

Technical Guidebook  
Domestic Section 5:  
Noise

**ROCKWOOL®**

# SUMMARY GUIDE

This document provides a quick and easy reference guide of typical constructions using ROCKWOOL insulation products that will assist the end user in meeting the performance levels required by Section 5 of the Scottish Building Regulations.

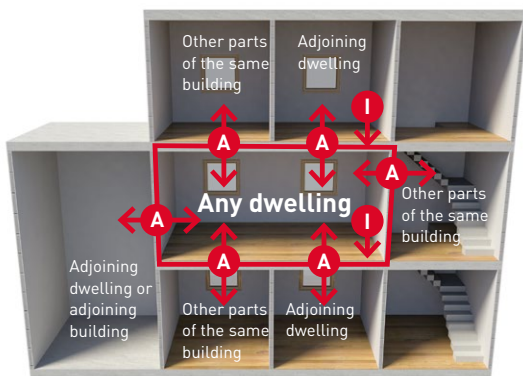
For further information on our wider product range, please visit [www.rockwool.co.uk](http://www.rockwool.co.uk)

Every building, which is divided into more than one area of different occupation, must be designed and constructed in such a way to limit the transmission of source noise from normal domestic type activities, between such areas, to a level that will not threaten the health of, or cause inconvenience to the building occupants.\*

## Introduction

### Application of Section 5 - Domestic

The diagram below summarises the areas of a building to which Section 5 applies, ensuring that dwellings achieve reasonable levels of sound insulation from adjoining buildings or differently occupied parts of the same building.



**A** = Airborne sound insulation  
**I** = Impact sound insulation

### Noise Separation (Section 5.1)

The  $D_{nT,w}$  and  $L_{nT,w}$  figures in the table below include flanking transmission. As such, when looking at laboratory-tested  $R_w$  figures, these should aim to improve on the targets by at least 5 dB to help ensure compliance.

Design Performance	New build and conversions (not including traditional buildings)
Minimum airborne sound insulation	56 dB $D_{nT,w}$
Minimum impact sound transmission	56 dB $L_{nT,w}$

### Noise reduction between rooms (Section 5.2)

Design Performance	Minimum airborne insulation level
Internal walls	40 dB $R_w$
Intermediate floors	43 dB $R_w$

### Compliance

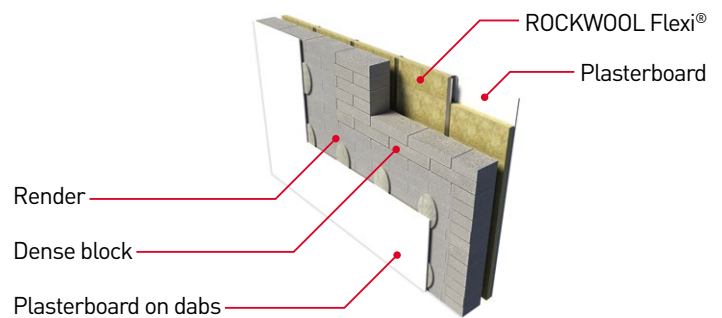
The Scottish Government has given several construction types which, if constructed correctly, should achieve the performance levels given in the table above. This guide outlines ROCKWOOL products and solutions that will comply with this guidance.

Please note that this document is a summary focussing on insulation requirements. Full guidance can be found in Section 5: Noise of the Technical Handbooks.

