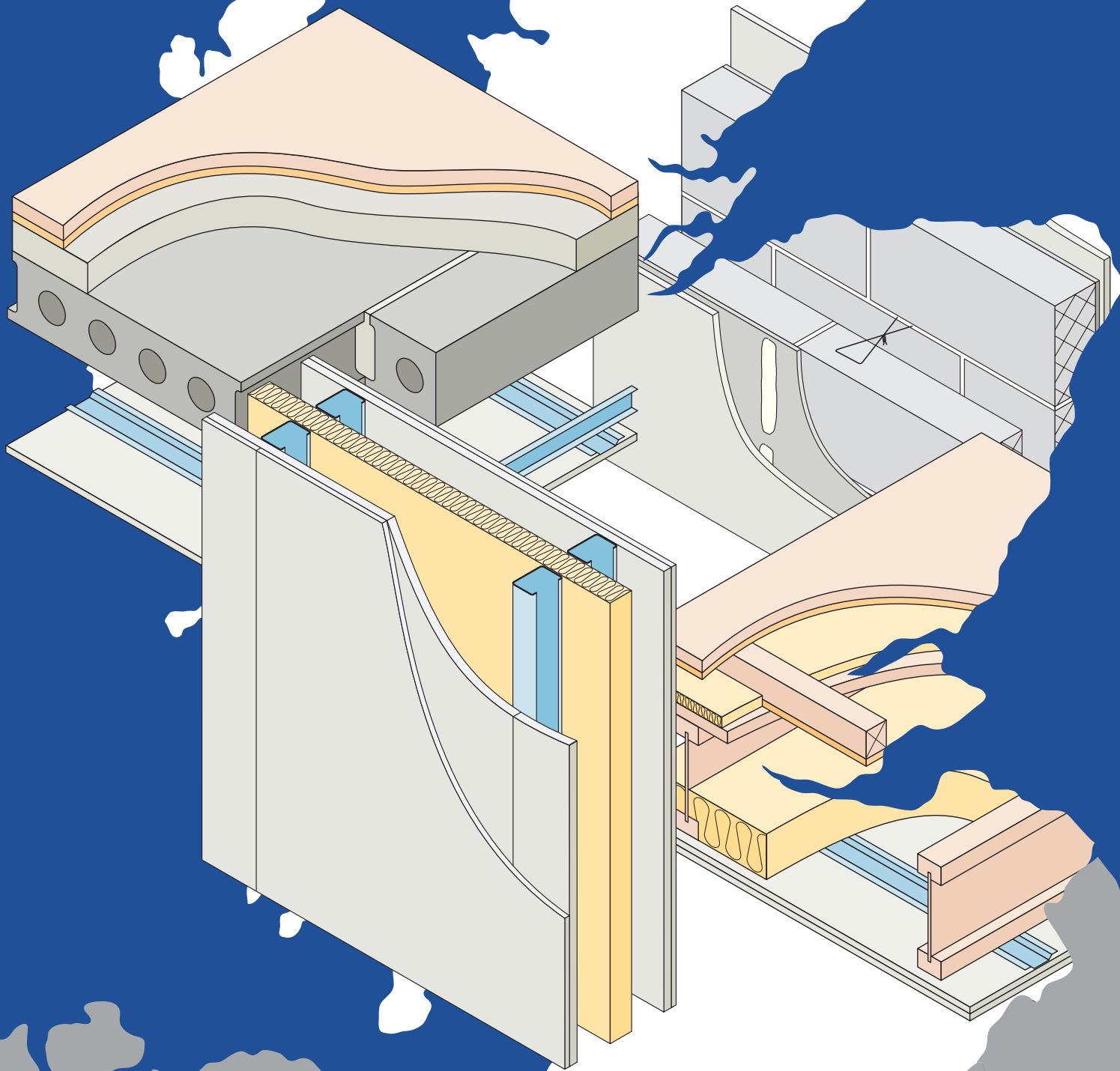


Section 5 Robust Details



Using the Section 5 Robust Details Scheme

1. Select the Robust Details you want to build to

Ensure you are able to meet the specifications and comply with the requirements

If selecting walls and floors for flats, refer to Table 3 in the Introduction to ensure compatibility



2. Register plots with Robust Details Limited (RDL)

Register all plots that will benefit from the robust details, prior to commencement of work on site

Notify the Verifier by forwarding them 1 set of the Purchase Statements issued to you by RDL



3. Construct in accordance with all relevant specifications

The specifications must be strictly followed. If in doubt contact the RDL Technical Helpline

The Verifier may carry out inspections of work in progress. Deviations from the specifications may result in post-completion sound testing

Performance Monitoring

To ensure the scheme continues to provide the expected high levels of performance, RDL conduct random visual inspections and tests on a proportion of sites registered. So please remember that your site may be visited by us as well as the Verifier.

Other forms of Construction may also be available...

If you have designed a robust form of construction for separating walls or floors, it is possible to have it assessed for inclusion in this Handbook

This involves submitting details of the construction; and a number of sound tests conducted within dwellings on real developments. To meet the robust details performance criteria, the mean of the test results must be at least 5dB better than the Building (Scotland) Regulations minimum.

For further information, please refer to our website, www.robustdetails.com, or for additional advice, phone the RDL Technical Helpline on 0870 240 8209

Introduction

List of Robust Details

- Table 1 – Separating walls
- Table 2 – Separating floors
- Tables 3a, 3b and 3c
 - **robust**details® separating walls and floors which can be used together in flats/apartments
- Table 4 – **robust**details® separating walls which can be used together with non-**robust**details® separating floors in flats/apartments
- Table 5 – **robust**details® separating floors which can be used together with non-**robust**details® separating walls in flats/apartments
- Tables 6a and 6b
 - **robust**details® separating walls and floors which can be used together with the proprietary flanking constructions contained in Appendix A2
- Table 7 – **robust**details® separating floors which can be used together with alternative products contained in Appendix A3

Robust Details

Separating walls

- Masonry
- Timber

Separating floors

- Timber
- Steel-concrete composite

Appendices

- Appendix A1 Additional guidance
- Appendix A2 Proprietary flanking constructions
- Appendix A3 Specific proprietary products
- Appendix B Glossary
- Appendix C Determination of the acoustic performance requirements for floating floor treatments used with **robust**details® timber frame separating floors
- Appendix D Determination of the acoustic performance requirements for floating floor treatments used with **robust**details® concrete and steel-concrete composite separating floors
- Appendix E Determination of the acoustic performance requirements for resilient bars used on ceilings
- Appendix F Determination of the acoustic performance of downlighters and recessed lighting in lightweight separating floors

This handbook produced by Robust Details Limited contains the separating wall and separating floor constructions that have achieved the status of Robust Details for Section 5. The prescribed Robust Details contained herein are applicable to limiting the transmission of noise **only within new build domestic buildings** within the scope of the Building (Scotland) Regulations 2004.

The Robust Details have undergone an extensive sound insulation testing regime, robust design analysis and independent audit and have satisfied the Robust Details Limited Management Board that they should provide a level of sound insulation compliant with Section 5. Only then can they be incorporated within this Robust Details Handbook.

Importantly, the designer and the verifier can be confident that when considering approval of a building warrant for new build housing incorporating **robustdetails[®], compliance with Mandatory Standard 5.1 will be achieved.**

It can be safely assumed that the pre-emptive approval of the building warrant is based on sound evidence and design competence.

As noted previously, the Building (Scotland) Regulations 2004 recognise that compliance on site can only be achieved by having sufficient checks in place to provide comfort to the designer and verifier that the design proposals have been followed to the letter during the construction and installation phase prior to completion and handover. In essence, buildings containing designed elements of construction to combat unacceptable levels of noise transmission, should be subjected to a **post-completion assessment (and test) to confirm their performance test levels.**

The use of **robustdetails**[®] provides an alternative to pre-completion testing for demonstrating compliance with the performance standards of Section 5 for new build dwellings. Every dwelling built using **robustdetails**[®] needs to be registered with Robust Details Limited and a plot registration fee paid.

Each Robust Detail includes materials and construction details for the separating wall/floor and its key interfaces with other elements and should be read in conjunction with Appendix A.

The final page of each Robust Detail is a checklist, which should be photocopied and used by the site manager/supervisor to confirm that the separating wall/floor has been built correctly. The verifier may ask to see the checklist.

It is important that separating walls/floors and their associated junctions and flanking conditions are constructed entirely in accordance with the relevant Robust Details; otherwise the verifier may require pre-completion testing to be carried out.

The tables on pages 4, 5 and 6 show which **robustdetails**[®] separating floors and walls can be used in flats/apartments.

Note:

The guidance contained in this handbook relates only to Section 5. The building work will also have to comply with the requirements of all other relevant parts of the Building (Scotland) Regulations and other relevant legislation.

Where testing is required on a wall or floor the user should seek expert acoustic advice prior to construction commencing.

Further information on the **robustdetails**[®] scheme (including how to apply for new Robust Details) is available on the Robust Details Limited web site at:

www.robustdetails.com

or from:

Robust Details Limited
Unit 14, Shenley Pavilions
Chalkdell Drive
Shenley Wood
Milton Keynes
MK5 6LB

Telephone: 03300 882140 - Technical
03300 882141 - General

Terms and Conditions:

Please refer to www.robustdetails.com for full terms and conditions.

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Introduction

List of Robust Details

Table 1 – Separating walls

V-WM-11	masonry – lightweight aggregate blockwork (render and gypsum-based board) with 100mm minimum cavity
V-WM-14	masonry – lightweight aggregate blockwork Saint Gobain - Isover RD35 (gypsum-based board) with 100mm minimum cavity
V-WM-19	masonry – dense or lightweight aggregate blockwork (render and gypsum-based board) with 100mm minimum cavity and MONARFLOOR® BRIDGESTOP® system
V-WM-20	masonry – lightweight aggregate blockwork Saint Gobain - Isover RD Party Wall Roll (gypsum-based board) with 100mm minimum cavity
V-WM-21	masonry – lightweight aggregate blockwork (wet plaster) with minimum 100mm cavity
V-WM-27	masonry – lightweight aggregate blockwork Superglass Party Wall Roll (gypsum-based board) with minimum 75mm cavity
V-WT-1	timber frame – without sheathing board
V-WT-2	timber frame – with sheathing board
V-WT-3	timber frame – Elecoframe prefabricated panels
V-WT-4	timber frame – Excel Industries Warmcell 500 insulation - with sheathing board

Introduction

List of Robust Details

Table 2 – Separating floors

V-FT-1	timber i-joists and floating floor treatment
V-FT-2	timber solid joists and floating floor treatment
V-FS-1	steel deck and in-situ concrete and floating floor treatment

Introduction

Table 3a – Combinations of **robust**details® separating walls and floors for flats/apartments in **loadbearing masonry** constructions

Separating walls	Separating floors
------------------	-------------------

No separating floors are currently approved for use with loadbearing masonry walls

Introduction

Table 3b – Combinations of **robust**details® separating walls and floors for flats/apartments in **timber frame** constructions

Separating walls	Separating floors	
	V-FT-1 V-FT-2	V-FS-1
V-WT-1	✓	W see note 1
V-WT-2	✓	W see note 1
V-WT-3	F	W see note 1
V-WT-4	F	W see note 1

Table 3c – Combinations of **robust**details® separating walls and floors for flats/apartments in **reinforced concrete and steel frame** constructions

Separating walls	Separating floors
------------------	-------------------

No separating walls are currently approved for use for flats/apartments in reinforced concrete and steel frame constructions

Key for Tables 3b and 3c

✓ Permissible wall and floor combinations for flats/apartments requiring no pre-completion sound testing.

F Only the separating floor requires pre-completion sound testing.

W Only the separating wall requires pre-completion sound testing.

1 Lightweight steel and timber frame walls may be constructed above in-situ poured concrete floors.

The lightweight walls built directly off the concrete floors may be registered as Robust Details provided:

- they meet all other requirements of the Robust Details, including flanking constructions;
- the principles of the raft foundation junction are followed. As such, the concrete of the floor must have a mass of 365 kg/m² (min), and a floating floor treatment must be provided;

Walls constructed to the soffit of in-situ poured concrete floors can not be registered as Robust Details and may be subject to pre-completion sound testing.

See also notes relating to [Combining loadbearing masonry and lightweight framed separating walls](#) included on page 6.

Introduction

Table 4 – Combining **robustdetails® separating walls with non-**robust**details® separating floors in flats/apartments**

Loadbearing masonry	V-WM-11	F1
	V-WM-14	F1
	V-WM-20	F1
	V-WM-21	F1
	V-WM-27	F1
Timber frame	V-WT-1	F2
	V-WT-2	F2
	V-WT-3	F2
	V-WT-4	F2

Key

- F1** Only the separating floor requires pre-completion testing provided the floor does not bridge the separating wall cavity. Otherwise both the wall and floor need testing.
- F2** Only the separating floor requires pre-completion testing provided the floor is timber-based and does not bridge the separating wall cavity. Otherwise both the wall and floor need testing.

For any construction that requires a separating element to be tested, the user should seek expert acoustic advice on the design and potential acoustic performance.

Table 5 – Combining **robustdetails® separating floors with non-**robust**details® separating walls in flats/apartments**

Timber frame	V-FT-1	W3
	V-FT-2	W3
Steel frame	V-FS-1	W5

Key

- W3** Only the separating wall requires pre-completion testing if used with timber frame supporting walls and twin leaf timber frame separating walls. Otherwise both the floor and wall need testing.
- W5** Only the separating wall requires pre-completion testing provided the external wall meets the specification given in the separating floor Robust Details. Otherwise both the floor and wall need testing.

Combining loadbearing masonry and lightweight framed separating walls

Upper storeys of blocks of flats may be constructed using lightweight steel or timber frame, where the lower storeys are loadbearing masonry construction. The lightweight walls built directly off the uppermost precast concrete separating floors may be registered as Robust Details provided:

- the lightweight walls are in vertical alignment with the masonry walls below, such that they can follow the principles of the ground floor junction shown for the relevant **robust**details® separating wall;
- the external (flanking) wall construction above the separating floor meets the requirements on page 2 of the relevant **robust**details® separating wall, and have 2 layers of gypsum-based board;
- the junction between the bottom rail (or sole plate) is well sealed;
- all other relevant requirements in the Handbook are strictly followed.

If the lightweight walls are not in vertical alignment with the masonry walls below, the concrete floor would bridge the separating wall cavities and connect the wall leaves. Therefore, the lightweight walls directly above the floor, as well as the masonry walls directly below, may be subject to pre-completion sound testing.

The separating floor can be registered as a Robust Detail provided:

- the floor is constructed in accordance with the requirements of the published detail;
- the external (flanking) wall below the precast concrete floor satisfies the requirements of detail 1 on page 2 of the relevant Robust Details separating floor;
- all other relevant requirements in the Handbook are strictly followed.

Introduction

Table 6 – robustdetails® separating walls which can be used together with the proprietary flanking constructions contained in Appendix A2

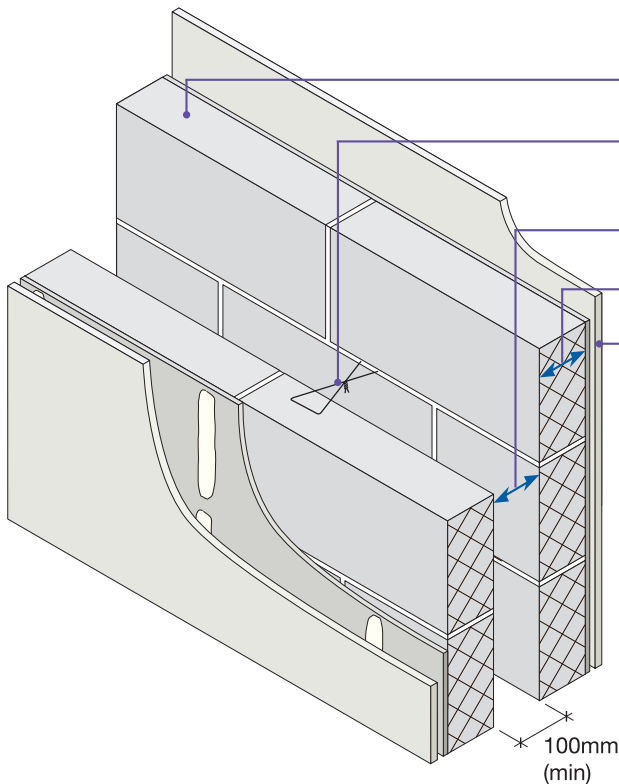
		BRIDGESTOP® system	Smartroof system	Kingspan TEK	Prestoplan PresPeak 60	RoofSpace I-Roof
Loadbearing Masonry	V-WM-11	✓	✓			✓
	V-WM-14	✓	✓			✓
	V-WM-19	✓				
	V-WM-20	✓	✓			✓
	V-WM-21	✓				
	V-WM-27	✓	✓			✓
Timber frame	V-WT-1		✓	✓	✓	✓
	V-WT-2		✓	✓	✓	✓
	V-WT-3		✓			✓
	V-WT-4		✓			✓

Introduction

Table 7 – **robust**details® separating floors which can be used together with alternative products contained in Appendix A3

		British Gypsum GypFloor	Insumate insulation tray
Timber floors	V-FT-1		✓
	V-FT-2		✓
Steel-concrete and steel floors	V-FS-1	✓	

- Lightweight aggregate, or nominated hollow or cellular blocks ■
- Render and gypsum-based board on dabs ■
- Minimum 100mm cavity ■



Block density	1350 to 1600 kg/m ³
Wall ties	'Tie type A' (see Appendix A)
Cavity width	100mm (min)
Block thickness	100mm (min), each leaf
Wall finish	Gypsum-based board (nominal 8 kg/m ²) mounted on dabs on cement:sand render (nominal 8mm) with scratch finish Typical render mix 1:1:6 to 1:1½:4. Render mix must not be stronger than background (see Appendix A)
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity – clear, fully filled or partially filled with insulation

Alternative internal renders

British Gypsum Gyproc Soundcoat Plus (nominal 8mm, minimum 6mm)

Knauf Gypsum Parge Coat (nominal 8mm, minimum 6mm)

Lafarge Ecoat Parge Coat (nominal 8mm, minimum 6mm)

applied in accordance with the manufacturer's instructions.

Hollow or Cellular Blocks

The Besblock Star Performer is the only block of this type currently accepted for use as an alternative to solid blocks in V-WM-11.

The separating wall **must not** be constructed using a mix of the block types.

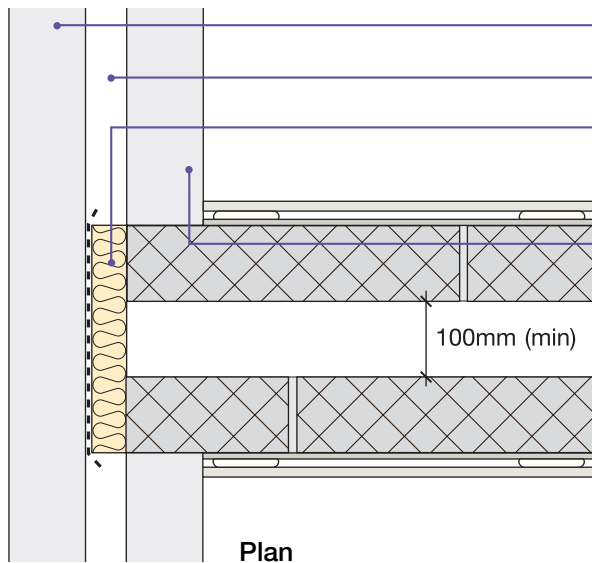
Separating wall cavity insulation (optional)

The cavity may be insulated with mineral wool with a maximum density of 40 kg/m³.

DO

- Keep cavity and wall ties (and insulation) free from mortar droppings and debris
- Fully fill all blockwork joints with mortar
- Make sure there is no connection between the two leaves except for wall ties and foundation (and insulation)
- Ensure cavity is **minimum 100mm** wide and that correct wall ties are used
- Ensure that only solid blocks or the nominated hollow or cellular blocks are used in the construction of separating and flanking walls. Place blocks with cellular holes open to lower mortar bed
- Keep any chases for services to a minimum and fill well with mortar. Stagger chases on each side of the wall to avoid them being back to back
- Ensure that render is applied to the complete face of each leaf with a scratch finish (it may be omitted within the floor joist/beam zone)
- Refer to Appendix A

1. External (flanking) wall junction



Masonry outer leaf

External wall cavity (min 50mm)

Close external wall cavity with a flexible cavity stop. (Optional if external wall cavity is fully filled with mineral wool insulation)

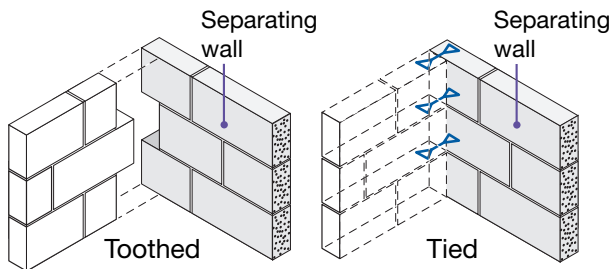
Inner leaf where there is no separating floor e.g. for houses

- 100mm (min) concrete block (850 kg/m³ to 1600 kg/m³) or aircrete block (450 kg/m³ to 800 kg/m³) or Besblock “Star Performer” block
- internal finish – 13mm plaster or nominal 8 kg/m² gypsum-based board

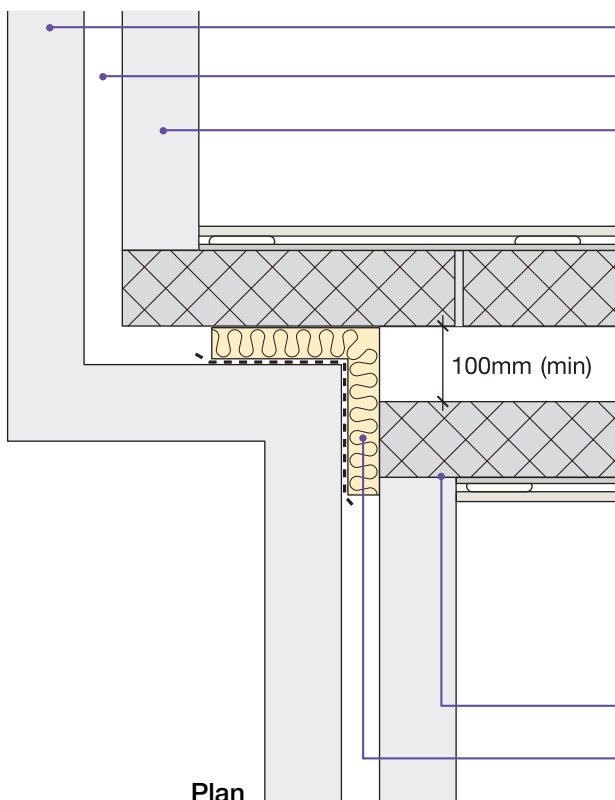
Inner leaf where there is a separating floor e.g. for flats/apartments

- if using **robustdetails**[®] for floor, refer to Table 3a in introduction to select an acceptable **robustdetails**[®] separating floor. Then refer to separating floor Robust Details to identify acceptable inner leaf construction or use Besblock “Star Performer” block
- if using floor requiring pre-completion testing, seek specialist advice

Tooth or tie walls together



2. Staggered external (flanking) wall junction



Masonry outer leaf

External wall cavity (min 50mm)

Inner leaf where there is no separating floor e.g. for houses

- 100mm (min) concrete block (850 kg/m³ to 1600 kg/m³) or aircrete block (450 kg/m³ to 800 kg/m³) or Besblock “Star Performer” block
- internal finish – 13mm plaster or nominal 8 kg/m² gypsum-based board

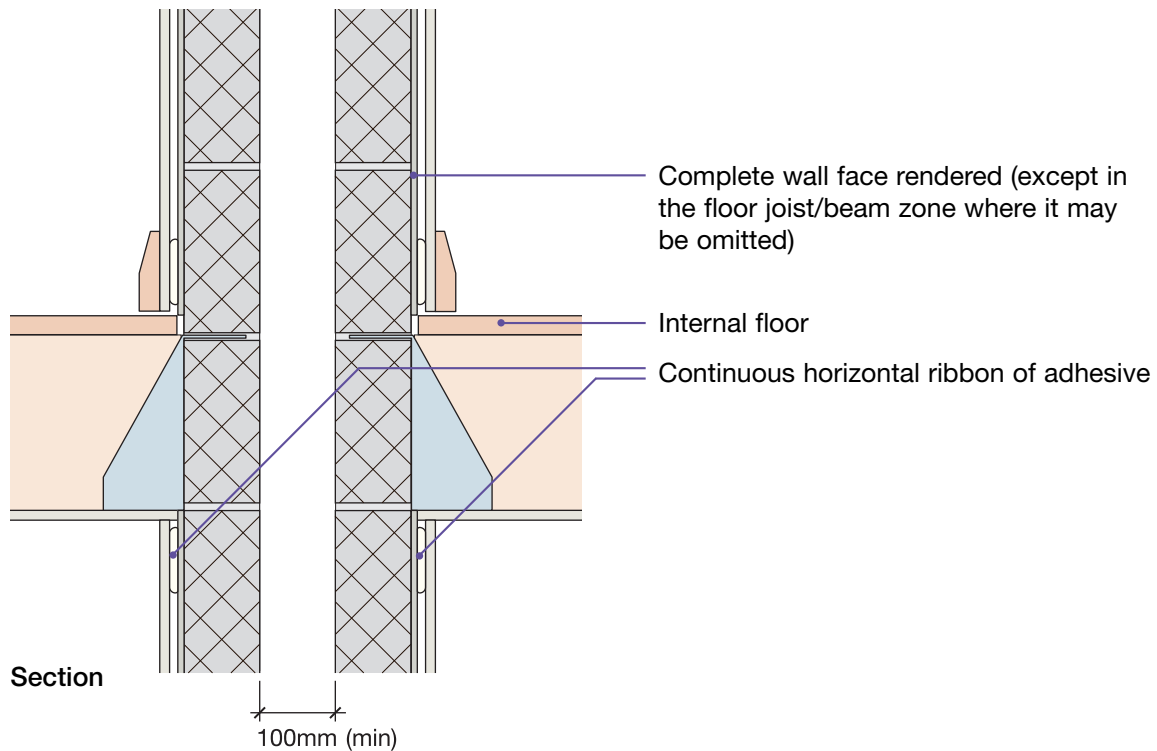
Inner leaf where there is a separating floor e.g. for flats/apartments

- if using **robustdetails**[®] for floor, refer to Table 3a in introduction to select an acceptable **robustdetails**[®] separating floor. Then refer to separating floor Robust Details to identify acceptable inner leaf construction or use Besblock “Star Performer” block
- if using floor requiring pre-completion testing, seek specialist advice

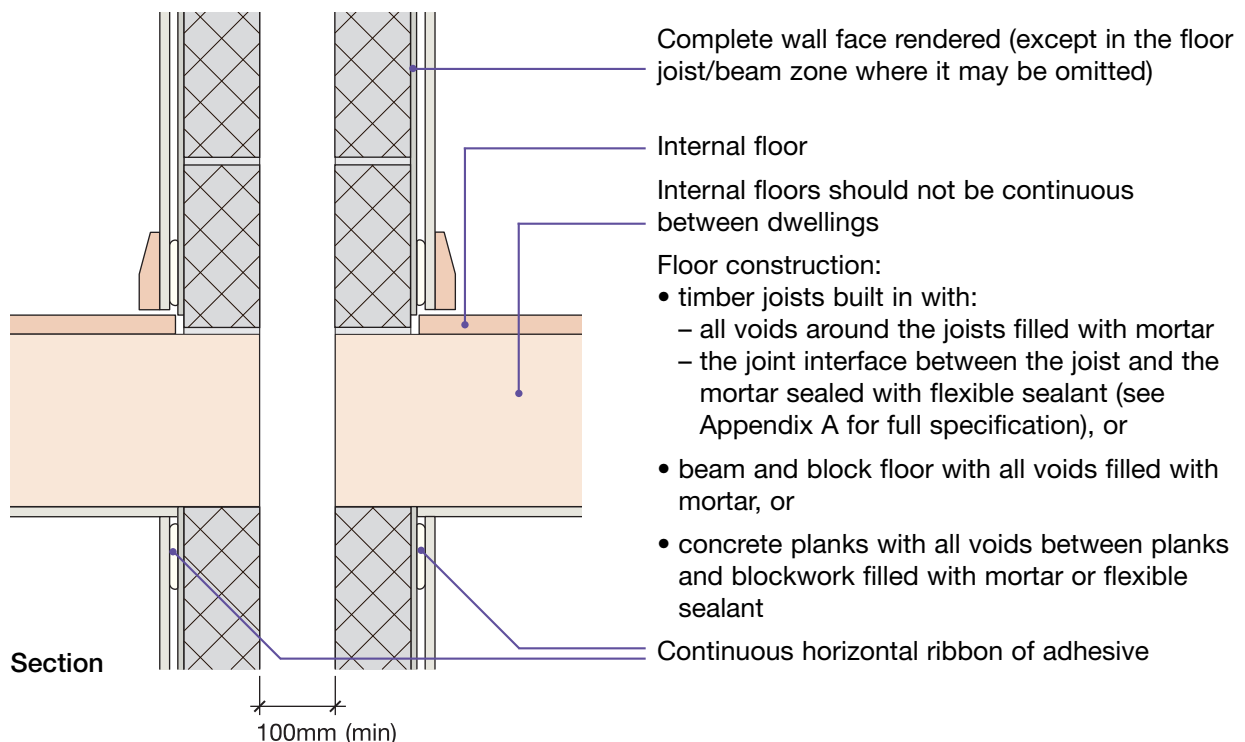
Tooth or tie walls together

Close external wall cavity with a flexible cavity stop. (Optional if external wall cavity is fully filled with mineral wool insulation)

3. Internal floor junction: timber floor supported on joist hangers

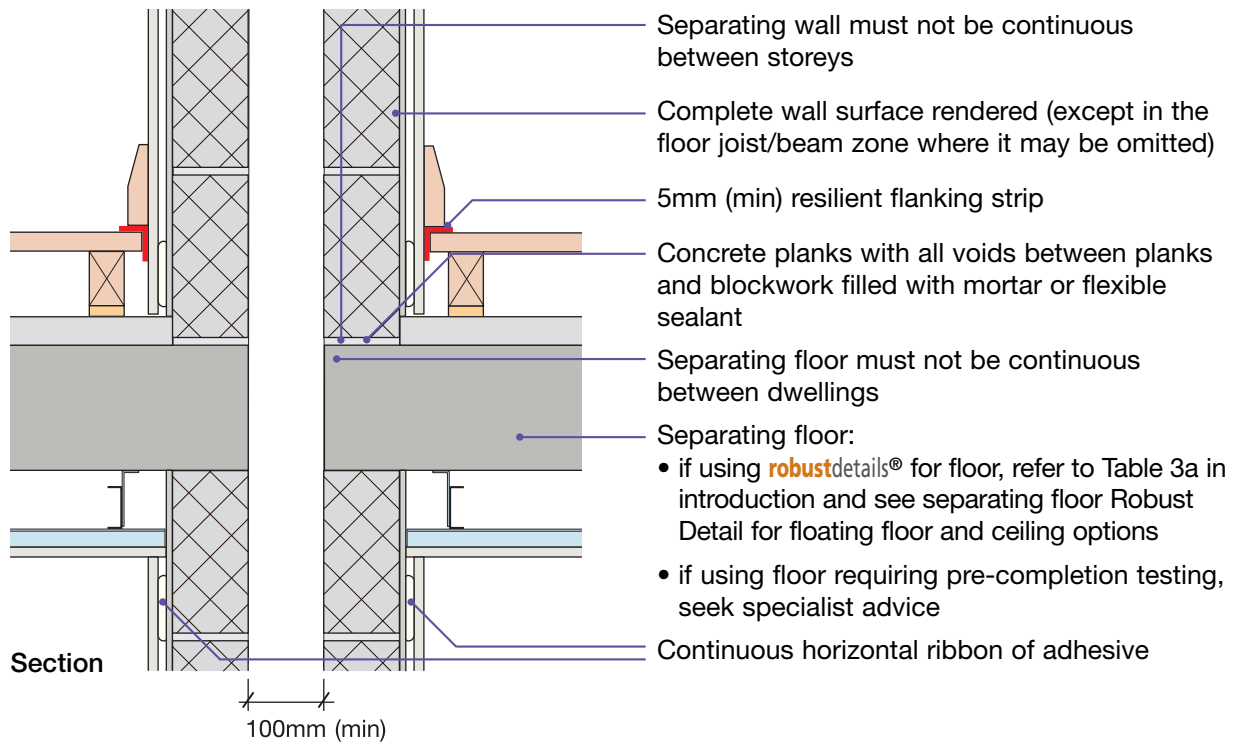


4. Internal floor junction: timber floor joists built in, beam and block or precast concrete



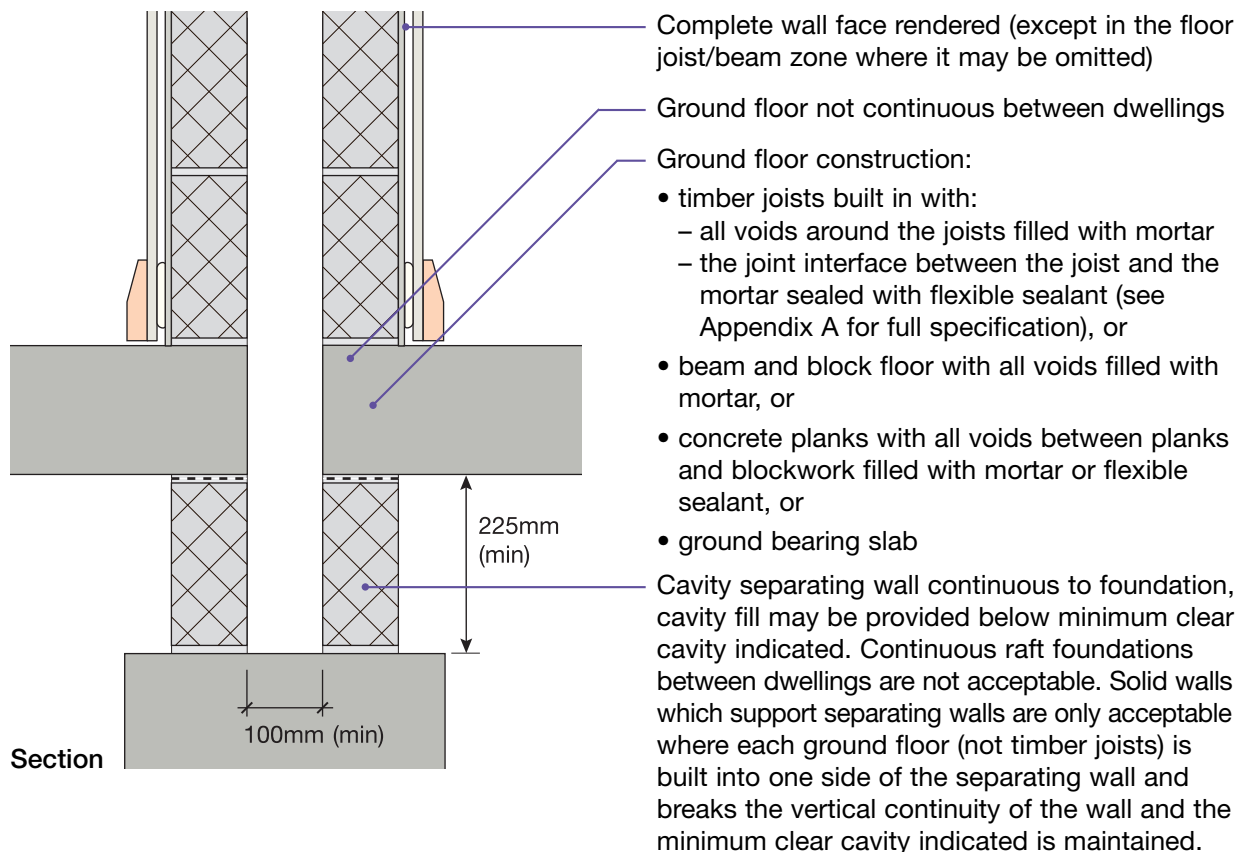
Sketch shows timber joists built in

5. Separating floor junction

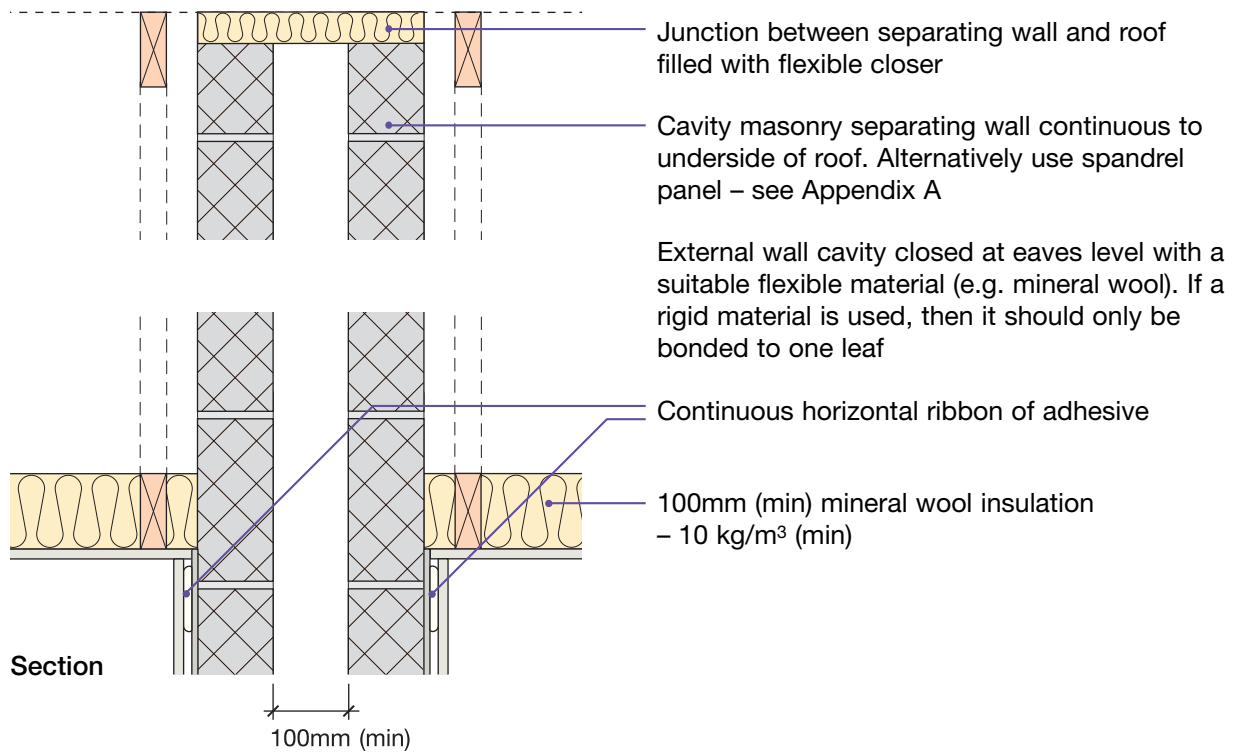


Sketch shows E-FC-1 type separating floor, FFT1 type floating floor treatment and CT3 type ceiling

