2003 EDITION

ACOUSTICS

part E

YOUR GUIDE TO THE NEW ACOUSTIC REGULATIONS

ROCKWOOL
FIRESAFE INSULATION

ROCKWOOL PERFORMANCE

NATURE'S POWER

We've harnessed the awesome power of nature to bring you the exceptional performance of our unique insulation. Rockwool is manufactured from molten volcanic rock. It is not only a naturally efficient acoustic insulation material, it is also highly regarded for its inherent thermal properties and its excellent fire protection performance.

Rockwool has been proven over many years to be the ideal insulation material for all applications where noise attenuation or absorption is needed – in domestic, commercial, manufacturing, industrial and environmental situations.

Walls. Roofs. Floors. Ceilings. Unlike other insulation, Rockwool is suitable for every application.
The key to Rockwool is its flexibility.

ROCKWOOL SOUND SOLUTIONS

CONTENTS

SUMMARY OF THE MAIN CHANGES IN THE 2003 EDITION OF PART E

PROTECTION AGAINST SOUND FROM OTHER PARTS OF THE BUILDING AND ADJOINING BUILDINGS.

This requirement now includes 'rooms for residential purposes' in addition to dwelling houses and flats.

'Room for residential purposes' covers a room or suite of rooms, which is not a dwelling house or flat and which is used by one or more persons to live and sleep in, including rooms in hotels, hostels, boarding houses, halls of residence and residential homes. This term excludes rooms in hospitals or similar establishments used for patent accommodation.

For the first time there is a requirement for pre-completion site testing. The onus is upon the builder to demonstrate that required levels of sound insulation are achieved.

PROTECTION AGAINST SOUND WITHIN A DWELLING HOUSE

A new requirement setting standards for internal walls and floors in dwelling houses flats and rooms for residential purposes. Pre-completion site testing is not required. Compliance is based upon laboratory testing.

REVERBERATION IN THE COMMON PARTS OF BUILDINGS CONTAINING FLATS OR ROOMS FOR RESIDENTIAL PURPOSES.

A new requirement to control reverberation in the common parts of buildings containing flats and 'rooms for residential purposes'. Pre-completion site testing is not required.

ACOUSTIC CONDITIONS IN SCHOOLS

New schools are now controlled under the Building Regulations. This includes sound insulation, reverberation time and indoor ambient noise levels.

The normal way of satisfying requirement E4 will be to meet the values for sound insulation, reverberation time and internal ambient noise which are given in section 1 of Building Bulletin 93 'The Acoustic Design of Schools' produced by DfES. (IBSN: 0 11 271105 7).

WE'RE YOUR SOUNDING BOARD

Got a query relating to Part E? For sound technical advice, consult our experts by calling the Rockwool Technical Helpline: 0871 222 1780 For sound technical advice on ceilings and acoustic wall absorbers, call Rockfon on 01656 864696.

ROCKWOOL SOLUTIONS

PART E

Approved Document E, 2003 Edition – Resistance to the Passage of Sound

A GUIDE THAT MAKES PART E SOUND EASIER

The New Approved Document E, 2003 Edition will be implemented on 1st July 2003.

This will apply to houses, flats, schools, hotel and hostel types of accommodation constructed as new build or formed by material change of use.

For new houses & flats only, pre completion testing has been postponed until 1st January 2004.

This solutions guide provides examples of constructions including Rockwool and Rockfon products that meet the requirements of the New Approved Document E (ADE).

The guide should be used in conjunction with Approved Document E, and due attention be paid to the flanking noise and other requirements outlined therein.

ROCKWOOL SOUND SOLUTIONS

ROCKWOOL SOLUTIONS

WORKMANSHIP

IMPORTANCE OF DESIGN AND GOOD WORKMANSHIP

In all cases, good design and installation practice should be followed.

It is imperative that measures to eliminate or minimise flanking sound transmission are considered at the design stage and that products are installed correctly by the builder.

Failure to do so may lead to limitation of acoustic performance and the requirements of the Building Regulations not being met.

The New Approved Document E provides advice with respect to flanking details, and the appropriate Rockwool gap filling, joint sealing, fire stopping and cavity closing products to achieve compliance are detailed within this guide.

ROBUST DETAILS

PROPOSED ROBUST DETAILS

It is anticipated that Approved Document E will be amended from 1st January 2004 to allow Robust Standard Details (RSD'S) to be used for new build wall and floor applications.

The House Builders Federation has commissioned a programme of field testing to establish a set of robust constructions. Rockwool limited is actively involved in this programme.

Compliance with the proposed RSD's will negate the requirement for pre-completion testing of new build constructions.

The Proposed RSD's are based upon meeting sound test values in excess of those required by Approved Document E.

This guide will highlight proposals for RSD's involving Rockwool products.

ROCKWOOL SOUND SOLUTIONS

REQUIRED PERFORMANCE STANDARDS

The requirements of E1 may be satisfied by meeting the sound insulation values set out Tables 1a and 1b of Approved Document E, a summary of which are shown in the tables below. Compliance is established by on site pre-completion testing.

The requirements of E2 for internal wall and floor constructions will be satisfied by achieving the sound insulation values set out in Table 2. These are based upon laboratory tested values. There is no requirement for pre-completion site testing for compliance with E2.

The new performance requirements are considerably more onerous than those set out in the 1991 Edition. This is due to the addition of a low frequency correction factor (Ctr) which must be applied to the pre-completion measure of airborne sound. As a consequence, the new values will be more difficult to achieve for many types of construction.

TABLE 1A

Dwelling – houses and flats – performance standards for separating walls, separating floors and stairs that have a separating function.

	Airborne Sound Insulation $D_{nT,w} + C_{tr}$ dB (Minimum values)	Impact Sound Insulation $L'_{nT,w}$ dB (Maximum values)
Purpose built dwelling – houses and flats Walls	45	-
Floors and stairs	45	62
Dwelling – houses and flats formed by material change of use Walls	43	-
Floors and stairs	43	64

TABLE 1B

Rooms for residential purposes – performance standards for separating walls, separating floors and stairs that have a separating function.

	Airborne Sound Insulation $D_{nT,w}$ + Ctr dB (Minimum values)	Impact Sound Insulation $L'_{nT,w}$ dB (Maximum values)
Purpose built rooms for residential purposes Walls	43	-
Floors and stairs	45	62
Rooms for residential purposes formed by material change of use Walls	43	-
Floors and stairs	43	64

TABLE 2

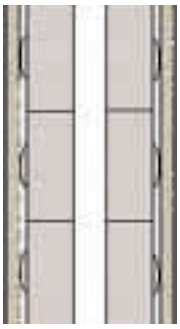
Laboratory values for new internal walls and floors within dwelling – houses, flats and rooms for residential purposes, whether purpose built or formed by material change of use.