## Separating Walls

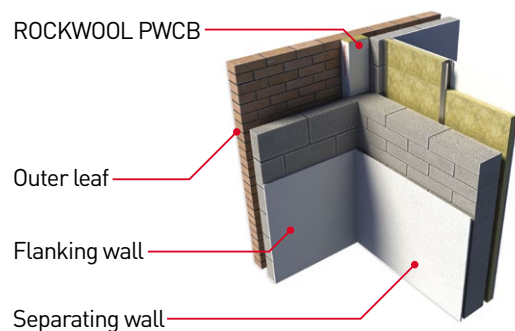
### 1. Dense Block Solid Wall

#### Specification



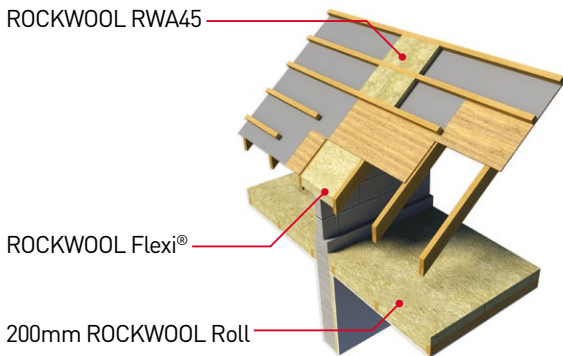
- Gypsum board minimum 12 kg/m<sup>2</sup>, e.g. 15mm acoustic plasterboard, on plaster dabs
- Sand cement render minimum 13mm with scratch finish
- 215mm dense aggregate concrete block (min. 1850 kg/m<sup>3</sup>) laid flat
- Clear cavity, minimum 30mm
- Minimum 70mm metal studs deep filled with minimum 50mm ROCKWOOL Flexi®
- Gypsum board (min. 12 kg/m<sup>2</sup>)

#### External wall junction



- The cavity should be stopped with ROCKWOOL PWCB to minimise sound transmission along the cavity, unless the cavity is fully filled with ROCKWOOL Cavity®
- ROCKWOOL PWCB also achieves a 60-minute fire rating

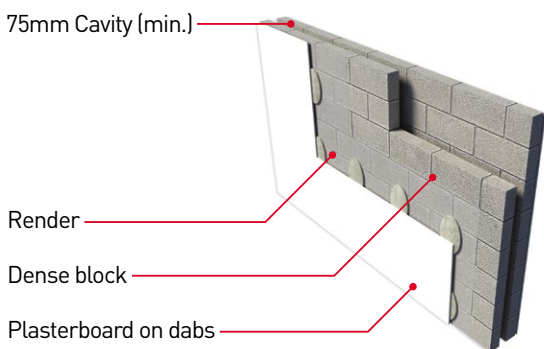
### Junctions with ceiling and roof



- The junction between the separating wall and the roof should be filled with ROCKWOOL Flexi®
- Minimum 140mm wide solid dense block to underside of roof
- Minimum 200mm ROCKWOOL Roll above ceiling
- Fire line maintained by filling void above underlay using ROCKWOOL RWA45

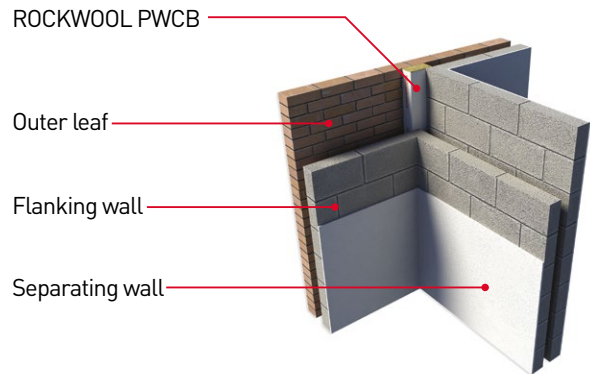
### 2. Dense block cavity wall

#### Specification



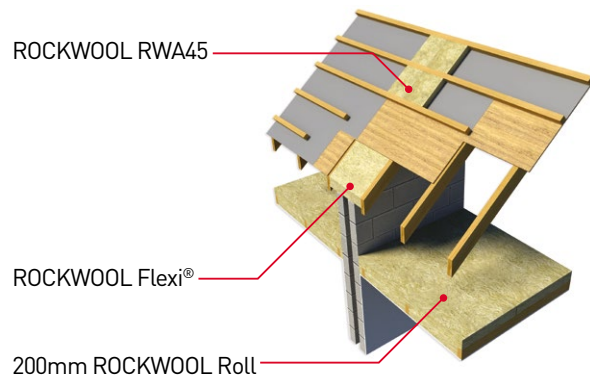
- Gypsum board (min. 12 kg/m<sup>2</sup>, e.g. 15mm acoustic plasterboard) on plaster dabs to each side
- Sand cement render (min. 13mm) with scratch finish to each side
- Dense blocks, min. 1850 kg/m<sup>3</sup> and min. 100mm thick
- Min. 75mm clear cavity

### External wall junction



- The cavity should be stopped with ROCKWOOL PWCB to minimise sound transmission along the cavity, unless the cavity is fully filled with ROCKWOOL Cavity®
- ROCKWOOL PWCB acts as an effective edge seal against the party wall bypass effect and also achieves a 60-minute fire rating