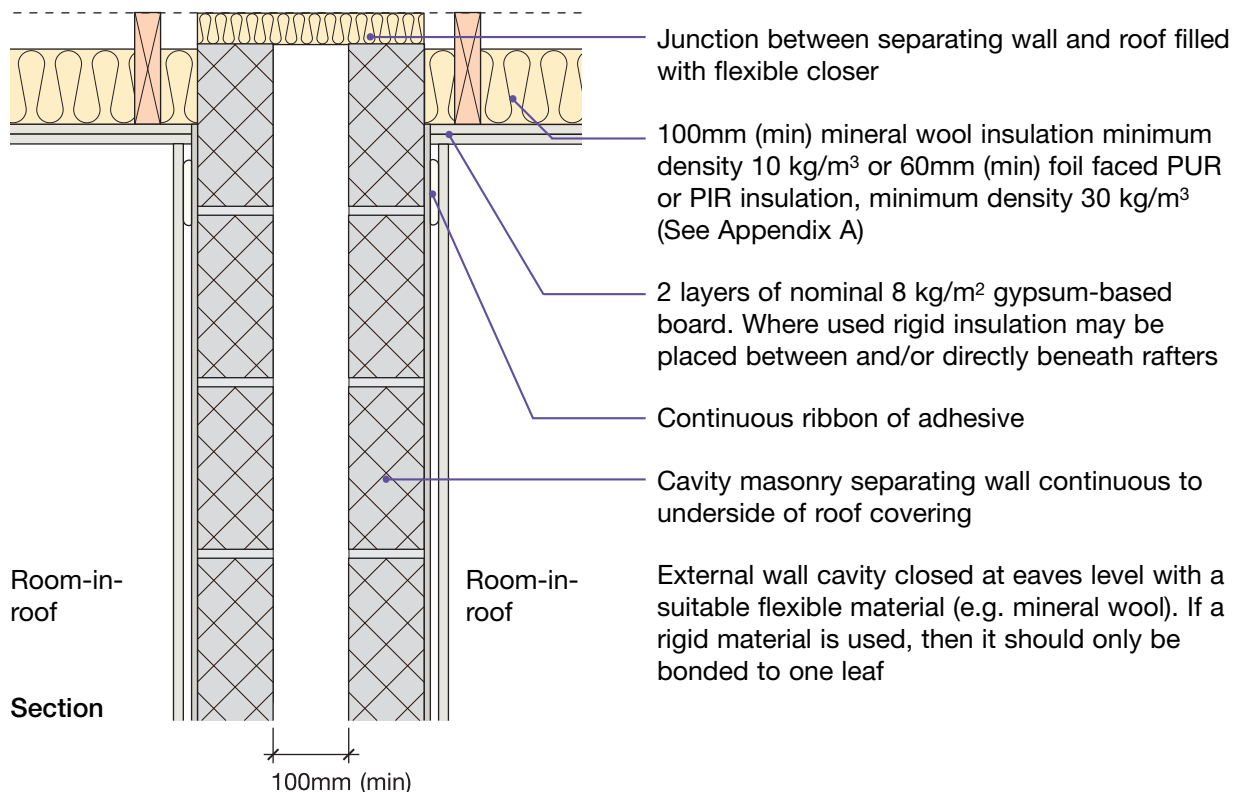
6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ suspended concrete slab or ground bearing concrete slab



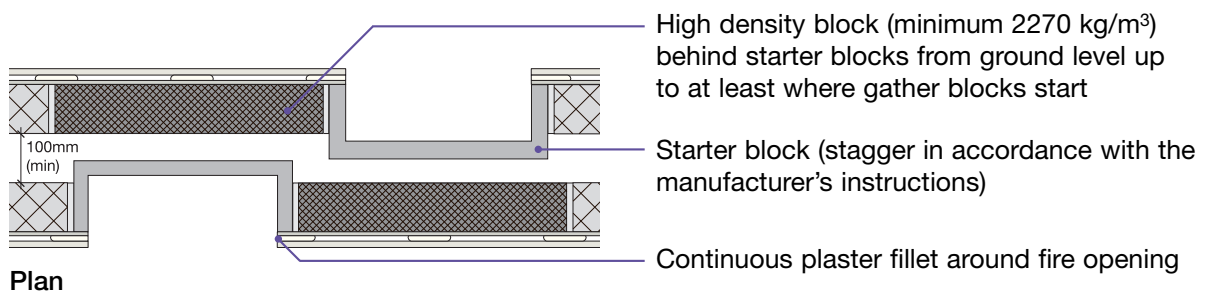
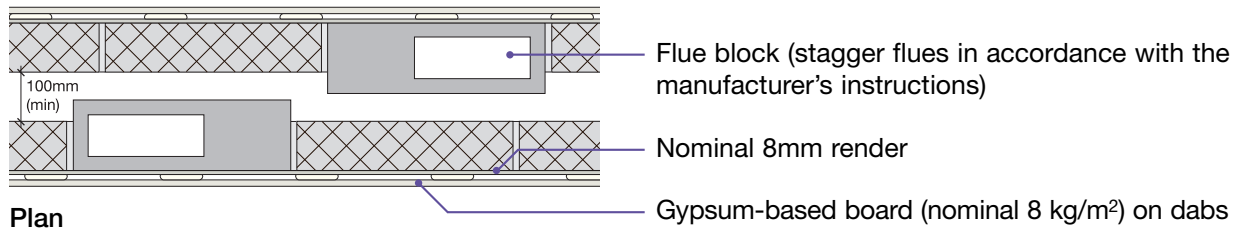
7. Roof junction – pitched roof without room-in-roof



8. Roof junction – pitched roof with room-in-roof



9. Flue blocks built into separating wall



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See overleaf for checklist

CHECKLIST (to be completed by site manager/supervisor)

Company: _____

Site: _____

Plot: _____ Site manager/supervisor: _____

Ref.	Item	Yes (✓)	No (✓)	Inspected (initials & date)
1.	Is separating wall cavity at least 100mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
2.	Is external (flanking) wall cavity at least 50mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
3.	Are separating wall blocks lightweight aggregate (1350 to 1600 kg/m ³) or Besblock “Star Performer”? Are blocks laid with the cells open to the lower bed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
4.	Is cavity free from droppings and debris?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
5.	Are separating wall ties “Tie type A” (see appendix A)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
6.	Are cavity stops installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
7.	Are joints fully filled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
8.	Are voids around floor joists, chases, etc. fully filled/sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
9.	Is render coat applied to the whole wall face (except where it may be omitted between floor joists/beams)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
10.	Where there is a separating floor (e.g. flats/apartments) has the resilient flanking strip been installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
11.	Are all junctions of wall and ceiling boards sealed with tape or caulked with sealant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
12.	Is separating wall satisfactorily complete?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

Notes (include details of any corrective action)

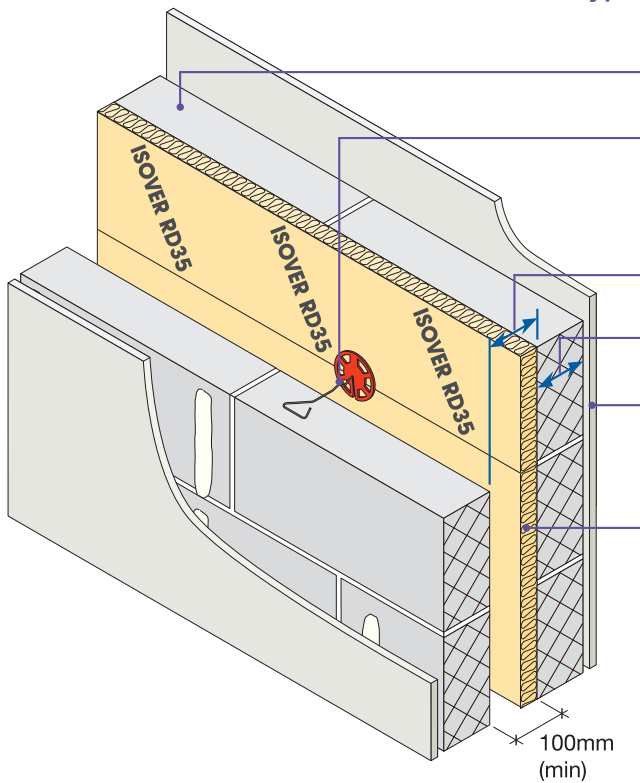
Site manager/supervisor signature

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- Lightweight aggregate blocks
- 35mm (minimum) Saint Gobain-Isover RD35 Acoustic Batt
- Gypsum-based board (nominal 9.8 kg/m²) on dabs

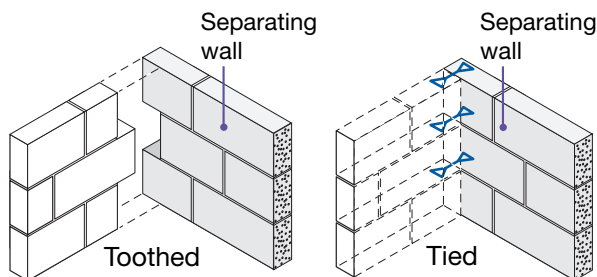
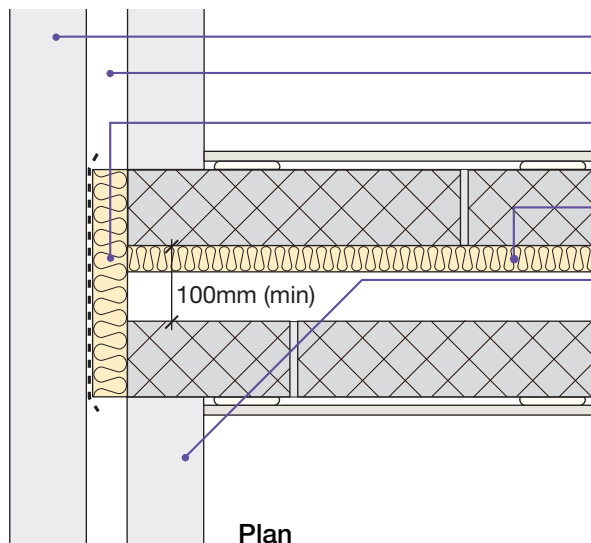


Block density	1350 to 1600 kg/m ³
Wall ties	Insulation retaining wall ties to 'Tie type A' (see Appendix A)
Cavity width	100mm (min) leaf-to-leaf
Block thickness	100mm (min), each leaf
Wall finish	Gypsum-based board (nominal 9.8 kg/m ²) mounted on dabs
Insulation	35mm (min) Iover RD35 mineral wool acoustic batt
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity – clear, fully filled or partially filled with insulation

DO

- Keep cavity, insulation batts and wall ties free from mortar droppings and debris
- Fully fill all blockwork joints with mortar
- Make sure there is no connection between the two leaves except for wall ties and foundation
- Ensure that only solid blocks (i.e. not hollow or cellular) are used in the construction of separating and flanking walls
- Ensure all Iover RD35 acoustic batts are tightly butted together and half cuts are made with a clean sharp knife
- Ensure that Iover RD35 acoustic batts are installed against the same face of the cavity wall construction throughout
- Ensure Iover RD35 acoustic batts are installed in accordance with manufacturer's recommendations
- Ensure Iover RD35 acoustic batts do not bridge the cavity
- Keep any chases for services to a minimum and fill well with mortar. Stagger chases on each side of the wall to avoid them being back to back
- Refer to Appendix A

1. External (flanking) wall junction

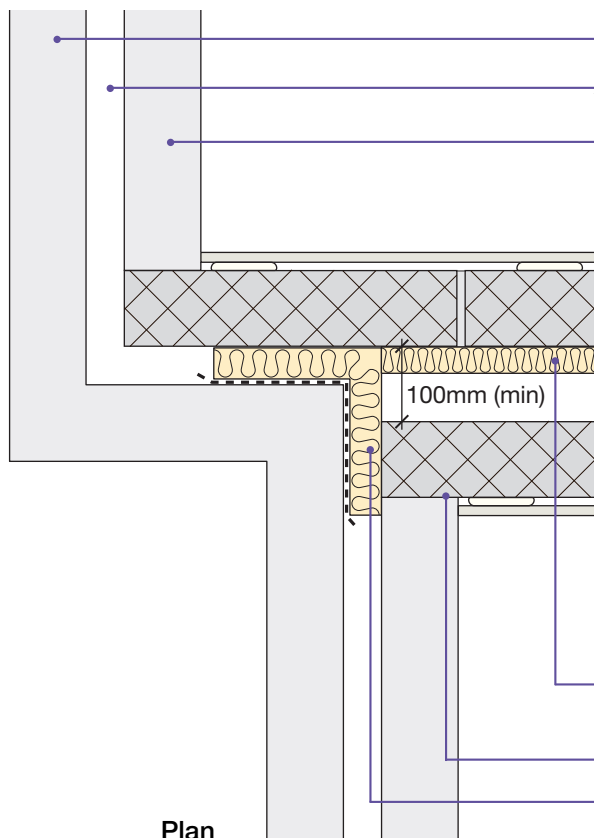


- Masonry outer leaf
- External wall cavity (min 50mm)
- Close cavity with a flexible cavity stop unless it is fully filled with mineral wool insulation
- 35mm (min) Isover RD35 mineral wool acoustic batt (no gaps to remain)
- Inner leaf where there is no separating floor e.g. for houses
 - 100mm (min) concrete block (1350 kg/m³ to 1600 kg/m³) or aircrete block (450 kg/m³ to 800 kg/m³)
 - internal finish – 13mm plaster or nominal 8 kg/m² gypsum-based board

- Inner leaf where there is a separating floor e.g. for flats/apartments
 - if using **robustdetails**[®] for floor, refer to Table 3a in introduction to select an acceptable **robustdetails**[®] separating floor. Then refer to separating floor Robust Details to identify acceptable inner leaf construction
 - if using floor requiring pre-completion testing, seek specialist advice

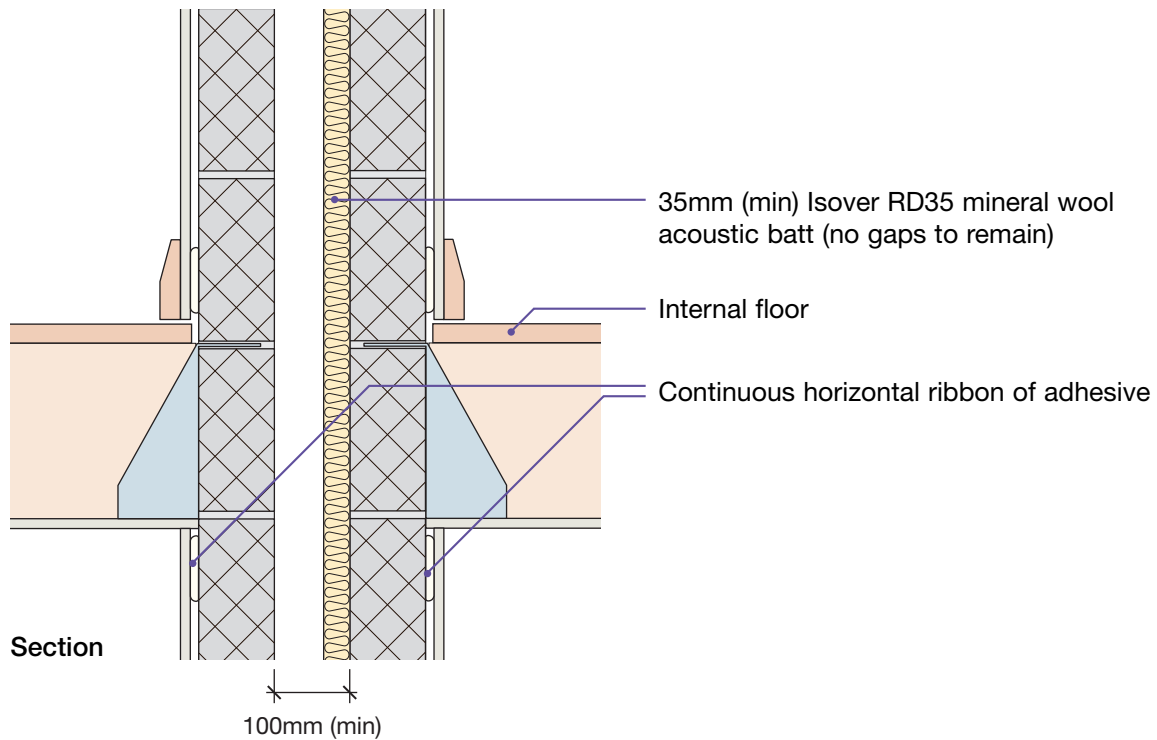
Tooth or tie walls together

2. Staggered external (flanking) wall junction

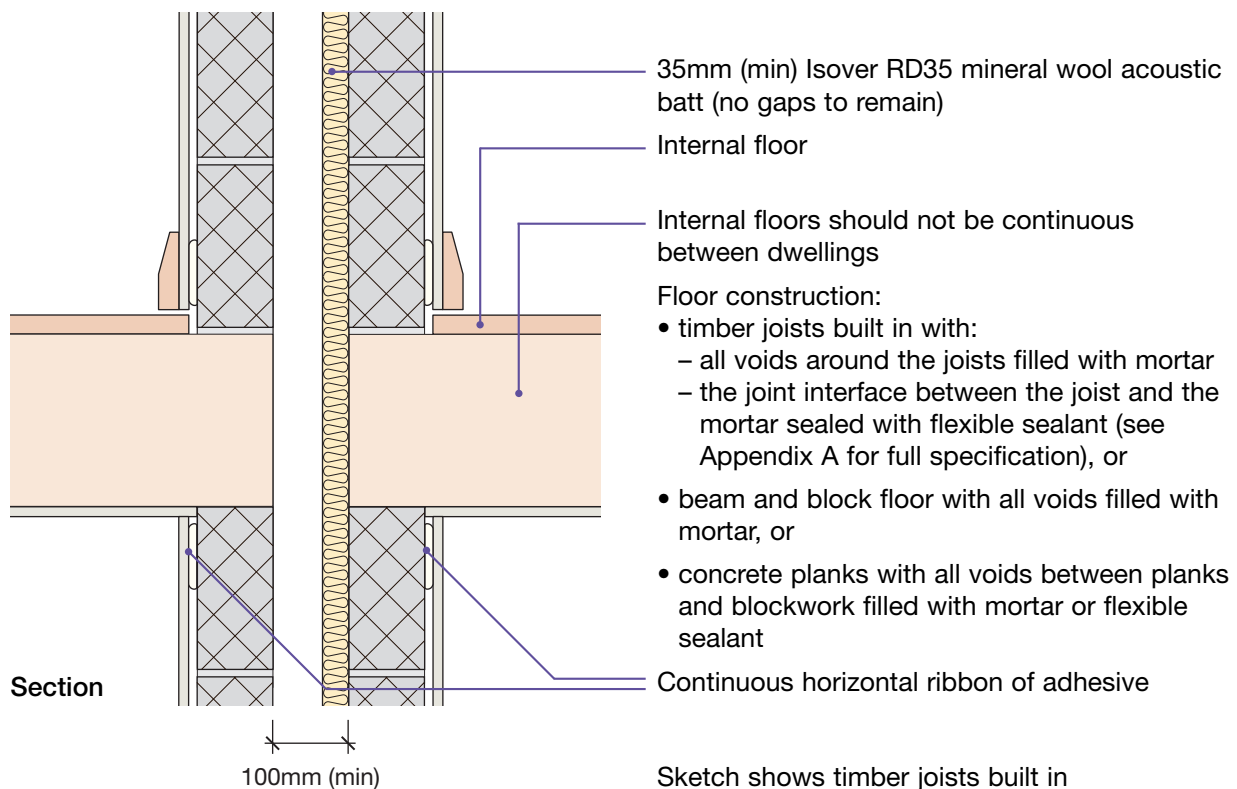


- Masonry outer leaf
- External wall cavity (min 50mm)
- Inner leaf where there is no separating floor e.g. for houses
 - 100mm (min) concrete block (1350 kg/m³ to 1600 kg/m³) or aircrete block (450 kg/m³ to 800 kg/m³)
 - internal finish – 13mm plaster or nominal 8 kg/m² gypsum-based board
- Inner leaf where there is a separating floor e.g. for flats/apartments
 - if using **robustdetails**[®] for floor, refer to Table 3a in introduction to select an acceptable **robustdetails**[®] separating floor. Then refer to separating floor Robust Details to identify acceptable inner leaf construction
 - if using floor requiring pre-completion testing, seek specialist advice
- 35mm (min) Isover RD35 mineral wool acoustic batt (no gaps to remain)
- Tooth or tie walls together
- Close cavity with a flexible cavity stop unless it is fully filled with mineral wool insulation

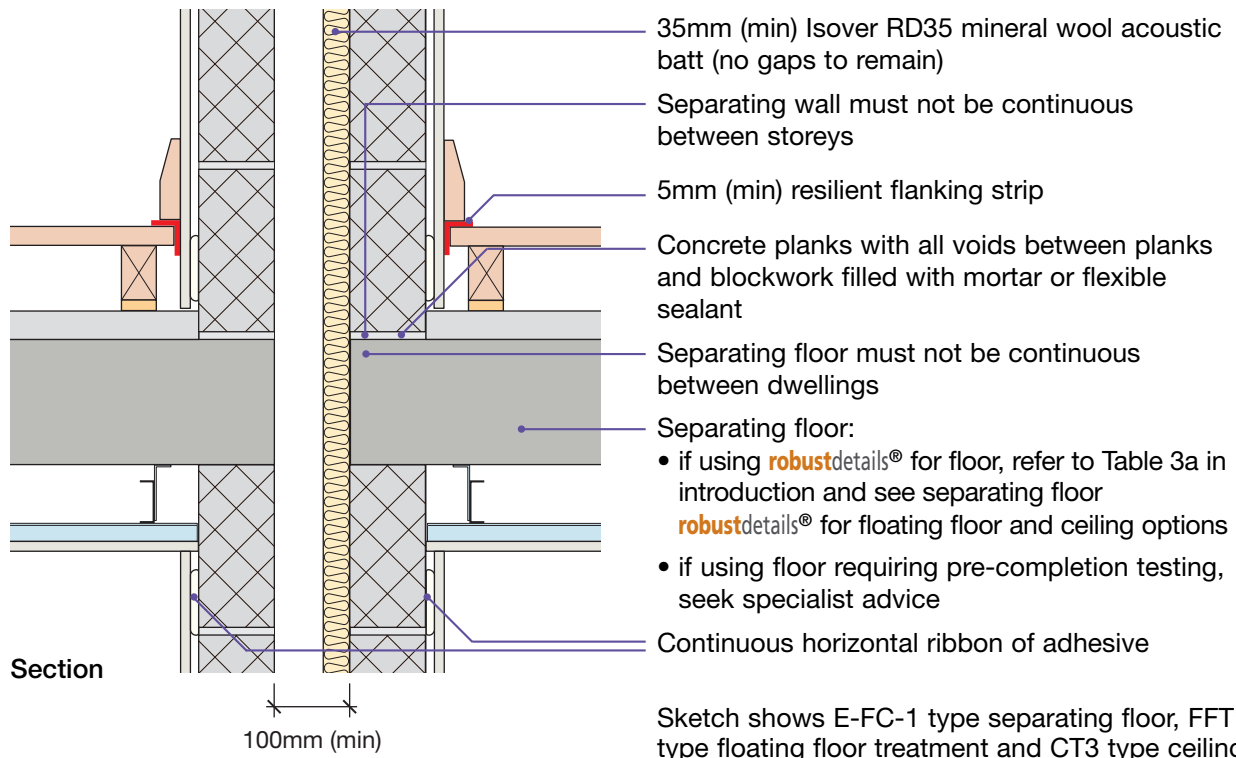
3. Internal floor junction: timber floor supported on joist hangers



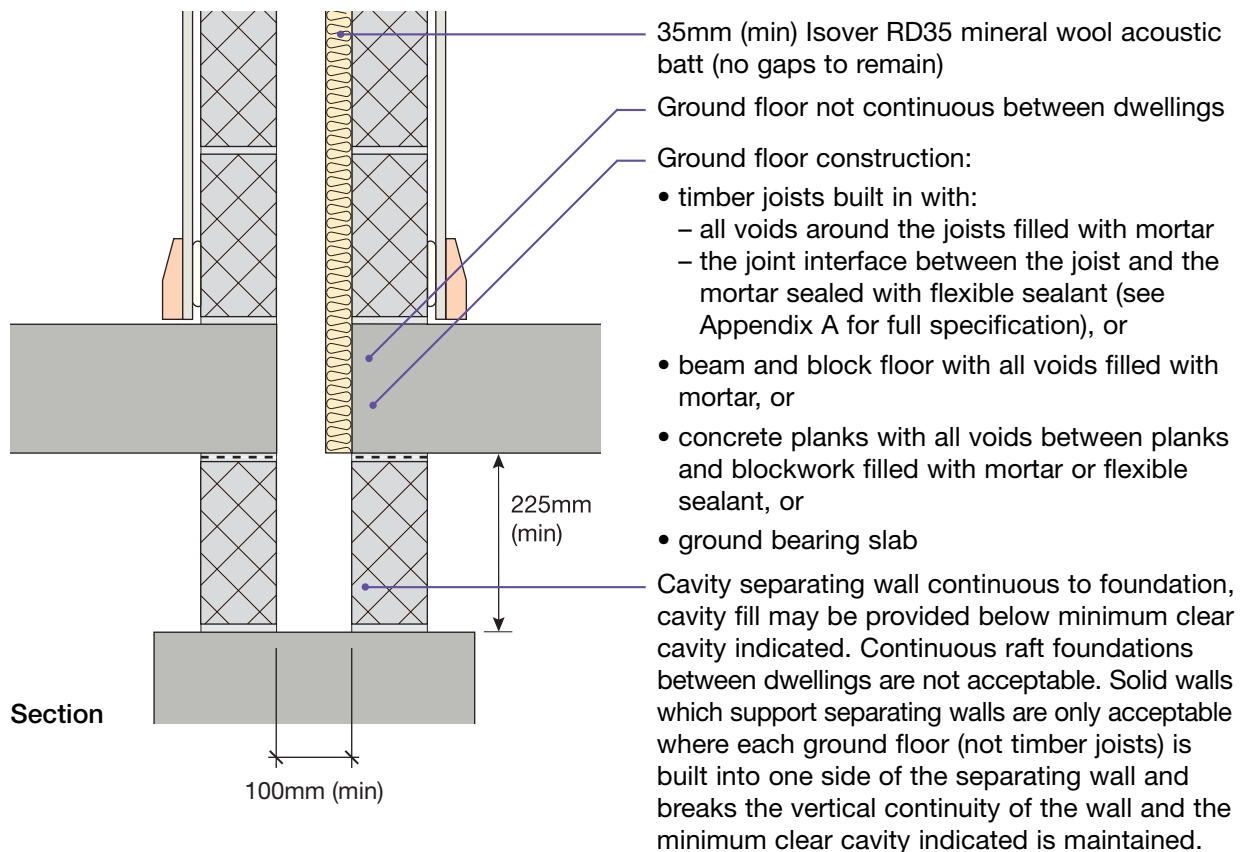
4. Internal floor junction: timber floor joists built in, beam and block or precast concrete



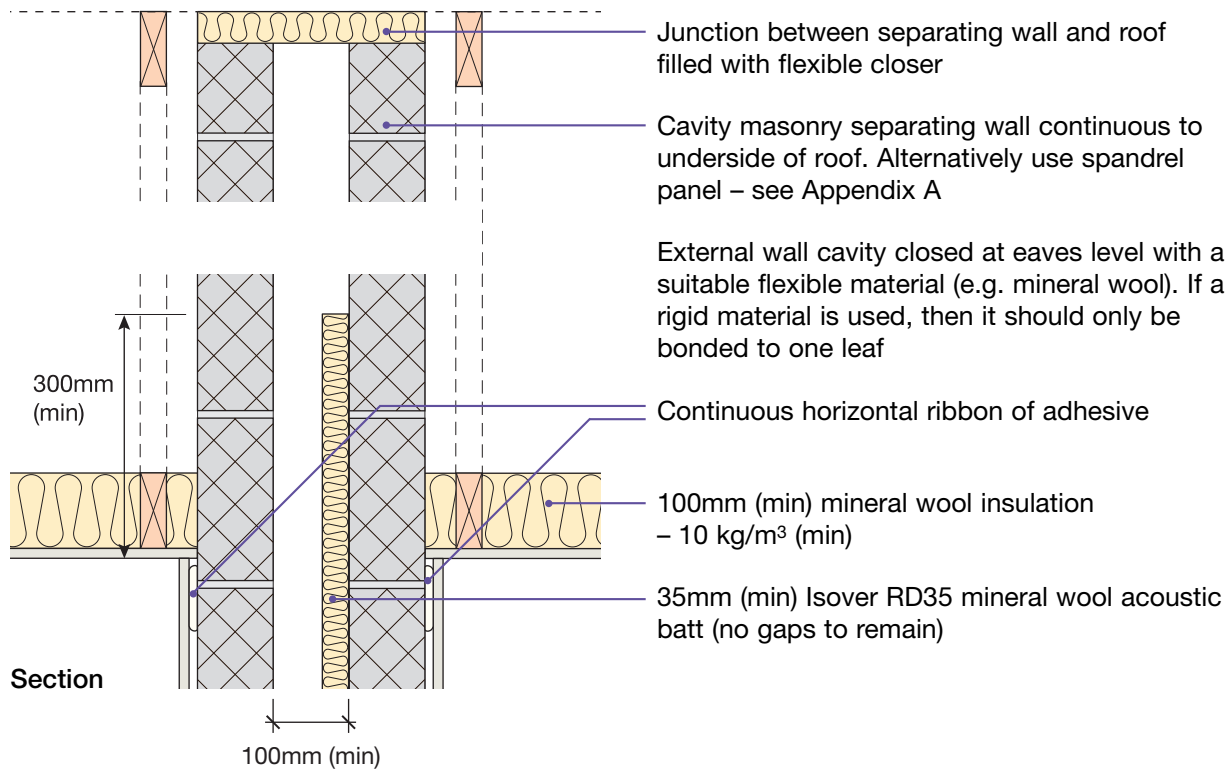
5. Separating floor junction



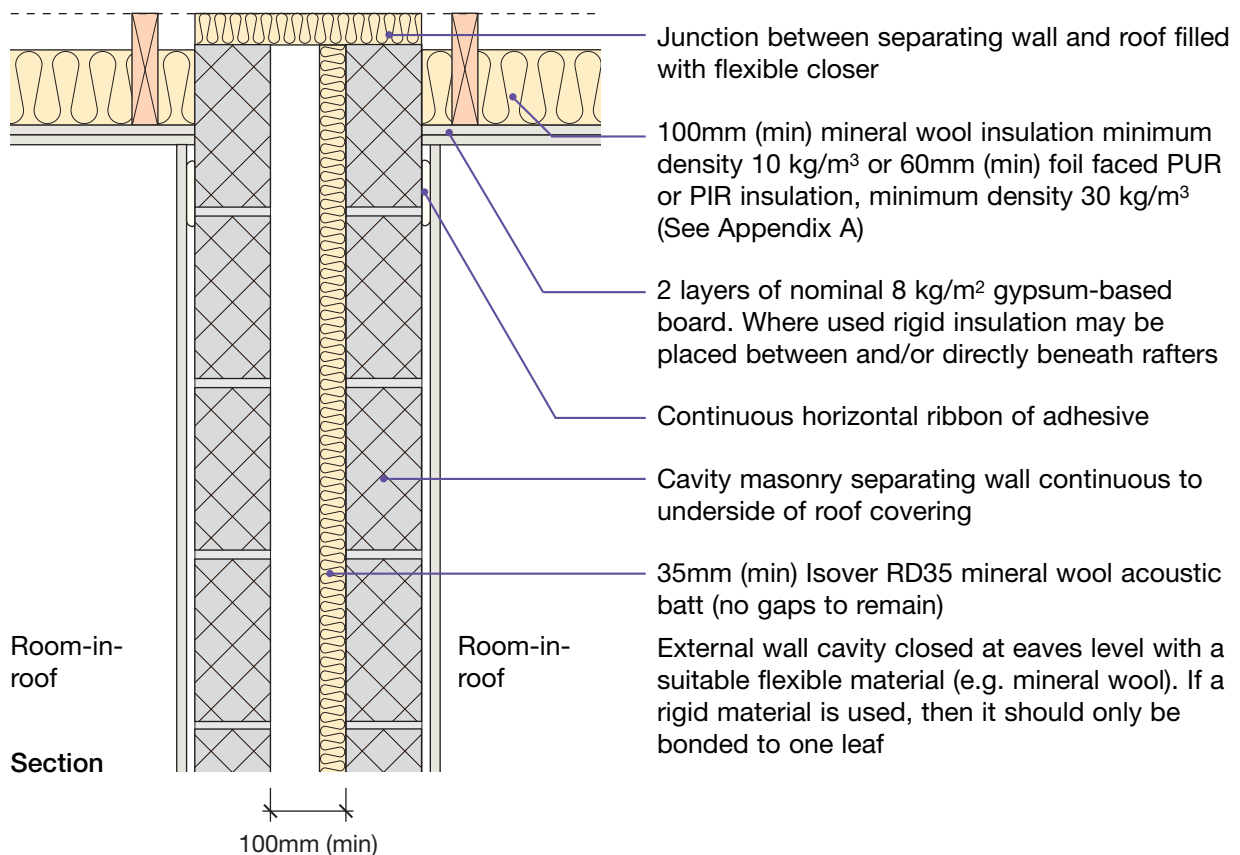
6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ suspended concrete slab or ground bearing concrete slab



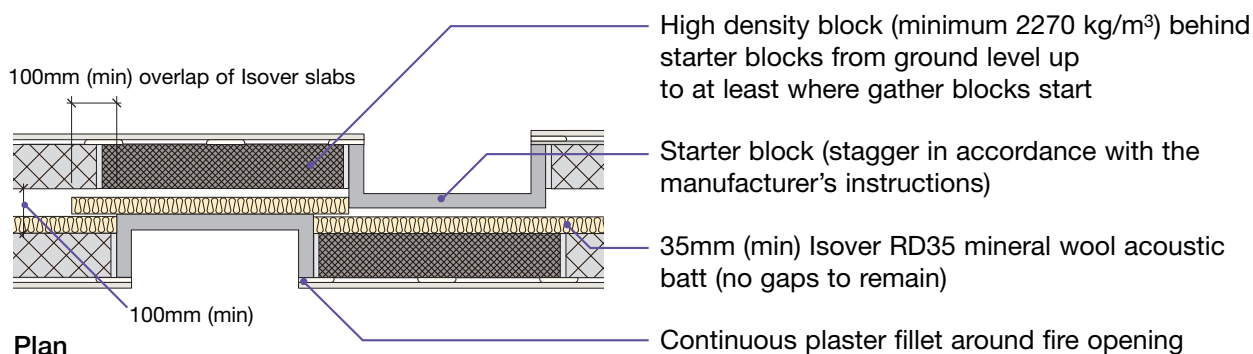
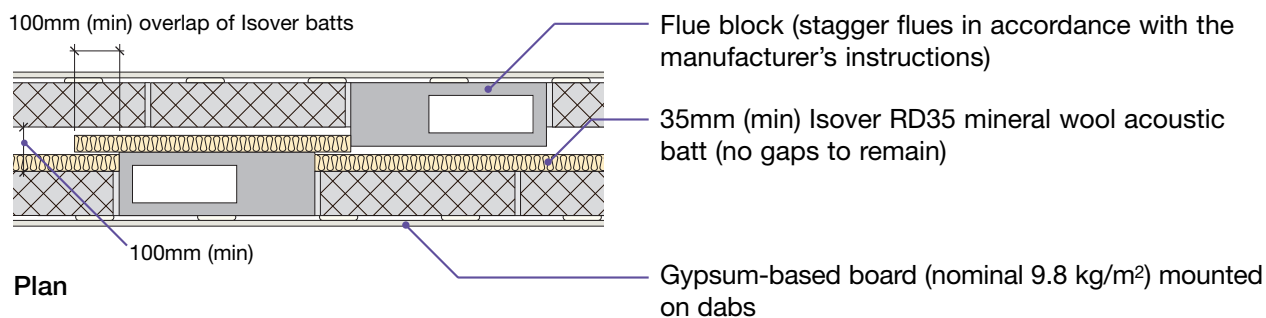
7. Roof junction – pitched roof without room-in-roof



8. Roof junction – pitched roof with room-in-roof



9. Flue blocks built into separating wall



Ensure that mortar and debris does not collect on the insulation batts, to avoid a connection between the wall leaves

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See overleaf for checklist

CHECKLIST (to be completed by site manager/supervisor)

Company: _____

Site: _____

Plot: _____ Site manager/supervisor: _____

Ref.	Item	Yes (✓)	No (✓)	Inspected (initials & date)
1.	Is separating wall cavity at least 100mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
2.	Is external (flanking) wall cavity at least 50mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
3.	Are separating wall blocks lightweight aggregate (1350 to 1600 kg/m ³)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
4.	Is cavity free from droppings and debris?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
5.	Are insulation retaining ties in separating wall “Tie type A” (see Appendix A)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
6.	Are cavity stops installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
7.	Are joints fully filled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
8.	Is Isover RD35 fixed in the cavity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
9.	Are insulation batts tightly butted together?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
10.	Are voids around floor joists, chases, etc. fully filled/sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
11.	Where there is a separating floor (e.g. flats/apartments) has the resilient flanking strip been installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
12.	Are all junctions of wall and ceiling boards sealed with tape or caulked with sealant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
13.	Is separating wall satisfactorily complete?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

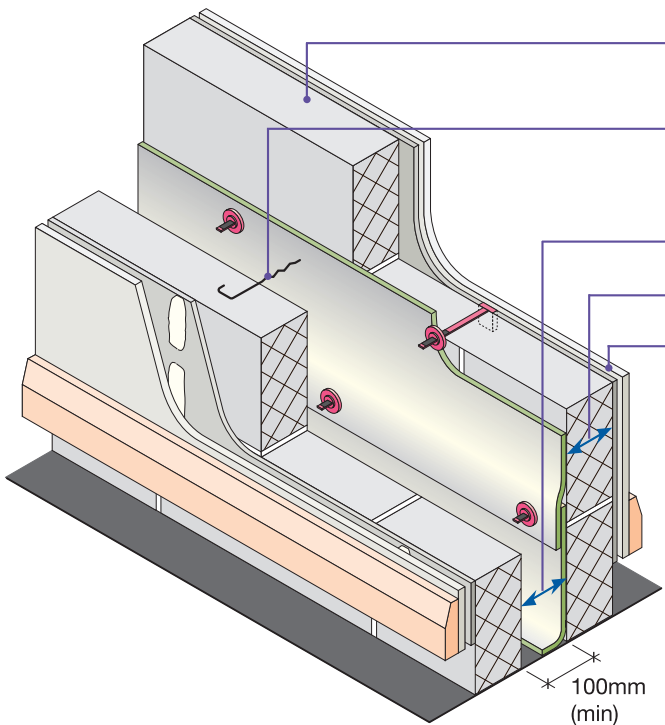
Contact details for technical assistance from Saint Gobain-Isover, manufacturer of Isover RD35 acoustic Batt:
Telephone: 01159 451143 Fax: 01159 451915 E-mail: isover.enquiries@saint-gobain.com

Notes (include details of any corrective action)

Site manager/supervisor signature

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- Minimum 100mm cavity wall with the MONARFLOOR® BRIDGESTOP® system ■
- Dense or lightweight aggregate blocks or nominated hollow or cellular blocks ■
- Render and gypsum-based board on dabs ■
- Attached houses only ■



Block density	1350 to 1600 kg/m ³ or 1850 to 2300 kg/m ³
Wall ties	Wall ties must be Ancon Building Products Staifix HRT4
Cavity width	100mm (min)
Block thickness	100mm (min), each leaf
Wall finish	Gypsum-based board (nominal 8 kg/m ²) mounted on dabs on cement:sand render (nominal 8mm) with scratch finish Typical render mix 1:1:6 to 1:1½:4. Render mix must not be stronger than background (see Appendix A)
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity – clear, fully filled or partially filled with insulation

Alternative internal renders

British Gypsum Gyproc Soundcoat Plus (nominal 8mm, minimum 6mm)

Knauf Gypsum Parge Coat (nominal 8mm, minimum 6mm)

Lafarge Ecoat Parge Coat (nominal 8mm, minimum 6mm)

applied in accordance with the manufacturer's instructions.