	Airborne Sound Insulation R_w dB (Minimum values)
Walls	40
Floors and stairs	40

- *Associated flanking constructions should be followed*
- *The person carrying out the building work should arrange for sound insulation testing to be carried out by a test body with appropriate third party accreditation*

SEPARATING WALLS

MASONRY SEPARATING WALL CONSTRUCTION

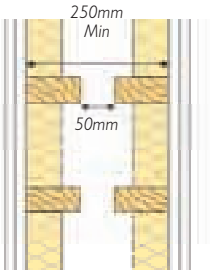


Basic Construction

RSD candidate cavity masonry
Average $D_{nT,w}$ + C_{tr} 50dB

- 275mm cavity wall (minimum 75mm cavity).
- Block density 1850 – 2300Kg/m³.
- 32mm Rockwool Rockliner fixed with adhesive dabs both sides.
- Block density less than 1850Kg/m³ use 42mm Rockwool Rockliner.
- Flanking wall densities and finish requirements – see flanking details page 10.

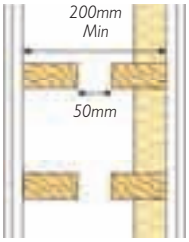
TIMBER FRAME SEPARATING WALL CONSTRUCTIONS



Construction 1*

RSD candidate timber frame wall
Average $D_{nT,w}$ + C_{tr} 50dB

- Nominal 90mm x 40mm studs @ 600mm centres. 50mm spacing between frames (min). Linings to be 250mm apart.
- Each lining to consist of 2 layer plasterboard (overall 21Kg/m²).
- Two layers 60mm (min) Rockwool Flexi Slab.



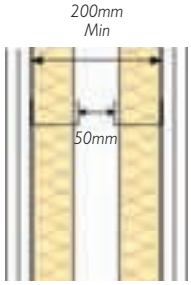
Construction 2*

ADE Section 2 : Wall type 4 : Framed walls with absorbent material
Min $D_{nT,w}$ + C_{tr} 45dB

- Nominal 90mm x 40mm studs @ 600mm centres. 50mm spacing between frames.
- Each lining to consist of 2 layer plasterboard (overall 20Kg/m²).
- One layer 50mm (min) Rockwool Flexi Slab.

*****These constructions may also be used with cavity sheathing boards*

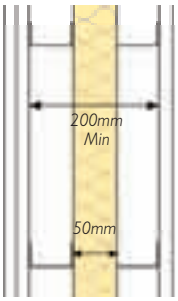
METAL FRAME SEPARATING WALL CONSTRUCTIONS



Construction 1

RSD candidate metal frame wall
Average $D_{nT,w}$ + C_{tr} 50dB

- Minimum 75mm lightweight metal studs @ 600mm centres.
- Each lining to consist of 2 layer plasterboard (overall 23Kg/m²).
- Two layer 50mm (min) Rockwool Flexi Slab.



Construction 2

RSD candidate metal frame wall
Average $D_{nT,w}$ + C_{tr} 50dB

- Minimum 75mm lightweight metal studs @ 600mm centres.
- Each lining to consist of 2 layer plasterboard (overall 23Kg/m²).
- Single layer 50mm (min) Rockwool Flexi or RWA 45 Slab.

Flanking Details – See Page 10-12

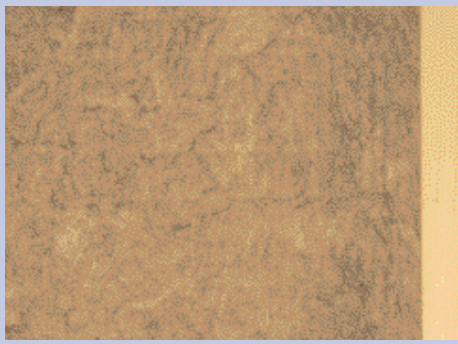
ROCKWOOL SOLUTIONS

FLEXI

SQUEEZE

AND FIT

WITH EASE!



The ingenious volcanic rock slab with the flexi edge that makes installation so easy.

- **Unique flexi edge – accurate fit, every time.**
- **Multi-application – suits metal and timber studs.**
- **No waste.**
- **Excellent thermal, acoustic and fire properties.**
- **Easy to handle and install without gaps.**

ROCKWOOL
SOUND SOLUTIONS

ROCKWOOL SOLUTIONS

ROCKFLOOR

ACOUSTIC PERFORMANCE

IS ITS STRENGTH

Chipboard being applied as a floating floor construction

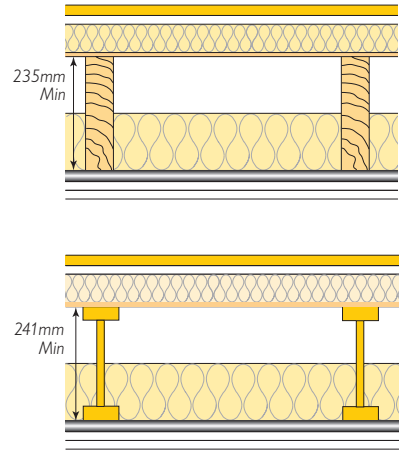
Rockwool Rockfloor is a tissue-faced, high compressive strength Rockwool board specially formulated for the acoustic insulation of intermediate floors. Manufactured in a wide range of thicknesses, it is easy to lay and its flexibility allows for small irregularities in the floor.

- **Excellent acoustic and thermal properties.**
- **High compressive resistance.**
- **Easy handling and fitting.**
- **No acoustic or thermal bridging.**

ROCKWOOL SOUND SOLUTIONS

SEPARATING FLOORS

TIMBER SEPARATING FLOOR CONSTRUCTIONS

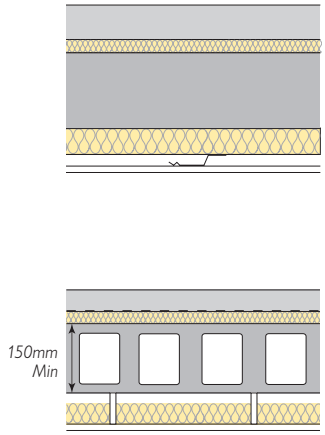


RSD candidate timber floor
Average $D_{nT,w}$ + C_{tr} 50dB
Average $L'_{nT,w}$ 57dB

Platform floor – timber joists or timber joist engineered I beam.

