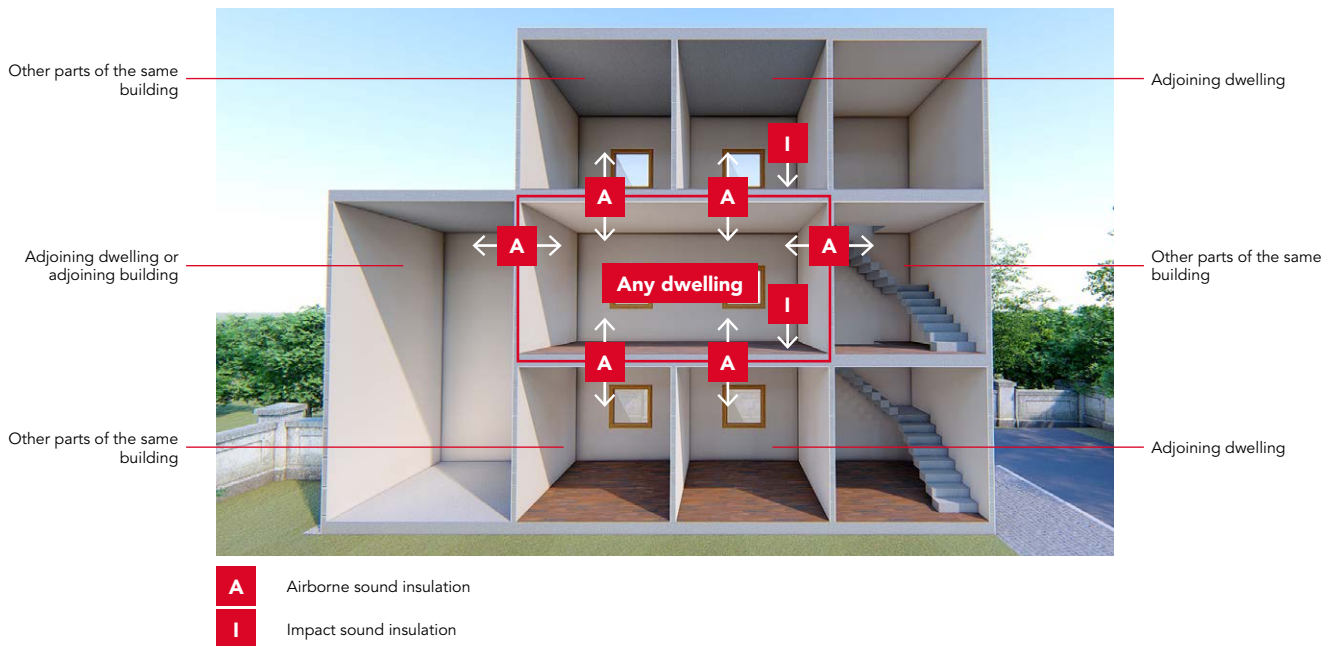
Approved document E (resistance to the passage of sound) was introduced to the Building Regulations in 2003 and sets out acoustic performance for new build residential housing, schools and other construction types.

Part E also brought about pre-completion testing. For new buildings, the separating wall build-ups in this section comply with Robust Details, which avoids pre-completion testing, each of these systems carries a robust detail reference.

Overview of requirements

The diagram below summarises the areas of a building to which the regulations apply.

The minimum required performance standards are outlined in the following tables. The terms $D_{nT,w}$ and $L'_{nT,w}$ relate to on-site measurements, and include "flanking transmission". Also, the corrective term C_{tr} adjusts for poor performance at lower frequencies. When looking at laboratory-tested R_w and $L_{n,w}$ figures, these should offer an approximate improvement over the figures below of at least 15dB to help ensure compliance with on-site testing.



Performance standards; protection against noise from other parts of a building, and adjoining buildings:

Separating construction	Airborne sound insulation $D_{nT,w} + C_{tr}$ dB		Impact sound insulation $L'_{nT,w}$ dB	
	New build	Change of use	New build	Change of use
Walls	45 (43*)	45	-	-
Floors & stairs	45	43	62	64

*Lower limit applies only to 'rooms for residential purposes'.

Protection against sound within a dwelling-house (England & Wales Only)

Internal walls between a bedroom and other rooms, as well as internal floors, should be designed and constructed to provide a reasonable resistance to sound. The minimum required performance standards are given in terms of laboratory values. Pre-completion site testing is not required.