Hollow or Cellular Blocks

The Besblock Star Performer is the only block of this type currently accepted for use as an alternative to solid blocks in V-WM-19.

The separating wall **must not** be constructed using a mix of the block types.

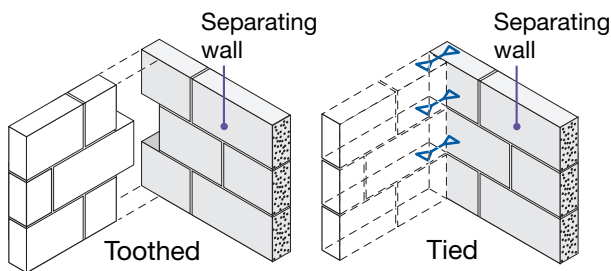
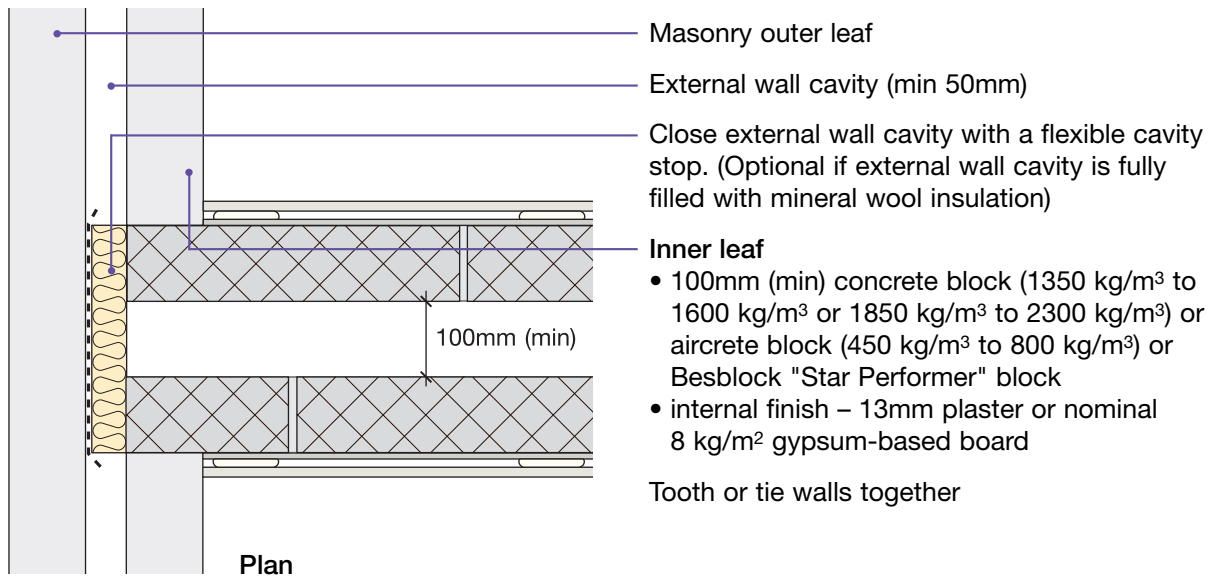
Separating wall cavity insulation (optional)

The cavity may be insulated with mineral wool with a maximum density of 40 kg/m³.

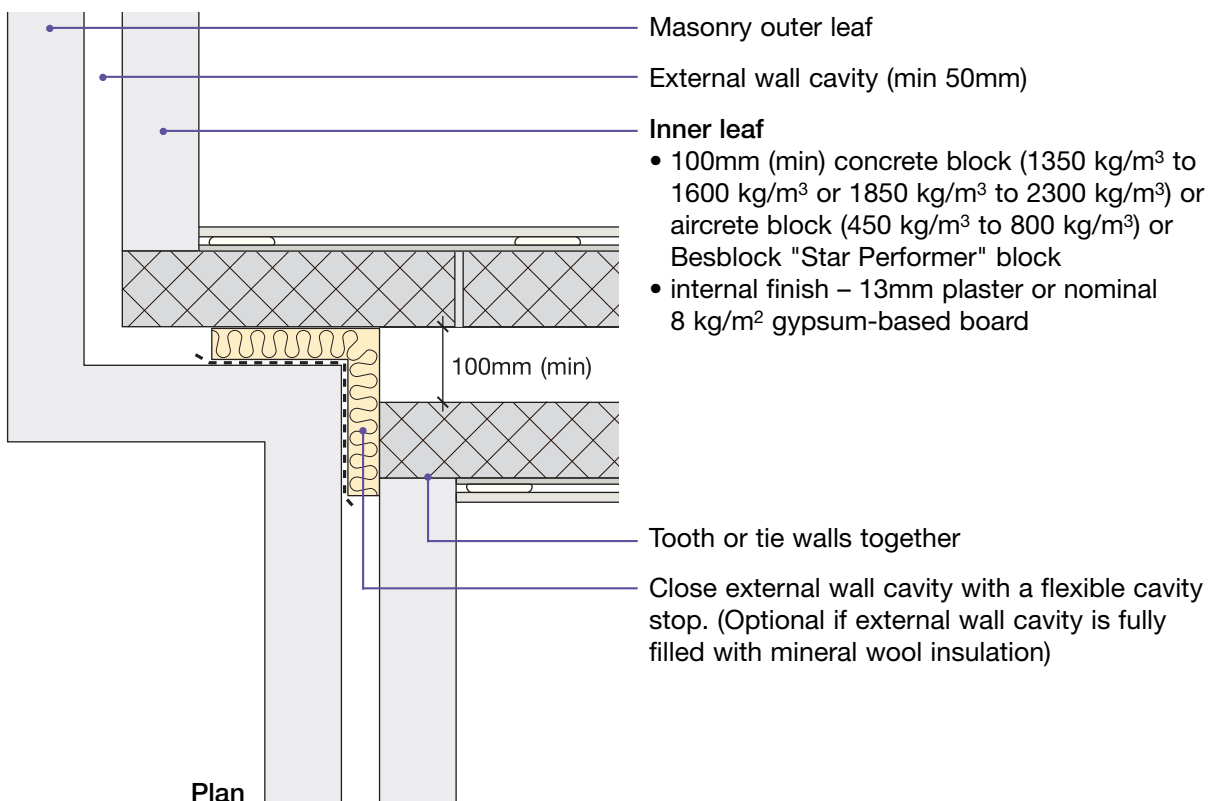
DO

- Keep cavity and wall ties (and insulation) free from mortar droppings and debris
- Fully fill all blockwork joints with mortar
- Make sure there is no connection between the two leaves except for wall ties and foundation (and insulation)
- Ensure cavity is **minimum 100mm** wide and that correct wall ties are used
- Ensure that only solid blocks or the nominated hollow or cellular blocks are used in the construction of separating and flanking walls. Place blocks with cellular holes open to lower mortar bed
- Keep any chases for services to a minimum and fill well with mortar. Stagger chases on each side of the wall to avoid them being back to back
- Ensure that render is applied to the complete face of each leaf with a scratch finish (it may be omitted within the floor joist/beam zone)
- Refer to Appendix A

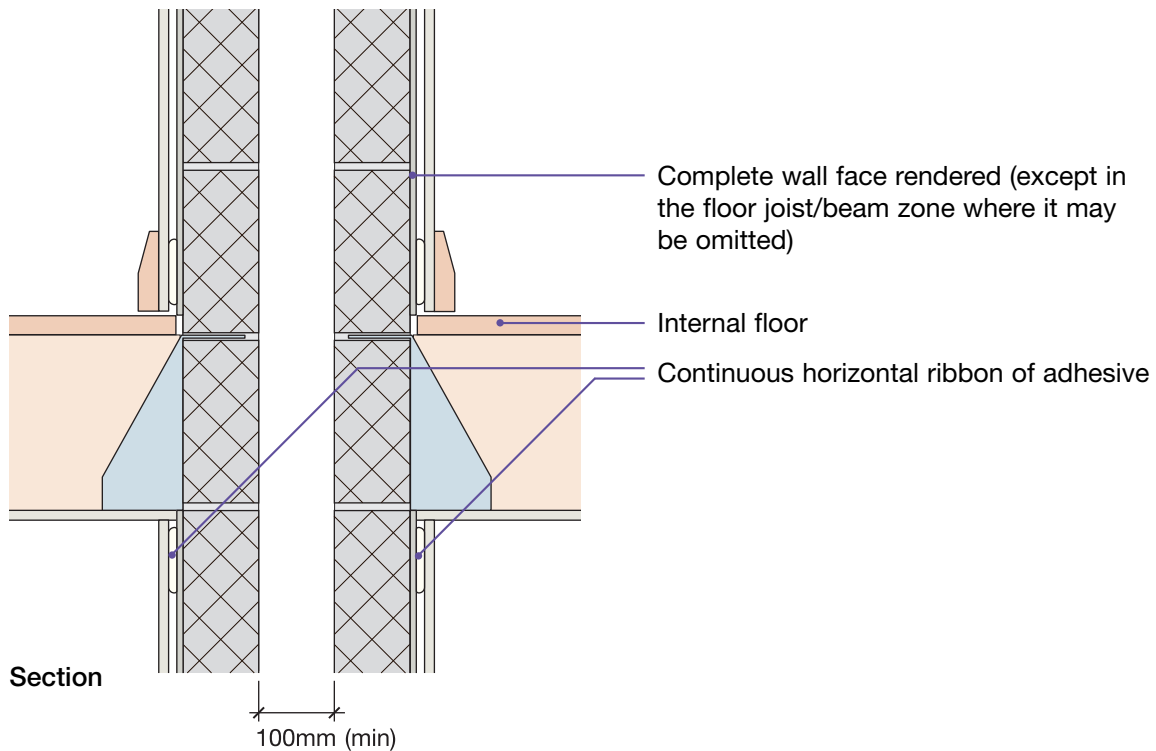
1. External (flanking) wall junction



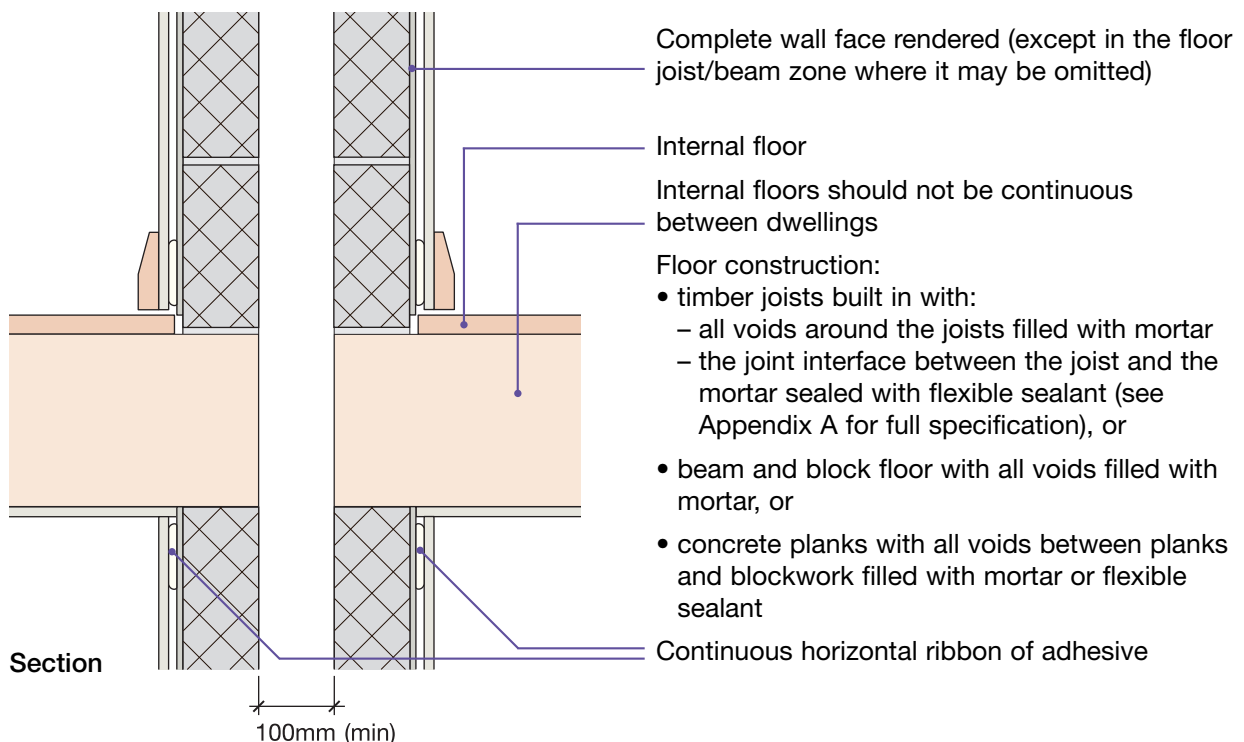
2. Staggered external (flanking) wall junction



3. Internal floor junction: timber floor supported on joist hangers

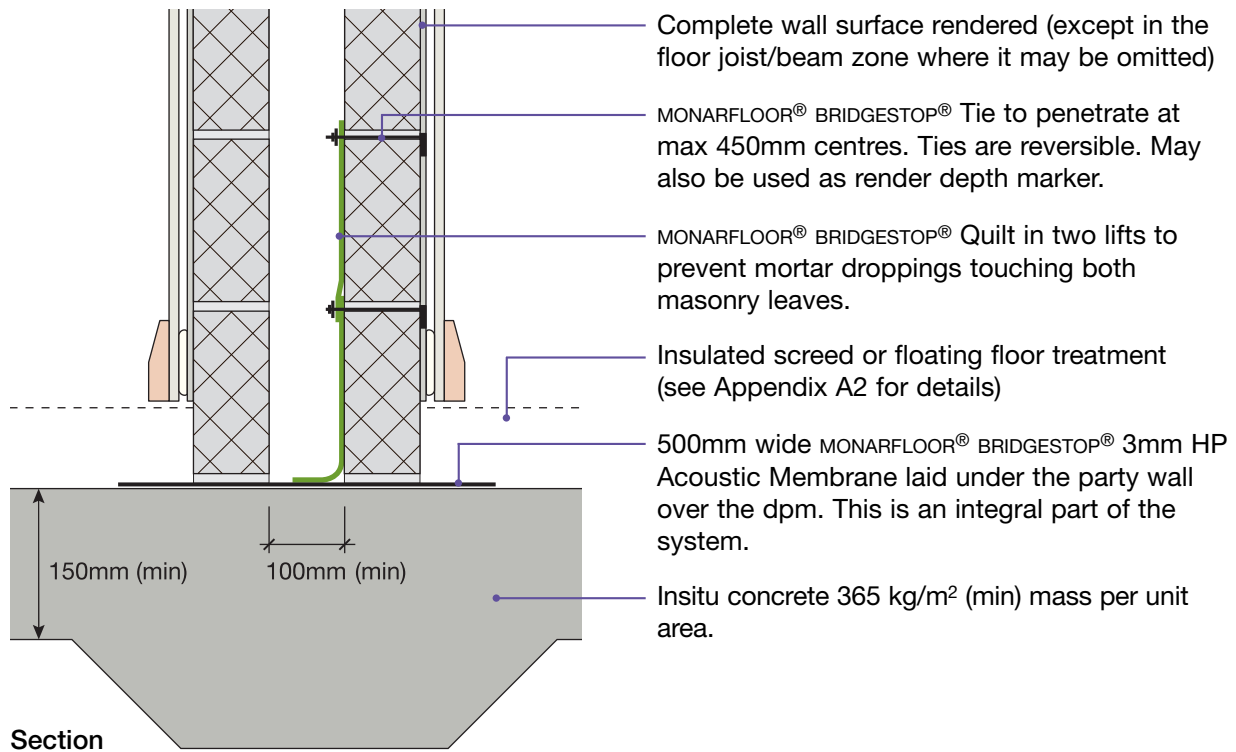


4. Internal floor junction: timber floor joists built in, beam and block or precast concrete

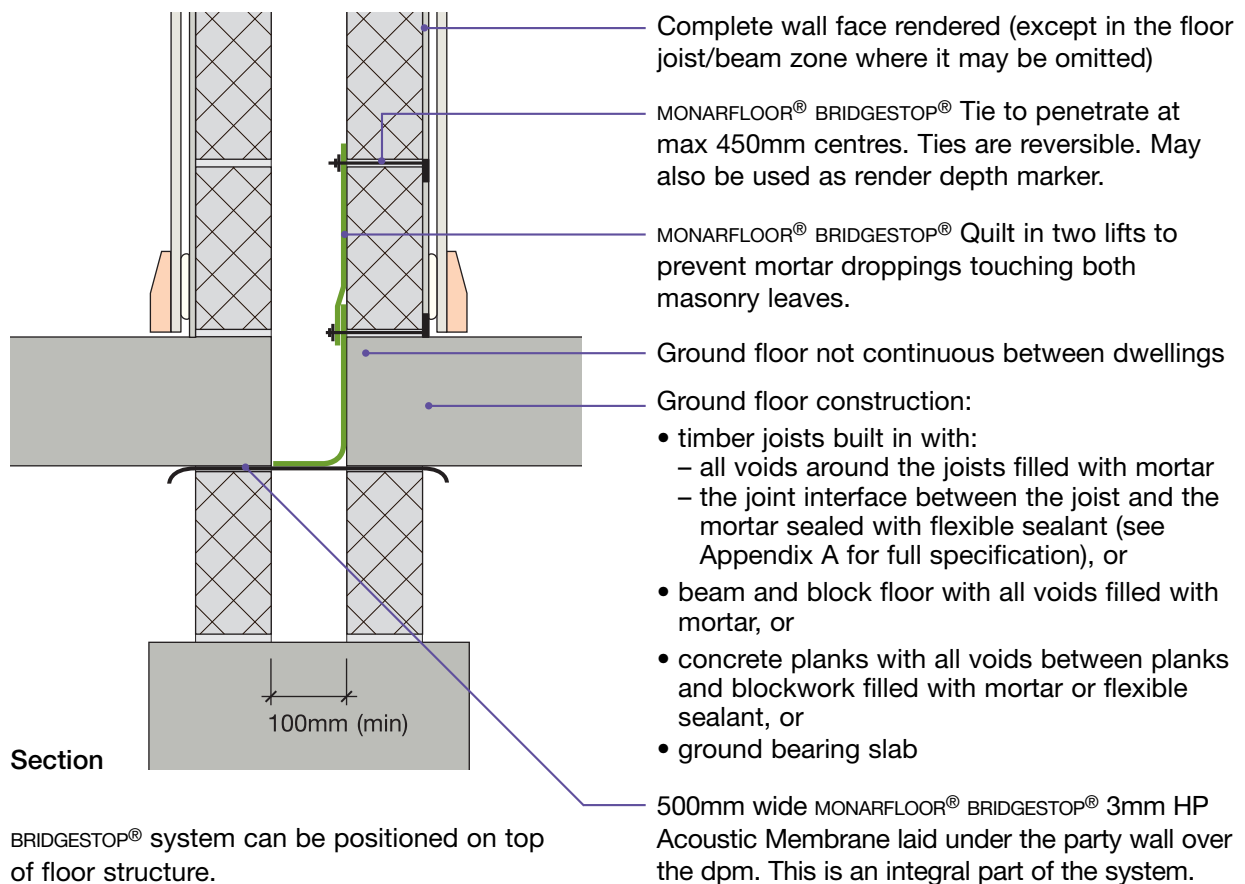


Sketch shows timber joists built in

5. Ground floor junction: insulated raft foundation

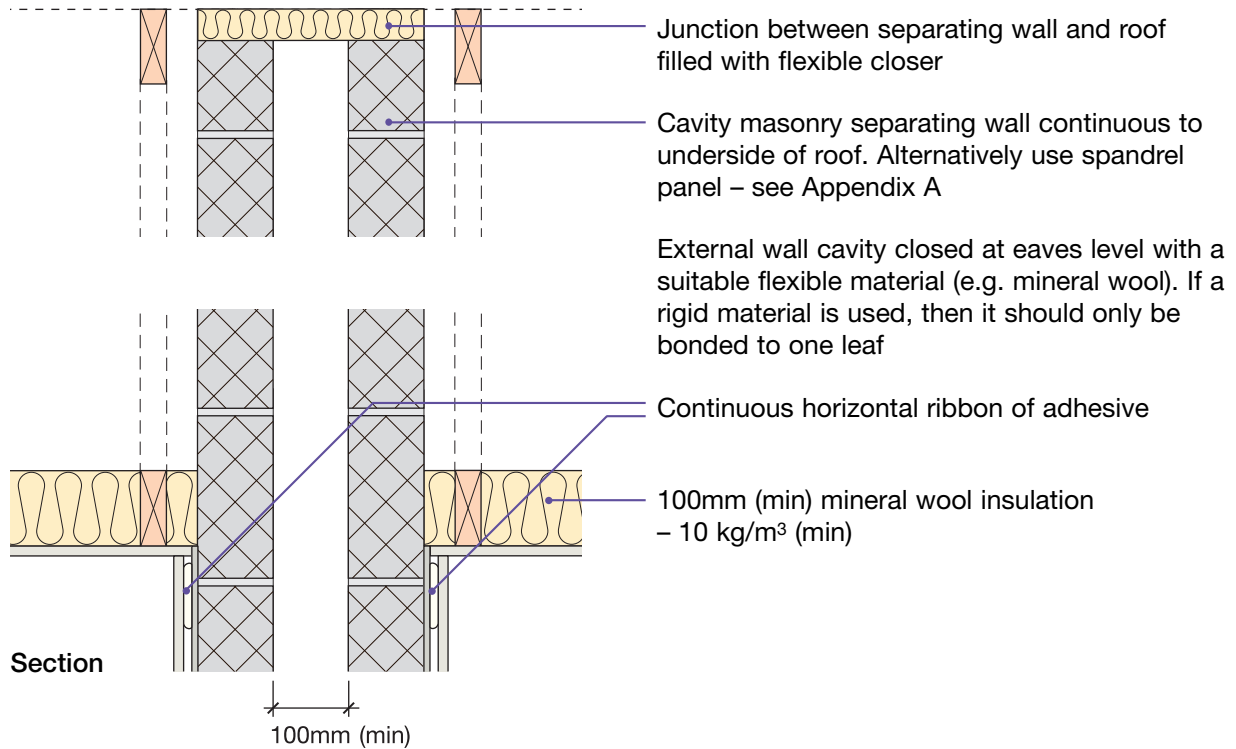


6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ suspended concrete slab or ground bearing concrete slab

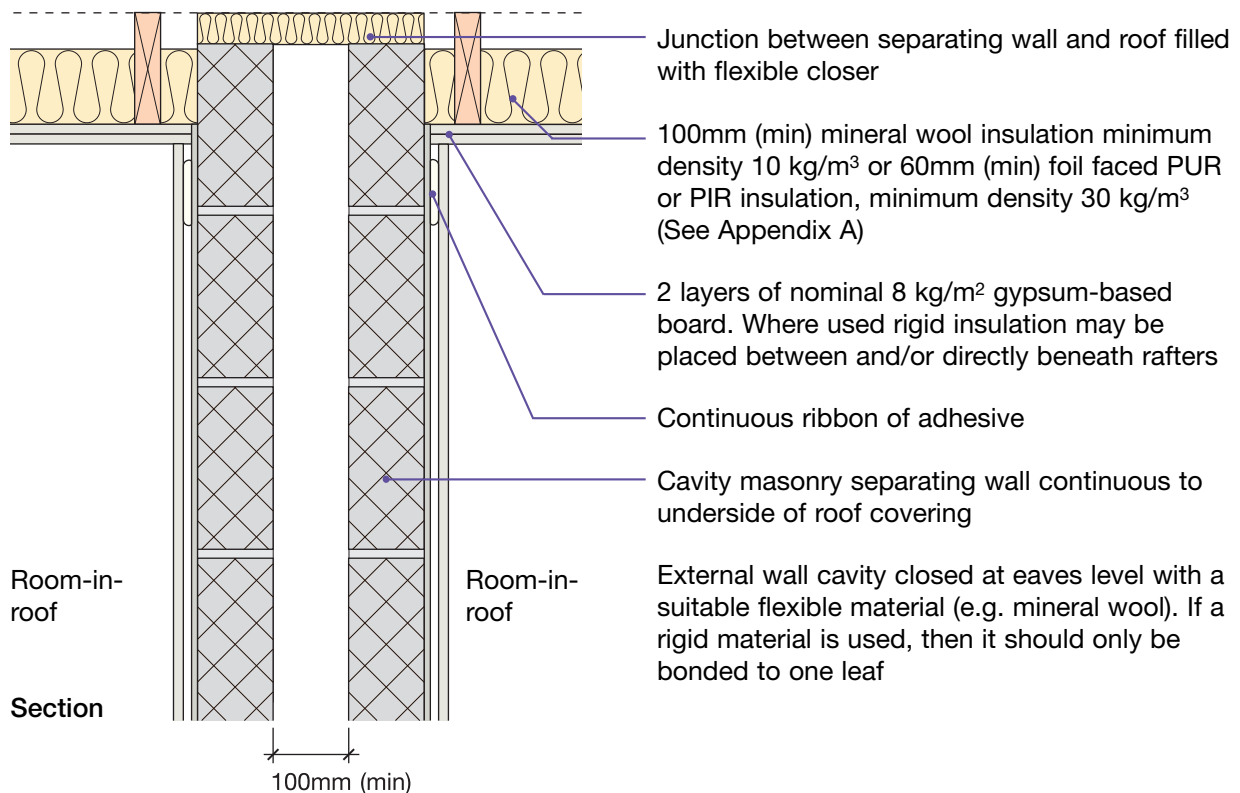


BRIDGESTOP® system can be positioned on top of floor structure.

7. Roof junction – pitched roof without room-in-roof



8. Roof junction – pitched roof with room-in-roof



CHECKLIST (to be completed by site manager/supervisor)

Company: _____

Site: _____

Plot: _____ Site manager/supervisor: _____

Ref.	Item	Yes (✓)	No (✓)	Inspected (initials & date)
1.	Is separating wall cavity at least 100mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
2.	Is external (flanking) wall cavity at least 50mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
3.	Are separating wall blocks solid aggregate (1350-1600 kg/m ³ or 1850-2300 kg/m ³) or Besblock “Star Performer” (with cells open to lower bed)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
4.	Has 500mm wide MONARFLOOR® BRIDGESTOP® 3mm HP Acoustic Membrane been laid under the party wall over the dpm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
5.	Has MONARFLOOR® BRIDGESTOP® Quilt been installed in 2 lifts with MONARFLOOR® BRIDGESTOP® Ties?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
6.	Is cavity above the quilt free from droppings and debris?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
7.	Are separating wall ties Staifix HRT4?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
8.	Are cavity stops installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
9.	Are all block joints fully filled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
10.	Are voids around floor joists, chases, etc. fully filled/sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
11.	Is render coat applied to the whole wall face (except where it may be omitted between floor joists/beams)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
12.	Are all junctions of wall and ceiling boards sealed with tape or caulked with sealant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
13.	Is separating wall satisfactorily complete?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

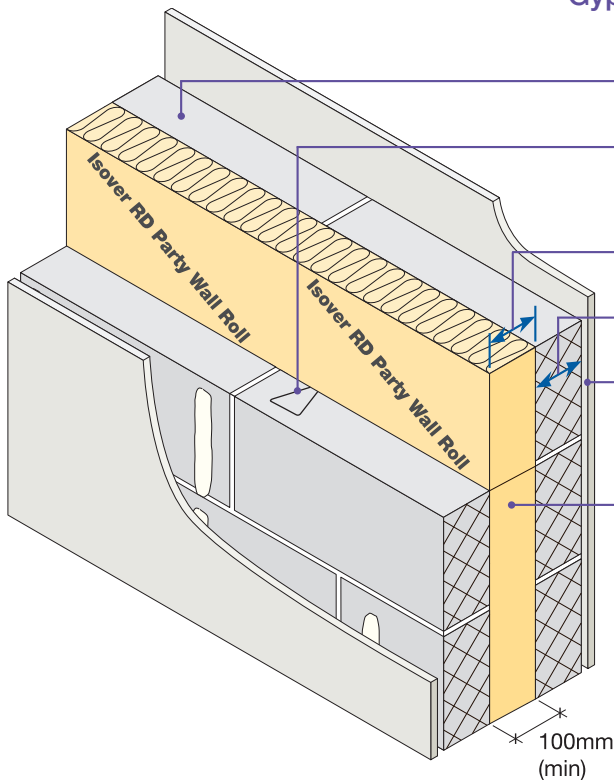
Contact details for technical assistance from Icopal-MONARFLOOR®, manufacturer of the MONARFLOOR® BRIDGESTOP® system:
Telephone: 0161 866 6540 Fax: 0161 865 8433 E-mail: acoustics.uk@icopal.com

Notes (include details of any corrective action)

Site manager/supervisor signature

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- Lightweight aggregate blocks
- Isover RD Party Wall Roll or Isover Round The House Roll
- Gypsum-based board (nominal 9.8 kg/m²) on dabs

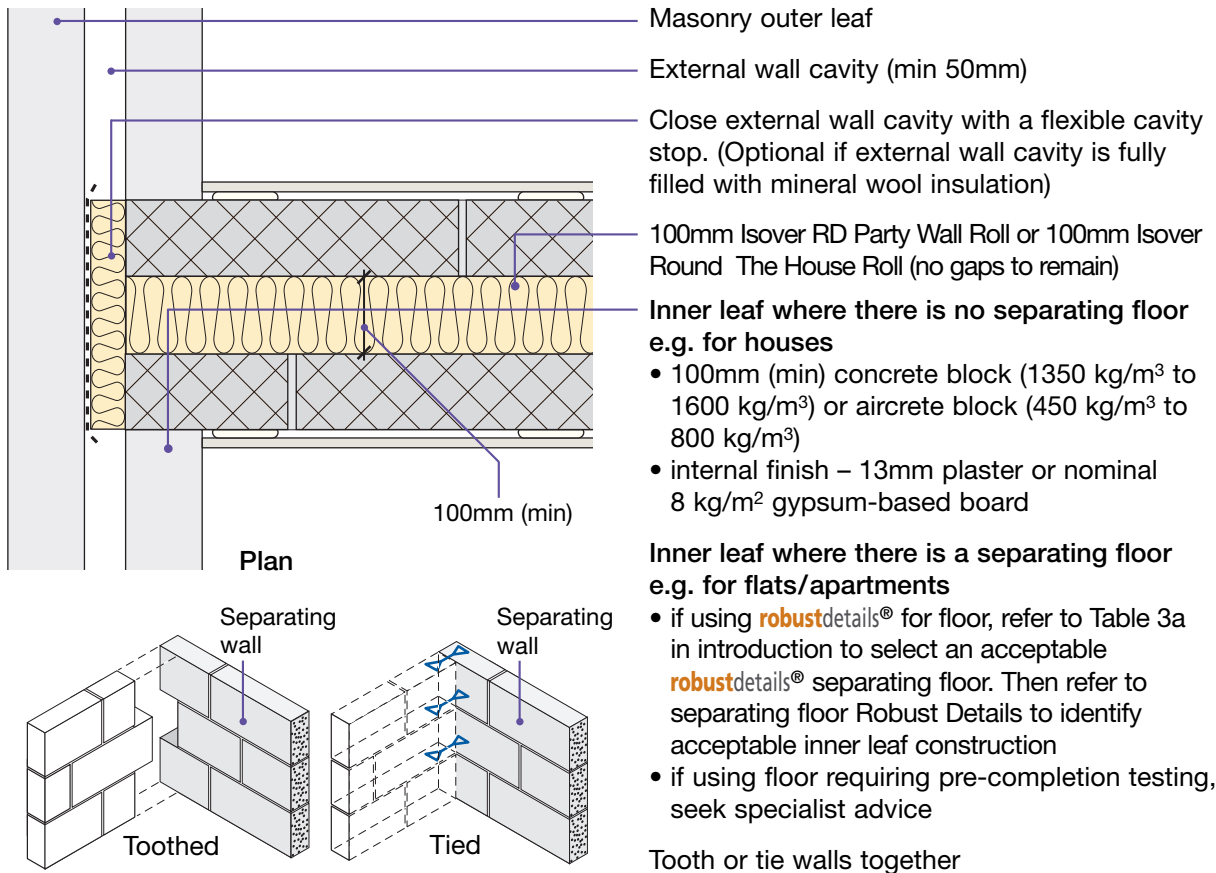


Block density	1350 to 1600 kg/m ³
Wall ties	'Tie type A' (see Appendix A)
Cavity width	100mm (min)
Block thickness	100mm (min), each leaf
Wall finish	Gypsum-based board (nominal 9.8 kg/m ²) mounted on dabs
Insulation	100mm Isover RD Party Wall Roll or 100mm Isover Round The House Roll
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity – clear, fully filled or partially filled with insulation

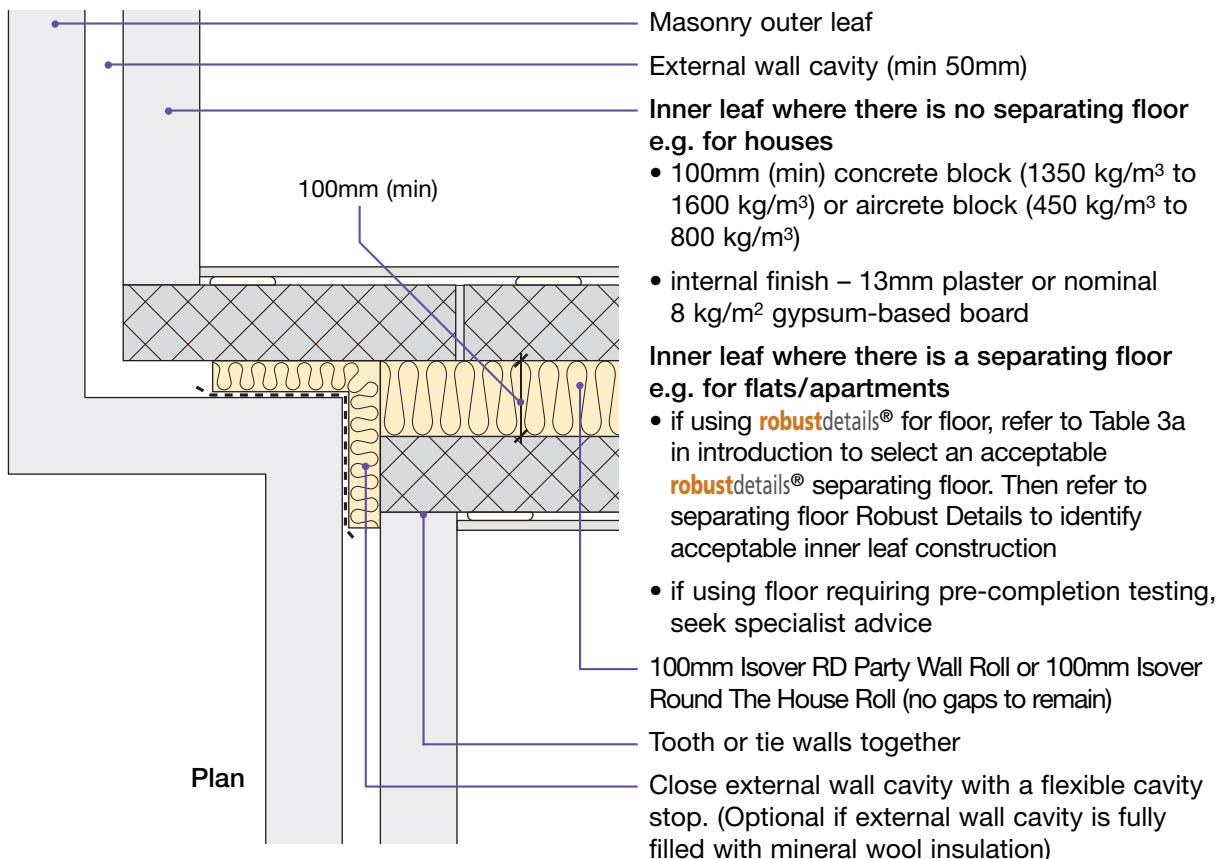
DO

- Keep cavity, insulation rolls and wall ties free from mortar droppings and debris
- Fully fill all blockwork joints with mortar
- Make sure there is no connection between the two leaves except for wall ties, insulation and foundation
- Ensure that only solid blocks (i.e. not hollow or cellular) are used in the construction of separating and flanking walls
- Ensure all 100mm Isover RD Party Wall Rolls or 100mm Round The House Rolls are tightly butted together and half cuts are made with a clean sharp knife and are installed in accordance with the manufacturer's instructions
- Keep any chases for services to a minimum and fill well with mortar. Stagger chases on each side of the wall to avoid them being back to back
- Refer to Appendix A
- Ensure that either 'Isover RD Party Wall Roll' or 'Isover Round The House Roll' is printed on the insulation material.