- T & G Chipboard 18mm (min 15 Kg/m²) – bonded to:
  - Plasterboard layer (13Kg/m²).
  - Rockfloor acoustic insulation, (min) 50mm.
  - Plywood / OSB base.
  - Timber joists/or engineered I beam @ 400mm centres.
  - Rockwool Roll or Flexi (min) 100mm.
  - Resilient bar @ 400mm centres. 90° to joist direction.
  - Two layers of plasterboard (min) 23Kg/m².

CONCRETE SEPARATING FLOOR CONSTRUCTIONS



Screeded concrete floor

Construction 1

ADE section 3: Floor type 2
Minimum $D_{nT,w}$ + C_{tr} 45dB
Maximum $L'_{nT,w}$ 62dB

- 65mm (min) sand cement screed (reinforced) or alternative 40mm (min) proprietary screed.
- Separating layer - building paper.
- Rockfloor acoustic insulation, (min) 25mm.
- Dense concrete floor slab. (min) 300Kg/m³.
- Rockwool Flexi Slab (min) 50mm.
- Ceiling options - see Option 2 below.

Construction 2

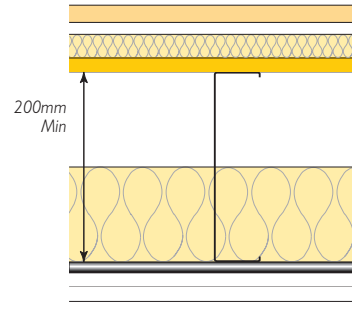
RSD candidate concrete floor
Average $D_{nT,w}$ + C_{tr} 50dB
Average $L'_{nT,w}$ 57dB

- As Construction 1 incorporating a 300Kg/m³ pre-cast floor slab.
- Ceiling options 1, 2 or 3.

CEILING OPTIONS

Option 1 *Any suspended metal ceiling system (min) 85mm void. One layer of plasterboard (min) 10Kg/m².*
Option 2 *50 x 50mm softwood battens @ 600mm c/c. Resilient bars @ 600mm c/c. One layer of plasterboard (min) 10Kg/m².*
Option 3 *70mm deep metal frame ceiling system. One layer of plasterboard (min) 12Kg/m².*

METAL SEPARATING FLOOR CONSTRUCTIONS+



Platform floor – Metal joists

- T & G Chipboard 18mm (min 15Kg/m²) – bonded to:
  - Plaster board layer (13Kg/m²).
  - Rockfloor acoustic insulation, (min) 50mm.
  - Plywood / OSB base.
  - Steel joists @ 400mm centres.
  - Rockwool Roll or Flexi (min) 100mm.
  - Resilient bar @ 400mm centres. 90° to joist direction.
  - Two layers of plasterboard (min) 23Kg/m².

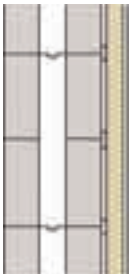
+*This Rockwool solution has the potential to meet the requirements set out in Part E.*

Flanking Details – See Page 10-12

SEPARATING WALLS

CONSTRUCTIONS FOR DWELLING – HOUSES AND FLATS FORMED BY MATERIAL CHANGE OF USE

MASONRY SEPARATING WALL CONSTRUCTION



Basic Construction
Cavity wall+

- 275mm cavity wall (minimum 75mm cavity).
- Block density 1375 – 2300Kg/m³.
- 62.5mm Rockliner fixed with adhesive dabs applied to one side.
- Plasterboard on dabs (10Kg/m²) or dense plaster applied to other side of wall.

Solid wall
RSD candidate solid masonry wall
Average $D_{nT,w}$ + C_{tr} 50dB

- 215mm dense concrete blockwork (min) 1850Kg/m³.
- 32mm Rockliner fixed with adhesive dabs applied to both sides.
- Ensure that separating wall breaks the continuity of the inner leaf between dwellings.

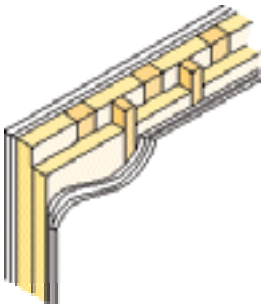
Solid wall+

- 215mm dense concrete blockwork (min) 1850Kg/m³.
- 62.5mm Rockliner fixed with adhesive dabs applied to one side.
- Plasterboard on dabs (10Kg/m²) or dense plaster applied to other side of wall.
- Ensure that the separating wall breaks the continuity of the inner leaf between dwellings.

Solid wall
ADE Section 4, wall treatment 1
Minimum $D_{nT,w}$ + C_{tr} 43dB

- 100mm (min) existing solid masonry wall plastered on both faces.
- Independent framework to be constructed which should not be in contact with separating wall. A gap of (min) 10mm should be left between the framework and separating wall. Depth of framework (min) 75mm.
- Rockwool Acoustic Slab (min) 67mm.
- 2 layers of plasterboard (min 20Kg/m²).

SEPARATING TIMBER FRAME WALL CONSTRUCTION+

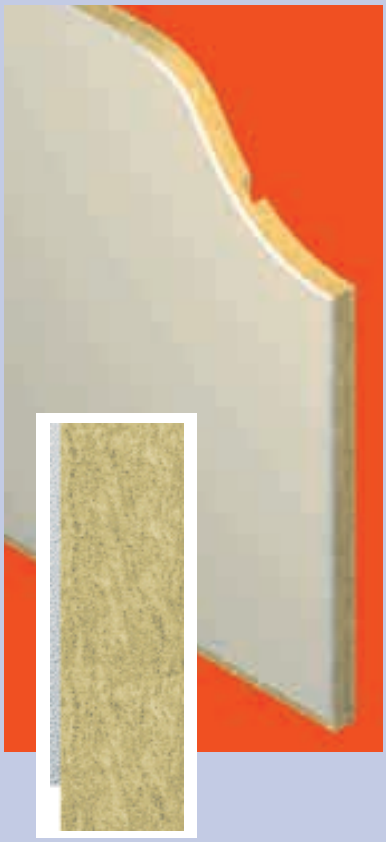


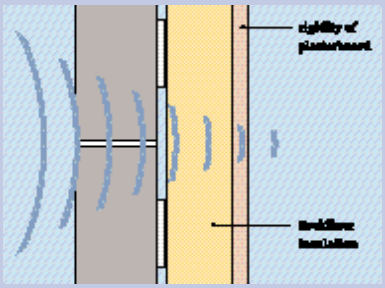
- Nominal 38mm x 57mm staggered studs at 400mm centres. 16mm (min) spacing between frames. No connections between frames.
- 47mm Rockwool Acoustic Slab or 50mm Rockwool Flexi slab applied between the studs of each frame.
- Each lining to consist of 2 layers of plasterboard (overall 20Kg/m²).