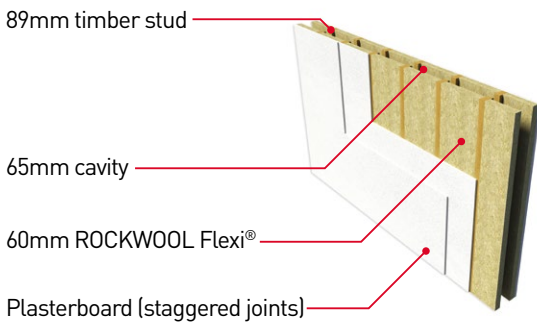
#### Example construction



- The junction between the separating wall and the roof should be filled with ROCKWOOL Flexi®
- Cavity masonry separating wall is continuous to underside of roof
- Minimum 200mm ROCKWOOL Roll above ceiling
- Fire line maintained by filling void above underlay using ROCKWOOL RWA45

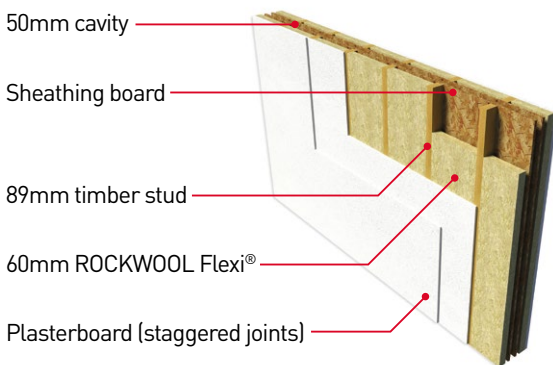
### 3. Timber frame twin-stud wall

#### Specification (non-sheathed)



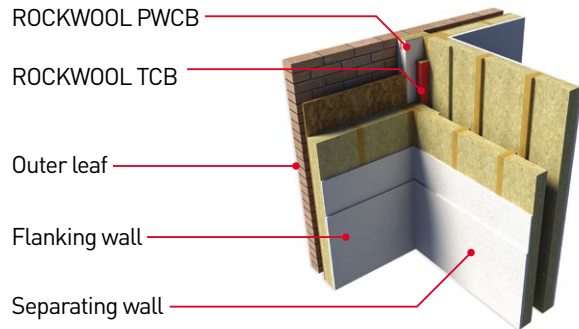
- Gypsum board lining, two layers, total 22 kg/m<sup>2</sup> (e.g. 2 x 12.5mm acoustic plasterboard) to each side
- Minimum 240mm between inner face of linings
- Each stud filled with 60mm ROCKWOOL Flexi®

#### Specification (sheathed)



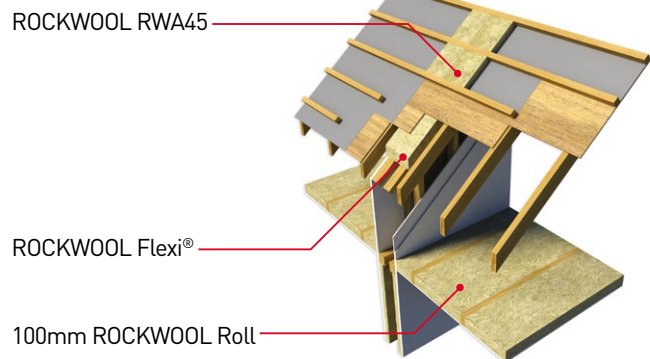
- Gypsum board lining, two layers, total 22 kg/m<sup>2</sup> (e.g. 2 x 12.5mm acoustic plasterboard) to each side
- Minimum 250mm between inner face of linings
- Minimum 50mm between sheathing
- Each stud filled with 60mm ROCKWOOL Flexi®

### External wall junction



- The cavity should be stopped with ROCKWOOL PWCB to minimise sound transmission along the cavity. This product also achieves a 60 minute fire rating
- ROCKWOOL TCB can be inserted to maintain the acoustic and fire performance as shown