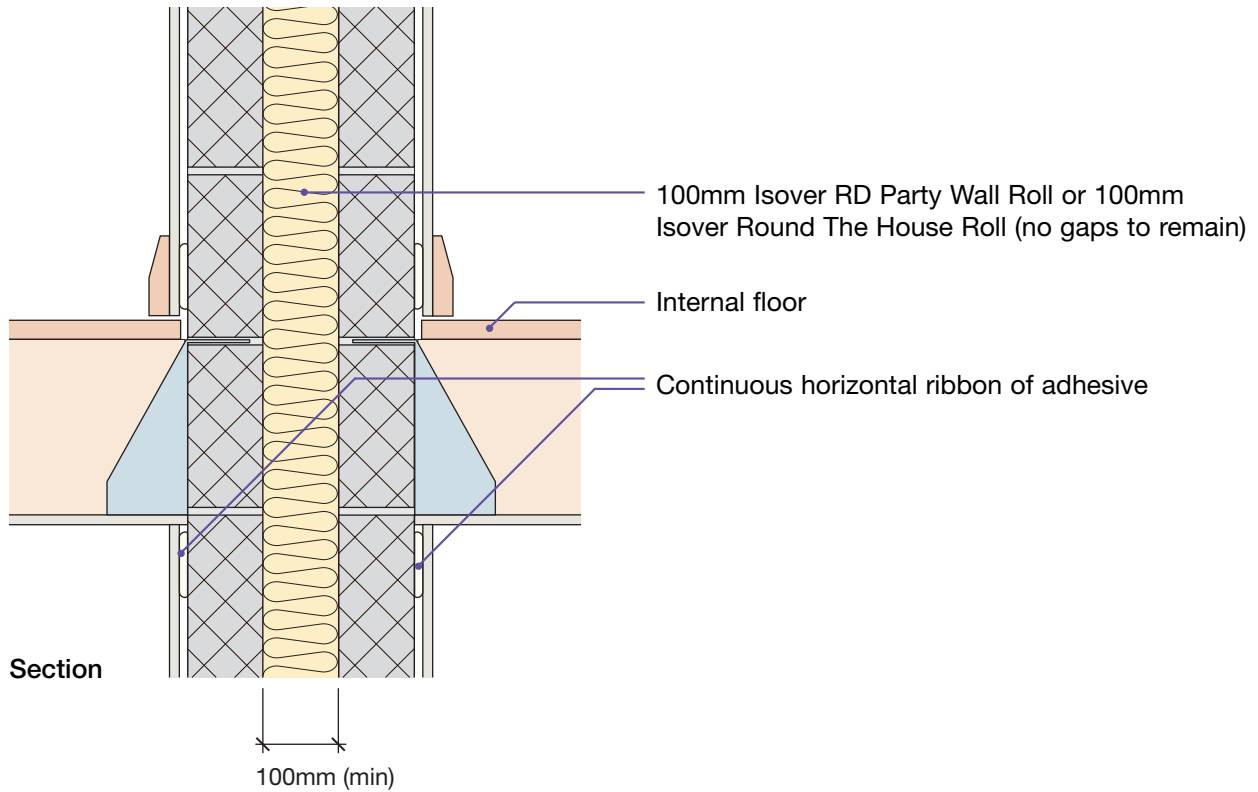
1. External (flanking) wall junction



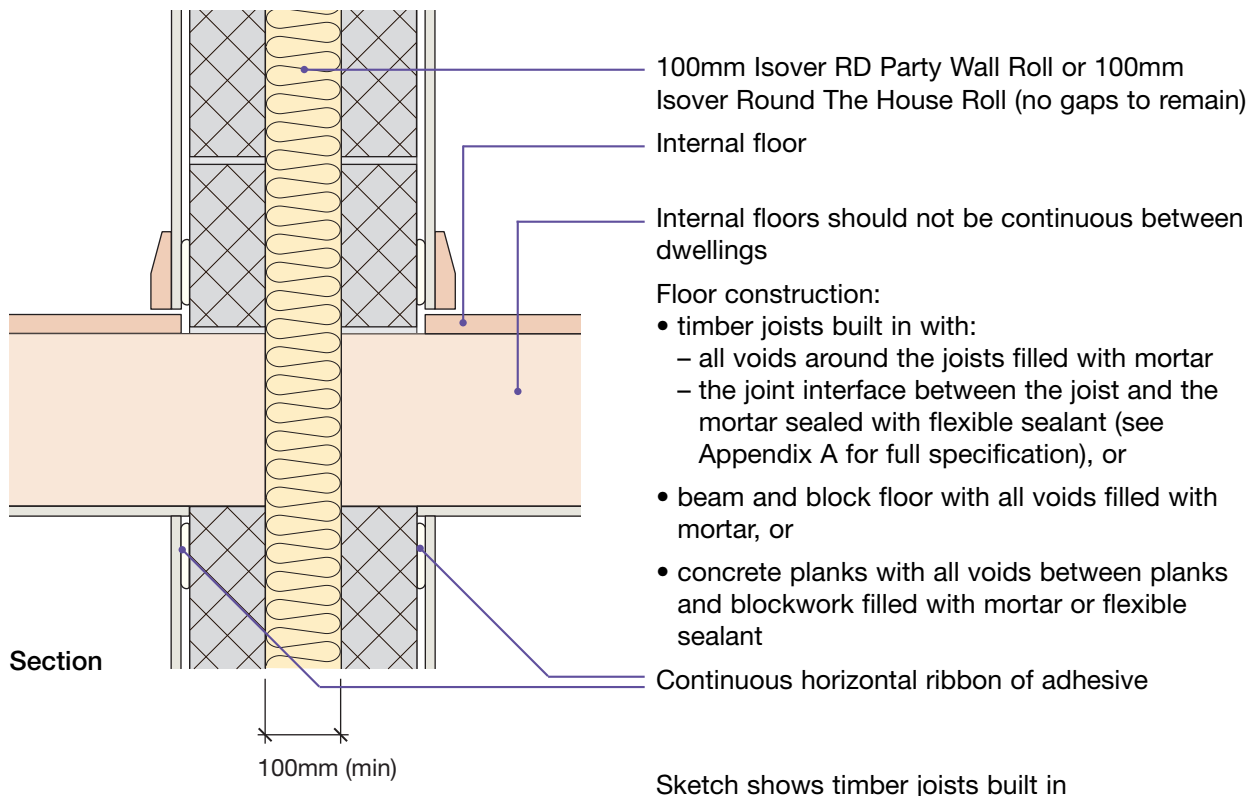
2. Staggered external (flanking) wall junction



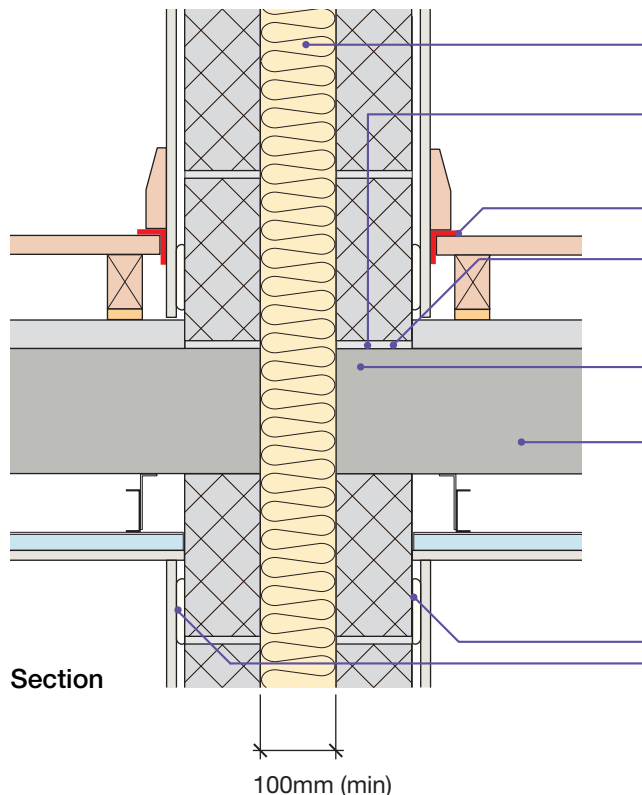
3. Internal floor junction: timber floor supported on joist hangers



4. Internal floor junction: timber floor joists built in, beam and block or precast concrete

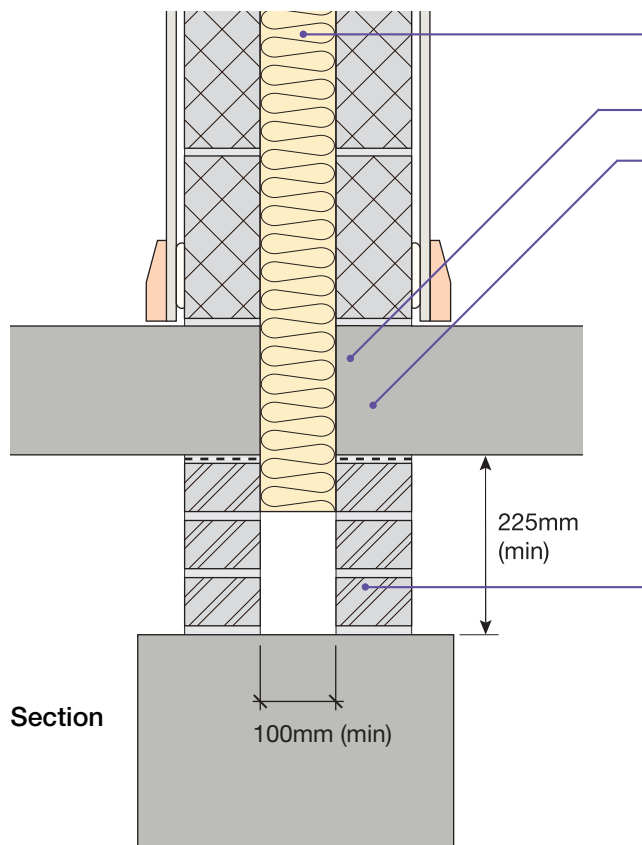


5. Separating floor junction



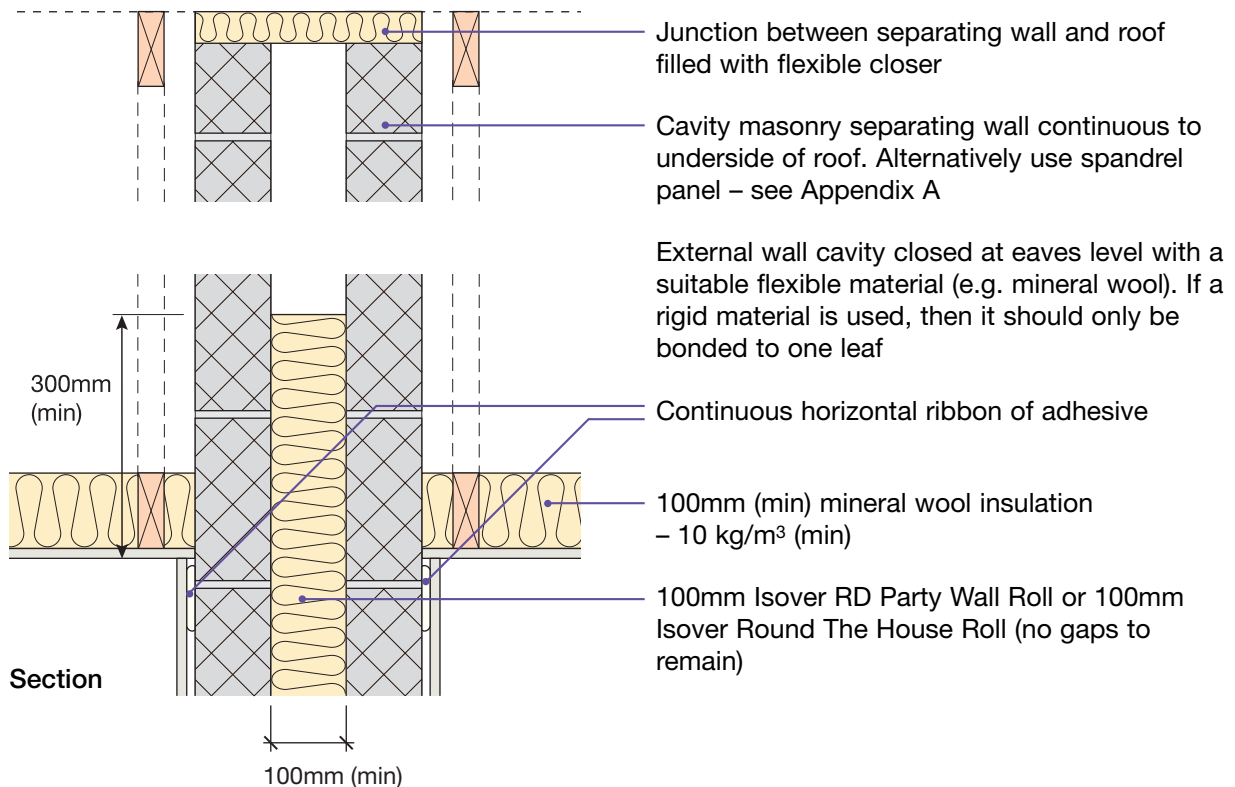
- 100mm Iover RD Party Wall Roll or 100mm Iover Round The House Roll (no gaps to remain)
- Separating wall must not be continuous between storeys
- 5mm (min) resilient flanking strip
- Concrete planks with all voids between planks and blockwork filled with mortar or flexible sealant
- Separating floor must not be continuous between dwellings
- Separating floor:
 - if using **robustdetails**® for floor, refer to Table 3a in introduction and see separating floor Robust Details for floating floor and ceiling options
 - if using floor requiring pre-completion testing, seek specialist advice
- Continuous horizontal ribbon of adhesive
- Sketch shows E-FC-1 type separating floor, FFT1 type floating floor treatment and CT3 type ceiling

6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ suspended concrete slab or ground bearing concrete slab

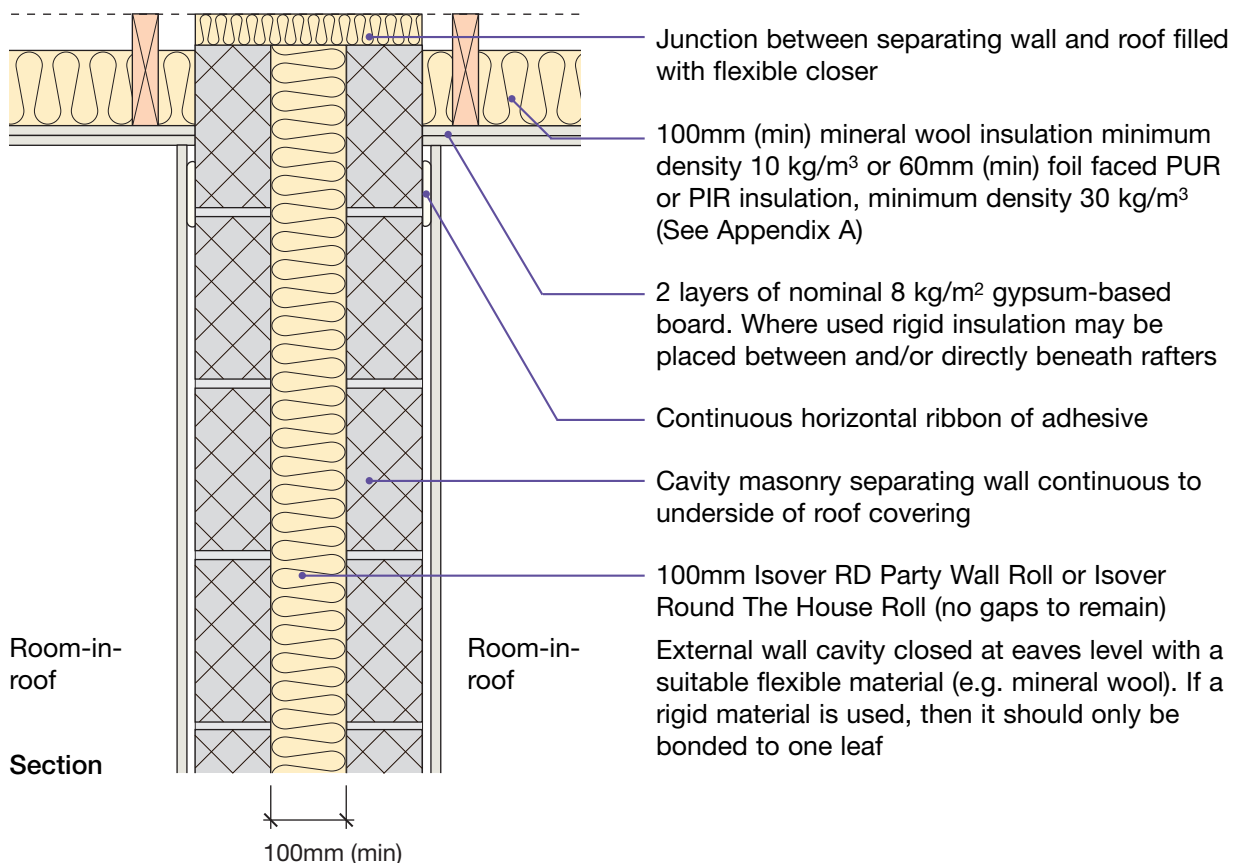


- 100mm Iover RD Party Wall Roll or 100mm Iover Round The House Roll (no gaps to remain)
- Ground floor not continuous between dwellings
- Ground floor construction:
 - timber joists built in with:
 - all voids around the joists filled with mortar
 - the joint interface between the joist and the mortar sealed with flexible sealant (see Appendix A for full specification), or
 - beam and block floor with all voids filled with mortar, or
 - concrete planks with all voids between planks and blockwork filled with mortar or flexible sealant, or
 - ground bearing slab
- Cavity separating wall continuous to foundation, cavity fill may be provided below minimum clear cavity indicated. Continuous raft foundations between dwellings are not acceptable. Solid walls which support separating walls are only acceptable where each ground floor (not timber joists) is built into one side of the separating wall and breaks the vertical continuity of the wall and the minimum clear cavity indicated is maintained.

7. Roof junction – pitched roof without room-in-roof



8. Roof junction – pitched roof with room-in-roof



CHECKLIST (to be completed by site manager/supervisor)

Company: _____

Site: _____

Plot: _____ Site manager/supervisor: _____

Ref.	Item	Yes (✓)	No (✓)	Inspected (initials & date)
1.	Is separating wall cavity at least 100mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
2.	Is external (flanking) wall cavity at least 50mm?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
3.	Are separating wall blocks lightweight aggregate (1350 to 1600 kg/m ³)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
4.	Is cavity free from droppings and debris?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
5.	Are separating wall ties “Tie type A” (see Appendix A)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
6.	Are cavity stops installed where specified in the Robust Detail?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
7.	Are joints fully filled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
8.	Is 100mm RD Party Wall Roll or 100mm Isover Round The House Roll used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
9.	Are insulation rolls tightly butted together?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
10.	Are voids around floor joists, chases, etc. fully filled/sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
11.	Where there is a separating floor (e.g. flats/apartments) has the resilient flanking strip been installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
12.	Are all junctions of wall and ceiling boards sealed with tape or caulked with sealant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
13.	Is separating wall satisfactorily complete?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

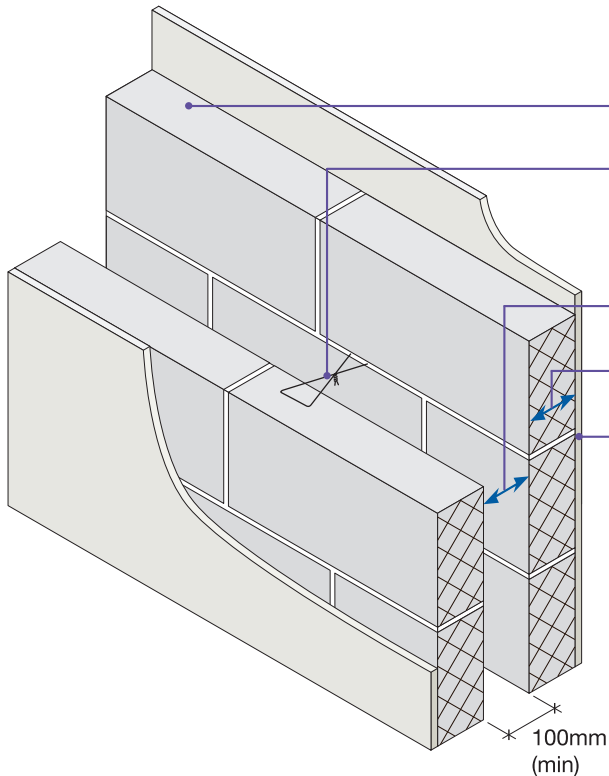
Contact details for technical assistance from Saint Gobain-Isover, manufacturer of RD Party Wall Roll and Round The House Roll:
Telephone: 01159 451143 Fax: 0844 5618816 E-mail: isover.enquiries@saint-gobain.com

Notes (include details of any corrective action)

Site manager/supervisor signature

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 Warning: the doing of an unauthorised act in relation to a copyright work may result in both a civil claim for damages and criminal prosecution.

- Lightweight aggregate blocks ■
- Wet plaster ■
- Minimum 100mm cavity ■



Block density	1350 to 1600 kg/m ³
Wall ties	“Tie type A” (see Appendix A)
Cavity width	100mm (min)
Block thickness	100mm (min), each leaf
Wall finish	13mm plaster or cement: sand render with plaster skim (min 10 kg/m ²), both sides
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity – clear, fully filled or partially filled with insulation

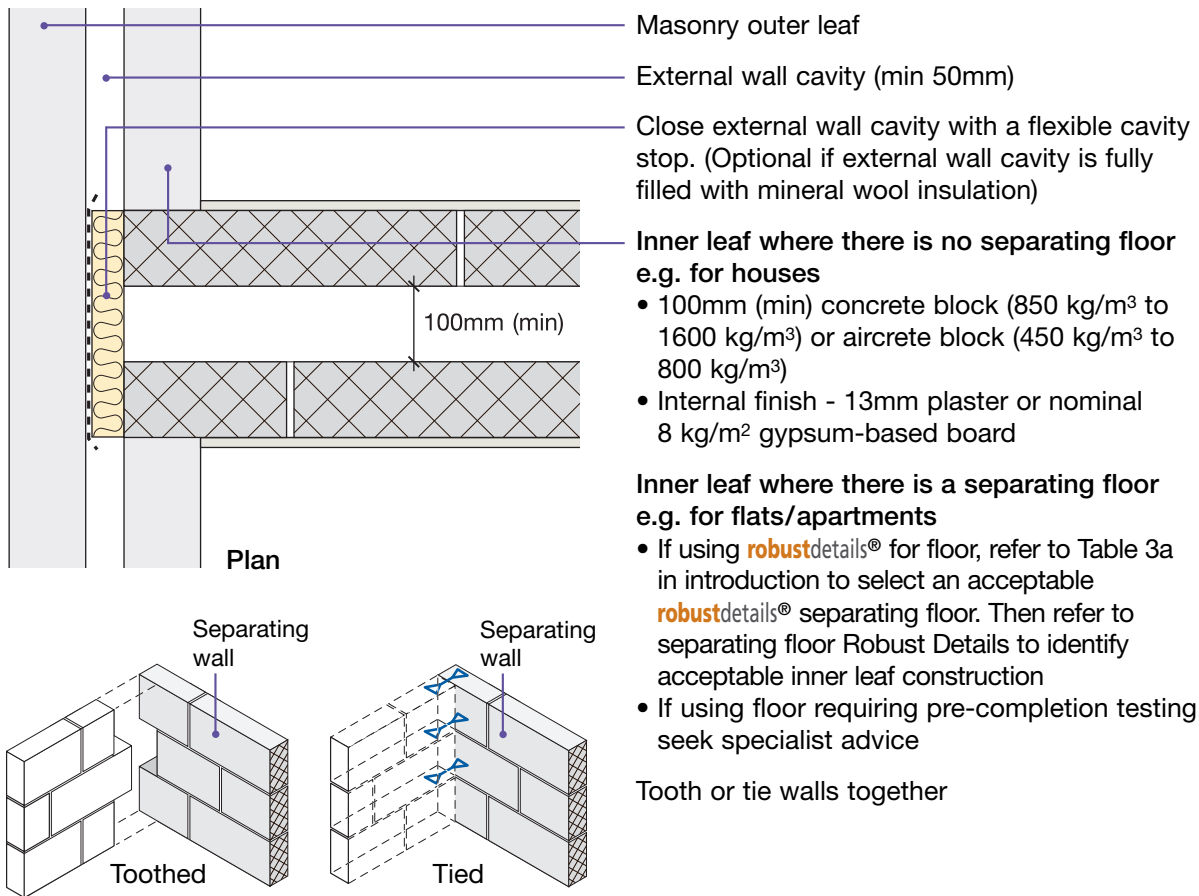
Separating wall cavity insulation (optional)

The cavity may be insulated with mineral wool with a maximum density of 40 kg/m³.

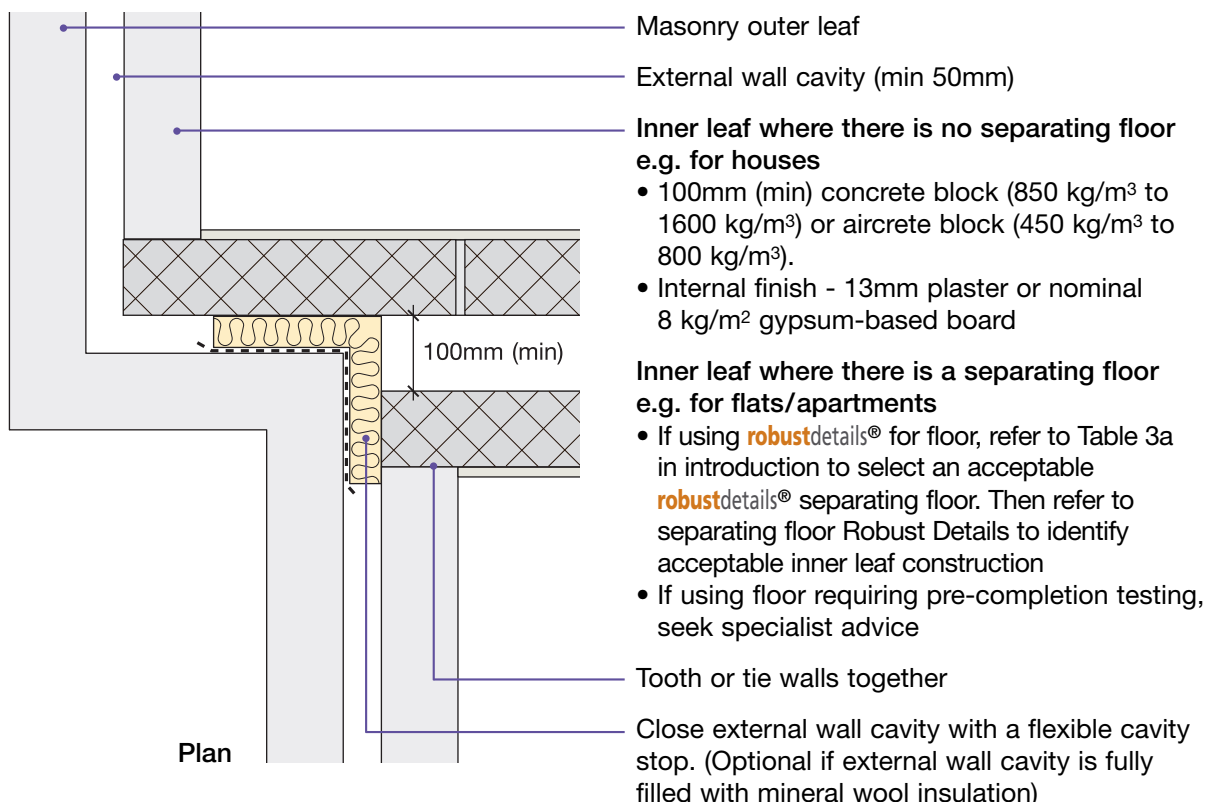
DO

- Keep cavity and wall ties (and insulation) free from mortar droppings and debris
- Fully fill all blockwork joints with mortar
- Make sure there is no connection between the two leaves except for wall ties and foundation (and insulation)
- Ensure that only solid blocks (i.e. not hollow or cellular) are used in the construction of separating and flanking walls
- Keep any chases for services to a minimum and fill well with mortar. Stagger chases on each side of the wall to avoid them being back to back
- Select an alternative Robust Detail where flues are required in the separating wall
- Refer to Appendix A

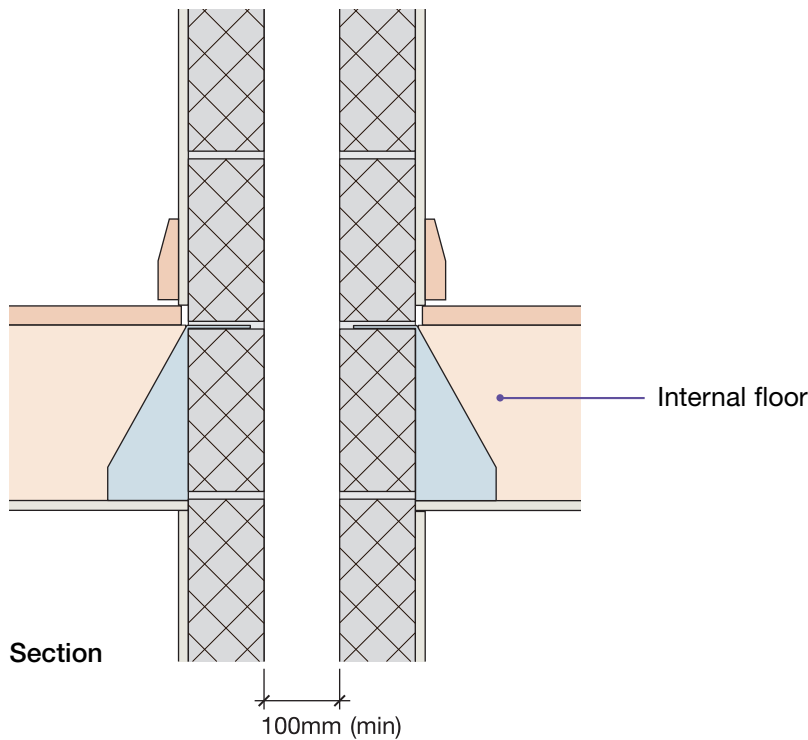
1. External (flanking) wall junction



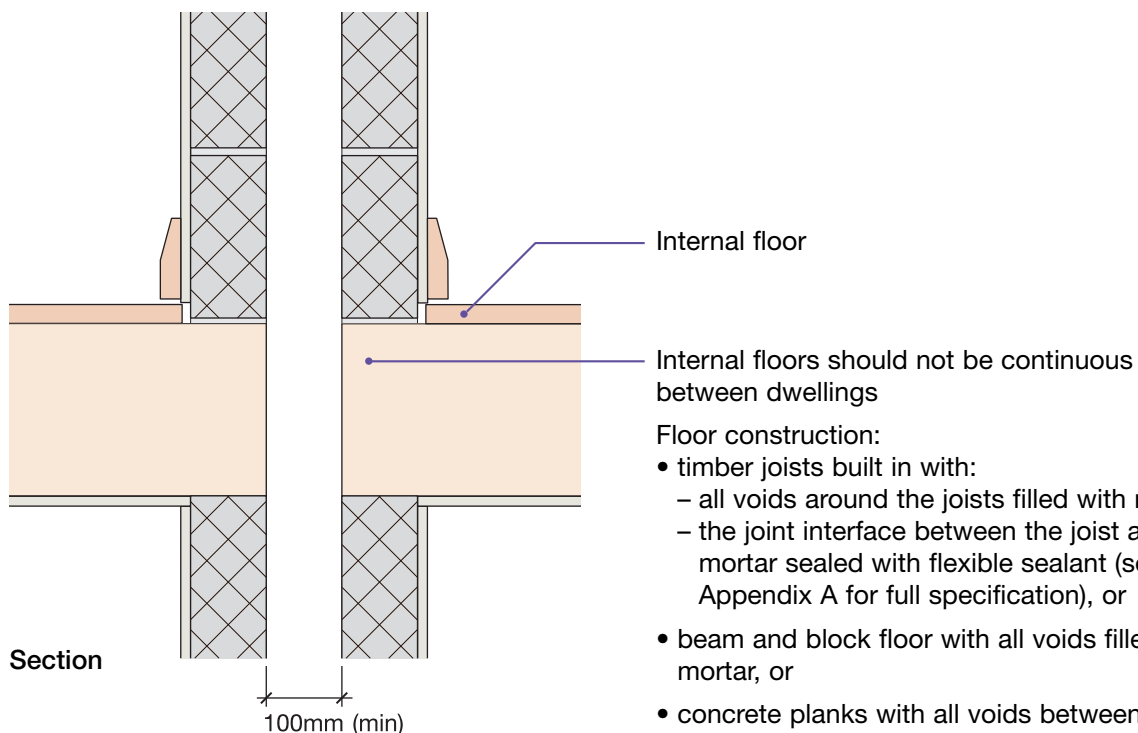
2. Staggered external (flanking) wall junction



3. Internal floor junction: timber floor supported on joist hangers



4. Internal floor junction: timber floor joists built in, beam and block or precast concrete

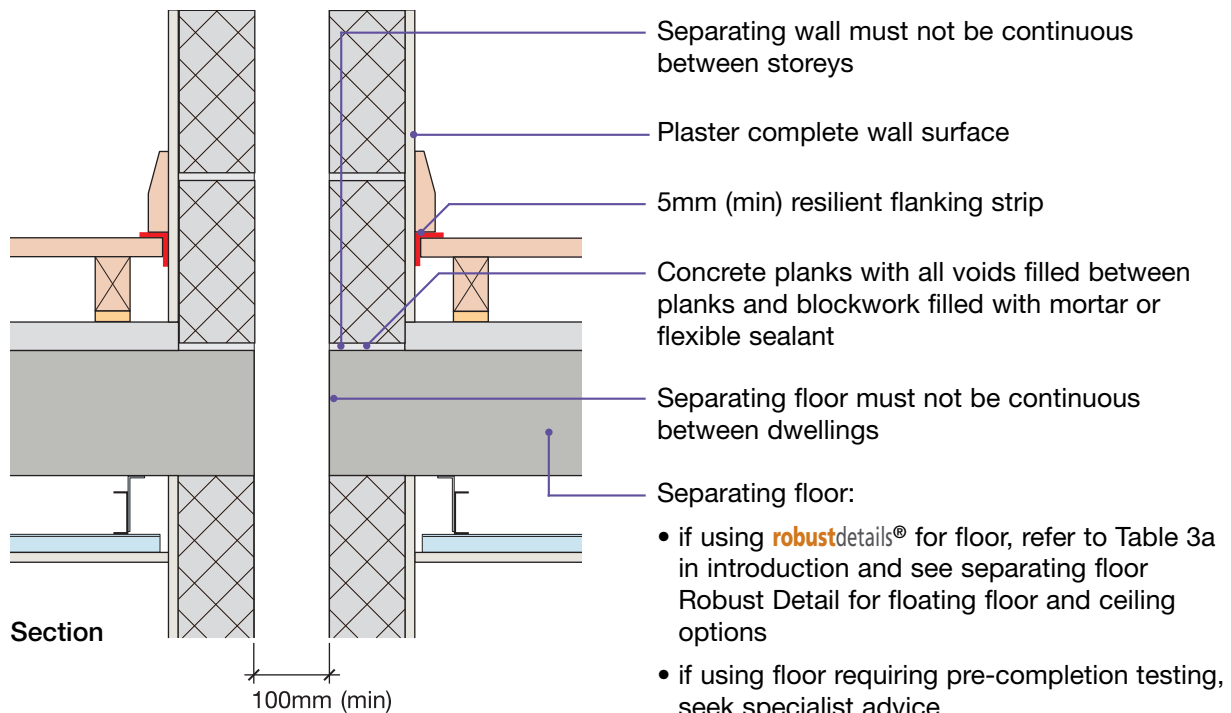


Floor construction:

- timber joists built in with:
 - all voids around the joists filled with mortar
 - the joint interface between the joist and the mortar sealed with flexible sealant (see Appendix A for full specification), or
- beam and block floor with all voids filled with mortar, or
- concrete planks with all voids between planks and blockwork filled with mortar or flexible sealant

