Approved Document E (England & Wales)/G (Northern Ireland)
Protection against sound within a dwelling-house
Internal walls between a bedroom (or a room containing a water closet) 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.

Performance Standards

<table>
<thead>
<tr>
<th>Element</th>
<th>Airborne sound insulation, $R_w$ dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td>40 (min.)</td>
</tr>
<tr>
<td>Floors</td>
<td>40 (min.)</td>
</tr>
</tbody>
</table>

Note that this requirement does not apply to:

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

Compliance
The regulations outline several construction types which, if constructed correctly, should achieve the required performance standards. In addition, solutions offered by Robust Details can eliminate the requirement for post-completion onsite acoustic testing.

This guide summarises ROCKWOOL products and solutions that will comply with this guidance.

Please note that this document is a summary that focuses on insulation requirements, and is designed to be read in conjunction with Approved Document E (England & Wales) / G (Northern Ireland).

Overview of requirements
Protection against sound from other parts of the building and adjoining buildings
The diagram below summarises the areas of a building to which the regulations apply, ensuring that dwelling houses, flats and ‘rooms for residential purposes’ achieve reasonable levels of sound insulation from adjoining buildings or differently occupied parts of the same building.

Performance Standards

<table>
<thead>
<tr>
<th>Separating construction</th>
<th>Airborne sound insulation $D_{ntw} + C_{tr}$ dB</th>
<th>Impact sound insulation $L_{nTw}$ dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walls</td>
<td>45 (43*)</td>
<td>45</td>
</tr>
<tr>
<td>Floors</td>
<td>43</td>
<td>42</td>
</tr>
</tbody>
</table>

* Lower limit applies only to ‘rooms for residential purposes’

1 “A room, or a suite of rooms, which is not a dwelling-house or a flat and which is used by one or more persons to live and sleep and includes a room in a hostel, a hotel, a boarding house, a hall of residence or a residential home, but does not include a room in a hospital, or other similar establishments, used for patient accommodation.”

New Build Separating Walls

1. Guidance from Part E / G
   i) Framed walls with absorbent material

2. Robust Details
   i) E-WT-1: Timber frame cavity wall without sheathing
   ii) E-WT-2: Timber frame cavity wall with sheathing

iii) E-WS-1: Twin metal frames

Specification

- Independent timber frames
- Minimum 200mm between inside lining faces
- ROCKWOOL FLEXİ® 50mm in one frame
- Each lining to be two or more layers of plasterboard, each sheet of minimum 10 kg/m² (e.g. 2 x 12.5 acoustic plasterboard or 2 x 15mm standard)
- Plywood sheathing may be used as necessary for structural reasons
- Pre-completion site testing required

Pre-completion site testing required

Pre-completion site testing required

Pre-completion site testing required

Specification

- Independent timber frames
- Minimum 240mm between inside lining faces
- Minimum 50mm gap between frames
- ROCKWOOL FLEXİ® 60mm in both frames
- Each lining to be two layers of gypsum-based board, total nominal mass per unit area 22 kg/m² (e.g. 2 x 15 acoustic plasterboard)
- Pre-completion site testing required

Pre-completion site testing required

Pre-completion site testing required

Specification

- Independent steel frames
- Minimum 240mm between inside lining faces
- Minimum 50mm gap between frames
- ROCKWOOL Flexi 50mm in between frames
- Each lining to be two layers of gypsum-based board, total nominal mass per unit area 22 kg/m² (e.g. 2 x 15 acoustic plasterboard)
**New Build Separating Walls**

The external cavity should be stopped with ROCKWOOL Party Wall Cavity Barrier (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.

**ii) Ceiling and roof**

- The wall should continue to the underside of roof
- The junction between the separating wall and the roof should be filled with ROCKWOOL PWCB
- ROCKWOOL PWCB also achieves a 60-minute fire rating.

**New Build Separating Floors**

1. Guidance from Part E / G

**i) Soft floor covering on concrete slab/hollow planks/solid planks with ceiling**

- Soft floor covering to be either:
  - a resilient material, or material with a resilient base, with an overall uncompressed thickness of at least 4.5mm
  - one with a tested weighted reduction in impact sound pressure level (ΔLw) of at least 17 dB
- Total floor area weight min. 365 kg/m²
- Ceiling to be type A, B or C (type C shown above).