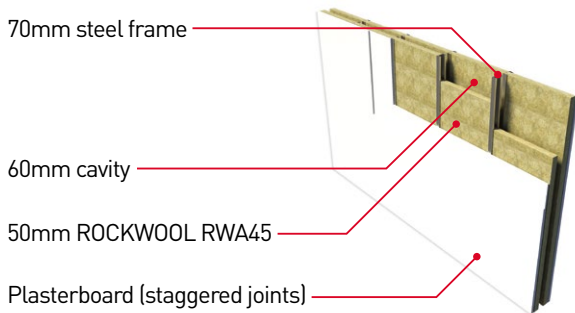
### Junctions with ceiling and roof



- The junction between the separating wall and the roof should be filled with ROCKWOOL Flexi®
- Fire line maintained by filling void above underlay using ROCKWOOL RWA45
- Minimum 100mm ROCKWOOL Roll above ceiling
- Ceiling: 12.5mm standard plasterboard (2 x 12.5mm if room in roof)
- Wall lining above ceiling to be 2 x 12.5mm standard plasterboard
- Seal all perimeter joints with ROCKWOOL Acoustic Intumescent Sealant

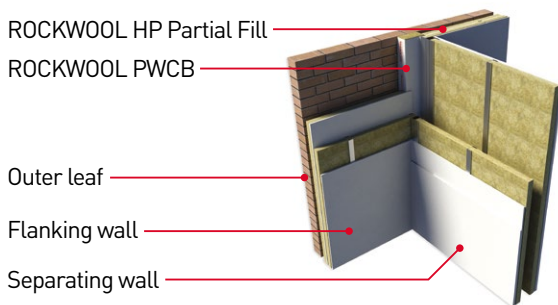
#### 4. Metal frame twin-stud wall

##### Specification



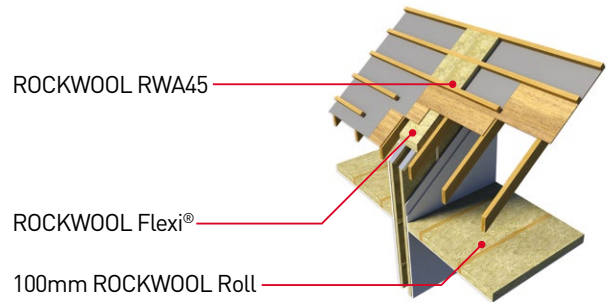
- Gypsum board lining, two layers, total 22 kg/m<sup>2</sup> (e.g. 2 x 12.5mm acoustic plasterboard to each side)
- Minimum 200mm between inner faces of wall linings
- Minimum 70mm studs with minimum 60mm cavity between each set of studs
- Minimum 50mm ROCKWOOL RWA45 between each set of studs

##### External wall junction



- The cavity should be stopped with ROCKWOOL PWCB to minimise sound transmission along the cavity
- The void within the flanking wall studs should be filled on each side of the separating wall ROCKWOOL RWA45 to a minimum distance of 600mm

#### Junctions with ceiling and roof

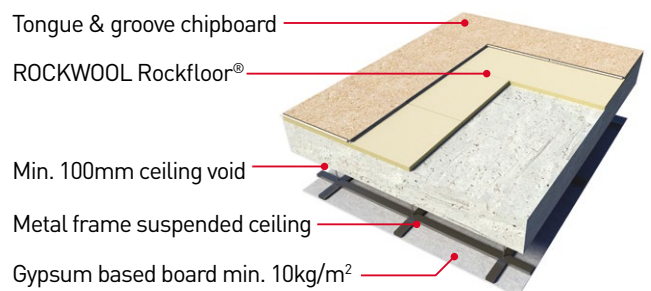


- The junction between the separating wall and the roof should be filled with ROCKWOOL Flexi®
- Separating wall construction is continuous to underside of roof
- Minimum 200mm ROCKWOOL Roll above ceiling
- Fire line maintained by filling void above underlay using ROCKWOOL RWA45

## Separating Floors

### 1. B: In-situ concrete with floating floor treatment

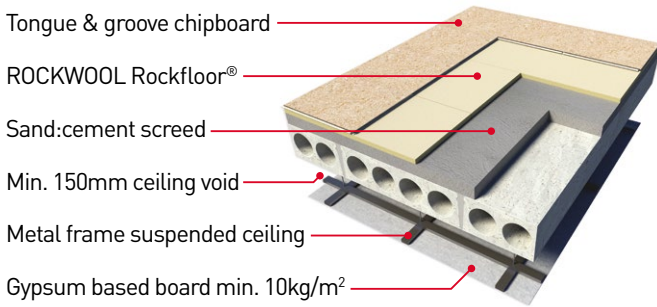
##### Specification



- 18mm T&G chipboard
- 25mm ROCKWOOL Rockfloor® more than meets the minimum standards required of a floating floor treatment as dictated by 2015 Scottish Building Standards
- Minimum 225mm in-site concrete core, minimum 2400 kg/m<sup>3</sup>
- Metal frame suspended ceiling with gypsum based board, minimum 10 kg/m<sup>2</sup> (e.g. 12.5mm acoustic plasterboard)