Note that this requirement does not apply to:

1. Internal walls that contain a door
2. Internal walls that separate an en-suite from the associated bedroom
3. Existing walls and floors in a material change of use.

Performance standards; protection against noise from within the same dwelling:

Element	Airborne Sound Insulation R_w dB
Walls	40 (min)
Floors	40 (min)

Technical information

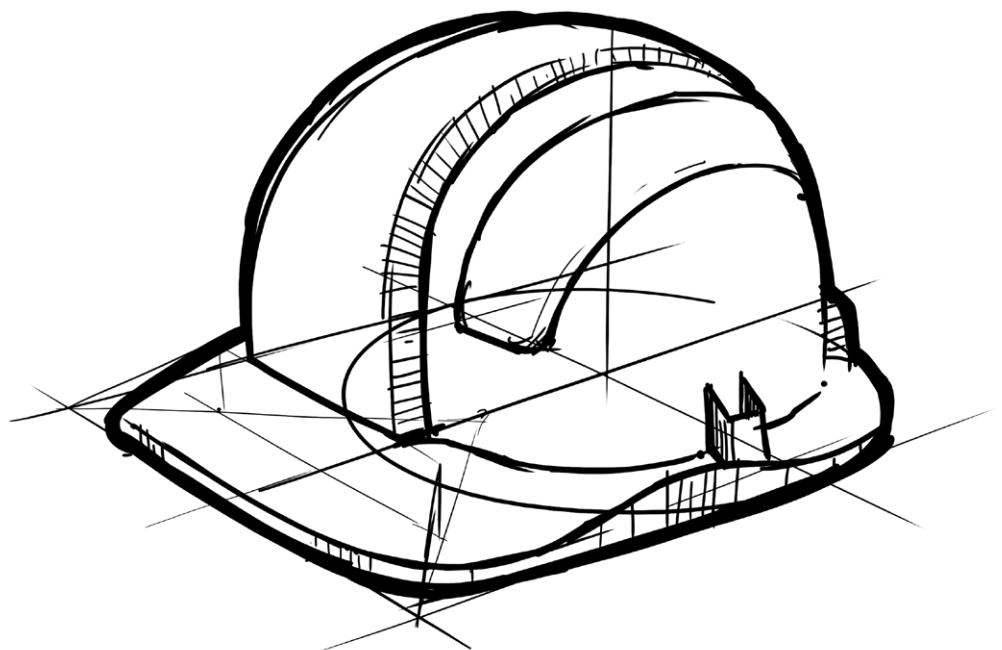
Product properties

Durability

Non-hygroscopic (does not attract water), highly durable and inorganic. Provides no food source to sustain vermin, and does not encourage growth of mold, fungi or bacteria.

Water repellence and vapour resistivity

ROCKWOOL Insulation products work with the fabric of the building, preventing water from penetrating, but allowing moisture vapour to pass through. Vapour resistivity of 5.9 MNs/gm.



Installation

ROCKWOOL Sound Slab applications

This guide gives an overview of the key constructions for domestic sound proofing. Where appropriate, references for robust details are included, and system performance will meet or exceed those of the building regulations listed above. For further information on acoustic regulations, systems and construction details visit www.rockwool.com to download the Acoustic Regulation Guides.

Separating walls

1. Separating timber framed walls without sheathing - Robust Details reference - E-WT-1

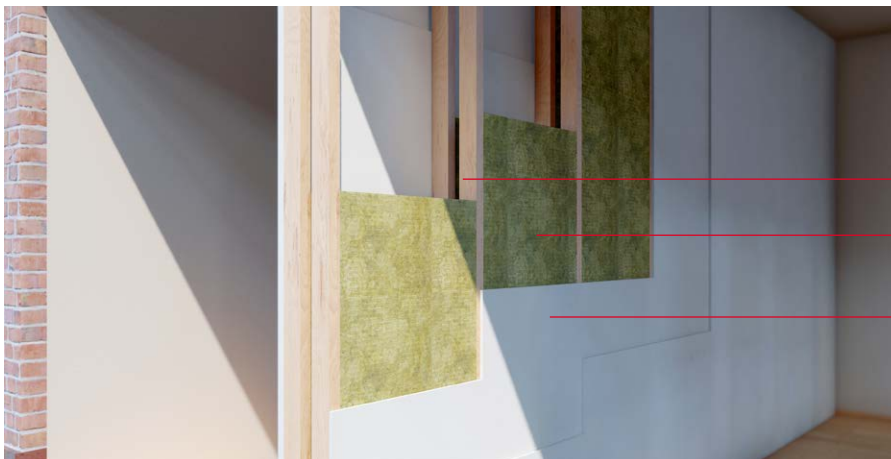
- Without sheathing boards
- Twin timber frames