**ii-a) Raft floating floor on concrete slab/hollow planks/solid planks with ceiling**

- T&G timber boarding min. 12 kg/m², fixed to 45x45mm battens laid loose on resilient layer
- Resilient layer of ROCKWOOL ROCKFLOOR® 25mm
- Floor area weight min. 365 kg/m²
- Ceiling to be type A, B or C (type C shown above).

**ii-b) Screed floating floor on concrete slab/hollow planks/solid planks with ceiling**

- Sand cement screed 65mm, or proprietary screed min. area weight 80 kg/m²
- Resilient layer of ROCKWOOL ROCKFLOOR® 25mm
- Floor area weight min. 365 kg/m² (including screed)
- One of ceiling types A, B or C (type C shown above).

**iii) Platform floor on timber frame with independent ceiling**

- Two layers of board material, bonded/fixed together, minimum total area weight 25 kg/m², e.g.:
  - 18mm T&G chipboard on 19mm plank plasterboard
  - Two layers of 12mm cement particle board
- Resilient layer of ROCKWOOL ROCKFLOOR® 25mm
- Min. 20 kg/m² deck on timber floor joists
- ROCKWOOL FLEXI® 100mm between independent ceiling joists
- Ceiling type A only, with independent joists min. 100mm below underside of floor

**Ceiling Types**

The ceiling types below are suitable for use where indicated.

A: Independent Joists

- ROCKWOOL Flexi 100mm between joists
- Two layers of plasterboard, staggered joints, min. 20 kg/m² (e.g. 2 x 12.5mm acoustic plasterboard)

B: Plasterboard on resilient bars

- Resilient bars (fixed to perpendicular timber battens if using with concrete floor)
- ROCKWOOL FLEXI® to fill void
- One layer of plasterboard, min. 10 kg/m² (e.g. 12.5mm acoustic plasterboard)

C: Plasterboard on resilient channels

- Resilient channels
- ROCKWOOL FLEXI® to fill void
- One layer of plasterboard, min. 10 kg/m² (e.g. 12.5mm acoustic plasterboard)
2. ROCKWOOL Tested Solution

i) Timber platform floor

3. Robust Details

i) E-FT-1: Timber I-joists with floating floor

Typical junction details

i) External wall with concrete floor

- The external cavity should be stopped with ROCKWOOL SP 60 Firestop to minimise sound transmission along the cavity.

ii) External wall with timber floor

- The external cavity should be stopped with ROCKWOOL TCB to minimise sound transmission along the cavity.

iii) Penetration through floor

- Services that penetrate a habitable room should be enclosed for their full height.
- Enclosure should be made from two layers of 12.5mm standard plasterboard.
- Wrap pipe with ROCKWOOL Roll or alternatively line the enclosure with ROCKWOOL RWA45 25mm.
- Penetrations should be fire protected to satisfy fire regulations.
- Please contact ROCKWOOL Technical Solutions for advice.

Performance

- $R_w (C;Ctr) = 63 (-2;-7) \text{ dB}$, ref. BTC10187A
- $L_{n,w} = 54 \text{ dB}$, ref. L03-275

Penetrations should be fire protected to satisfy fire regulations.
- Please contact ROCKWOOL Technical Solutions for advice.

New Build Separating Floors

Typical junction details

i) External wall with concrete floor

- The external cavity should be stopped with ROCKWOOL SP 60 Firestop to minimise sound transmission along the cavity.

ii) External wall with timber floor

- The external cavity should be stopped with ROCKWOOL TCB to minimise sound transmission along the cavity.

iii) Penetration through floor

- Services that penetrate a habitable room should be enclosed for their full height.
- Enclosure should be made from two layers of 12.5mm standard plasterboard.
- Wrap pipe with ROCKWOOL Roll or alternatively line the enclosure with ROCKWOOL RWA45 25mm.
- Penetrations should be fire protected to satisfy fire regulations.
- Please contact ROCKWOOL Technical Solutions for advice.