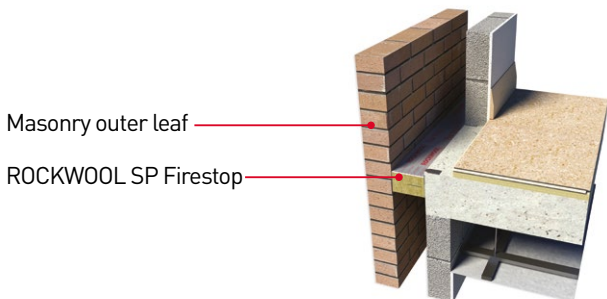
## 2. B: Precast concrete slab with floating floor treatment

### Specification



- 18mm T&G chipboard
- 25mm ROCKWOOL Rockfloor® more than meets the minimum standards required of a floating floor treatment as dictated by 2015 Scottish Building Standards
- Minimum 50mm screed or structural topping
- Minimum 200mm pre-cast concrete floor slab, minimum 365 kg/m<sup>2</sup>
- Metal frame suspended ceiling, minimum 150mm ceiling void, with gypsum based board minimum 10 kg/m<sup>2</sup> (e.g. 12.5mm acoustic plasterboard)

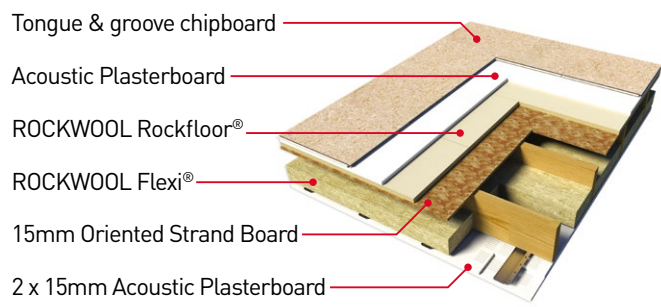
### External wall junction with concrete floor



- Masonry outer leaf minimum 100mm thick
- External wall cavity minimum 50mm
- ROCKWOOL SP Firestop in cavity satisfies acoustic regulations and acts as a 60 minute fire stop
- Alternatively, ROCKWOOL FIREPRO® SoftSeal for high levels of movement
- Resilient strip where chipboard meets wall

## 3. A: Timber frame floor with solid joists

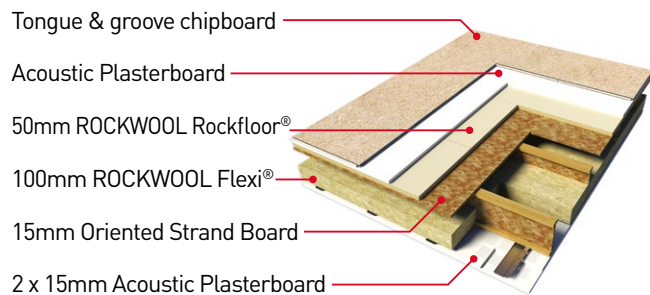
### Specification



- 18mm T&G chipboard
- Acoustic plasterboard, minimum 13.5 kg/m<sup>2</sup>
- 50mm ROCKWOOL Rockfloor®
- 15mm OSB
- 200 x 50mm timber joists at maximum 400mm centres
- Minimum 100mm ROCKWOOL Flexi® between joists
- Resilient bars fixed at right-angles to joists, at 400mm centres
- Two layers of acoustic plasterboard, total area weight 26 kg/m<sup>2</sup> minimum

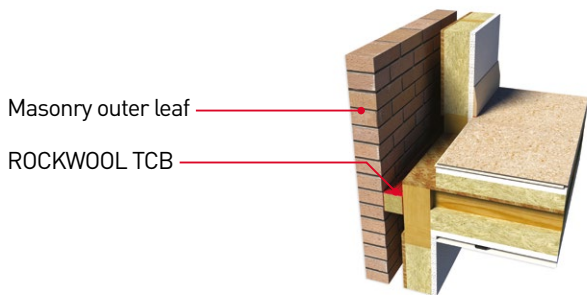
### Timber frame floor with engineered I-joists