+These Rockwool solutions have the potential to meet the requirements set out in Part E.

ROCKWOOL SOLUTIONS

ROCKLINER





PERFORMANCE

Rockwool Rockliner is a laminate of Rockwool Insulation bonded to plasterboard for improved acoustic and thermal performance.

- **Unique acoustic and thermal integrity strip.**
- **Firesafe insulation.**
- **Easy to finish, install and decorate.**
- **Shark cutting tool for services chases.**

ROCKWOOL SOUND SOLUTIONS

ROCKWOOL SOLUTIONS

ROLL

TWIST THE ROCK

AND ROLL
IT'S THAT EASY!

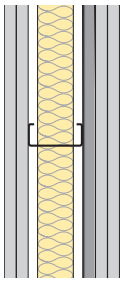
Nothing could be simpler than installing Rockwool volcanic rock roll.

- **Excellent acoustic and thermal performance.**
- **Higher density than lightweight glass fibre for superior fit.**
- **Non combustible.**
- **Easy to handle and install.**
- **Suitable to accurately fit between 400mm or 600mm Centre joists.**
- **Does not slump.**

SEPARATING WALLS

DWELLING HOUSES AND FLATS
FORMED BY MATERIAL CHANGE OF USE

SEPARATING METAL FRAME WALL CONSTRUCTION+

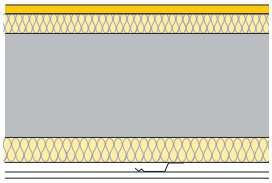


- Minimum 70mm lightweight metal studs @ 600mm centres.
- 50mm Rockwool Flexi Slab.
- Two layers of plasterboard (min 23Kg/m²) one side. Other side 2 layers of plasterboard (min 23Kg/m²) fixed to resilient bar.

SEPARATING FLOORS

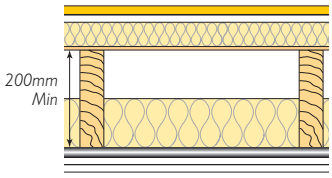
DWELLING HOUSES AND FLATS
FORMED BY MATERIAL CHANGE OF USE

PLATFORM FLOOR – CONCRETE+



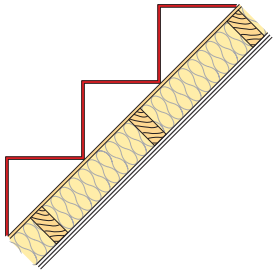
- T & G Chipboard 18mm (min) 15Kg/m².
- Rockfloor acoustic insulation, (min) 30mm.
- 1000g polyethylene vapour control layer.
- Dense concrete floor slab (min) 300Kg/m³.
- 50 x 50mm softwood timber battens at 600mm centres.
- Rockwool Flexi Slab (min) 50mm.
- Resilient bar @ 600mm centres. 90° to joist direction.
- One layer plasterboard (min) 10 Kg/m².

PLATFORM FLOOR – TIMBER JOISTS+



- T & G Chipboard 18mm (min) 15Kg/m² bonded to:
  - Plasterboard layer (13Kg/m²).
  - Rockfloor acoustic insulation, (min) 25mm.
  - Plywood / OSB base.
  - Timber joists @ 400mm centres.
  - Rockwool Roll or Flexi (min) 100mm.
  - Resilient bar @ 400mm centres, 90° to joist direction.
  - Two layers of plasterboard (min) 20Kg/m².

STAIR TREATMENT – ADE SECTION 4

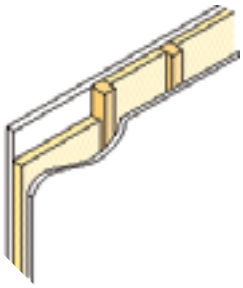


- Follow detail provided by diagrams 4-1 and 4-8 of ADE.
- Where there is no cupboard under the stair, an independent ceiling should be constructed below. (See floor treatment 1, ADE pages 54-58).
- Use Rockwool Flexi slab within the construction.

+*These Rockwool solutions have the potential to meet the requirements set out in Part E.*

INTERNAL WALLS AND FLOORS

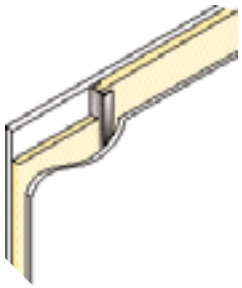
TIMBER STUD WALL CONSTRUCTION



ADE Section 5, internal wall type B
R_w 40dB

- Nominal 38mm x 75mm studs @ 600mm centres.
- Rockwool Acoustic Slab (min) 25mm.
- Single layer plasterboard (10Kg/m²) both sides.

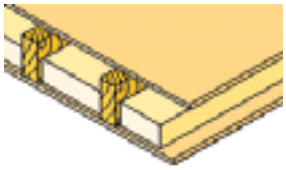
METAL STUD WALL CONSTRUCTION



ADE Section 5, internal wall type B
R_w 40dB

- Minimum 48mm lightweight metal studs @ 600mm centres.
- Rockwool Acoustic Slab (min) 25mm.
- Single layer plasterboard (10Kg/m²) both sides.

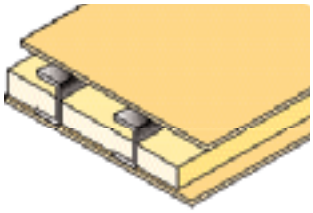
TIMBER FLOOR CONSTRUCTION



ADE Section 5, internal floor type C
R_w 40dB

- T & G Chipboard 18mm (min) 15Kg/m².
- Timber joists @ 400mm (min) centres.
- Rockwool Roll or Flexi slab (min) 100mm.
- Single layer plasterboard (10Kg/m²).

METAL FLOOR CONSTRUCTION



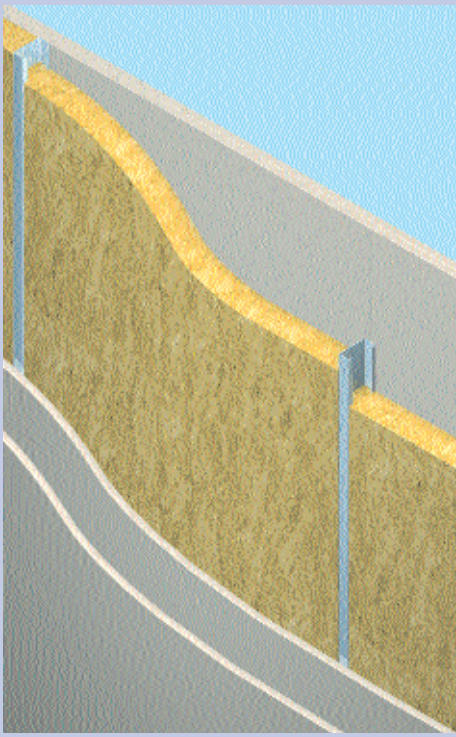
ADE Section 5, internal floor type C
R_w 40dB

- T & G Chipboard 18mm (min) 15Kg/m².
- Steel joists @ 400mm (min) centres.
- Rockwool Roll or Flexi slab (min) 100mm.
- Single layer plasterboard (10Kg/m²).