2. Separating timber framed walls with sheathing - Robust Details reference - E-WT-2

- With sheathing boards
- Twin timber frames

Construction details:

- Wall Width: a minimum of 240mm between inner faces of wall linings and a 50mm gap between the two frames
- Wall Lining: 2 or more layers of gypsum based board (total nominal mass per unit area 22kg/m²) both sides
- ROCKWOOL Sound Slab: 70mm in both wall frames
- Maximum Height: 3 metres



Minimum system performance

Airborne noise reduction (dB)	45
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Twin timber studs

70mm ROCKWOOL Sound Slab

Two layers gypsum based board
(22kg/m³ per side)

Party Wall Thermal Bypass - achieving zero U-value heat loss

Approved Documents L1A & L2A of England and Wales's Building standards recognise that where party cavity walls between connected buildings are untreated, considerable heat can escape through them. A key feature of the SAP calculation is that party wall cavities should have a zero heat loss (U-value 0.0W/m²K). If these cavities are left unfilled and unsealed, a U-value of 0.5W/m²K will automatically be applied making it extremely difficult to meet the TER compliance. The following table shows the different constructions and the resulting U-values:



Party wall construction	U-value W/m ² K
Solid	0.00
Unfilled cavity with NO effective edge sealing	0.50
Unfilled cavity with effective edge sealing around all exposed edges and in line with insulation layers in abutting elements	0.20
Fully filled cavity with effective edge sealing around all exposed edges and in line with the insulation layers in abutting elements	0.00



Minimum system performance

Airborne noise reduction (dB) 45

Party Wall Cavity Barrier

ROCKWOOL Sound Slab (fully filling cavity)

Two layers gypsum based board (22kg/m² per side)

3. Separating steel framed walls - Robust Details reference - E-WS-1

Twin metal frames for use in lightweight steel frame houses and flats/apartments.

Construction details:

- Wall Width: a minimum of 200mm between inner faces of wall linings
- Wall Lining: 2 or more layers of gypsum based board (total nominal mass per unit area 22kg/m²) both sides
- ROCKWOOL Sound Slab: a minimum of 50mm fully filling the cavity between frames (this thickness will vary pending as built cavity width)
- Maximum Height: 3 metres

Note: The steel frame profiles shown are indicative only. Other profiles are acceptable.



4. 'Change of use' separating wall - Independent panel to existing masonry wall

Construction details:

- Existing Masonry: if at least 100mm and plastered both sides, apply one side only. Otherwise apply both sides
- Two layers of board min. 20 kg/m²
e.g. 2 x 12.5mm acoustic plasterboard
- Supporting timber or metal framework set min. 10mm away from face of existing masonry
- ROCKWOOL Sound Slab 50mm within frame



Separating Floors

5. New build separating timber floors

Construction details:

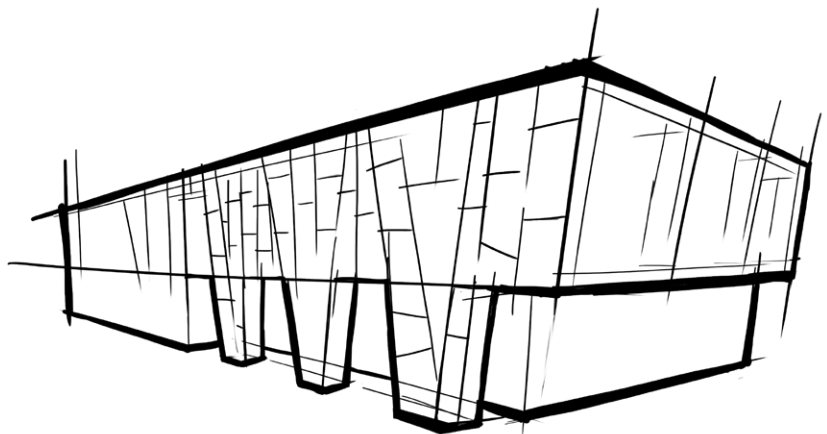
- 18mm of tongue and groove flooring grade chipboard
- 15mm acoustic rated plasterboard with a minimum mass of 12.5 kg/m² mass per unit area
- 50mm of ROCKWOOL ROCKFLOOR resilient layer
- 15mm of OSB on 200 × 50mm timber joists at 400mm centres
- 100mm of ROCKWOOL Sound Slab between joists
- Resilient bars fixed at right angles to joists at 400mm centres
- Ceiling Finish: 2 layers of 15mm acoustic rated plasterboard (26kg/m²)
- Pre-completion site testing required on site