### Specification



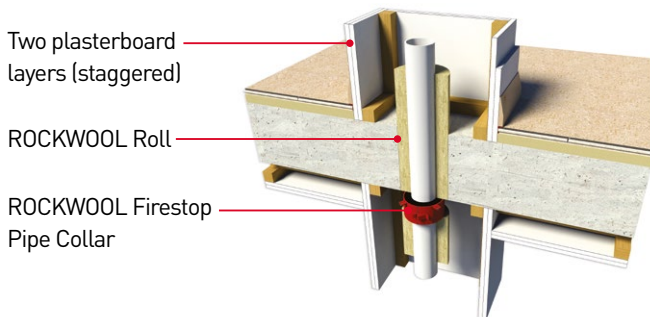
- 18mm T&G chipboard
- Acoustic plasterboard, minimum 13.5 kg/m<sup>2</sup>
- 50mm ROCKWOOL Rockfloor®
- 15mm OSB
- Minimum 240mm timber I-joists at maximum 400mm centres
- Minimum 100mm ROCKWOOL Flexi® between joists
- Resilient bars fixed at right-angles to joists, at 400mm centres
- Two layers of acoustic plasterboard, total area weight 26 kg/m<sup>2</sup> minimum

### External wall junction with timber floor



- Masonry outer leaf minimum 100mm thick
- External wall cavity minimum 50mm
- ROCKWOOL TCB in cavity satisfies acoustic regulations and acts as a 30 minute fire stop (or 60 minute if cavity greater than 89mm)
- Resilient strip where chipboard and resilient plasterboard meet wall

### Vertical SVP's through separating floors (typical detail)

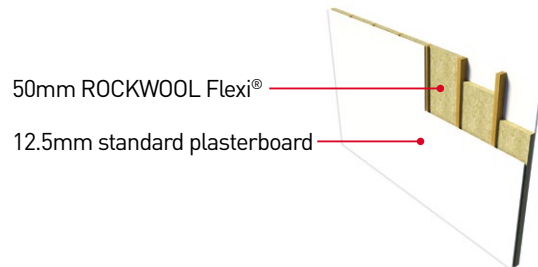


- Service fully wrapped with ROCKWOOL Roll
- SVP boxed in with two layers of plasterboard, total 16 kg/m<sup>2</sup> (e.g. 2 x standard plasterboard)
- Penetrating services should be fire protected to satisfy fire regulations - please contact ROCKWOOL Technical for advice on selecting an appropriate product

## Internal Walls - Minimum Rw 40 dB

### 1. A: Timber frame

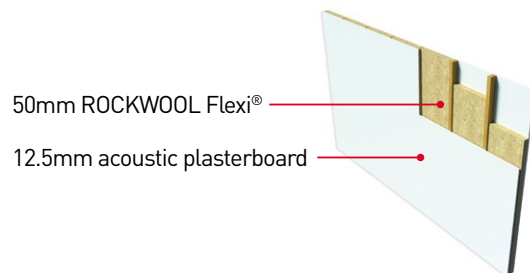
#### Specification



- Achieves R<sub>w</sub> 40 dB
- Timber stud frame 75mm x 44mm
- Both sides lined with one layer of 12.5mm standard plasterboard (min. 8.4 kg/m<sup>2</sup> per board)
- 50mm ROCKWOOL Flexi® between studs
- Test report number AIRO L/1944/A/5 (RTP03)

### B: Timber frame

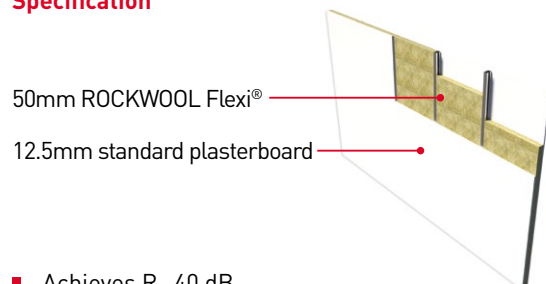
#### Specification



- Achieves R<sub>w</sub> 40 dB
- Timber stud frame 63mm x 38mm
- Both sides lined with one layer of 12.5mm acoustic plasterboard (min. 10.2 kg/m<sup>2</sup> per board)
- 50mm ROCKWOOL Flexi® between studs
- Test report number RTP-AC01A