ROCKWOOL SOLUTIONS

ACOUSTIC SLAB

A SOUND SOLUTION



Rockwool acoustic slab is a high quality resin bonded semi-rigid slab designed to combine optimum acoustic and fire performance with easy fitting into both partition and floor constructions.

- **New slimmer 25mm thickness.**
- **Excellent acoustic absorption.**
- **Simple and fast installation.**
- **Optimum dimensions to suit metal and timber partitions.**
- **Suitable for continued performance – no sagging or slumping.**

ROCKWOOL SOUND SOLUTIONS

ROCKWOOL SOLUTIONS

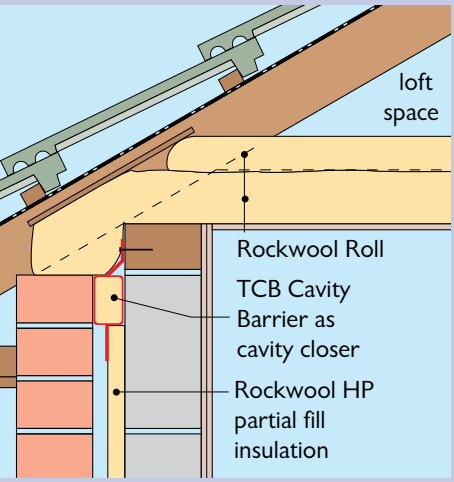
DPC

ACOUSTIC PARTY WALL DPC

(ADE Diagrams 2-5, 2-7, 2-9, 2-19, 2-21, 2-22, 2-23)

- Solution to junction of separating wall detail.
- Acoustic and fire stopping solution.
- Integral insulation dpc solution.
- Fully filling the cavity with Rockwool cavity wall insulation negates this requirement.

FIREPRO TCB CAVITY BARRIER



(ADE Diagrams 2-14, 2-26, 36)

CAVITY CLOSING AT EAVES LEVEL OF EXTERNAL WALLS.

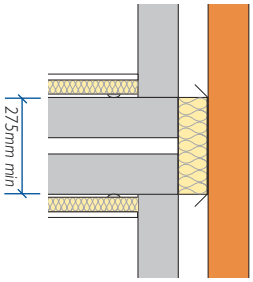
- Meets requirements of Building Regulations Part E and Part B.
- Simple and fast to install.
- Maintenance free.

ROCKWOOL SOUND SOLUTIONS

FLANKING DETAILS – SEPARATING MASONRY WALLS

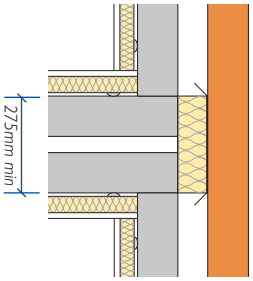
JUNCTION – EXTERNAL WALL FLANKING DETAILS

NEW BUILD



Plan on – flanking wall finish when a separating floor IS NOT present (e.g. semi-detached house).

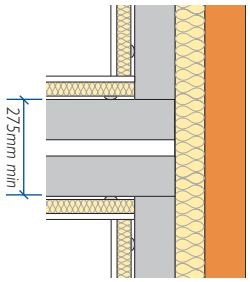
Flanking wall block may be:
- 450 to 750kg/m³ (aircrete only) 1100 to 1600kg/m³.
- Any nominal finish to flanking walls may be used.
- Rockliner (min) 42mm applied to separating walls.



Plan on – flanking wall finish when THERE IS a separating floor present (e.g. apartments/flats).

Flanking wall block may be:
- 600 to 750kg/m³ (aircrete only) 1100 to 1600kg/m³.
- Rockliner (min) 32mm applied to flanking walls.
- Rockliner (min) 42mm applied to separating walls.

CHANGE OF USE



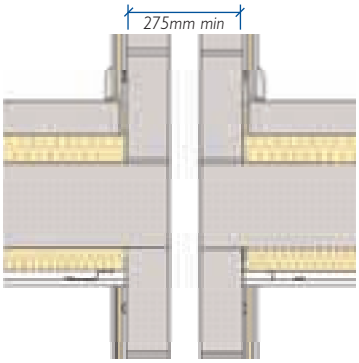
Plan on – flanking wall detail where change of use is proposed.

- Rockliner (min) 32mm applied to separating and flanking walls.
- Rockwool Energy Saver cavity wall insulation.

- Ensure all perpends are fully fitted and sealed with mortar.
- Ensure external cavity wall IS stopped with Rockwool Acoustic Party Wall dpc at the separating wall junction, unless the cavity is fully filled with Rockwool.
- Ensure CORRECT wall ties are used, e.g. butterfly ties (or as BUS 1243)
- Ensure that mortar does not build up on the wall ties to form acoustic bridge.
- Ensure the ONLY connections between each side of the separating wall are via the wall ties or foundation.
- Maintain wall cavities up to the underside of the roof.
- Use Firepro TCB Cavity Barrier for cavity closing at eaves level, unless the cavity is fully filled with Rockwool.

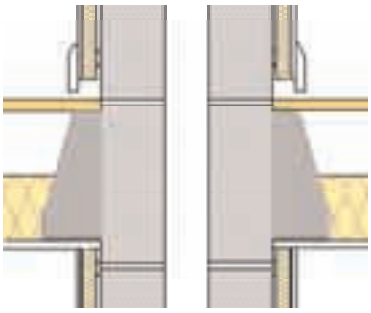
FLANKING DETAILS – SEPARATING MASONRY WALLS / FLOORS

JUNCTION – WITH A CONCRETE SEPARATING FLOOR



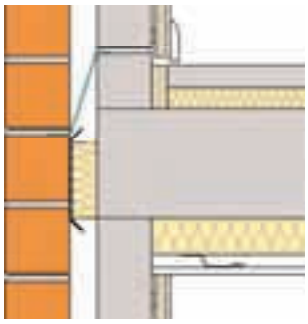
- Rockliner to be applied to the whole wall face.
- No voids to remain at wall floor junctions.
- Separating floor must break the vertical continuity of each wall leaf.
- The separating floor must not be continuous between dwellings.
- The small cavity behind Rockliner must be closed off by the ceiling board lining.