Minimum system performance

Airborne noise reduction (dB)	45
Impact noise reduction (dB)	62

- 18mm of tongue and groove flooring grade chipboard
- 50mm ROCKWOOL Acoustic ROCKFLOOR
- 100mm ROCKWOOL Sound Slab
- Resilient bars



6. Separating floors (material change of use) ADE Section 4

ADE Construction guidance specifications for material change of use separating timber floor treatment 2: Platform floor with absorbent material.

Construction details:

- A minimum of 2 layers of board material to provide a total mass of 25kg/m², spot bonded together with joints staggered (eg 18mm of tongue and groove flooring grade chipboard and 19mm of plasterboard plank)
- 25mm (min) ROCKWOOL ROCKFLOOR resilient layer
- The floating layer to be loose laid over the ROCKFLOOR
- Existing floor deck on existing timber floor joists
- 100mm of ROCKWOOL Sound Slab
- Existing ceiling should be upgraded to 20kg/m². If the existing ceiling is of lath and plaster it should be retained, providing it satisfies Part B - Fire Safety (if in doubt, underdraw the ceiling with an extra layer of 12.5mm fire rated plasterboard and screw into the joists)
- Pre-completion site testing



Minimum system performance

Airborne noise reduction (dB)	43
Impact noise reduction (dB)	64

- 18mm tongue and groove flooring grade chipboard
- 25mm ROCKWOOL Acoustic ROCKFLOOR
- 100mm ROCKWOOL Sound Slab
- Resilient bars

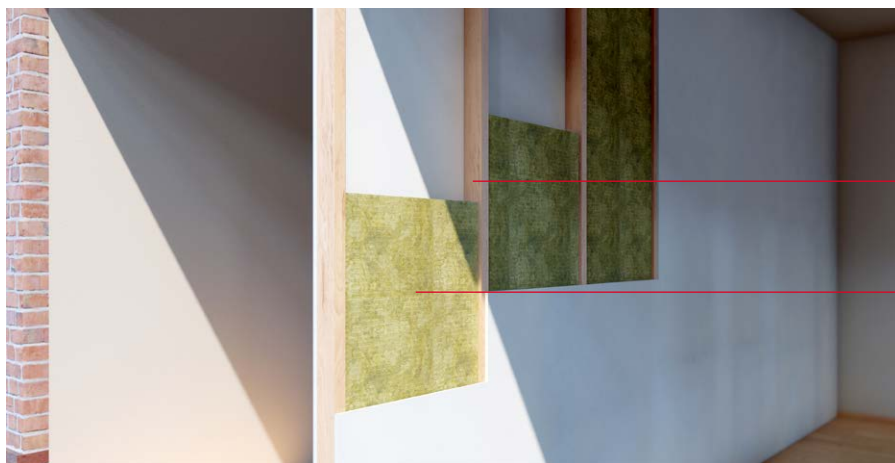
Internal Walls

7. Internal walls - timber stud partition

ROCKWOOL Sound Insulation Slab will provide both acoustic and fire benefits when used in partitions.

Construction details:

- Studs: 38×75 timber studs at 600mm centres
- Facings: 1 layer 12.5mm acoustic rated plasterboard (11 kg/m²) each side
- Insulation: a minimum of 50mm of ROCKWOOL Sound Slab
- Maximum Height: 3 metres