Performance

- $R_w (C;Ctr) = 63 (-2;-7) \text{ dB}$, ref. BTC10187A

New Build Separating Walls

1. Guidance from Part E / G

Independent panel to existing masonry wall

Specification

- 18mm T&G chipboard
- Plasterboard 13 kg/m², e.g. 15mm acoustic
- ROCKWOOL ROCKFLOOR® 30mm
- 15mm OSB
- ROCKWOOL FLEXI® 100mm between 195 x 45mm timber joists at 450mm centres
- Resilient bars at 400mm centres
- Two layers of 15mm acoustic plasterboard, min. area weight 26 kg/m²
- Pre-completion site testing required.

Performance

- $R_w (C;Ctr) = 63 (-5;-12) \text{ dB}$, ref. L03-272
- $L_{n,w} = 58 \text{ dB}$, ref. L03-273
- Ceiling down lights - if spaced at max. 1 per 1.8m², and used with Tenmat FF 109 down light covers:
  - $R_w (C;Ctr) = 63 (-5;-12) \text{ dB}$, ref. L03-274
  - $L_{n,w} = 54 \text{ dB}$, ref. L03-275

- Services that penetrate a habitable room should be enclosed for their full height.
- Enclosure should be made from two layers of 12.5mm standard plasterboard.
- Wrap pipe with ROCKWOOL Roll or alternatively line the enclosure with ROCKWOOL RWA45 25mm.
- Penetrations should be fire protected to satisfy fire regulations.
- Please contact ROCKWOOL Technical Solutions for advice.

Specification

- 18mm T&G chipboard
- Gypsum board 13.5 kg/m² nominal e.g. 19mm plank
- ROCKWOOL RWA45 25mm between FFT1-compliant battens, e.g. JCW80T
- 15mm OSB
- ROCKWOOL FLEXI® 100mm between min. 235mm I-joists
- Two layers of 15mm acoustic plasterboard mounted on min. 16mm resilient bars

Performance

- $R_w (C;Ctr) = 66 (-5;-12) \text{ dB}$, ref. L03-274
- $L_{n,w} = 54 \text{ dB}$, ref. L03-275
- Ceiling down lights - if spaced at max. 1 per 1.8m², and used with Tenmat FF 109 down light covers:
  - $R_w (C;Ctr) = 65 (-5;-12) \text{ dB}$, ref. L03-274
  - $L_{n,w} = 54 \text{ dB}$, ref. L03-275

New Build Separating Walls

2. ROCKWOOL Tested Solution

Steel frame wall

Specification

- Min. 26 kg/m² each side, e.g. 2 x 15mm acoustic plasterboard
- Resilient bars to one side only
- ROCKWOOL FLEXI® 60mm within 70mm metal C-studs
- Pre-completion site testing required.

Performance

- $R_w (C;Ctr) = 63 (-2;-7) \text{ dB}$, ref. BTC10187A

New Build Separating Floors

Typical junction details

i) External wall with concrete floor

- The external cavity should be stopped with ROCKWOOL SP 60 Firestop to minimise sound transmission along the cavity.

ii) External wall with timber floor

- The external cavity should be stopped with ROCKWOOL TCB to minimise sound transmission along the cavity.

iii) Penetration through floor

- Services that penetrate a habitable room should be enclosed for their full height.
- Enclosure should be made from two layers of 12.5mm standard plasterboard.
- Wrap pipe with ROCKWOOL Roll or alternatively line the enclosure with ROCKWOOL RWA45 25mm.
- Penetrations should be fire protected to satisfy fire regulations.
- Please contact ROCKWOOL Technical Solutions for advice.

Specification

- 18mm T&G chipboard
- Gypsum board 13.5 kg/m² nominal e.g. 19mm plank
- ROCKWOOL RWA45 25mm between FFT1-compliant battens, e.g. JCW80T
- 18mm OSB
- ROCKWOOL FLEXI® 100mm between min. 253mm metal web joists, e.g. Wolf Easi-Joist, MiTek Posi-Joist, ITW[see the Robust Details handbook for a full list of up-to-date acceptable types]
- Two layers of 15mm acoustic plasterboard mounted on min. 16mm resilient bars