JUNCTION – WITH A TIMBER INTERNAL FLOOR USING JOIST HANGERS



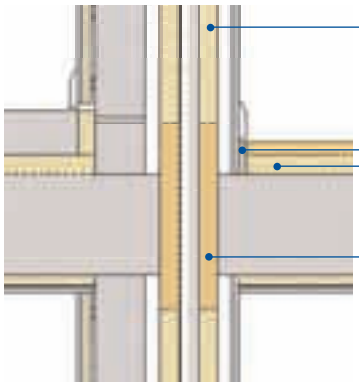
- Floor joists may be supported on hangers.

CAVITY CLOSING AT FLOOR DETAIL (ADE DIAGRAMS 3-5, 3-16)



- Rockwool Acoustic Party Wall dpc.
- Separate dpc required.
- Adequate drainage required.
- Fully filling the cavity with Rockwool cavity wall insulation negates this requirement.

FLOOR PENETRATIONS – TYPICAL OCCURRENCE (ADE DIAGRAMS 3-6, 3-17, 3-21, 4-9)



ROCKWOOL SOLUTIONS

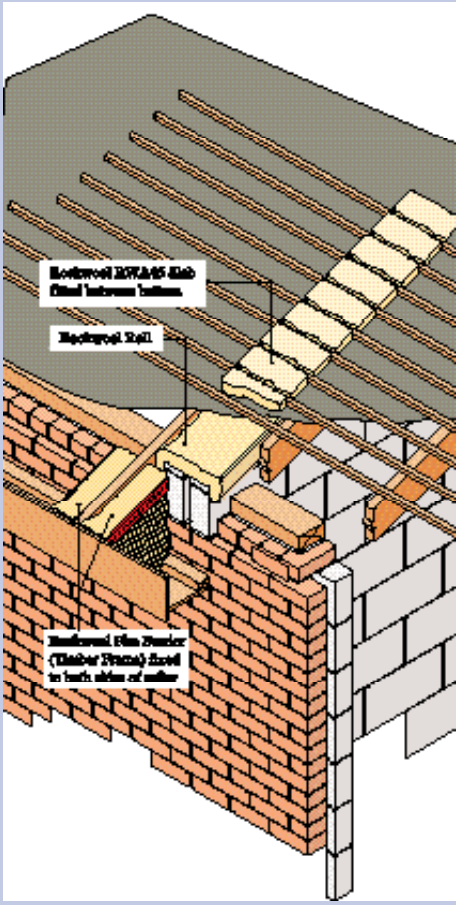
ROOF DETAILS

Acoustic and fire stopping details

(a) 30mm Rockwool RWA45 slab between tiling battens.

(b) Rockwool Roll above separating wall detail (ADE Diagrams 2-25, 2-35).

(c) Rockwool Fire Barrier (2 x 50mm Timber Frame) fixed to sides of rafters at eaves.



WE'RE YOUR SOUNDING BOARD

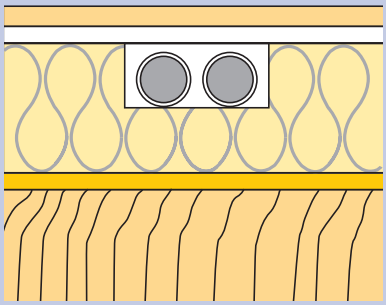
Got a query relating to Part E? For sound technical advice, consult our experts by calling the Rockwool Technical Helpline: 0871 222 1780

ROCKWOOL SOUND SOLUTIONS

ROCKWOOL SOLUTIONS

FLANKING TRANSMISSION DUE TO SERVICES

- Rockfloor of thickness 50mm (min) can be recessed to receive services.
- Services to be isolated from flooring by packing void with Rockwool Roll, or off-cuts of Rockfloor.
- Use Rockwool 'Shark' tool for accurate cutting.



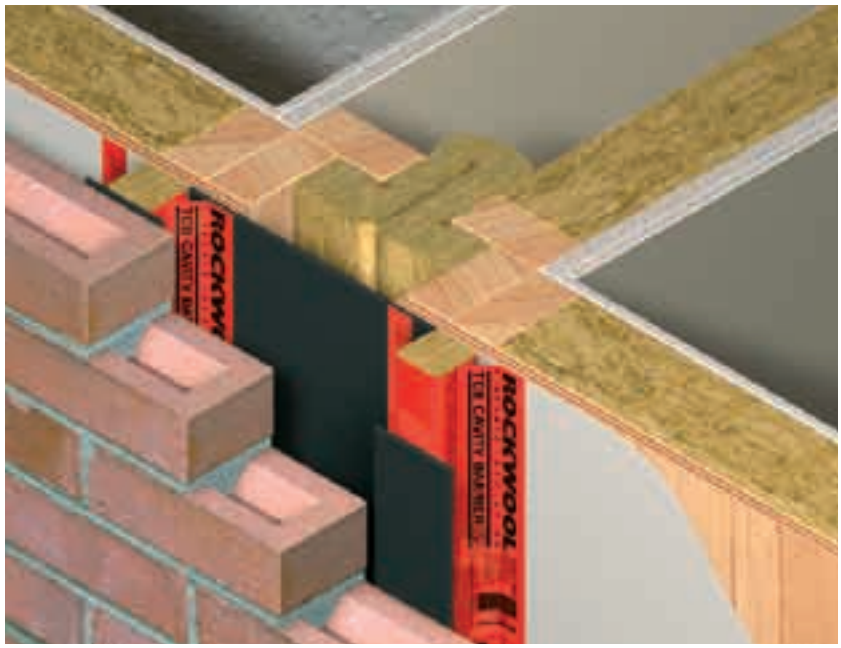
ADDITIONAL POINTS TO NOTE

- *Independent wall frames should not be connected unless necessary for structural reasons. Structural ties should not be more than 14 – 15 gauge (50 x 2.5mm).*
- *Where kitchen units back onto separating walls an additional lining on straps is required. Sockets and chases should not puncture the main separating wall linings.*
- *Isolated sockets should be back boxed, and not positioned back to back.*