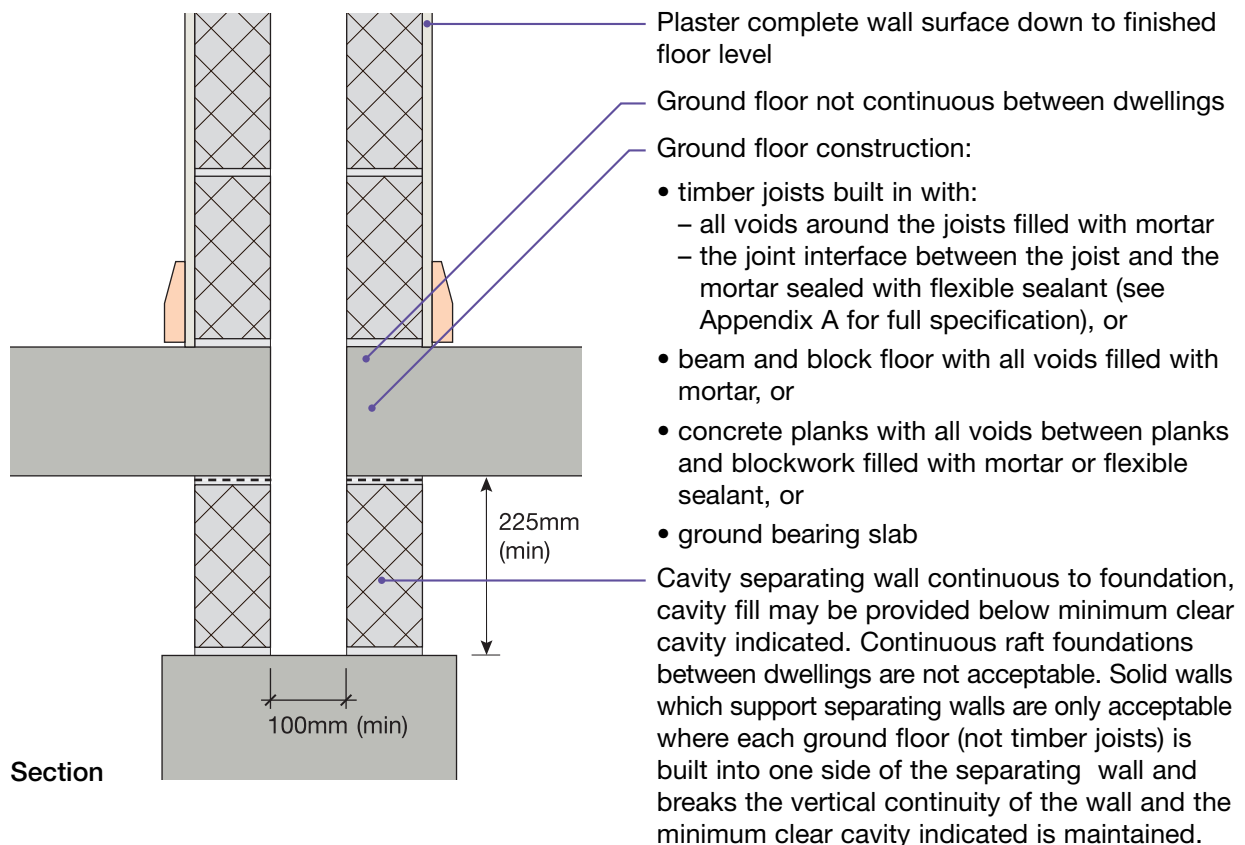
Sketch shows timber joists built in

5. Separating floor junction

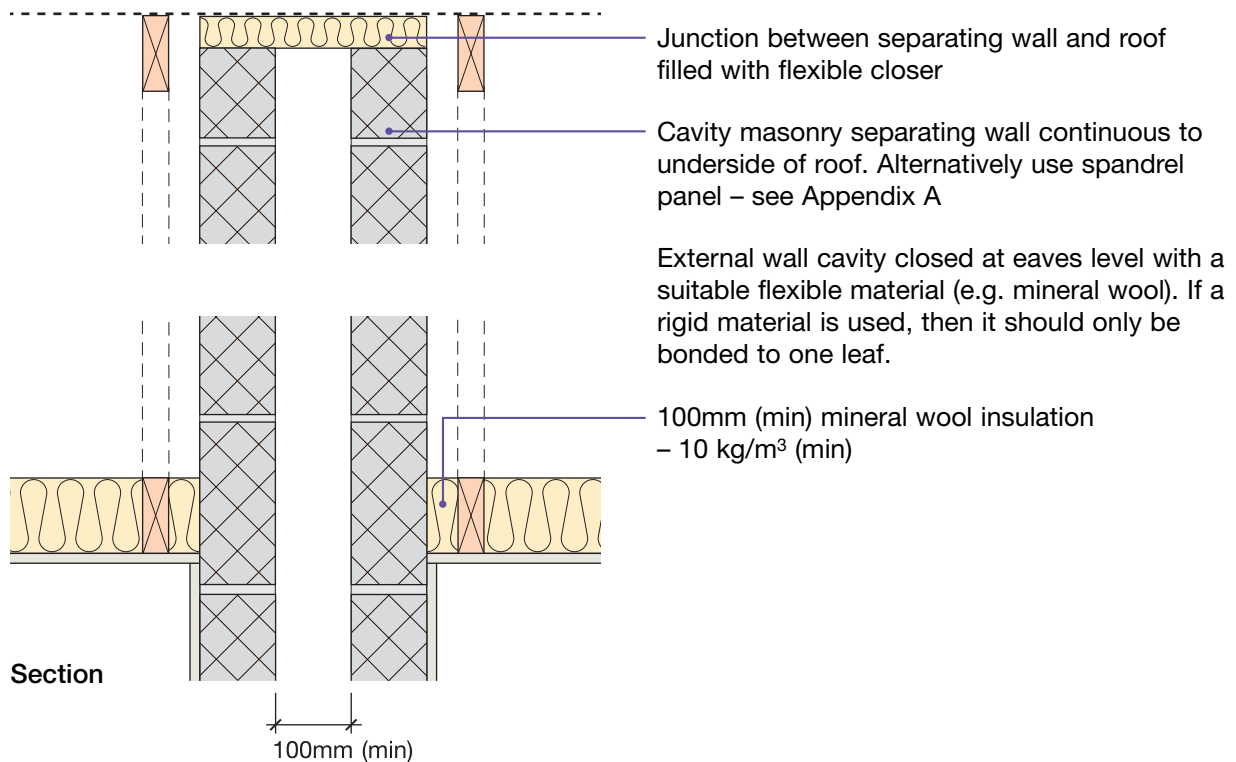


Sketch shows E-FC-1 type separating floor, FFT1 type floating floor treatment and CT3 type ceiling

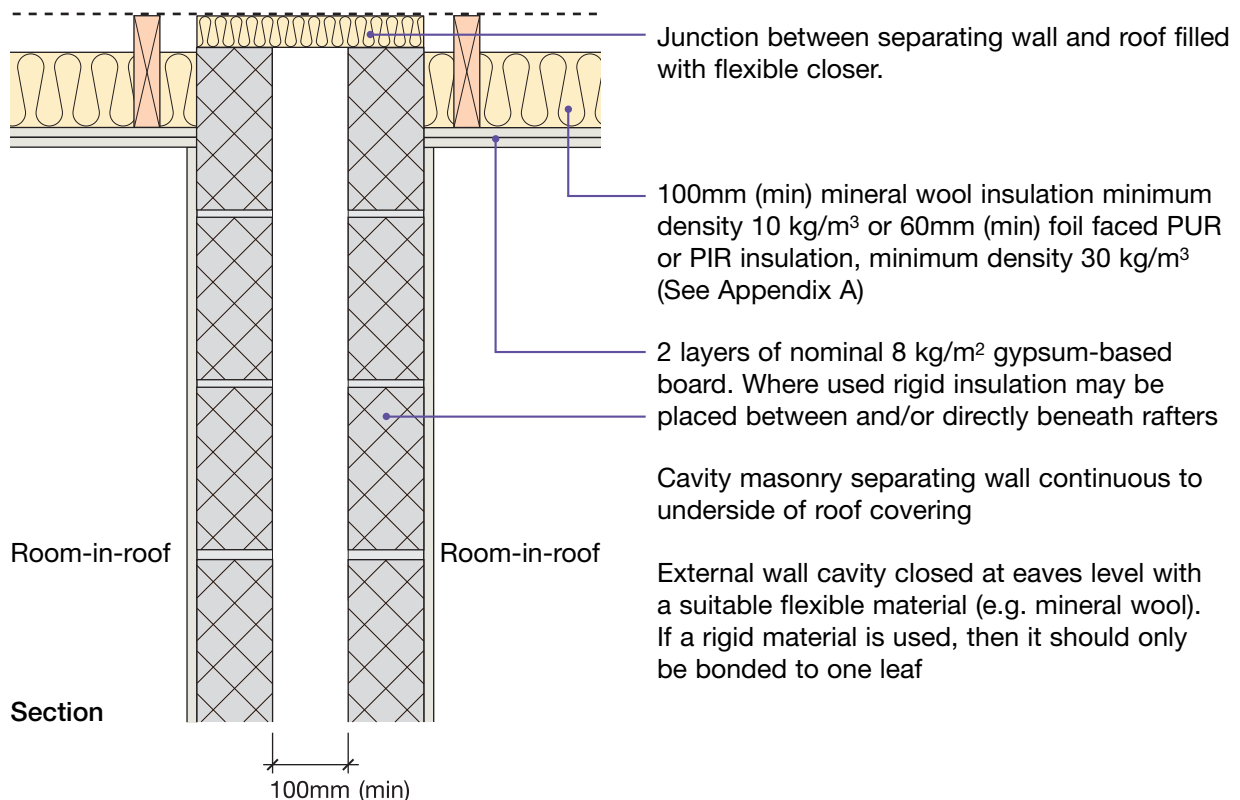
6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ concrete slab or ground bearing slab



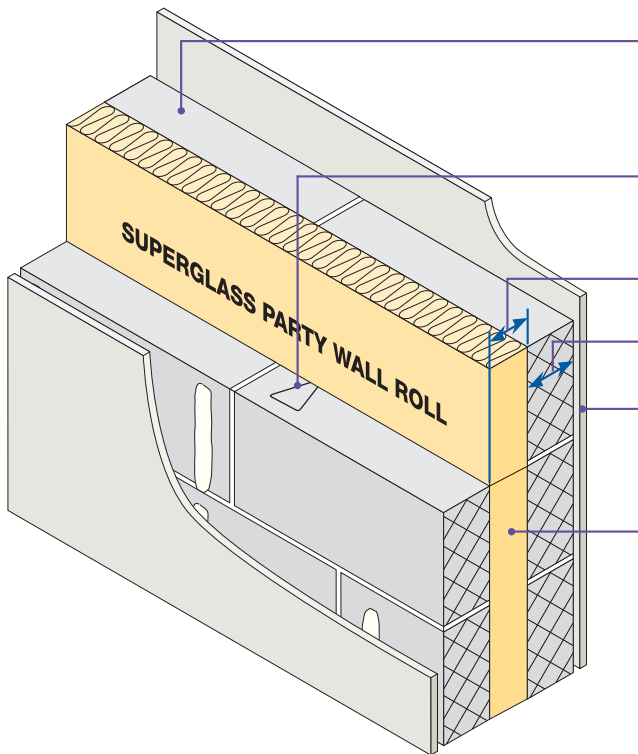
7. Roof junction – pitched roof without room-in-roof



8. Roof junction – pitched roof with room-in-roof



- Lightweight aggregate blocks ■
- Superglass Party Wall Roll ■
- Gypsum-based board (nominal 8 kg/m²) on dabs ■

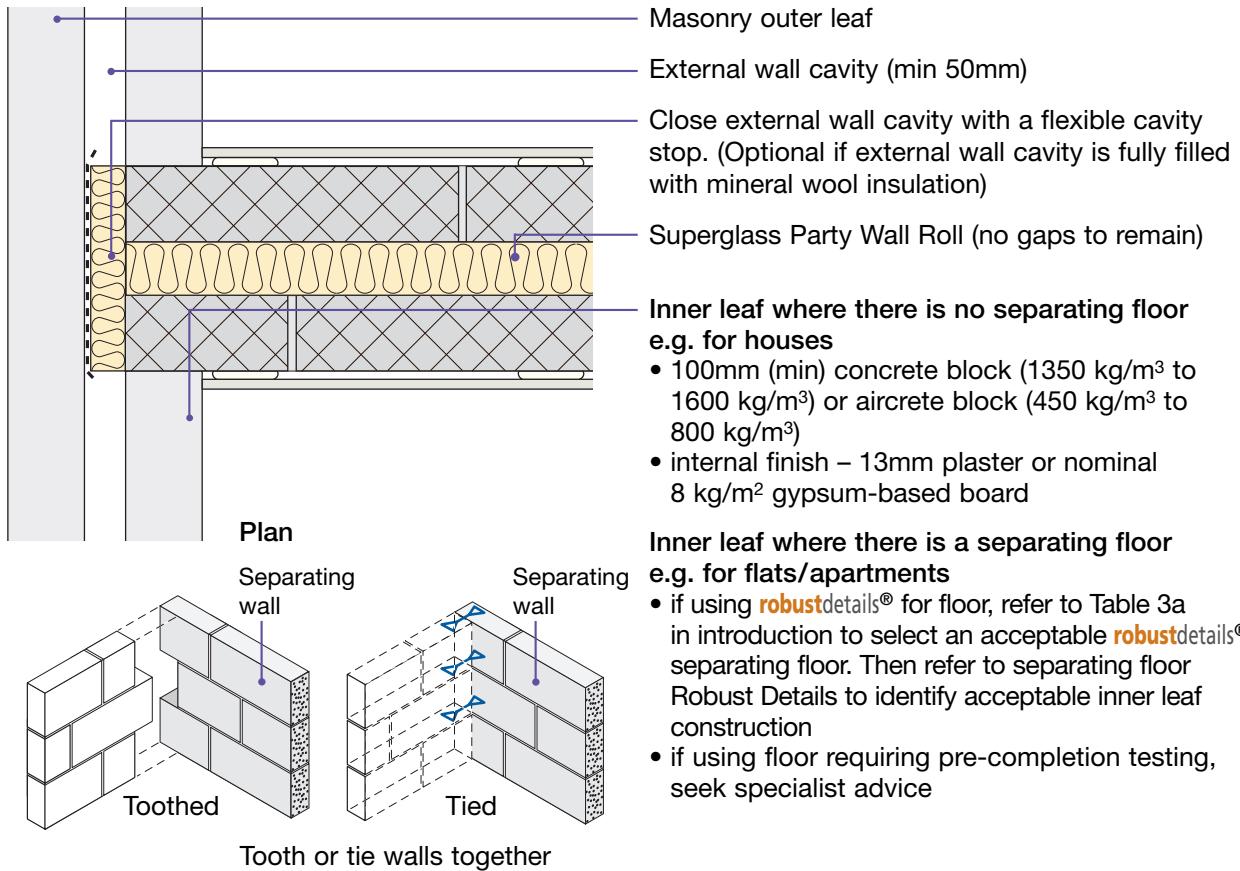


Block density	1350 to 1600 kg/m ³
Wall ties	'Tie type A' (see Appendix A)
Cavity width	75mm (min)
Block thickness	100mm (min), each leaf
Wall finish	Gypsum-based board (nominal 8 kg/m ²) mounted on dabs
Insulation	Superglass Party Wall Roll
External (flanking) wall	Masonry (both leaves) with 50mm (min) cavity – clear, fully filled or partially filled with insulation

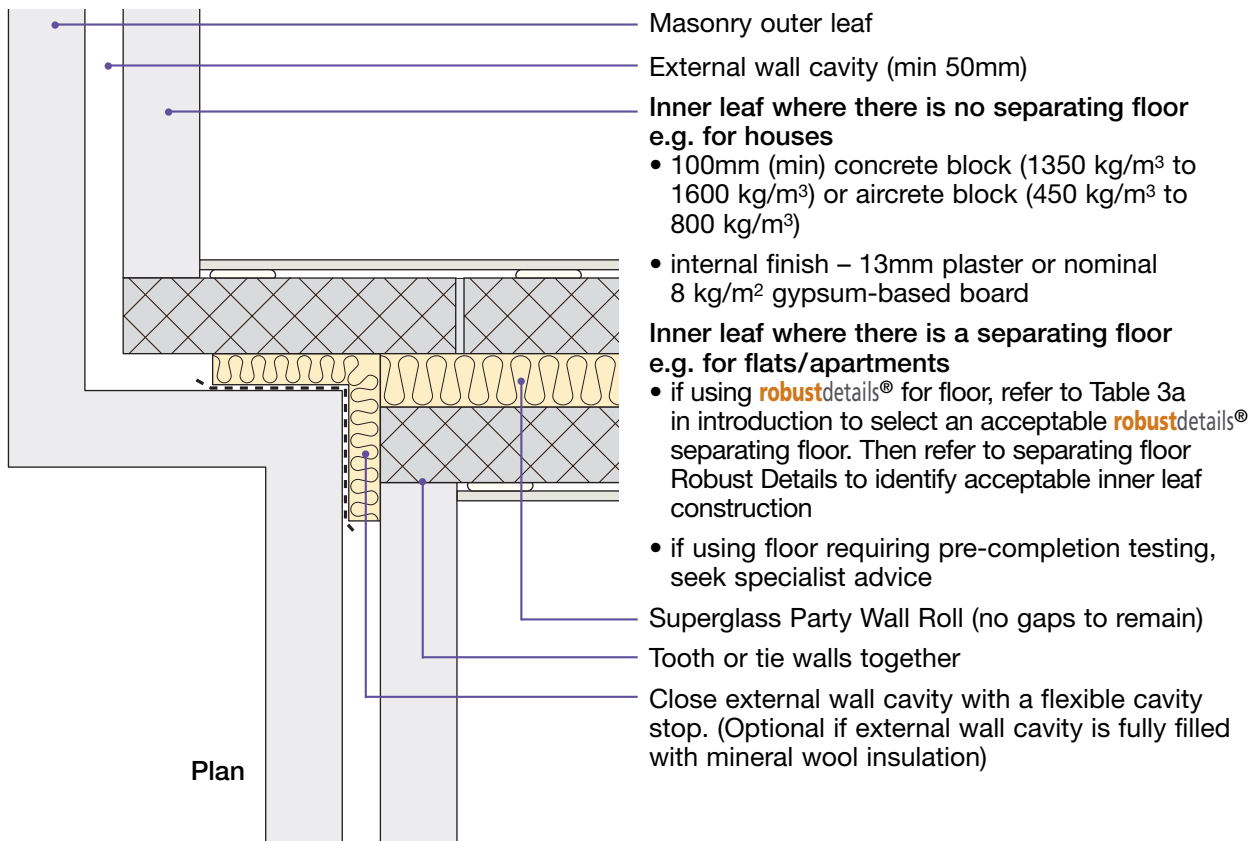
DO

- Keep cavity, insulation rolls and wall ties free from mortar droppings and debris
- Fully fill all blockwork joints with mortar
- Make sure there is no connection between the two leaves except for wall ties, insulation and foundation
- Ensure that only solid blocks (i.e. not hollow or cellular) are used in the construction of separating and flanking walls
- Ensure all Superglass Party Wall Rolls are tightly butted together and half cuts are made with a clean sharp knife and are installed in accordance with the manufacturer's instructions
- Keep any chases for services to a minimum and fill well with mortar. Stagger chases on each side of the wall to avoid them being back to back
- Refer to Appendix A
- Ensure that 'Superglass Party Wall Roll' is printed on the insulation material

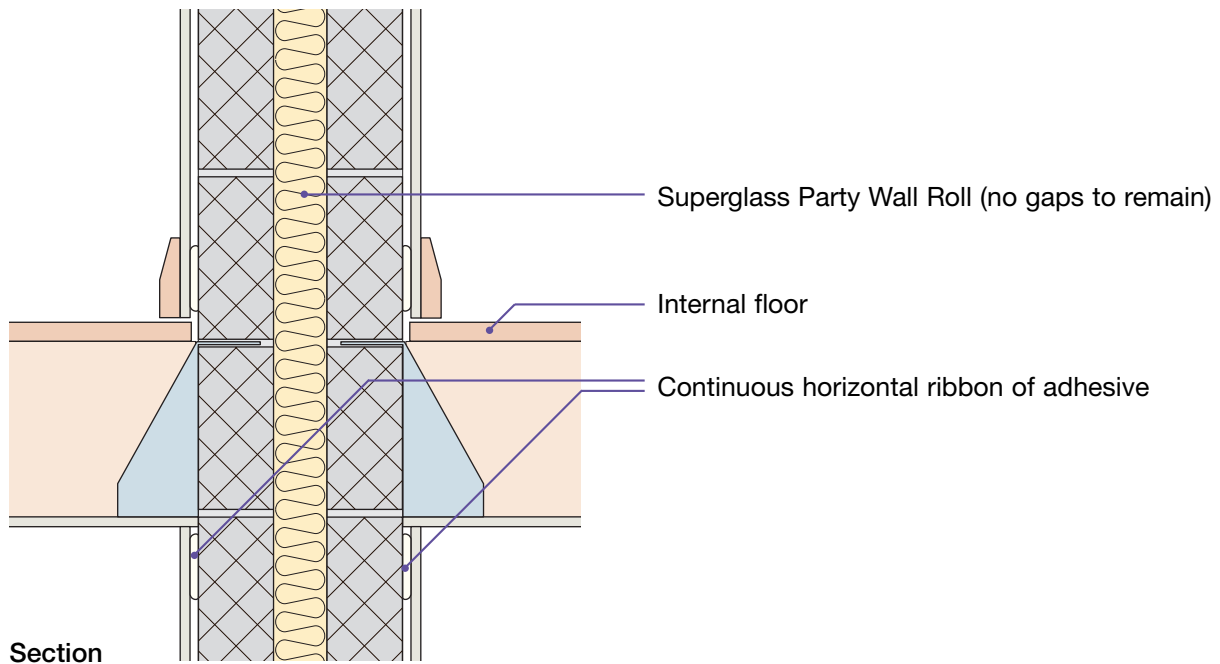
1. External (flanking) wall junction



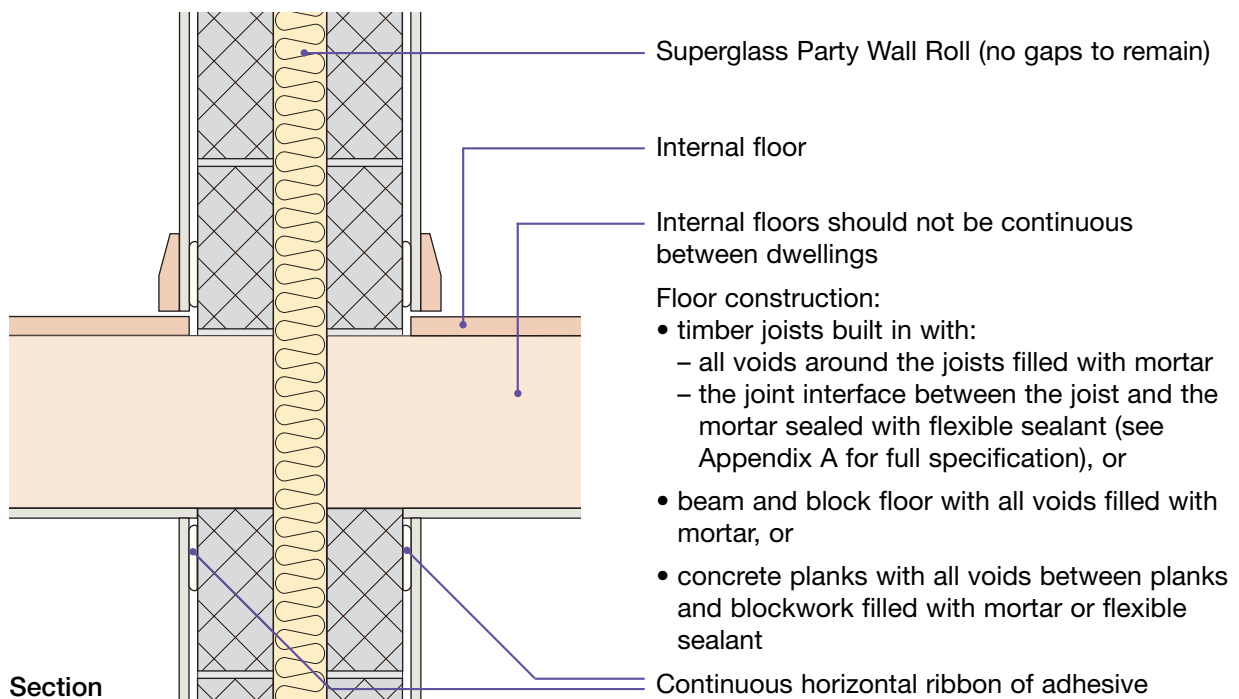
2. Staggered external (flanking) wall junction



3. Internal floor junction: timber floor supported on joist hangers

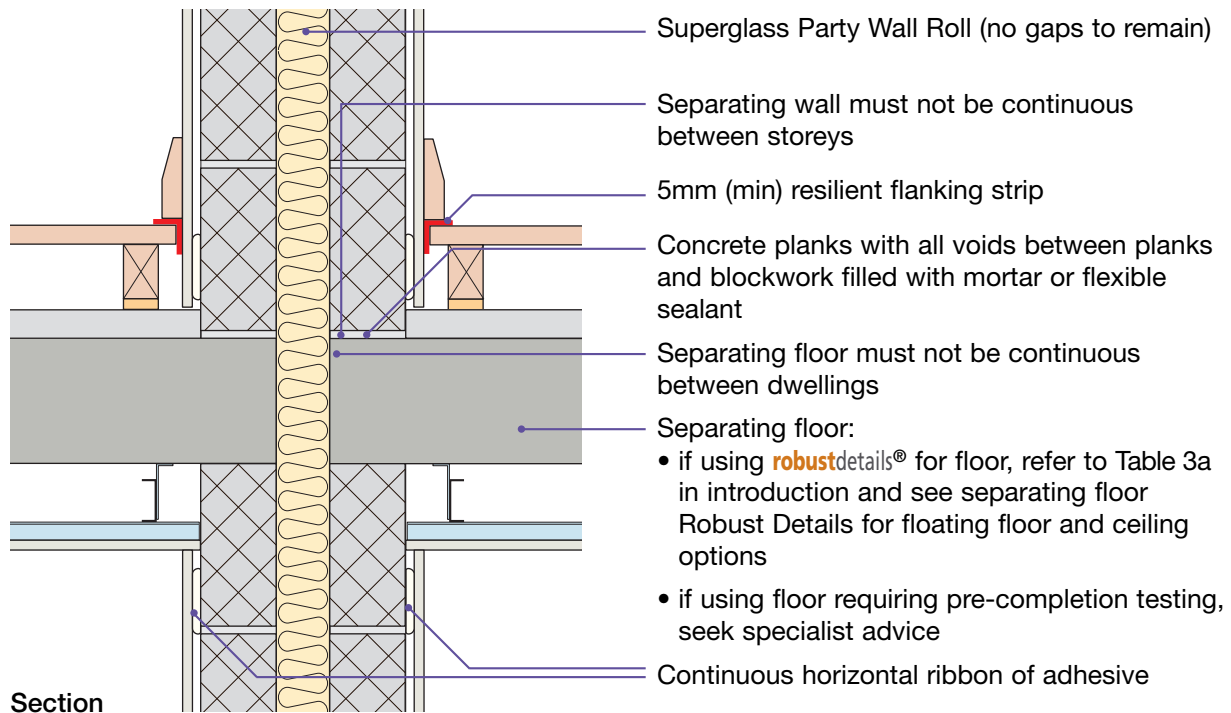


4. Internal floor junction: timber floor joists built in, beam and block or precast concrete



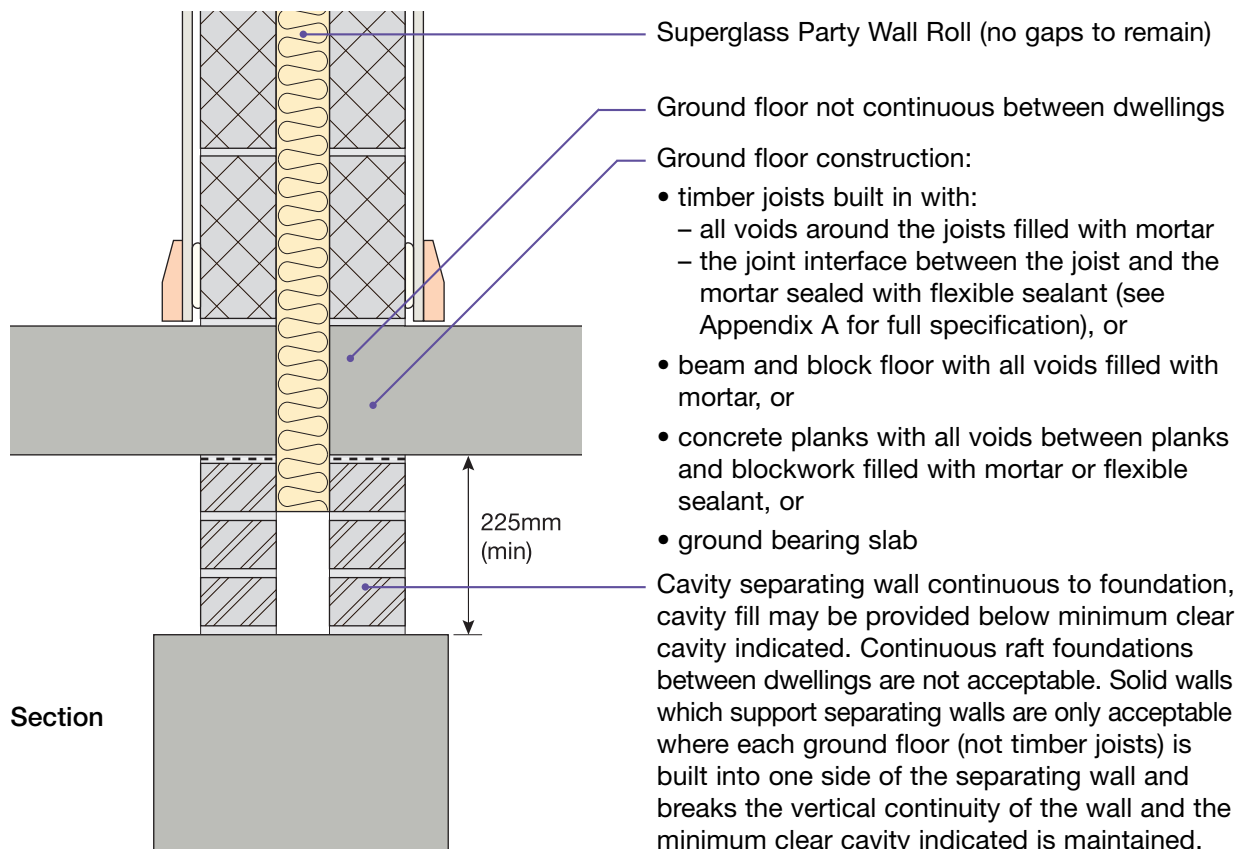
Sketch shows timber joists built in

5. Separating floor junction

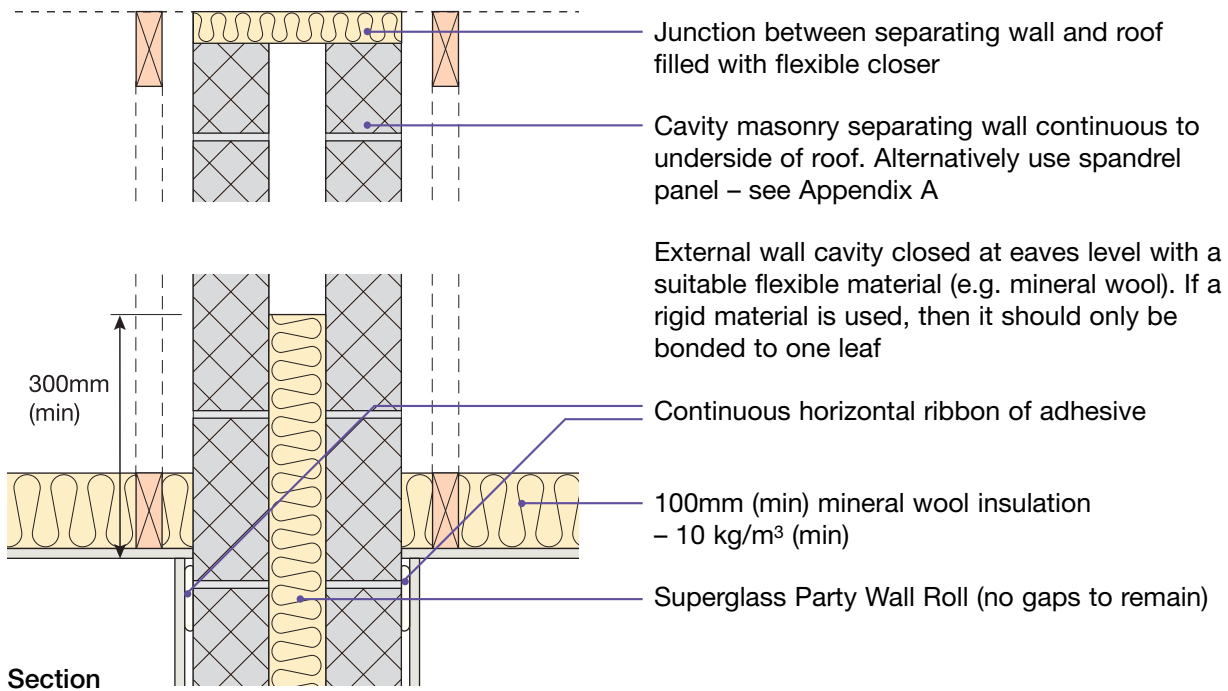


Sketch shows E-FC-1 type separating floor, FFT1 type floating floor treatment and CT3 type ceiling

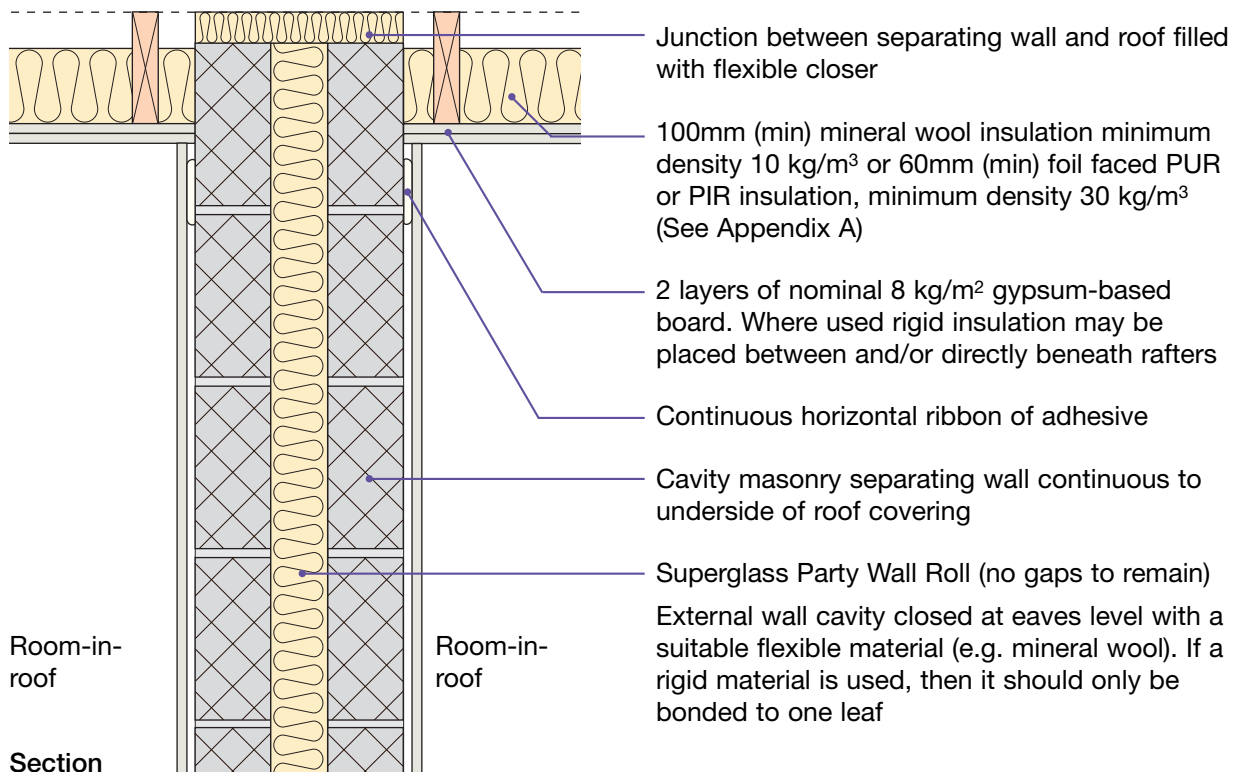
6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ suspended concrete slab or ground bearing concrete slab



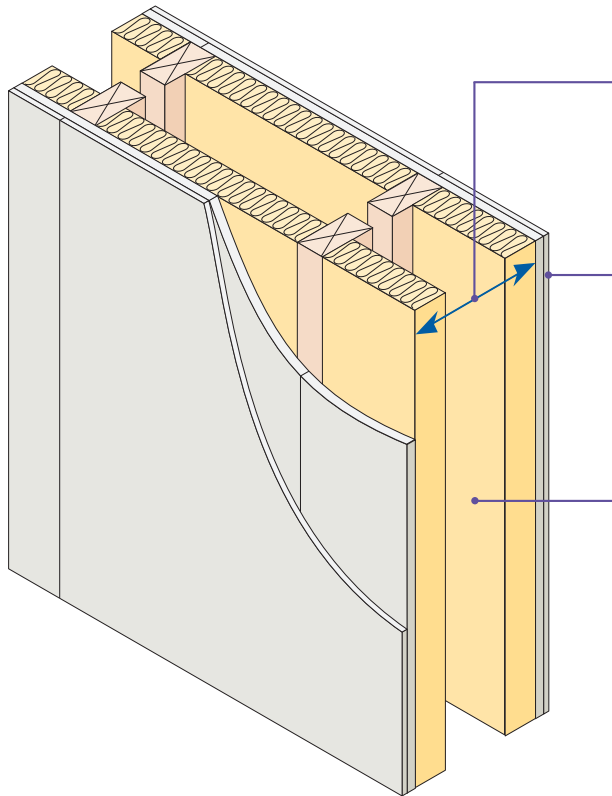
7. Roof junction – pitched roof without room-in-roof



8. Roof junction – pitched roof with room-in-roof



Without sheathing board ■
Twin timber frames ■



Wall width	240mm (min) between inner faces of wall linings. 50mm (min) gap between studs (must not be bridged by any diagonal bracing)
Wall lining	- 2 or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m ²), both sides - all joints staggered
Absorbent material	60mm (min) mineral wool batts or quilt (density 10 – 60 kg/m ³) both sides. Material may be unfaced, paper faced or wire-reinforced
Ties	Ties between frames not more than 40mm x 3mm, at 1200mm (min) centres horizontally, one row of ties per storey height vertically
External (flanking) wall	Outer leaf masonry with minimum 50mm cavity

Separating wall cavity insulation (optional)

The cavity may be insulated with mineral wool rolls or batts with a density of 10 – 40 kg/m³. Ensure insulation thickness is no greater than 20mm wider than cavity width to avoid excessive compression of the insulation.