Performance

- $R_w (C;Ctr) = 66 (-5;-12) \text{ dB}$, ref. L03-274
- $L_{n,w} = 54 \text{ dB}$, ref. L03-275
- Ceiling down lights - if spaced at max. 1 per 1.8m², and used with Tenmat FF 109 down light covers:
  - $R_w (C;Ctr) = 65 (-5;-12) \text{ dB}$, ref. L03-274
  - $L_{n,w} = 54 \text{ dB}$, ref. L03-275

New Build Separating Floors

3. Robust Details

i) E-FT-1: Timber I-joists with floating floor

ii) E-FT-3: Metal web joists with floating floor

Performance

- $R_w (C;Ctr) = 66 (-5;-12) \text{ dB}$, ref. L03-274
- $L_{n,w} = 54 \text{ dB}$, ref. L03-275
- Ceiling down lights - if spaced at max. 1 per 1.8m², and used with Tenmat FF 109 down light covers:
  - $R_w (C;Ctr) = 65 (-5;-12) \text{ dB}$, ref. L03-274
  - $L_{n,w} = 54 \text{ dB}$, ref. L03-275

New Build Separating Floors

Typical junction details

i) External wall with concrete floor

- The external cavity should be stopped with ROCKWOOL SP 60 Firestop to minimise sound transmission along the cavity.

ii) External wall with timber floor

- The external cavity should be stopped with ROCKWOOL TCB to minimise sound transmission along the cavity.

iii) Penetration through floor

- Services that penetrate a habitable room should be enclosed for their full height.
- Enclosure should be made from two layers of 12.5mm standard plasterboard.
- Wrap pipe with ROCKWOOL Roll or alternatively line the enclosure with ROCKWOOL RWA45 25mm.
- Penetrations should be fire protected to satisfy fire regulations.
- Please contact ROCKWOOL Technical Solutions for advice.

Specification

- 18mm T&G chipboard
- Gypsum board 13.5 kg/m² nominal e.g. 19mm plank
- ROCKWOOL RWA45 25mm between FFT1-compliant battens, e.g. JCW80T
- 15mm OSB
- ROCKWOOL FLEXI® 100mm between min. 235mm I-joists
- Two layers of 15mm acoustic plasterboard mounted on min. 16mm resilient bars
### ‘Change of Use’ Separating Floors

#### Guidance from Part E / G

i) **Independent ceiling to existing timber floor**

**Specification**
- Existing ceiling upgraded to 20 kg/m²
- ROCKWOOL FLEXI® 100mm between new independent ceiling joists
- Two layers of plasterboard, staggered joints, min 20 kg/m² e.g. 2 x 15mm standard plasterboard
- Pre-completion side testing required

ii) **Platform floor with absorbent material**

**Specification**
- Both sides lined with one layer of 12.5mm standard plasterboard (min. 8.4 kg/m² per board)
- ROCKWOOL FLEXI® 50mm between 75x44mm studs
- Achieves Rw 40 dB
- Test ref. AIRO L/1944/A/5 (RTP03)

### Internal Walls

**ROCKWOOL Tested Solutions**

i) **Timber frame, 75mm studs**

**Specification**
- Both sides lined with one layer of 12.5mm standard plasterboard (min. 8.4 kg/m² per board)
- ROCKWOOL FLEXI® 50mm between 75x44mm studs
- Achieves Rw 40 dB
- Test ref. AIRO L/1944/A/5 (RTP03)

ii) **Timber frame, 63mm studs**

**Specification**
- Both sides lined with one layer of 12.5mm acoustic plasterboard (min. 10.2 kg/m² per board)
- ROCKWOOL FLEXI® 50mm between 63x38mm studs
- Achieves Rw 40 dB
- Test ref. RTP-AC01A

iii) **Lightweight metal studs**

**Specification**
- Both sides lined with one layer of 12.5mm standard plasterboard (min. 8.4 kg/m² per board)
- ROCKWOOL FLEXI® 50mm between 50mm metal studs at 600mm centres
- Achieves Rw 40 dB
- Test ref. L03-185

### Internal Floors

**ROCKWOOL Tested Solution**

- **Timber joists**

**Specification**
- 18mm T&G chipboard
- ROCKWOOL FLEXI® 100mm between timber joists at 460mm centres
- Standard 12.5mm plasterboard, 8.4 kg/m²
- Test ref. L03-264