ROCKWOOL SOUND SOLUTIONS

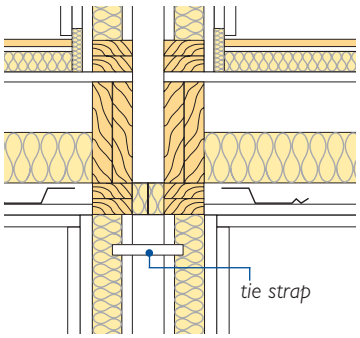
FLANKING DETAILS – SEPARATING TIMBER WALLS / FLOORS

TIMBER FRAME SEPARATING WALLS (ADE DIAGRAM 2-38)



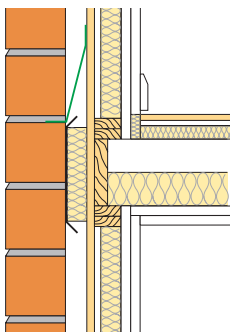
- Rockwool Fire Barrier (Timber Frame), 50mm fixed at junction of separating wall.
- Rockwool Flexi, fixed within separating wall and between external wall timber frame studs.
- Rockwool TCB Cavity barrier applied to both sides of Separating wall junction with external wall detail.
- Two layers of plasterboard (each min 10Kg/m^2) to be used on the external flanking walls, where there is a separating floor.

JUNCTION – WITH A TIMBER SEPARATING WALL



- Where the joists are at right angles to the wall, spaces between the floor joists should be sealed with full depth timber blocking.
- All junctions between the ceiling and wall linings should be sealed with tape or Rockwool Fire and Acoustic Sealant.
- Ensure that the floor linings are isolated from the floor decking using Rockfloor edge insulation.
- Ensure that the cavity is firestopped using Rockwool TCB cavity barrier or timber frame wired mat.

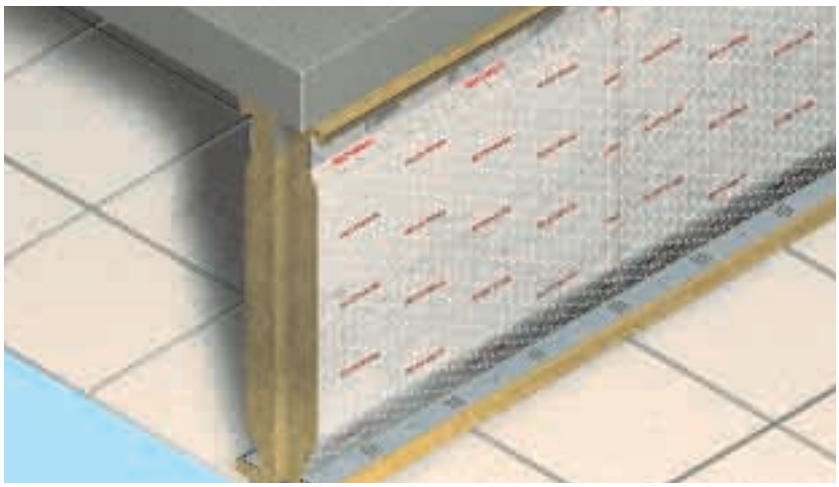
JUNCTION – WITH AN EXTERNAL CAVITY WALL



- The outer leaf of the external wall may be of any construction.
- The cavity should be firestopped at the junction between the separating floor and external wall, using Rockwool Acoustic dpc.

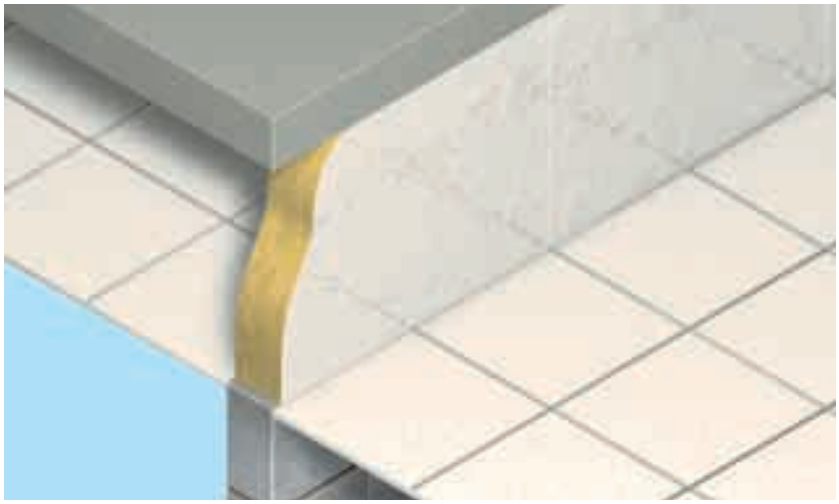
FLANKING DETAILS – ABOVE SUSPENDED CEILINGS

ACOUSTIC AND FIRE PERFORMANCE WITHIN CEILING VOIDS



Rockwool Firepro Fire Barrier

- 2 x 50mm Rockwool Firepro Firebarrier (Foil faced).
- For ceiling voids more greater than one metre.
- 90 minutes fire integrity and insulation.
- Rockfon suspended ceiling providing (min) 30dB room to room attenuation.



Rockwool Firepro Fire Barrier Slab

- For ceiling voids of up to 1 metre.
- 240 minutes Fire integrity (30 minutes if penetrations) and 60 minutes insulation.
- Rockfon suspended ceiling providing (min) 30dB room to room attenuation.

ALTERNATIVE CEILING

Plasterboard suspended ceiling providing (min) 30db room to room attenuation.

Acoustic Performance

Room to room attenuation	Rw dB
Typical lay-in grid system	30
Two thickness of 50mm Rockwool Fire Barrier – both foil faced	50
Rockwool Fire Barrier slab foil faced on both sides	50

ANOTHER SOUND IDEA FROM ROCKWOOL

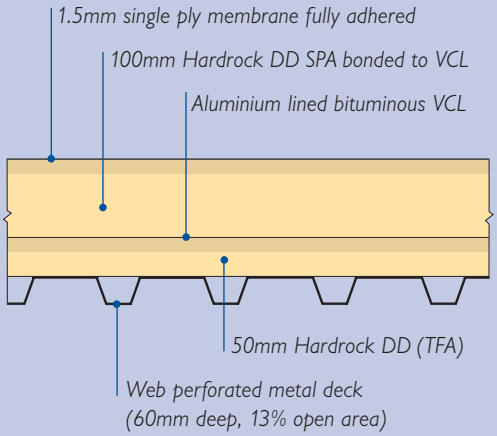
INSTALLING AN ADDED BARRIER AGAINST SOUND IS A PUSH-OVER WITH THE ROCKWOOL EASY-FIT SYSTEM!