Minimum system performance

Airborne noise reduction (dB) 40

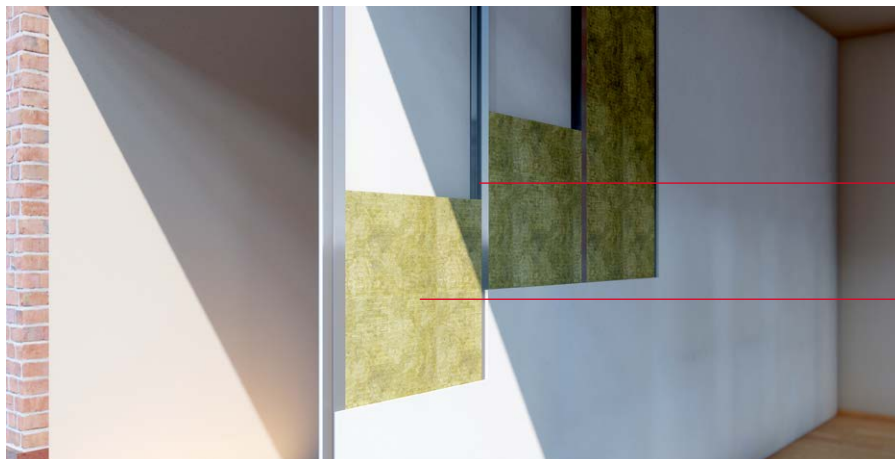
Timber stud

50mm ROCKWOOL Sound Slab

8. Internal walls - metal stud partition

Construction details:

- Studs: 50mm metal studs at 600mm centres
- Facings: 1 layer of 12.5mm standard plasterboard (8kg/m²) each side
- Insulation: a minimum of 50mm of ROCKWOOL Sound Slab
- Maximum Height: 2.5 metres



Minimum system performance

Airborne noise reduction (dB) 41

Metal stud

50mm ROCKWOOL Sound Slab

Internal Floors

ROCKWOOL systems for compliance with Approved Document E Section 5 - internal floors, within the same dwelling to meet part E2: R_w 40 dB.

9. Timber joist internal floor

Construction details:

- 18mm of tongue and groove flooring grade chipboard with a mass per unit area of 12.4 kg/m²
- Timber joists at 400mm centres
- 100mm of ROCKWOOL Sound Slab between joists
- A single layer of standard 12.5mm plasterboard ceiling with a mass per unit area of 8kg/m²



Minimum system performance

Airborne noise reduction (dB) 40

10. Metal joist internal floor

Construction details:

- Metal floor joists at 400 mm centres
- Timber floor minimum mass per unit area 15 kg/m² (e.g. 22mm chipboard)
- Single layer plasterboard, minimum mass per unit area 10 kg/m² (e.g. 15mm standard plasterboard)
- Minimum 100mm ROCKWOOL Sound Slab between joists



Minimum system performance

Airborne noise reduction (dB) 40

Product range

Thickness (mm)	Width (mm)	Length (mm)	Slabs per Pack	Coverage per Pack (m ²)
50	600	1200	12	8.64
50	400	1200	12	5.76
70	600	1200	8	5.76
100	600	1200	6	4.32
100	400	1200	6	2.88

Notes:

Sustainability

As an environmentally conscious company, ROCKWOOL promotes the sustainable production and use of insulation and is committed to a continuous process of environmental improvement.

All ROCKWOOL products provide outstanding thermal protection as well as four added benefits:



Fire resistance



Acoustic comfort



Sustainable materials



Durability

Environment

Made from a renewable and plentiful naturally occurring resource, ROCKWOOL insulation saves fuel costs and energy in use and relies on trapped air for its thermal properties.

ROCKWOOL insulation does not contain (and has never contained) gases that have ozone depletion potential (ODP) or global warming potential (GWP).

ROCKWOOL is approximately 97% recyclable. For waste ROCKWOOL material that may be generated during installation or at end of life, we are happy to discuss the individual requirements of contractors and users considering returning these materials to our factory for recycling.

Health & Safety

The safety of ROCKWOOL stone wool is confirmed by current UK and Republic of Ireland health & safety regulations and EU directive 97/69/EC: ROCKWOOL fibres are not classified as a possible human carcinogen.

A Material Safety Data Sheet is available and can be downloaded from www.rockwool.co.uk to assist in the preparation of risk assessments, as required by the Control of Substances Hazardous to Health Regulations (COSHH).



Interested?

For further information, contact the Technical Solutions Team on 01656 868490 or email technical.solutions@rockwool.co.uk

Visit www.rockwool.co.uk to view our complete range of products and services.

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The ROCKWOOL Trademark

ROCKWOOL® - our trademark

The ROCKWOOL trademark was initially registered in Denmark as a logo mark back in 1936. In 1937, it was accompanied with a word mark registration; a registration which is now extended to more than 60 countries around the world.

The ROCKWOOL trademark is one of the largest assets in the ROCKWOOL Group, and thus well protected and defended by us throughout the world.

If you require permission to use the ROCKWOOL logo for your business, advertising or promotion. You must apply for a Trade Mark Usage Agreement. To apply, write to:
marketcom@rockwool.com.

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