### 2. A: Metal frame

#### Specification

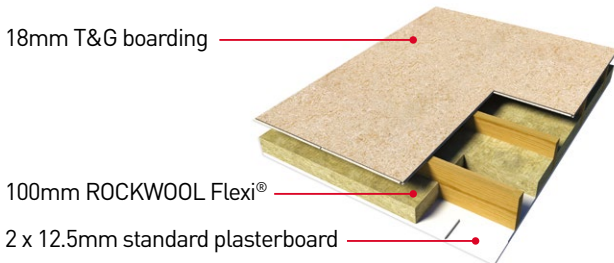


- Achieves R<sub>w</sub> 40 dB
- 50mm lightweight metal studs at 600mm centres
- Both sides lined with one layer of 12.5mm standard plaster-board (min. 8.4 kg/m<sup>2</sup> per board)
- 50mm ROCKWOOL Flexi® between studs
- Test report number L03 185

## Intermediate Floors - Minimum $R_w$ 43 dB

### 1. A: Timber floor - solid joist

#### Specification



- Achieves  $R_w$  44 dB
- 18mm T&G boarding
- Timber joists 200mm x 50mm at 450mm centres
- 100mm ROCKWOOL Flexi® between joists
- Two layers of 12.5mm standard plasterboard (min. 8.4 kg/m<sup>2</sup> per board)
- Test report number RTC-14

### B: Timber floor - solid joist

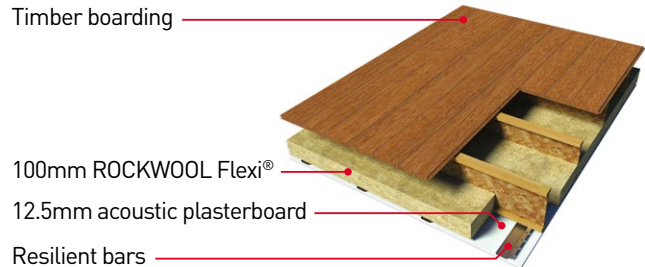
#### Specification



- Achieves  $R_w$  45 dB
- 18mm T&G floor boards
- Timber joists 200mm x 50mm at 400mm centres
- 100mm ROCKWOOL Flexi® between joists
- Resilient bars at 400mm centres
- One layer of 12.5mm standard plasterboard (min. 8.4 kg/m<sup>2</sup>)
- Test report number L03-258

### 2. Timber floor - 'I'-joist

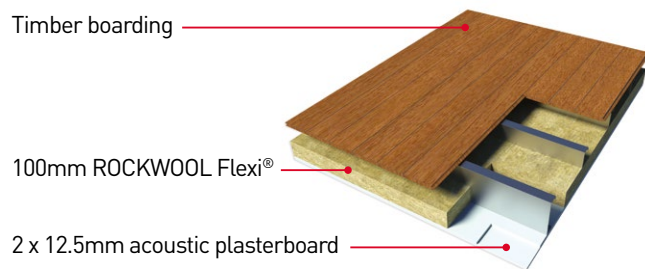
#### Specification



- Timber boarding (min. 11 kg/m<sup>2</sup>)
- Timber I-joists 240mm at 400mm centres
- 100mm ROCKWOOL Flexi® between joists
- Resilient bars at 400mm centres
- One layer of 12.5mm acoustic plasterboard (min. 10 kg/m<sup>2</sup>)

### 3. Metal floor - 'C'-joist

#### Specification



- Timber boarding (min. 15 kg/m<sup>2</sup>)
- Metal joists at max. 400mm centres
- 100mm ROCKWOOL Flexi®
- Two layers of acoustic plasterboard (min. 10 kg/m<sup>2</sup> per board)



### 3. A: Metal floor – 'C'-joist

#### Specification



- Timber boarding (min. 15 kg/m<sup>2</sup>)
- Metal joists at max. 400mm centres
- 100mm ROCKWOOL Flexi®
- Resilient bars at 400mm centres
- One layer of acoustic plasterboard (min. 10 kg/m<sup>2</sup>)

ROCKWOOL Limited  
Pencoed  
Bridgend  
CF35 6NY

01656 862 621  
info@rockwool.co.uk

**ROCKWOOL®**



rockwool.co.uk



@ROCKWOOLUK



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