Note: Partial sheathing of the cavity faces of the separating wall for structural reasons is permitted. This may be for:

- Up to 1800mm at each end of both leaves, provided this does not exceed 30% of the separating wall area that is common to the rooms on opposite sides of that wall; or
- To just the entire face of one leaf

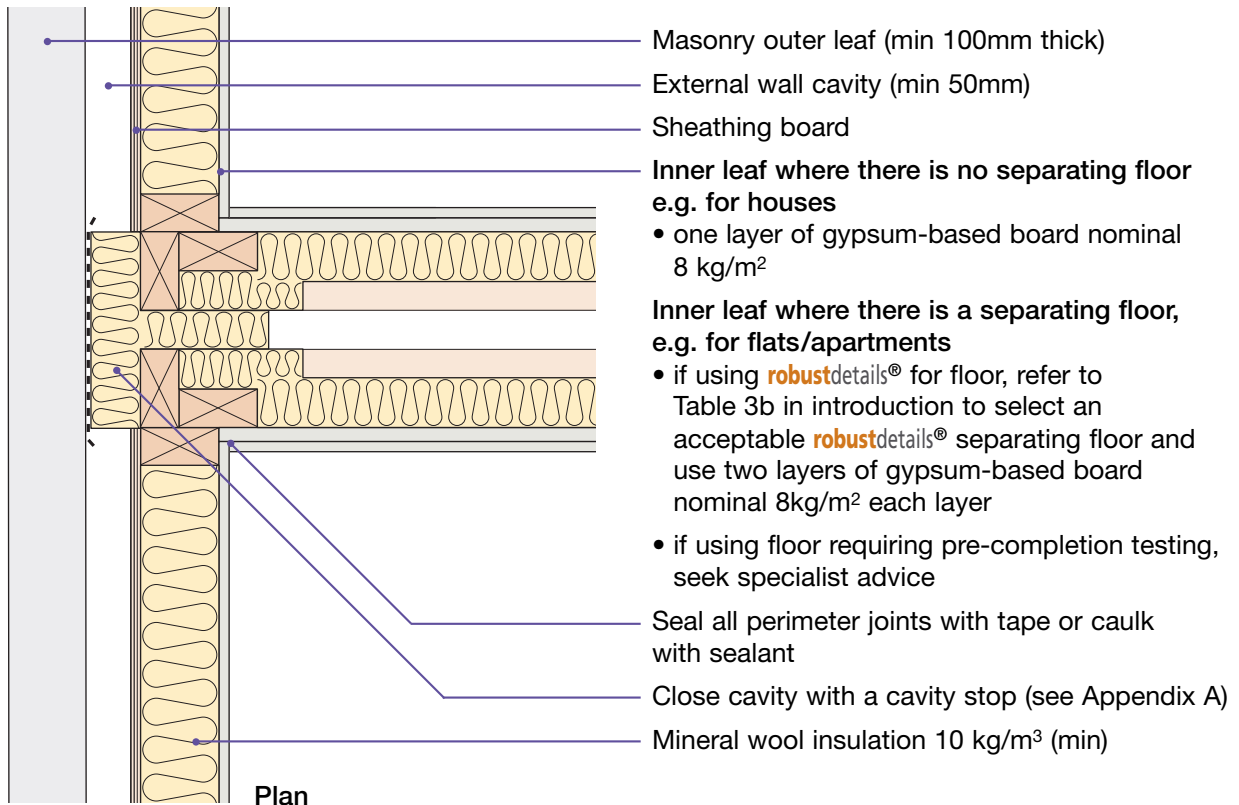
If a greater extent of sheathing is required to the cavity face, Robust Detail V-WT-2 must be used.

Structural framing details may vary slightly between different manufacturers and this is permitted, however, all dimension specifications within this Robust Detail must be adhered to.

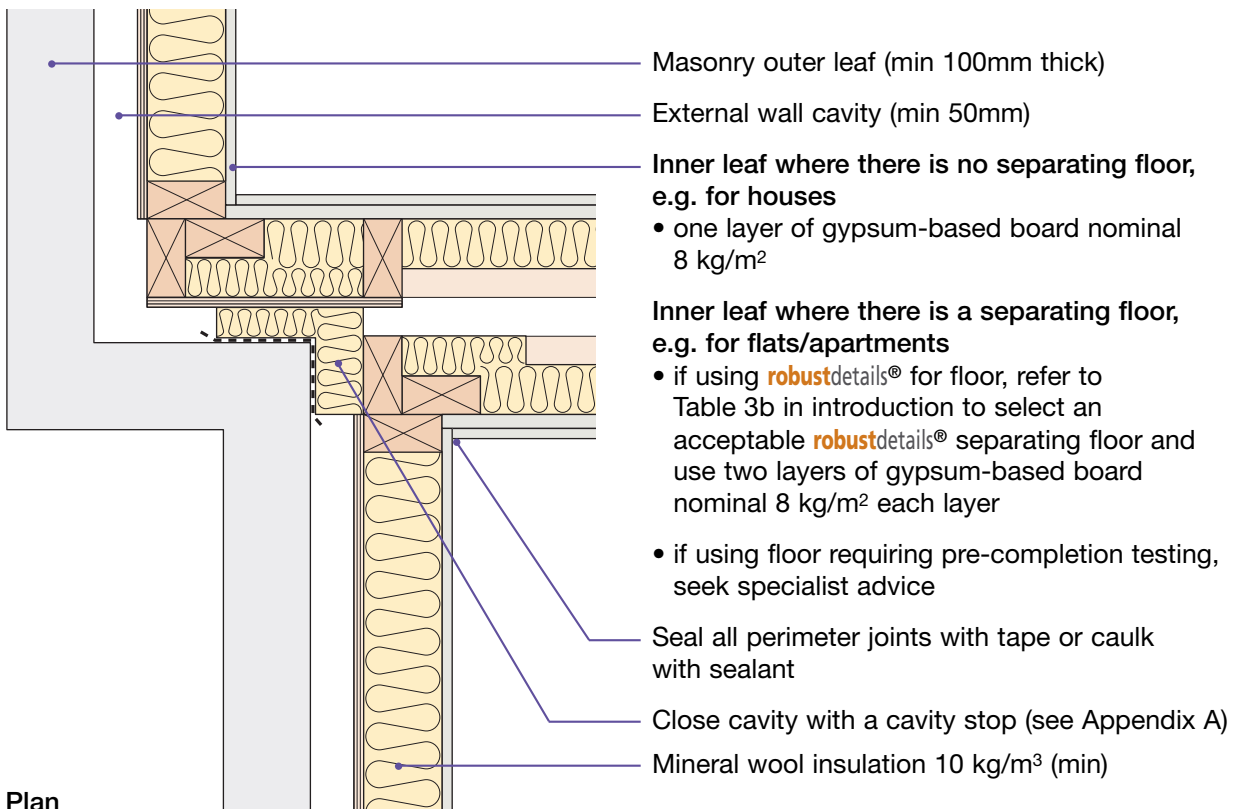
DO

- Keep wall linings at least 240mm apart
- Ensure quilt or batts cover whole lining area, fitting tight between studs without sagging
- Ensure that all cavity stops/closers are flexible or are fixed to one frame only
- Make sure there is no connection between the two leaves except where ties are necessary for structural reasons (see above).
- Stagger joints in wall linings to avoid air paths
- Seal all joints in outer layer with tape or caulk with sealant
- Refer to Appendix A

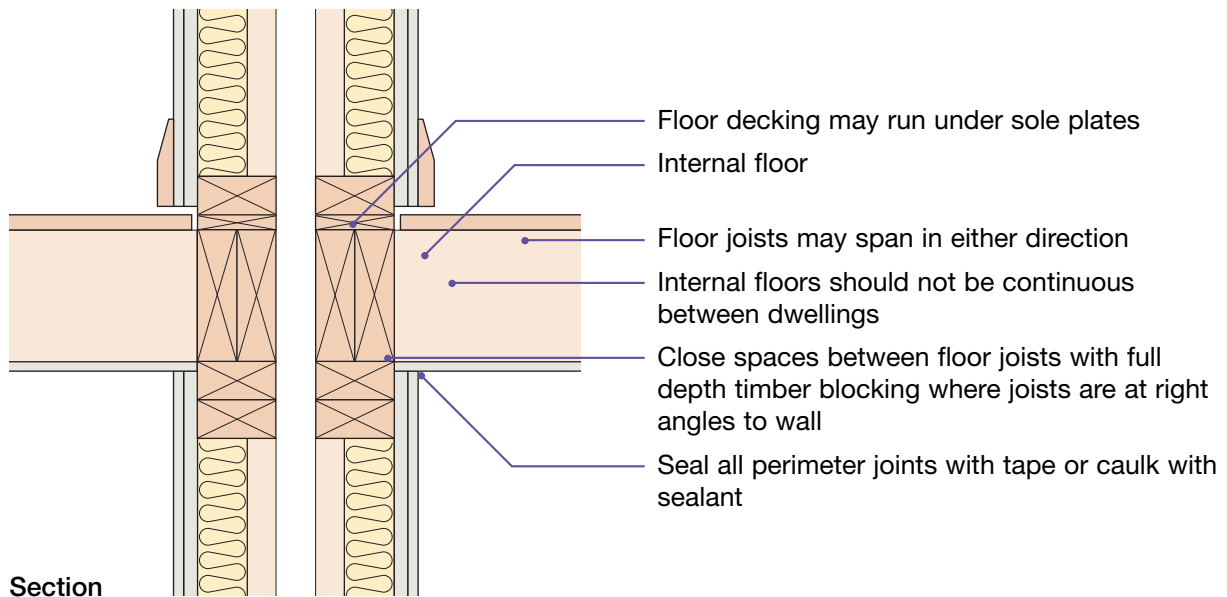
1. External (flanking) wall junction



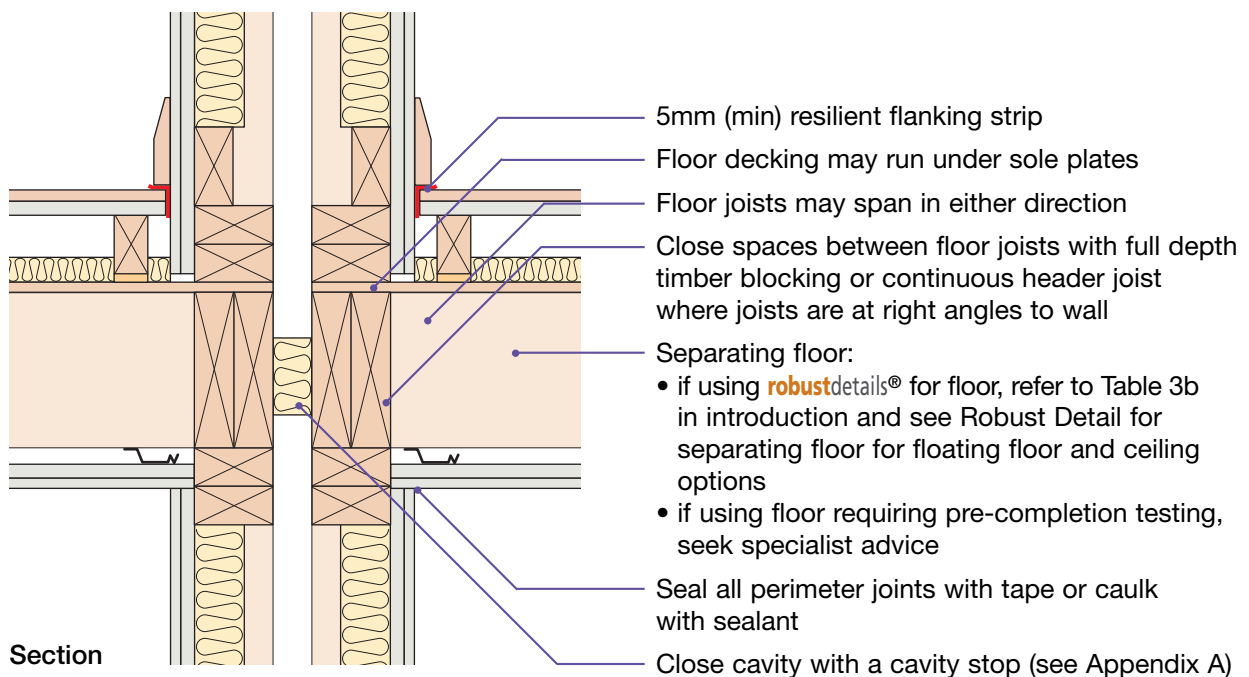
2. Staggered external (flanking) wall junction



3. Internal floor junction

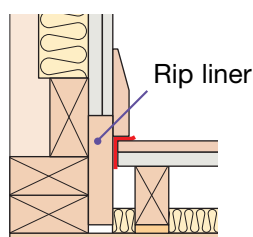


4. Separating floor junction



Sketch shows V-FT-2 type separating floor

Alternative detail



5. Internal wall junction

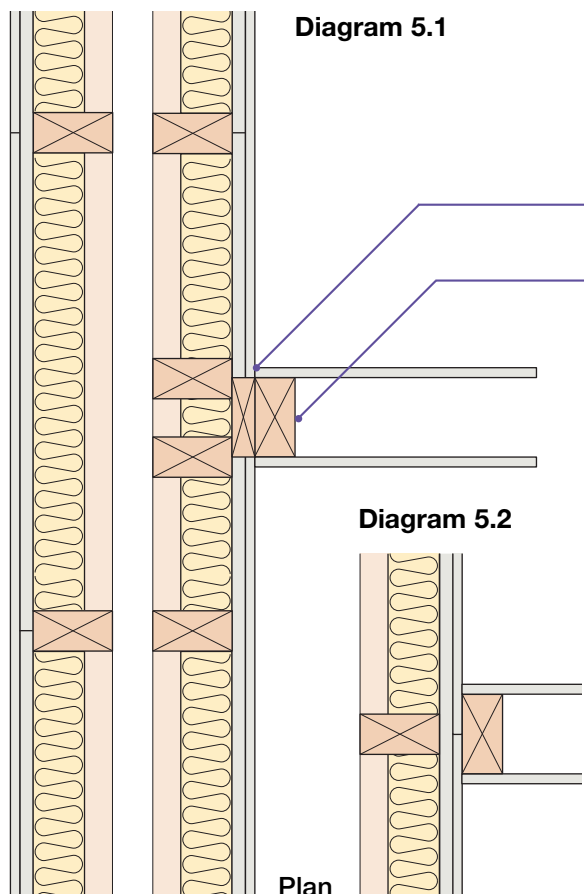


Diagram 5.1

Seal all perimeter joints with tape or caulk with sealant

Internal partition wall

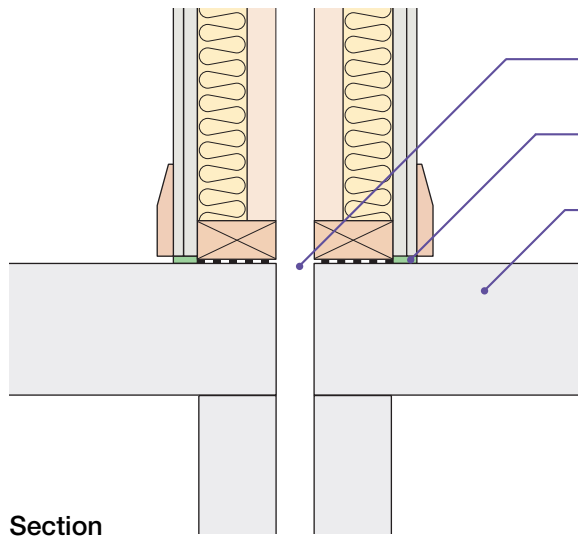
Diagram 5.1 shows junction detail where the internal wall is fixed through the separating wall lining; other junction details are acceptable provided all joints are sealed with tape or caulked with sealant

Diagram 5.2

Diagram 5.2 shows junction where the separating wall lining is continuous

Plan

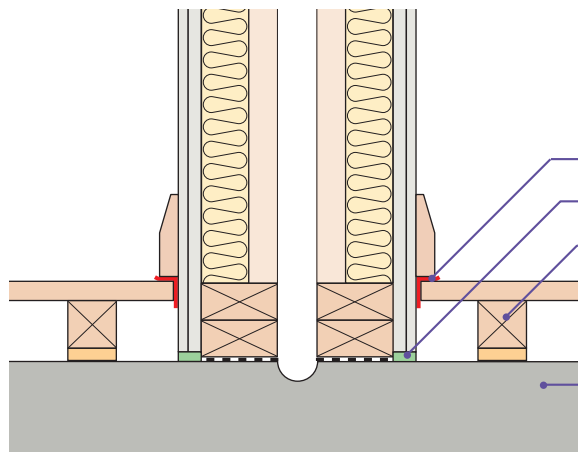
6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ concrete suspended slab or ground bearing slab



Section

- Ground floors not continuous between dwellings
- Flexible or acoustic sealant (may be omitted when timber ground floor is used)
- Ground floor construction:
 - timber floor joists:
 - may span in either direction
 - floor decking may run under sole plates
 - close spaces between floor joists with full depth timber blocking where joists are at right angles to wall, or
 - beam and block floor with all voids filled with mortar, or
 - precast concrete planks with all voids between planks and blockwork filled with mortar or flexible sealant, or
 - cast in-situ concrete suspended slab, or
 - ground bearing slab

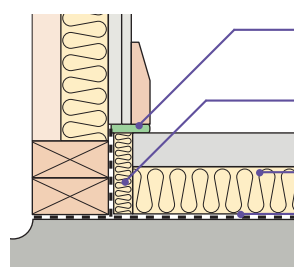
7. Raft foundation



Section

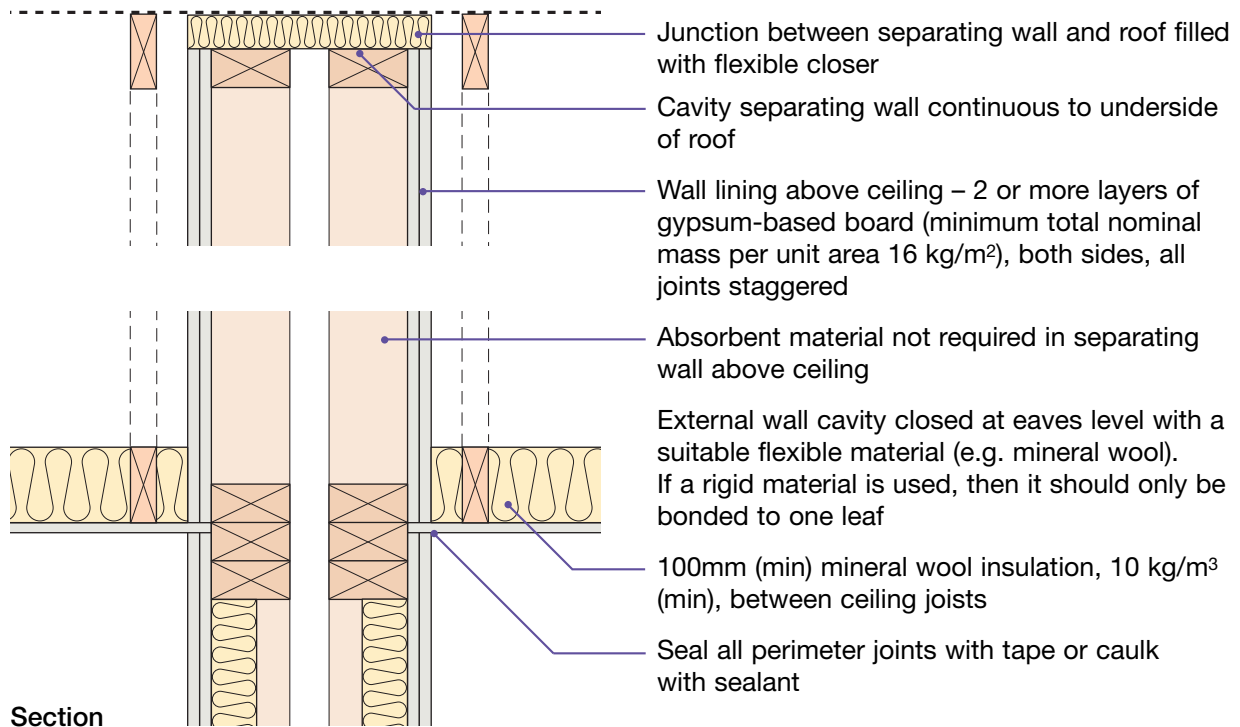
- 5mm (min) resilient flanking strip
- Flexible or acoustic sealant
- A floating floor treatment must be used (for ground floor floating floor treatments mineral fibre quilt is not required between the battens or cradle system)
- Concrete raft - mass per unit area of 365 kg/m² (min)

Alternative detail with screed finish

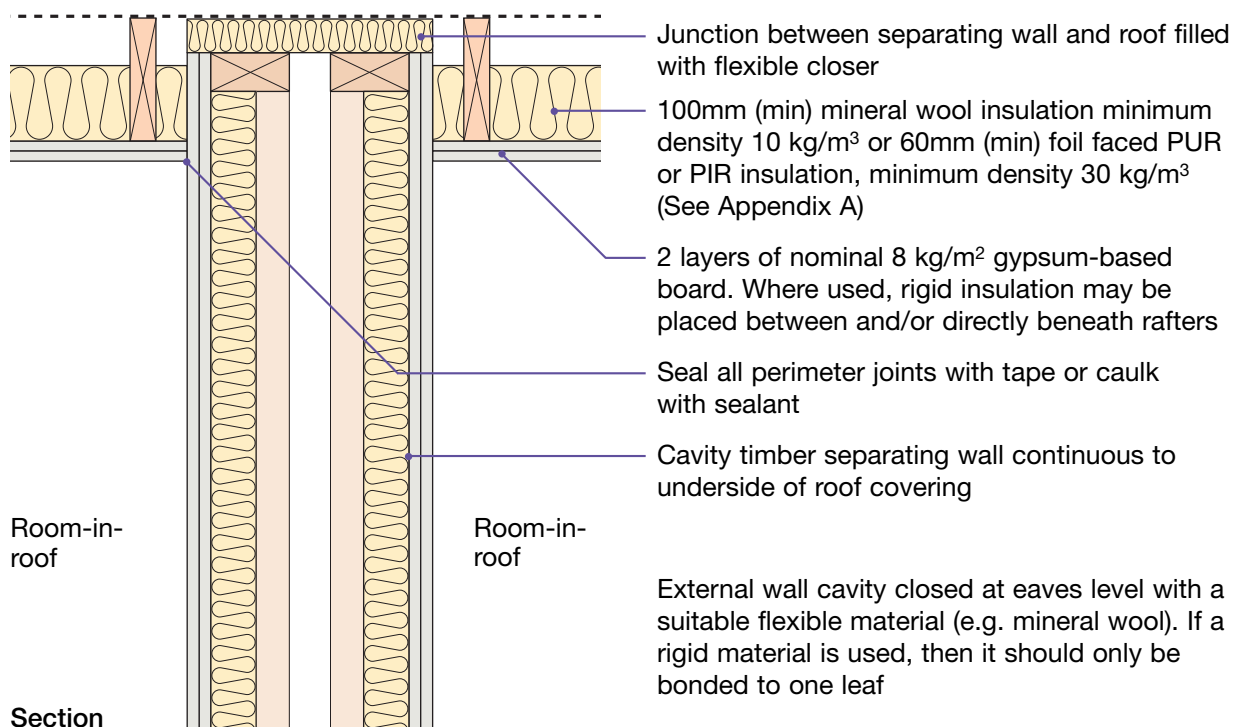


- Mastic sealant, ensure skirting and wall lining are isolated from screed
- Perimeter insulation, isolating screed from timber frame
- Below screed insulation, isolating screed from raft
- Polyethylene

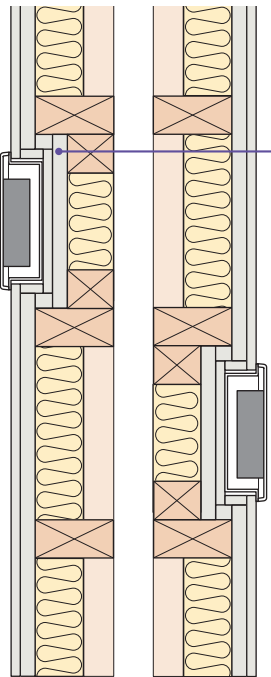
8. Roof junction - pitched roof with no room-in-roof



9. Roof junction - pitched roof with room-in-roof



10. Services and sockets in the separating wall

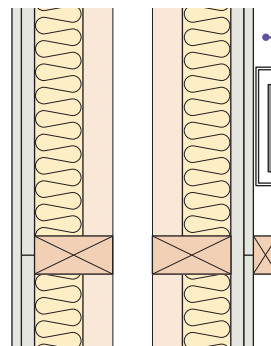


Plan

10.1 – electrical sockets, switches, etc.

Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose electrical boxes

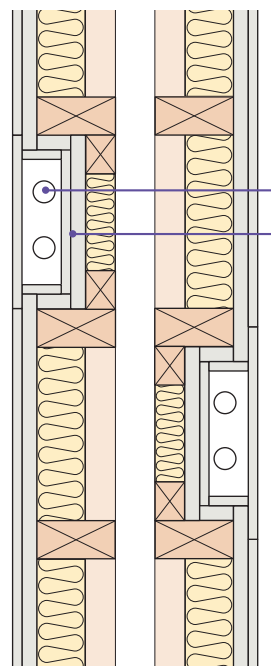
Stagger sockets, switches, etc. on each side of the wall such that they are not positioned in opposite bays



Plan

Alternatively provide a service void on surface of separating wall. This is the preferred method where more than one socket, switch, etc. are close together, e.g. in a kitchen.

Studs or battens used to create the service zone should be securely fixed back to the separating wall structure



Plan

10.2 – piped services

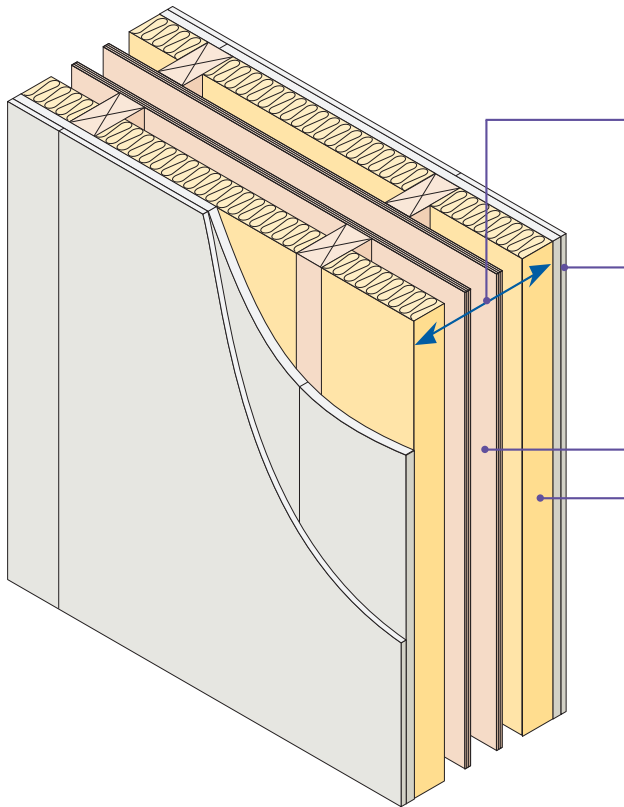
Service duct within separating wall

Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose pipes

Stagger services on each side of wall such that they are not positioned in opposite bays

Note: this detail is not applicable for SVPs or gas pipes.

- With sheathing board ■
- Twin timber frames ■



Wall width	240mm (min) between inner faces of wall linings. 50mm (min) gap between wall panels
Wall lining	- 2 or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m ²), both sides - all joints staggered
Sheathing	9mm (min) thick board
Absorbent material	60mm (min) mineral wool batts or quilt (density 10 – 60 kg/m ³) both sides. Material may be unfaced, paper faced or wire-reinforced
Ties	Ties between frames not more than 40mm x 3mm, at 1200mm (min) centres horizontally, one row of ties per storey height vertically
External (flanking) wall	Outer leaf masonry with minimum 50mm cavity

Note: This specification is intended for use where the extent of sheathing required to the cavity face of the separating wall is greater than that permitted for V-WT-1.

Structural framing details may vary slightly between different manufacturers and this is permitted, however, all dimension specifications within this Robust Detail must be adhered to.

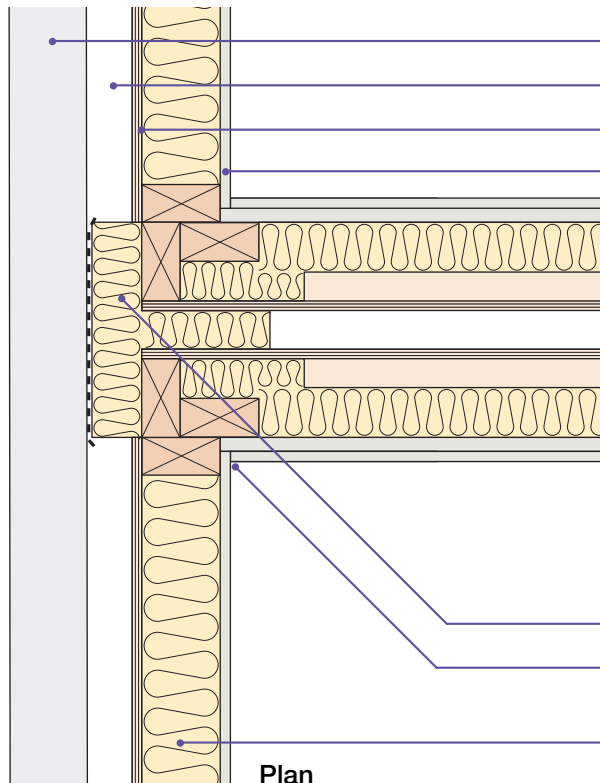
Separating wall cavity insulation (optional)

The cavity may be insulated with mineral wool rolls or batts with a density of 18 – 40 kg/m³. Ensure insulation thickness is no greater than 10mm wider than cavity width to avoid excessive compression of the insulation.

DO

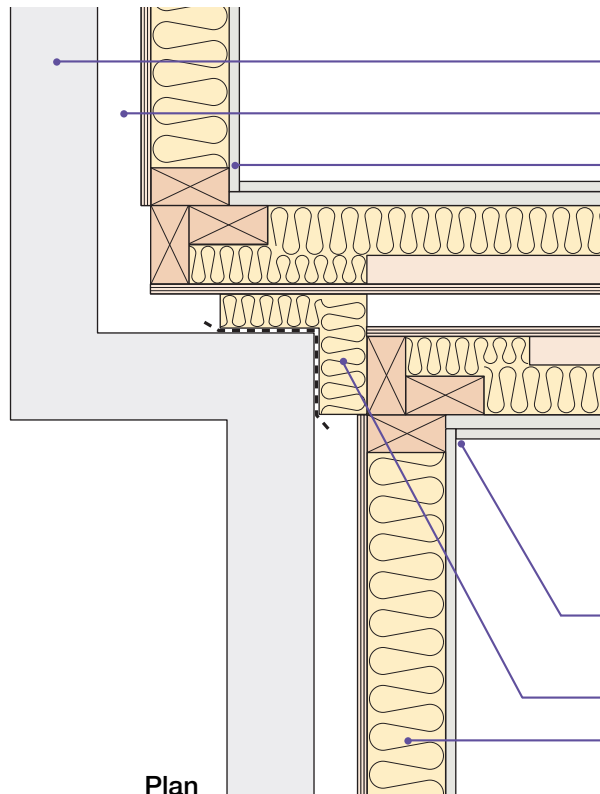
- Keep wall linings at least 240mm apart
- Ensure that the 50mm (min) gap between the wall panels is maintained
- Ensure quilt or batts cover whole lining area, fitting tight between studs without sagging
- Ensure that all cavity stops/closers are flexible or are fixed to one frame only
- Make sure there is no connection between the two leaves except where ties are necessary for structural reasons (see above)
- Stagger joints in wall linings to avoid air paths
- Seal all joints in outer layer with tape or caulk with sealant
- Refer to Appendix A

1. External (flanking) wall junction



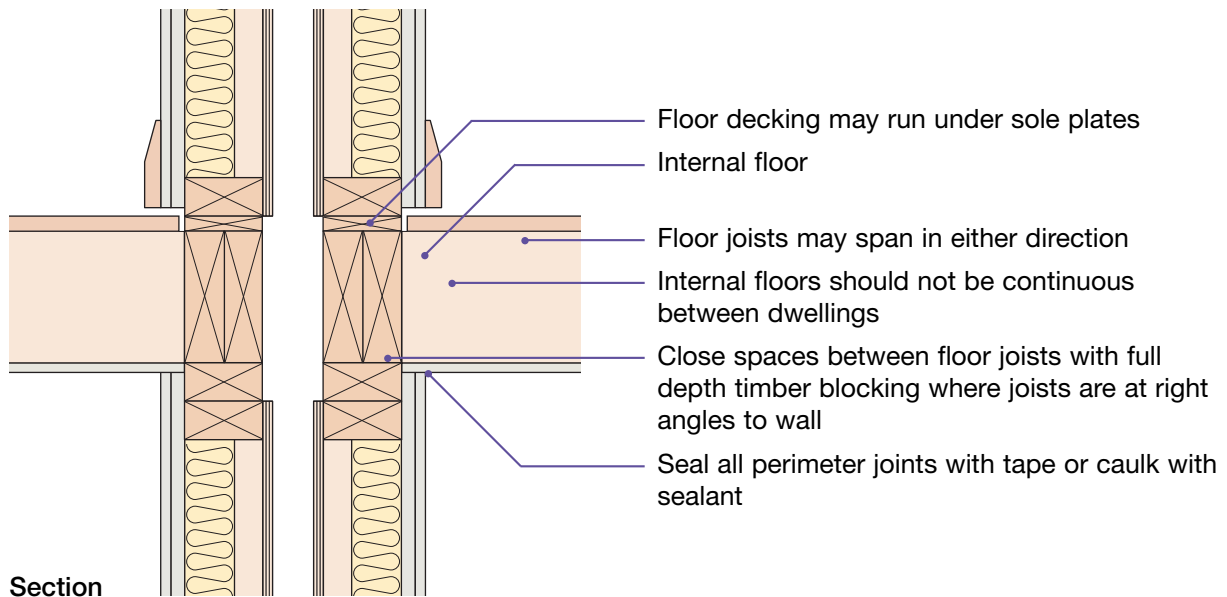
- Masonry outer leaf (min 100mm thick)
- External wall cavity (min 50mm)
- Sheathing board
- Inner leaf where there is no separating floor e.g. for houses
 - one layer of gypsum-based board nominal 8 kg/m²
- Inner leaf where there is a separating floor, e.g. for flats/apartments
 - if using **robustdetails**[®] for floor, refer to Table 3b in introduction to select an acceptable **robustdetails**[®] separating floor and use two layers of gypsum-based board nominal 8kg/m² each layer
 - if using floor requiring pre-completion testing, seek specialist advice
- Close cavity with a cavity stop (see Appendix A)
- Seal all perimeter joints with tape or caulk with sealant
- Mineral wool insulation 10 kg/m³ (min) or 70mm (min) foil faced PIR with no gaps

2. Staggered external (flanking) wall junction

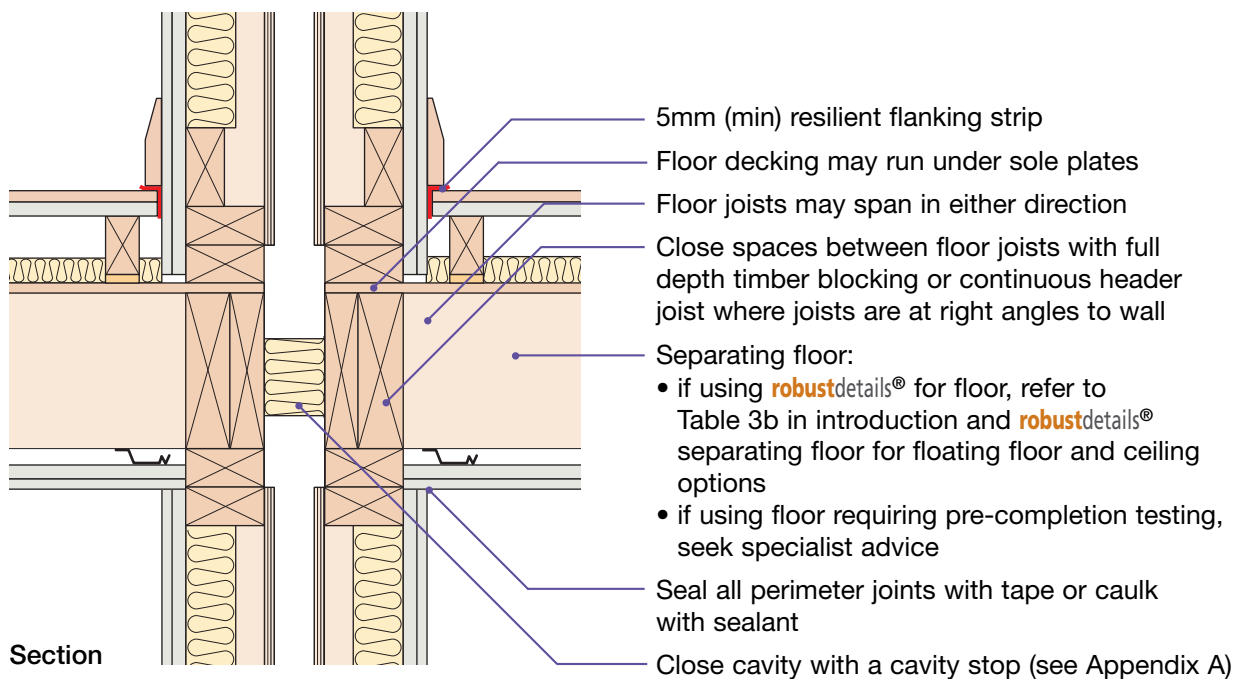


- Masonry outer leaf (min 100mm thick)
- External wall cavity (min 50mm)
- Inner leaf where there is no separating floor e.g. for houses
 - one layer of gypsum-based board nominal 8 kg/m²
- Inner leaf where there is a separating floor, e.g. for flats/apartments
 - if using **robustdetails**[®] for floor, refer to Table 3b in introduction to select an acceptable **robustdetails**[®] separating floor and use two layers of gypsum-based board nominal 8kg/m² each layer
 - if using floor requiring pre-completion testing, seek specialist advice
- Seal all perimeter joints with tape or caulk with sealant
- Close cavity with a cavity stop (see Appendix A)
- Mineral wool insulation 10 kg/m³ (min) or 70mm (min) foil faced PIR with no gaps