ROCKWOOL SOUND SOLUTIONS

ROCKWOOL SOLUTIONS

CEILINGS

PERFORATED METAL DECK



SOUND ABSORPTIONS COEFFICIENTS

Sound Absorption Class D

Frequency (Hz)					
125	250	500	1k	2k	4k
0.42	1.27	1.2	1.00	0.55	0.33

Weighted apparent – SRI Rw = 39dB (Acoustic reports: C/02/5L/0526/1, C/02/5L/0526/2).

REVERBERATION IN THE COMMON PARTS OF BUILDINGS CONTAINING FLATS OR ROOMS FOR RESIDENTIAL PURPOSES

GENERAL – ADE SECTION 7

Section 7 of ADE describes how to determine the amount of additional absorption to be used in corridors, hallways, stairwells and entrance halls giving access to flats and rooms for residential purposes.

Two alternative methods are provided by ADE to satisfy the requirements of E3. Both methods are fully detailed under section 7.

Method A

Method A is the most straight forward means of achieving compliance and can generally be satisfied by the use of proprietary suspended ceilings with Class C sound absorption or better.

Method B

Method B requires a calculation procedure, (see Section 7, page 65-66) taking account of absorption provided by all surfaces. In some cases, Method B will allow greater flexibility in meeting E3 and may require less additional absorption than Method A.

ACOUSTIC CEILINGS – SUSPENDED

FOR COMPLIANCE WITH PART E3

Rockfon offer a full range of aesthetically pleasing, fire safe & durable ceiling and room acoustic solutions with absorption Class C & better for use in corridors, hallways, stairwells and entrance halls.

Sound easily passes through the microperforated surface and is efficiently absorbed in the Rockwool core. Smooth, unbroken surfaces provide high light reflection.

The 100% Rockwool core is non hygroscopic; it does not burn and is not attacked by rot, fungus and bacteria.

ACOUSTIC CONDITIONS IN SCHOOLS

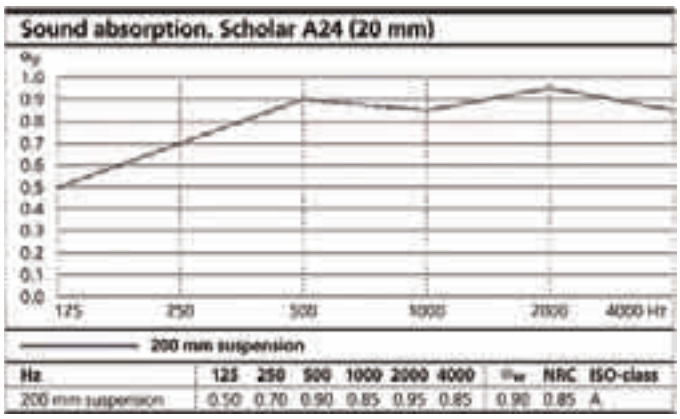
Section 8 of ADE states that the normal way of satisfying E4 will be to meet the values for sound insulation, reverberation time and internal ambient noise given in Section 1 of Building Bulletin 93 'The Acoustic Design of Schools' produced by DfEs. BB93 also requires STI calculations for open plan spaces. Many of the solutions shown for E1 and E2 also apply to schools (E4).

ACOUSTIC CEILING SOLUTIONS

ROCKFON SCHOLAR

- Aesthetically pleasing smooth cleanable surface.
- Tough & durable reinforced surface with latex coated edges.
- Excellent sound absorbing acoustic properties and fire safety.
- Suitable for use in classrooms, libraries, science labs., craft areas, corridors, assembly halls etc.
- Contributes to compliance with reverberation time and sound absorption regulations in Building Bulletin 93 and therefore ADE. Parts E3 and E4.
- Further details available from Rockfon. See Rockfon data sheet no. 5.2.06.

SOUND ABSORPTION - SCHOLAR CEILINGS - 20MM THICK



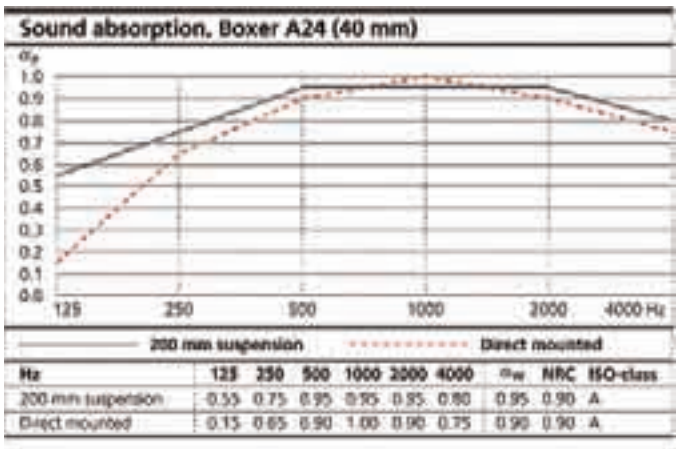
Hz	125	250	500	1000	2000	4000	α_w	NRC	ISO-class
200 mm suspension	0.50	0.70	0.90	0.85	0.95	0.85	0.90	0.85	A

ACOUSTIC WALL ABSORBER SOLUTIONS

ROCKFON BOXER

- Attractive smooth micro textured surface.
- Impact resistant acoustic wall absorber.
- Excellent sound absorbing acoustic properties and fire safety.
- Suitable for use in gyms, sports halls, craft areas, class rooms, science labs., corridors, lobbies etc.
- Contributes to compliance with reverberation time and sound absorption regulations in Building Bulletin 93 and therefore ADE. Parts E3 and E4.
- Further details available from Rockfon. See Rockfon data sheet no. 5.3.09.

SOUND ABSORPTION - BOXER WALL ABSORBER - 40MM THICK



Hz	125	250	500	1000	2000	4000	α_w	NRC	ISO-class
200 mm suspension	0.55	0.75	0.95	0.95	0.95	0.80	0.95	0.90	A
Direct mounted	0.15	0.65	0.90	1.00	0.90	0.75	0.90	0.90	A

ROCKWOOL SOLUTIONS

E4

ROCKFON

Rockfon offer a full range of ceiling and room acoustic solutions for school applications.

ROCKFON SCHOLAR

Just some of the many top grade Rockfon acoustic solutions for schools

ROCKWOOL Rockfon®
A ROCKWOOL GROUP COMPANY

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In all cases, readers are recommended to follow the advice offered by Approved Document E 2003 Addition and to ensure all details are built with proper materials in a workmanlike manner, using good construction practice.

Expert advice should be sought where different solutions/ applications are contemplated, or where the extent of any listed solution/ application is in doubt.

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