3. Internal floor junction

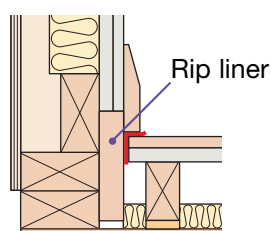


4. Separating floor junction



Sketch shows V-FT-2 type separating floor

Alternative detail



5. Internal wall junction

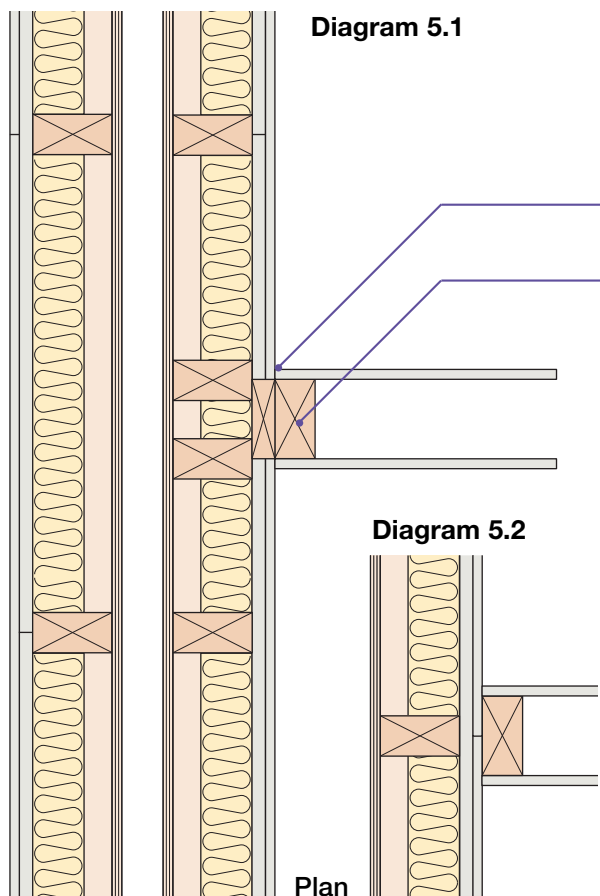


Diagram 5.1

Seal all perimeter joints with tape or caulk with sealant

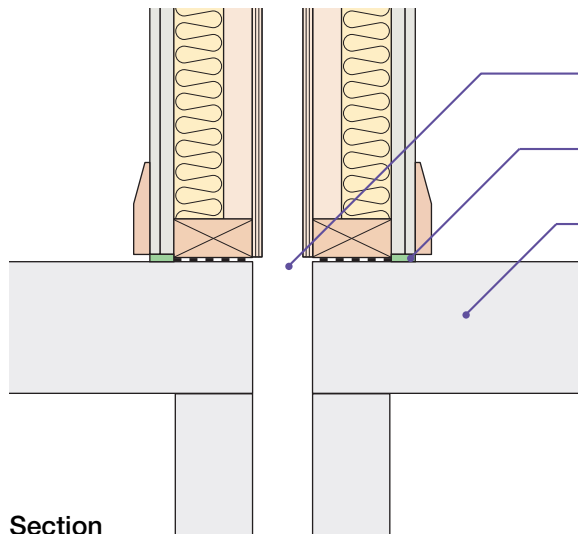
Internal partition wall

Diagram 5.1 shows junction detail where the internal wall is fixed through the separating wall lining; other junction details are acceptable provided all joints are sealed with tape or caulked with sealant

Diagram 5.2

Diagram 5.2 shows junction where the separating wall lining is continuous

6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ concrete suspended slab or ground bearing slab

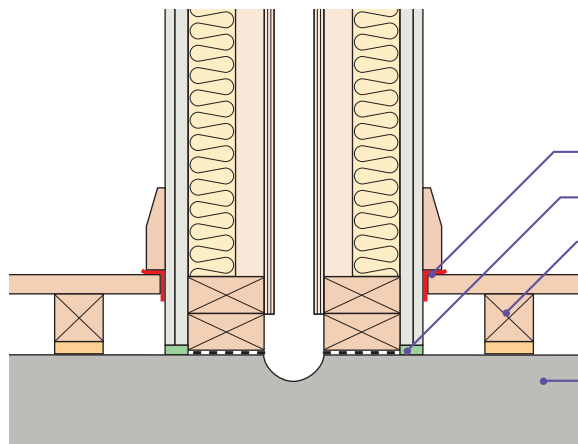


Section

*Note – Ensure substructure masonry is correctly set out to enable timber frame to achieve the required gap between wall panels

- Ground floors not continuous between dwellings
- Flexible or acoustic sealant (may be omitted when timber ground floor is used)
- Ground floor construction:
 - timber floor joists:
 - may span in either direction
 - floor decking may run under sole plates
 - close spaces between floor joists with full depth timber blocking where joists are at right angles to wall, or
 - beam and block floor with all voids filled with mortar, or
 - precast concrete planks with all voids between planks and blockwork filled with mortar or flexible sealant, or
 - cast in-situ concrete suspended slab, or
 - ground bearing slab

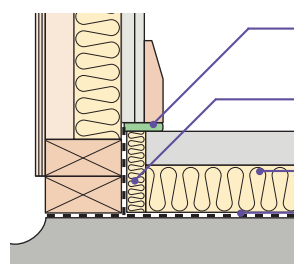
7. Raft foundation



Section

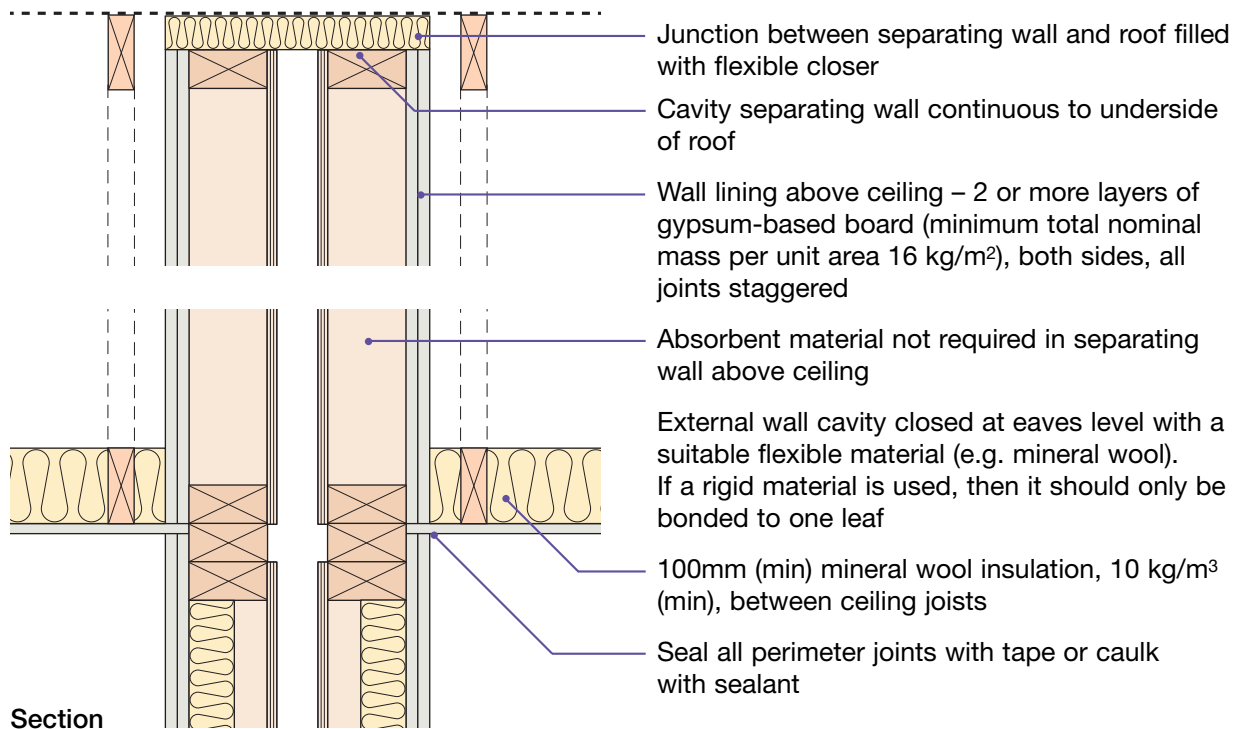
- 5mm (min) resilient flanking strip
- Flexible or acoustic sealant
- A floating floor treatment must be used (for ground floor floating floor treatments mineral fibre quilt is not required between the battens or cradle system)
- Concrete raft - mass per unit area of 365 kg/m² (min)

Alternative detail with screed finish

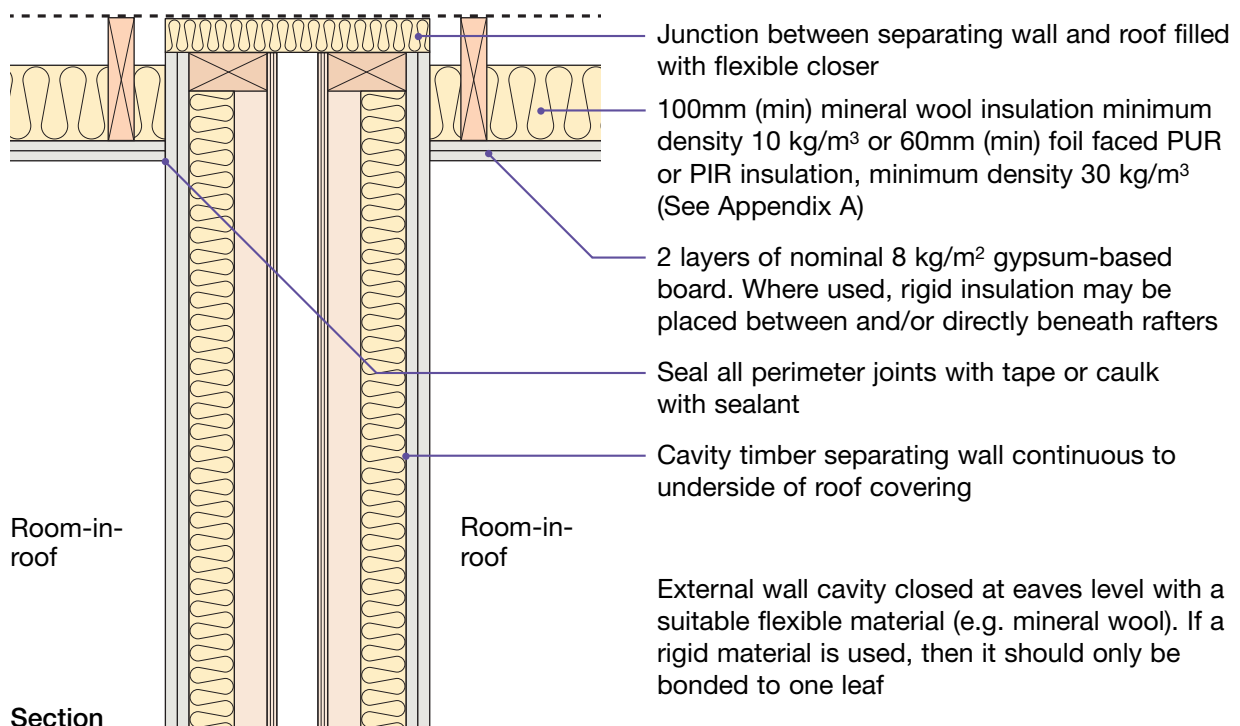


- Mastic sealant, ensure skirting and wall lining are isolated from screed
- Perimeter insulation, isolating screed from timber frame
- Below screed insulation, isolating screed from raft
- Polyethylene

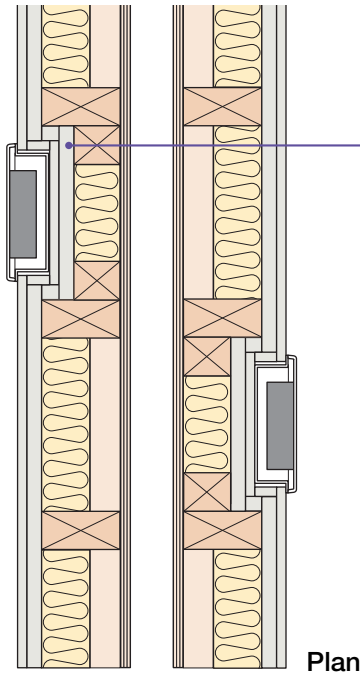
8. Roof junction - pitched roof with no room-in-roof



9. Roof junction - pitched roof with room-in-roof



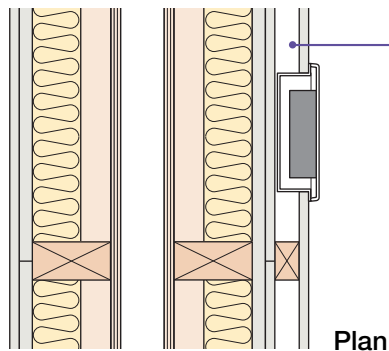
10. Services and sockets in the separating wall



10.1 – electrical sockets, switches, etc.

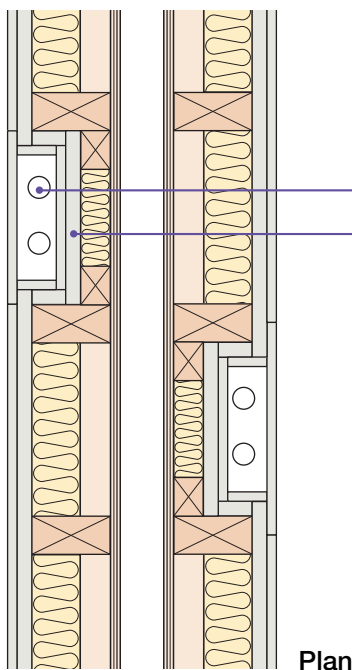
Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose electrical boxes

Stagger sockets, switches, etc. on each side of the wall such that they are not positioned in opposite bays



Alternatively provide a service void on surface of separating wall. This is the preferred method where more than one socket, switch, etc. are close together, e.g. in a kitchen.

Studs or battens used to create the service zone should be securely fixed back to the separating wall structure



10.2 – piped services

Service duct within separating wall

Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose pipes

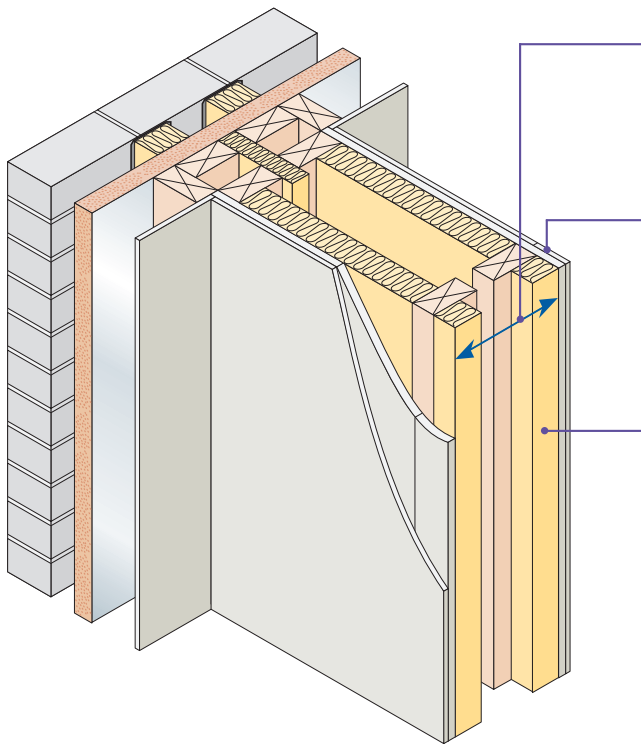
Stagger services on each side of wall such that they are not positioned in opposite bays

Note: this detail is not applicable for SVPs or gas pipes.

ElecoFrame prefabricated panels ■

Twin timber frames ■

For use in timber frame houses and flats/apartments ■



Wall width 240mm (min) between inner faces of wall linings. 50mm (min) gap between studs (must not be bridged by any diagonal bracing)

Wall lining - 2 or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²), both sides
- all joints staggered

Absorbent material 60mm (min) mineral wool batts or quilt (density 10 – 60 kg/m³) both sides. Material may be unfaced, paper faced or wire-reinforced

Ties Ties between frames not more than 40mm x 3mm, at 1200mm (min) centres horizontally, one row of ties per storey height vertically

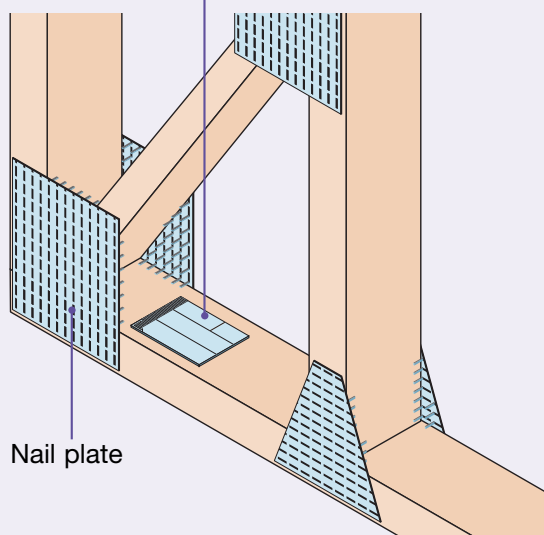
External (flanking) wall Outer leaf masonry with minimum 50mm cavity. Inner leaf lined with 45mm (min) foil faced PIR insulation, minimum density 32 kg/m³

Note: Partial sheathing of the cavity faces of the separating wall is permitted for structural reasons. This may be for a length of 1800mm (max) to each end of both leaves or to the entire face of one leaf.

Note: When using this Robust Detail in flats/apartments, please refer to Tables 3b and 4 of the Introduction

FRAME CONSTRUCTION

ElecoFrame identification plate

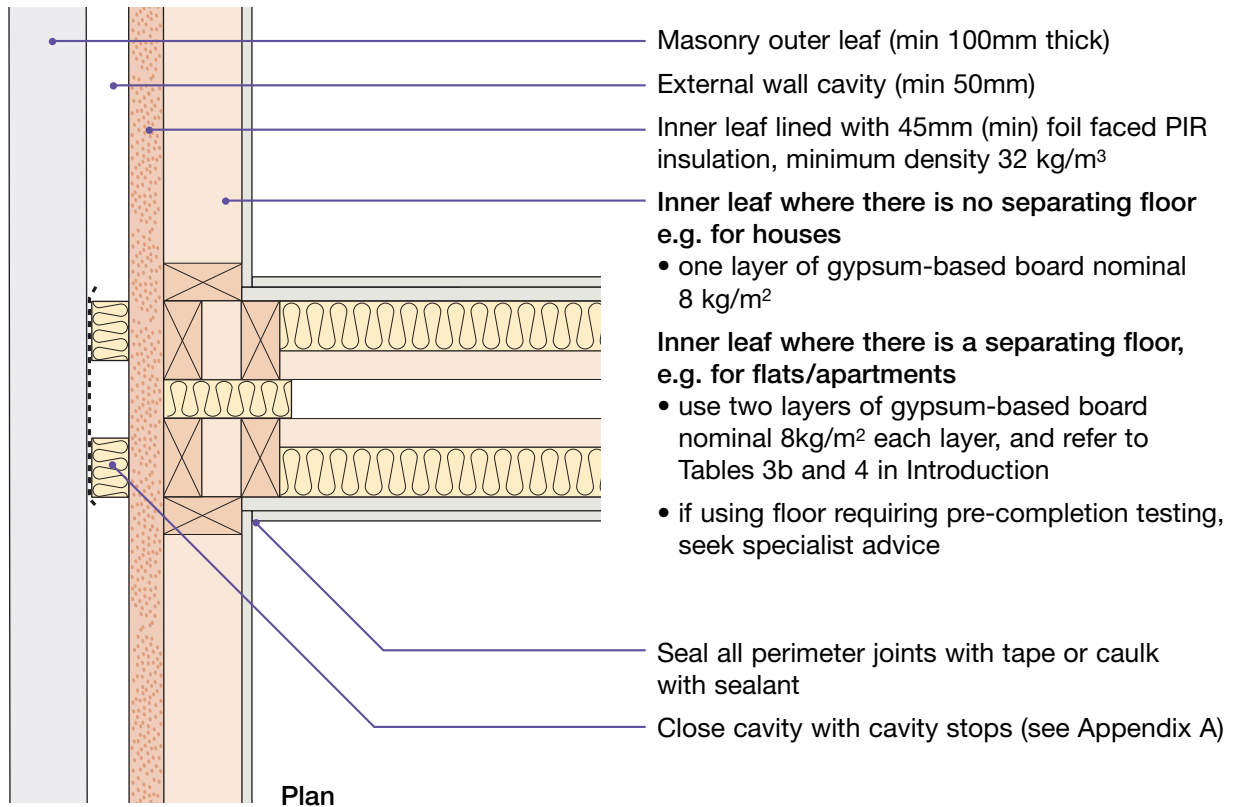


Nail plate

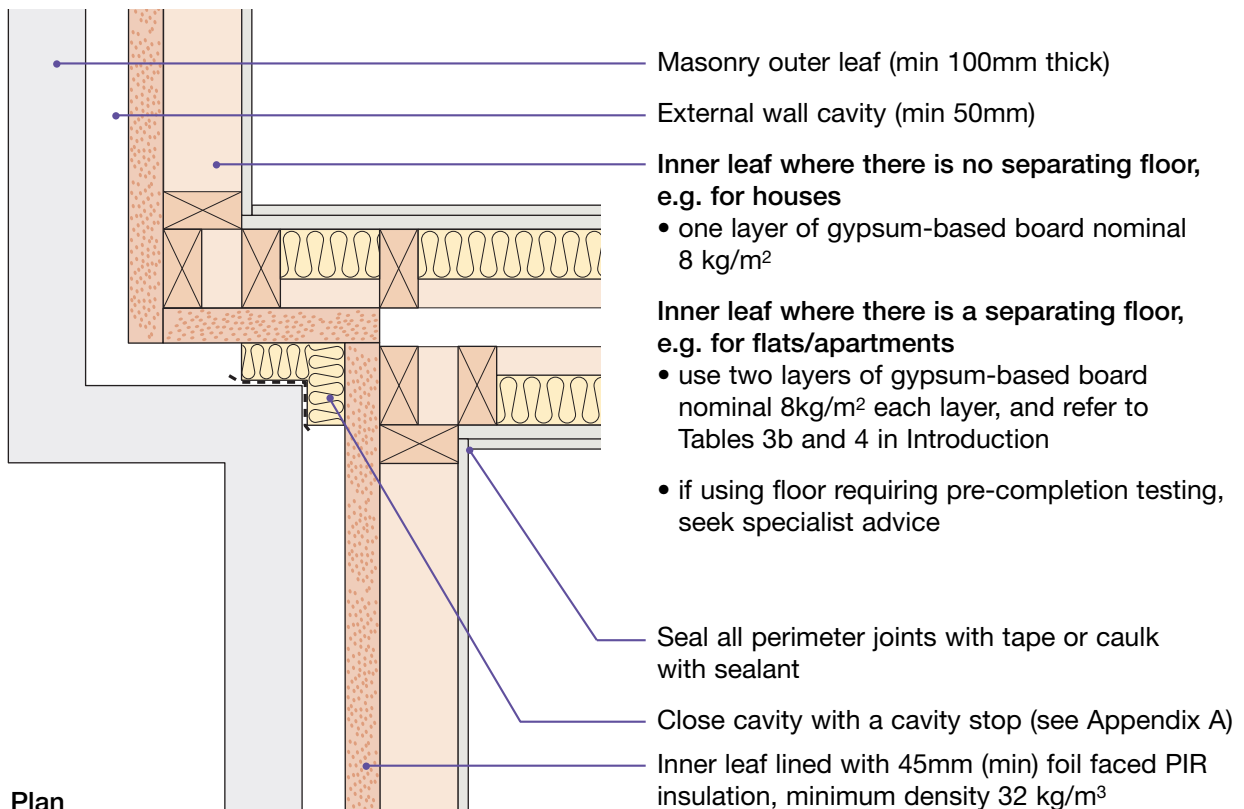
DO

- Keep wall linings at least 240mm apart
- Ensure quilt or batts cover whole lining area, fitting tight between studs without sagging
- Ensure that all cavity stops/closers are flexible or are fixed to one frame only
- Make sure there is no connection between the two leaves except where ties are necessary for structural reasons (see above).
- Stagger joints in wall linings to avoid air paths
- Seal all joints in outer layer with tape or caulk with sealant
- Refer to Appendix A

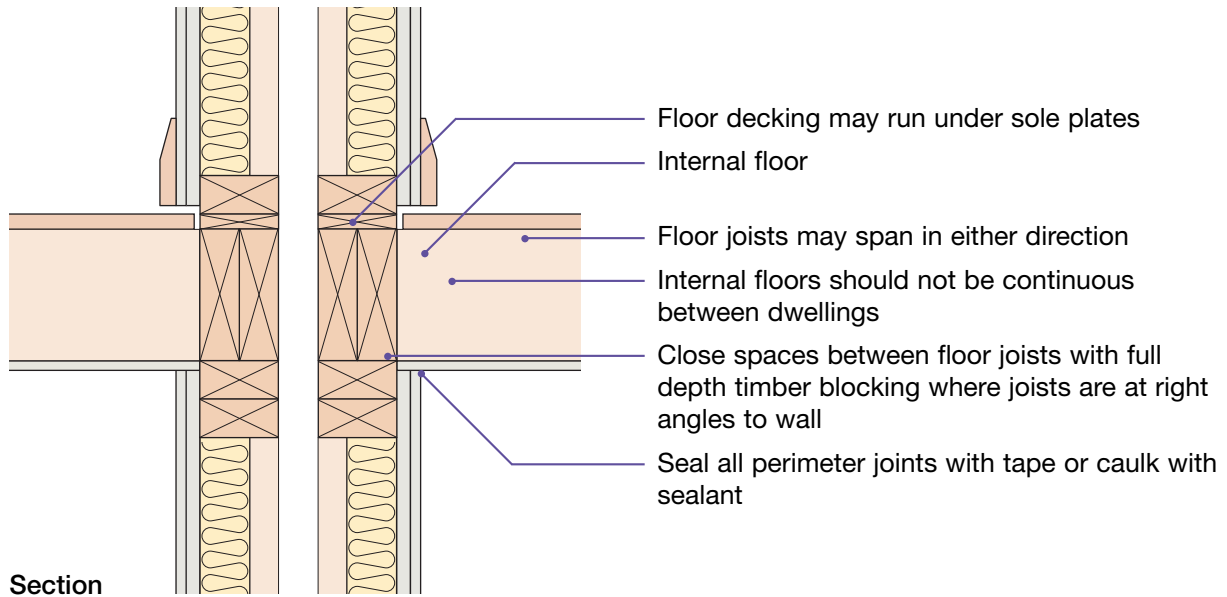
1. External (flanking) wall junction



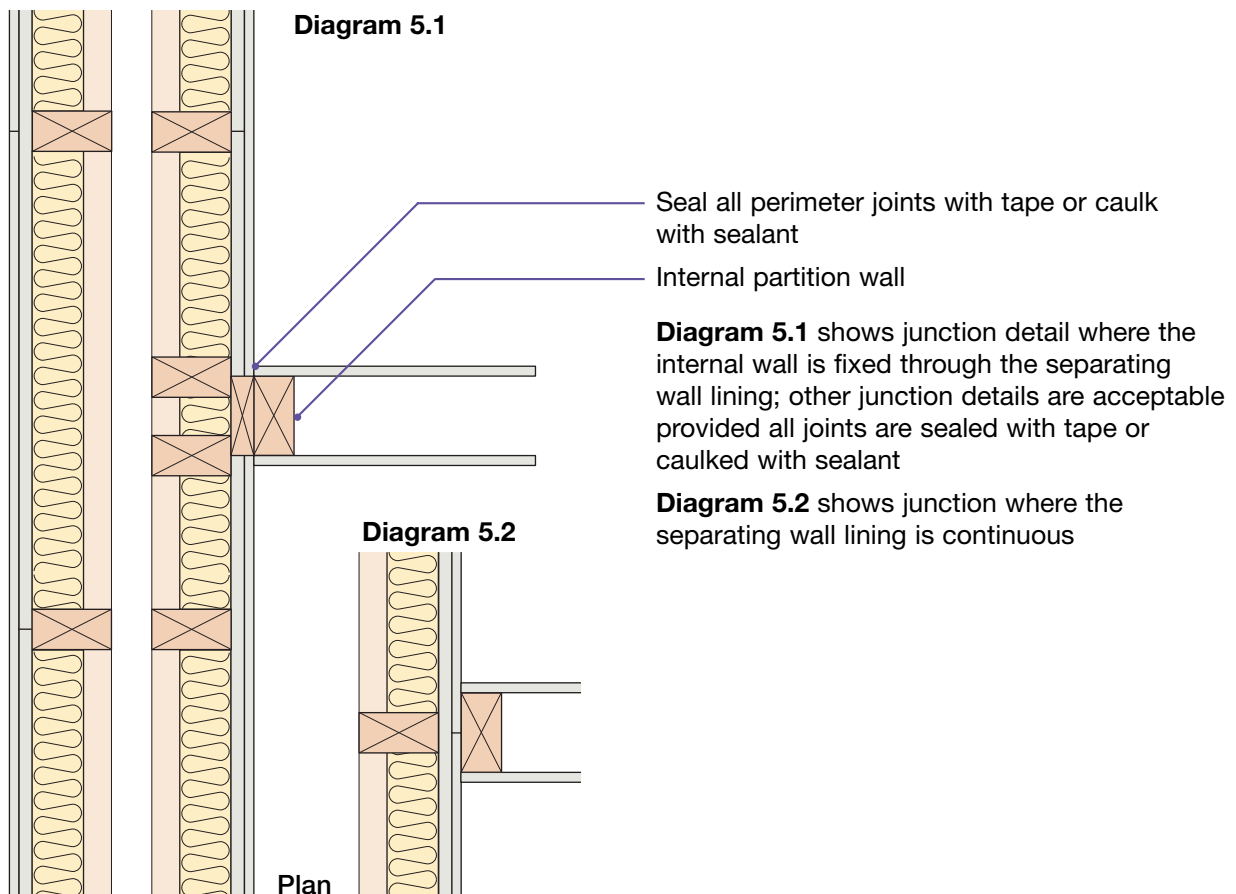
2. Staggered external (flanking) wall junction



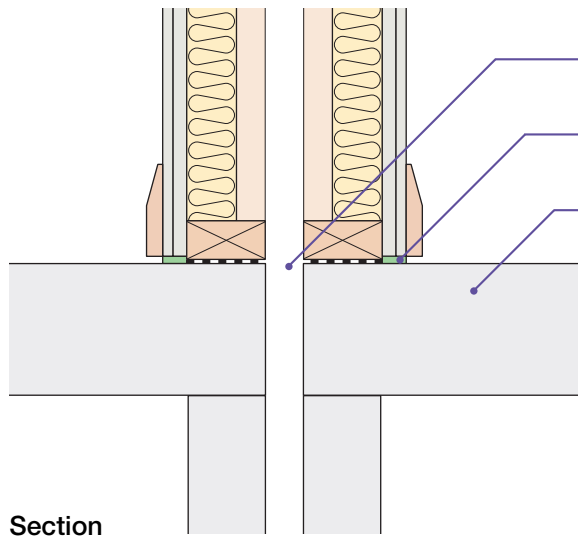
3. Internal floor junction



4. Internal wall junction

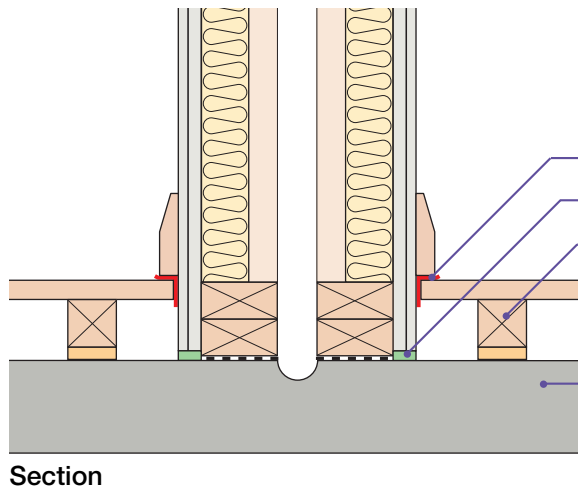


5. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ concrete suspended slab or ground bearing slab



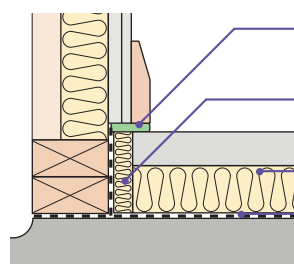
- Ground floors not continuous between dwellings
- Flexible or acoustic sealant (may be omitted when timber ground floor is used)
- Ground floor construction:
 - timber floor joists:
 - may span in either direction
 - floor decking may run under sole plates
 - close spaces between floor joists with full depth timber blocking where joists are at right angles to wall, or
 - beam and block floor with all voids filled with mortar, or
 - precast concrete planks with all voids between planks and blockwork filled with mortar or flexible sealant, or
 - cast in-situ concrete suspended slab, or
 - ground bearing slab

6. Raft foundation



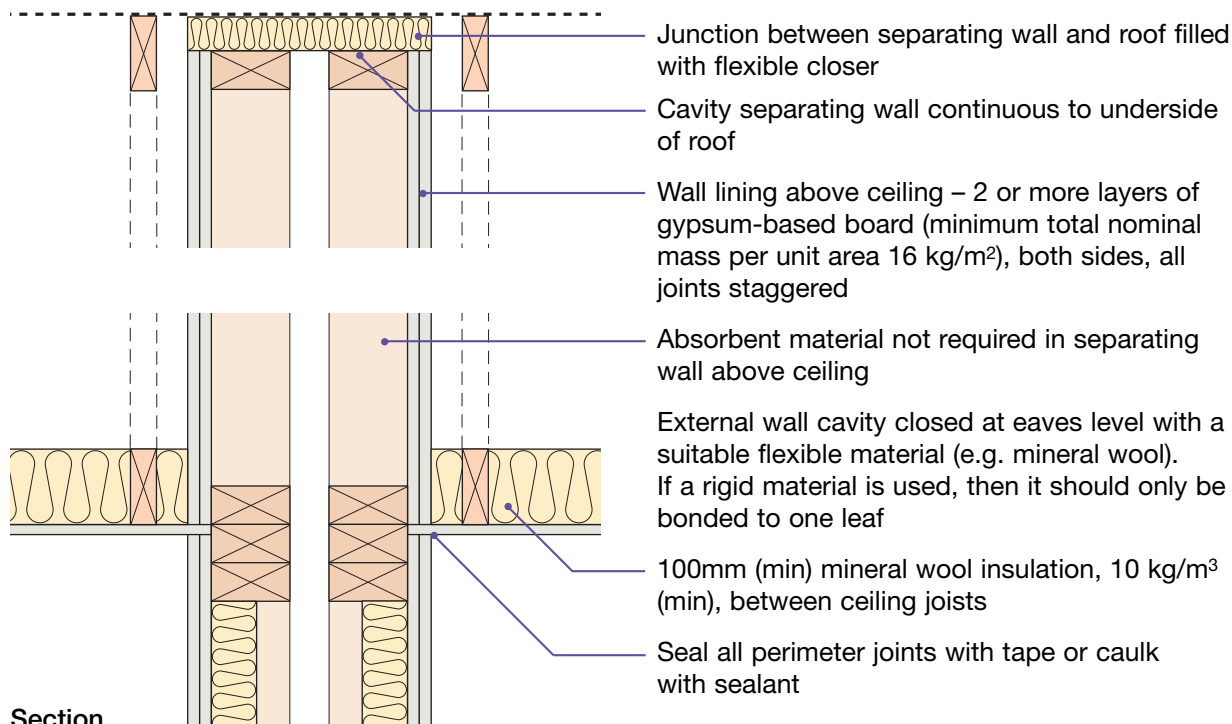
- 5mm (min) resilient flanking strip
- Flexible or acoustic sealant
- A floating floor treatment must be used (for ground floor floating floor treatments mineral fibre quilt is not required between the battens or cradle system)
- Concrete raft - mass per unit area of 365 kg/m² (min)

Alternative detail with screed finish

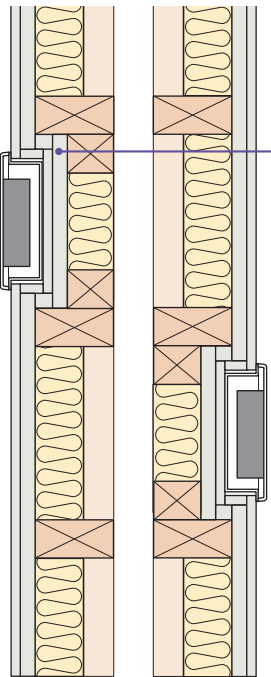


- Mastic sealant, ensure skirting and wall lining are isolated from screed
- Perimeter insulation, isolating screed from timber frame
- Below screed insulation, isolating screed from raft
- Polyethylene

7. Roof junction - pitched roof with no room-in-roof



8. Services and sockets in the separating wall

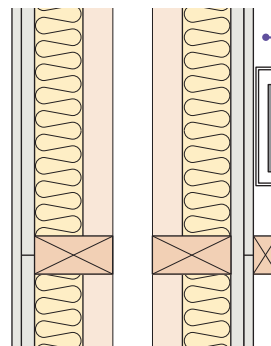


Plan

8.1 – electrical sockets, switches, etc.

Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose electrical boxes

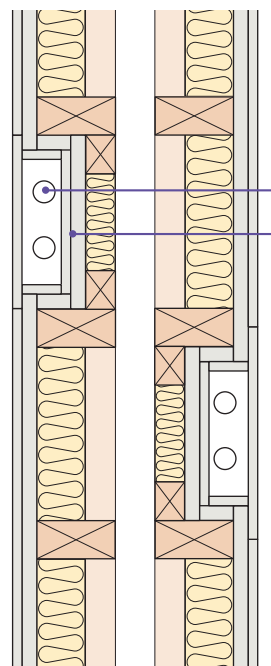
Stagger sockets, switches, etc. on each side of the wall such that they are not positioned in opposite bays



Plan

Alternatively provide a service void on surface of separating wall. This is the preferred method where more than one socket, switch, etc. are close together, e.g. in a kitchen.

Studs or battens used to create the service zone should be securely fixed back to the separating wall structure



Plan

8.2 – piped services

Service duct within separating wall

Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose pipes

Stagger services on each side of wall such that they are not positioned in opposite bays

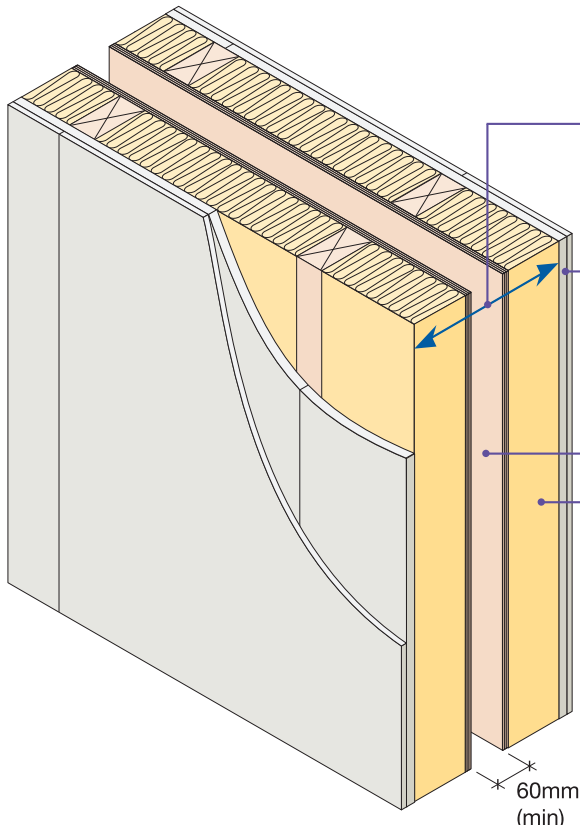
Note: this detail is not applicable for SVPs or gas pipes.

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See overleaf for checklist

With sheathing board ■

Twin timber frames ■

Excel Industries Warmcel 500 insulation ■



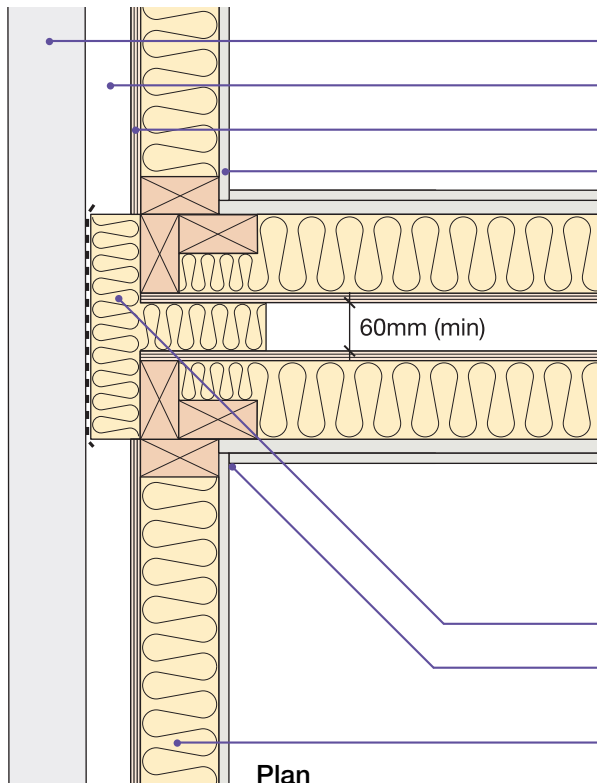
Wall width	240mm (min) between inner faces of wall linings. 60mm (min) gap between wall panels
Wall lining	- 2 or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m ²), both sides - all joints staggered
Sheathing	9mm (min) thick board
Absorbent material	89mm (min) Warmcel 500 insulation (blown or injected by Excel Industries-approved installer) fully filling stud voids
Ties	Ties between frames not more than 40mm x 3mm, at 1200mm (min) centres horizontally, one row of ties per storey height vertically
External (flanking) wall	Outer leaf masonry with minimum 50mm cavity

Note: Structural framing details may vary slightly between different manufacturers and this is permitted, however, all dimension specifications within this Robust Detail must be adhered to.

DO

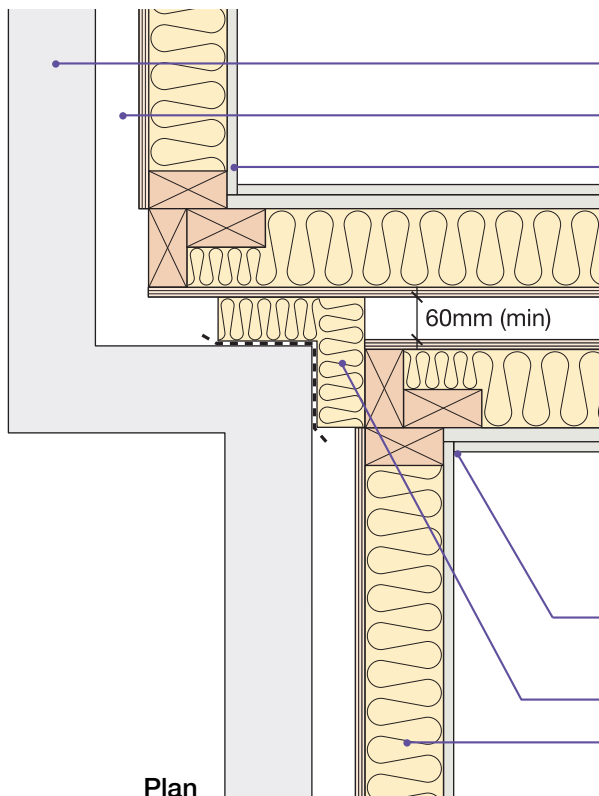
- Keep wall linings at least 240mm apart
- Ensure that the 60mm (min) gap between the wall panels is maintained
- Ensure Warmcel 500 is installed behind the whole lining area, without slumping
- Ensure stud voids are fully filled
- Make sure there is no connection between the two leaves except where ties are necessary for structural reasons (see above)
- Stagger joints in wall linings to avoid air paths
- Seal all joints in outer layer with tape or caulk with sealant
- Refer to Appendix A

1. External (flanking) wall junction



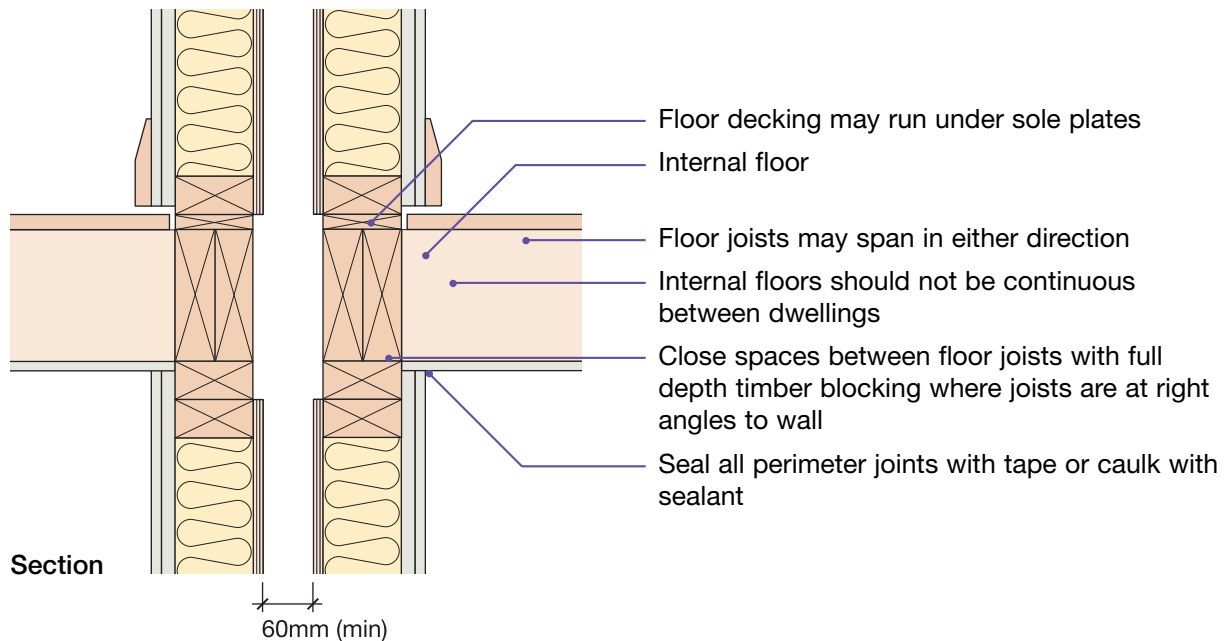
- Masonry outer leaf (min 100mm thick)
- External wall cavity (min 50mm)
- Sheathing board
- Inner leaf where there is no separating floor e.g. for houses
 - one layer of gypsum-based board nominal 8 kg/m²
- Inner leaf where there is a separating floor, e.g. for flats/apartments
 - if using **robustdetails**® for floor, refer to Table 3b in introduction to select an acceptable **robustdetails**® separating floor and use two layers of gypsum-based board nominal 8kg/m² each layer
 - if using floor requiring pre-completion testing, seek specialist advice
- Close cavity with a cavity stop (see Appendix A)
- Seal all perimeter joints with tape or caulk with sealant
- Full fill with Warmcel 500

2. Staggered external (flanking) wall junction

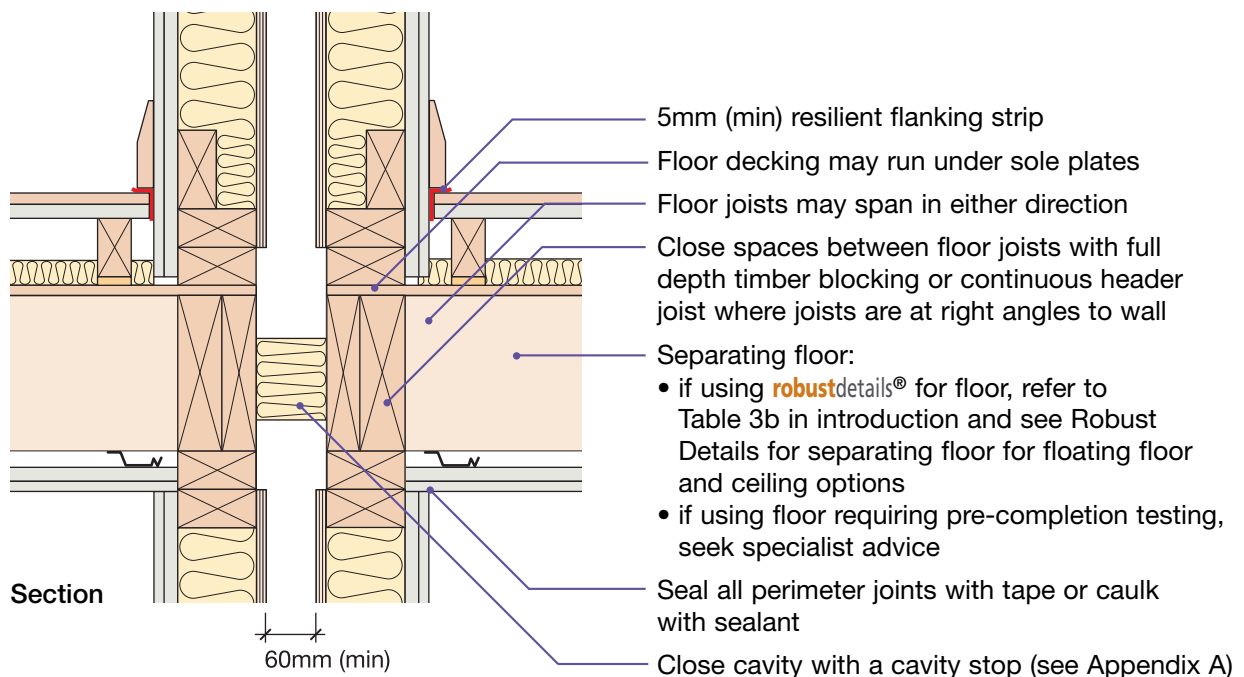


- Masonry outer leaf (min 100mm thick)
- External wall cavity (min 50mm)
- Inner leaf where there is no separating floor e.g. for houses
 - one layer of gypsum-based board nominal 8 kg/m²
- Inner leaf where there is a separating floor, e.g. for flats/apartments
 - if using **robustdetails**® for floor, refer to Table 3b in introduction to select an acceptable **robustdetails**® separating floor and use two layers of gypsum-based board nominal 8kg/m² each layer
 - if using floor requiring pre-completion testing, seek specialist advice
- Seal all perimeter joints with tape or caulk with sealant
- Close cavity with a cavity stop (see Appendix A)
- Full fill with Warmcel 500

3. Internal floor junction

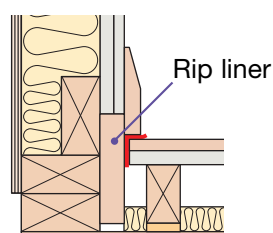


4. Separating floor junction

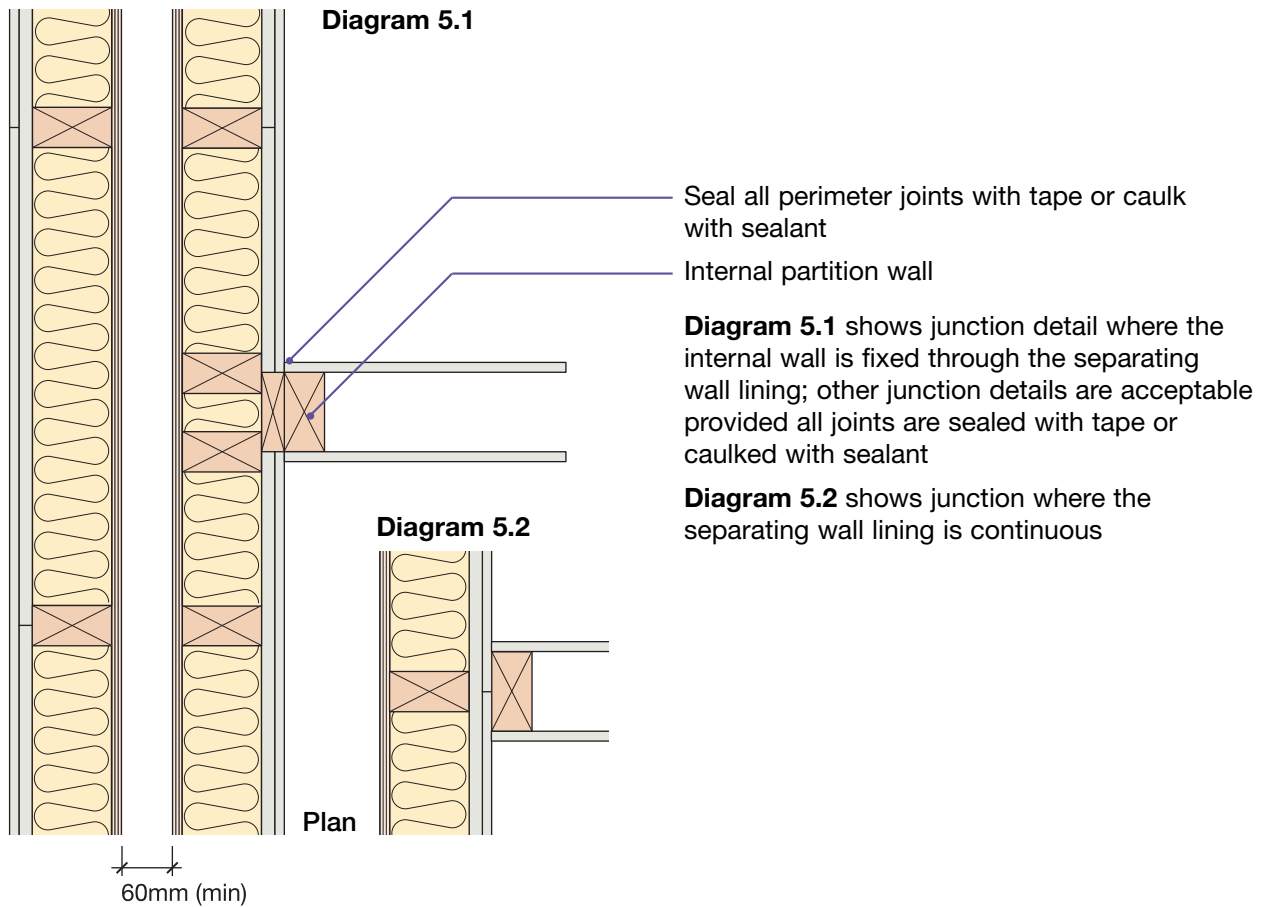


Sketch shows V-FT-2 type separating floor

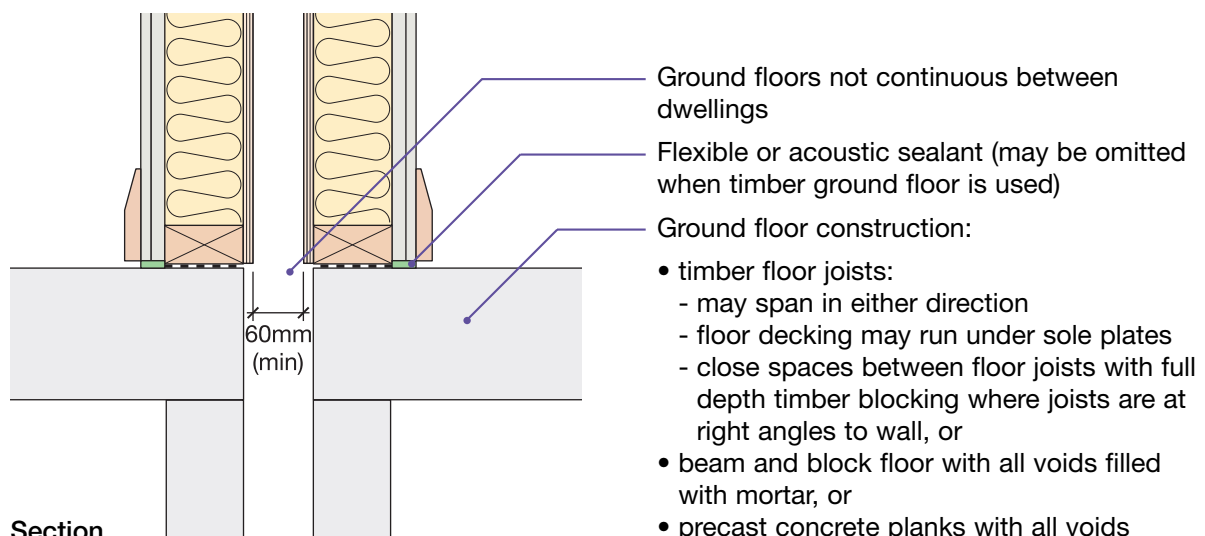
Alternative detail



5. Internal wall junction

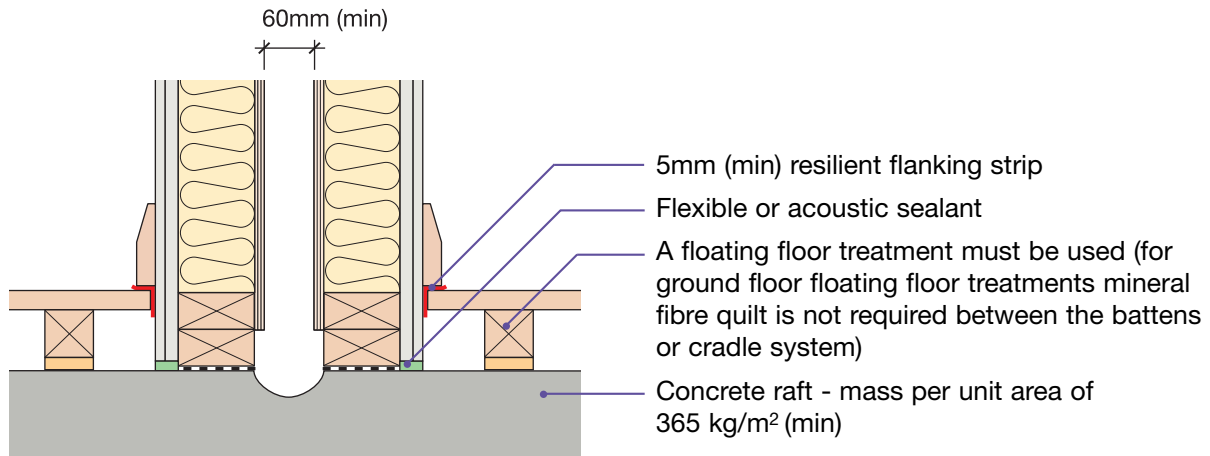


6. Ground floor junction: timber floor, beam and block, precast concrete plank, cast in-situ concrete suspended slab or ground bearing slab

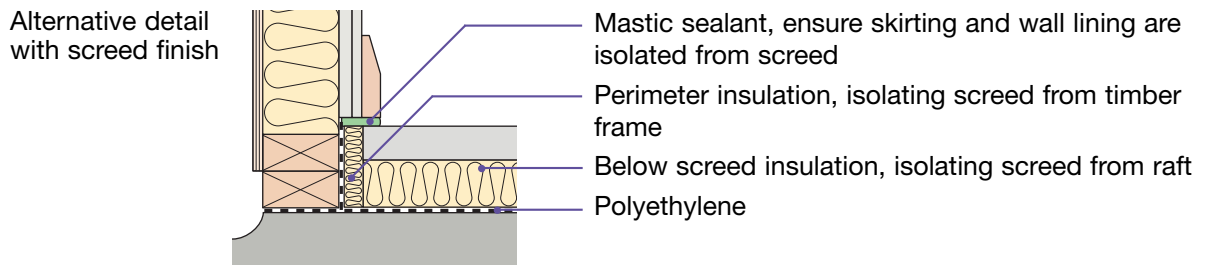


*Note – Ensure substructure masonry is correctly set out to enable timber frame to achieve the required gap between wall panels

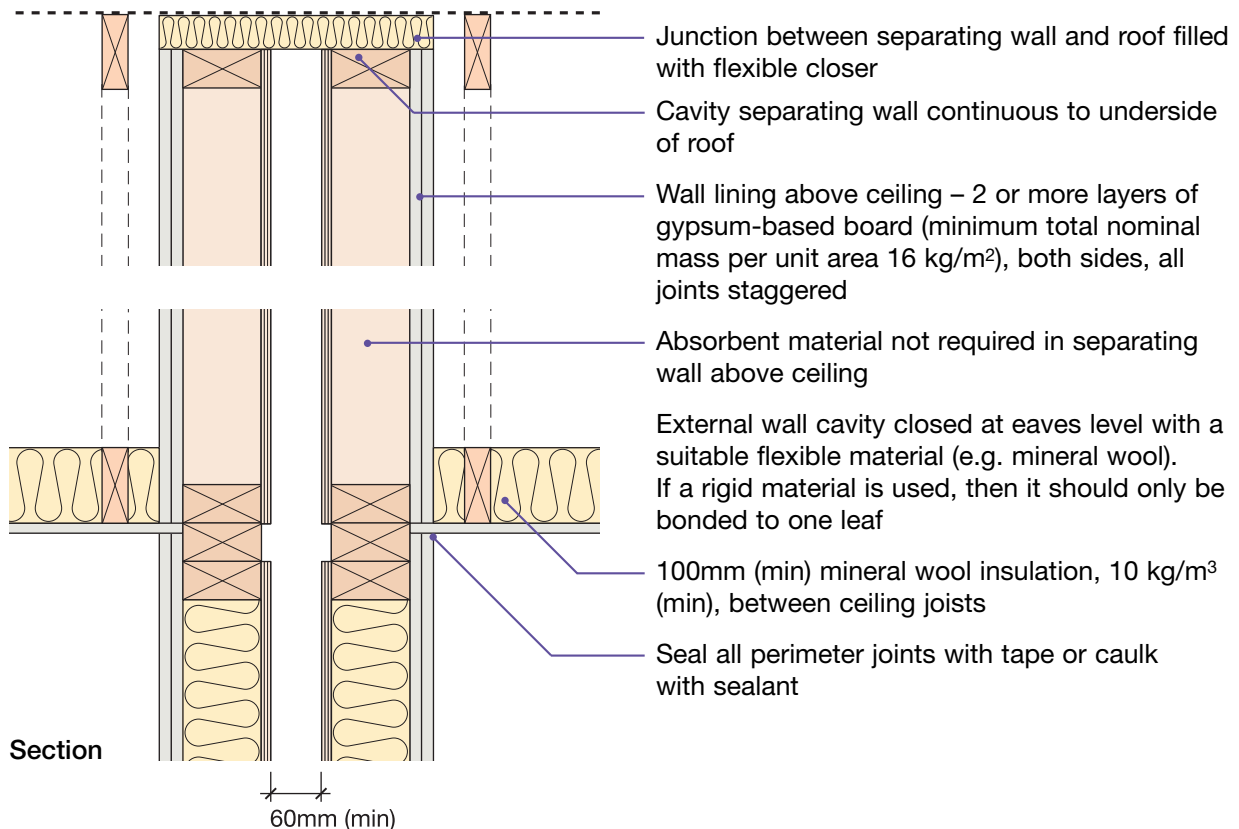
7. Raft foundation



Section

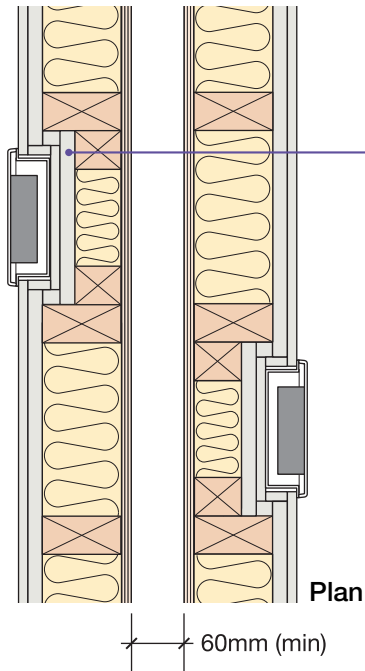


8. Roof junction - pitched roof with no room-in-roof



Section

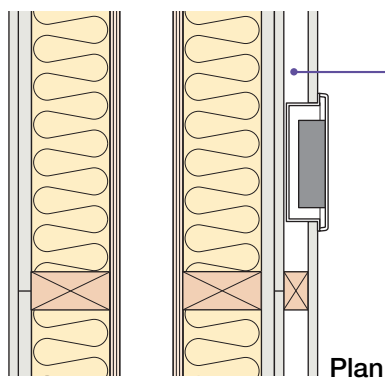
9. Services and sockets in the separating wall



9.1 – electrical sockets, switches, etc.

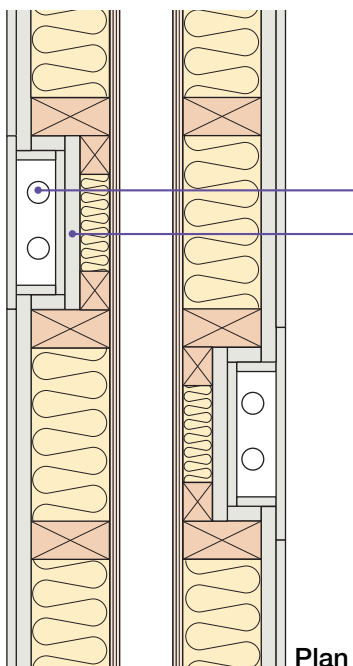
Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose electrical boxes

Stagger sockets, switches, etc. on each side of the wall such that they are not positioned in opposite bays



Alternatively provide a service void on surface of separating wall. This is the preferred method where more than one socket, switch, etc. are close together, e.g. in a kitchen.

Studs or battens used to create the service zone should be securely fixed back to the separating wall structure



9.2 – piped services

Service duct within separating wall

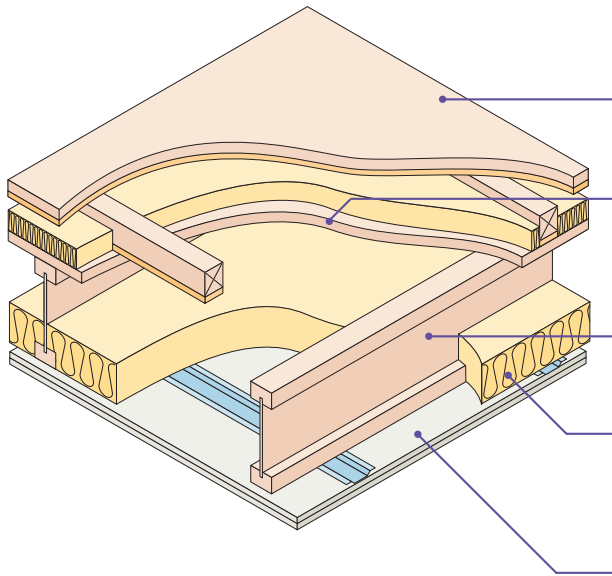
Provide two or more layers of gypsum-based board (total nominal mass per unit area 22 kg/m²) to enclose pipes

Stagger services on each side of wall such that they are not positioned in opposite bays

Note: this detail is not applicable for SVPs or gas pipes.

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See overleaf for checklist

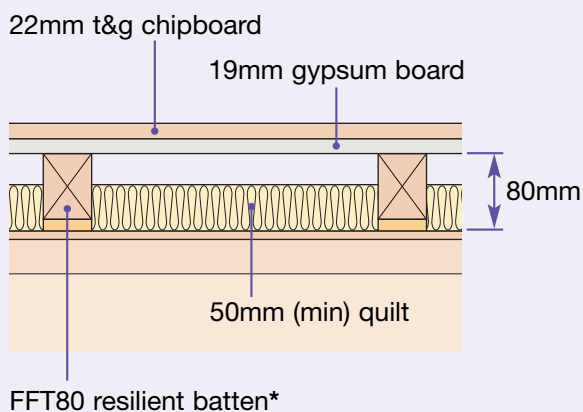
Timber I-Joists ■
Use with timber frame walls only ■



Floating floor	See page 5 for suitable floating floor treatment
Floor decking	15mm thick (min) wood based board, density 600 kg/m ³ (min)
Joists	240mm (min) timber I-Joists
Absorbent material	100mm (min) mineral wool quilt insulation (10–36 kg/m ³) between joists
Ceiling	See page 4 for suitable ceiling treatment

Note: Structural framing details may vary slightly between different manufacturers and this is permitted, however, all dimension specifications within this Robust Detail must be adhered to.

FLOATING FLOOR

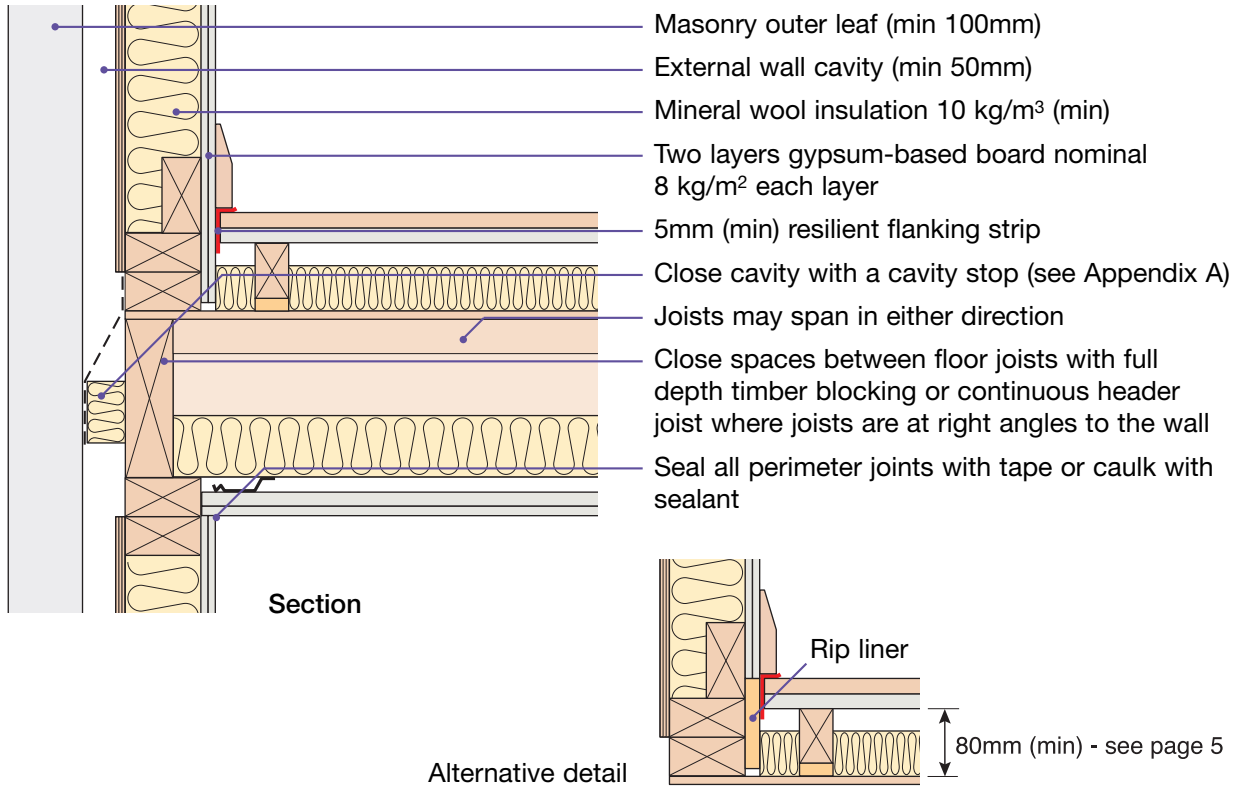


* FFT80 resilient batten must comply with laboratory performance requirements detailed on page 5

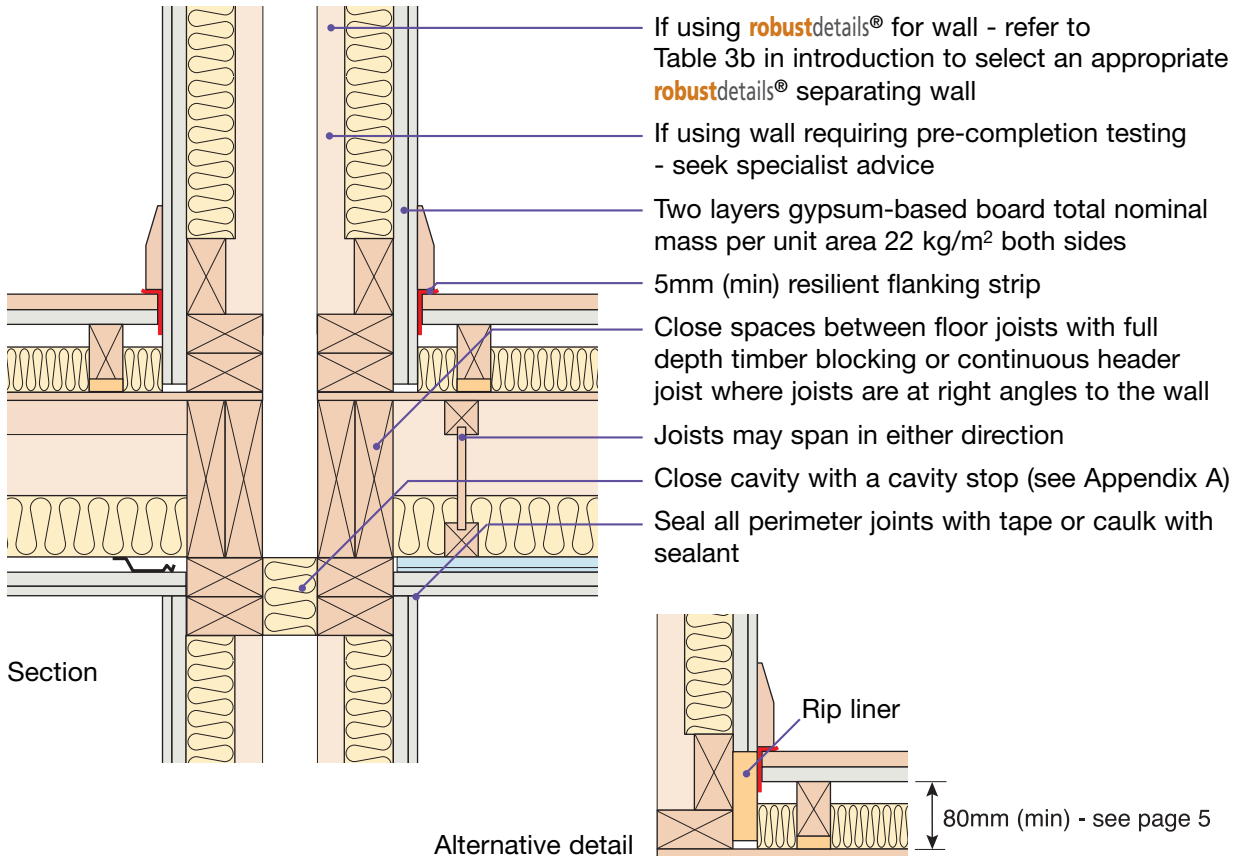
DO

- Lay quilt (min 100mm thick) between all joists, including doubled up I-joists, ensuring no gaps remain
- Ensure floating floor treatment is suitable and is installed in accordance with the manufacturer's instructions
- Ensure quilt is laid between and not under flooring battens
- Install flanking strips around the perimeter of the flooring board to isolate floor from walls and skirtings
- Ensure resilient ceiling bars are fixed at right angles to the joists
- Ensure timber floor ceiling treatment is CT1 and is fixed correctly (see page 4)
- Stagger joints in ceiling layers
- Refer to Appendix A

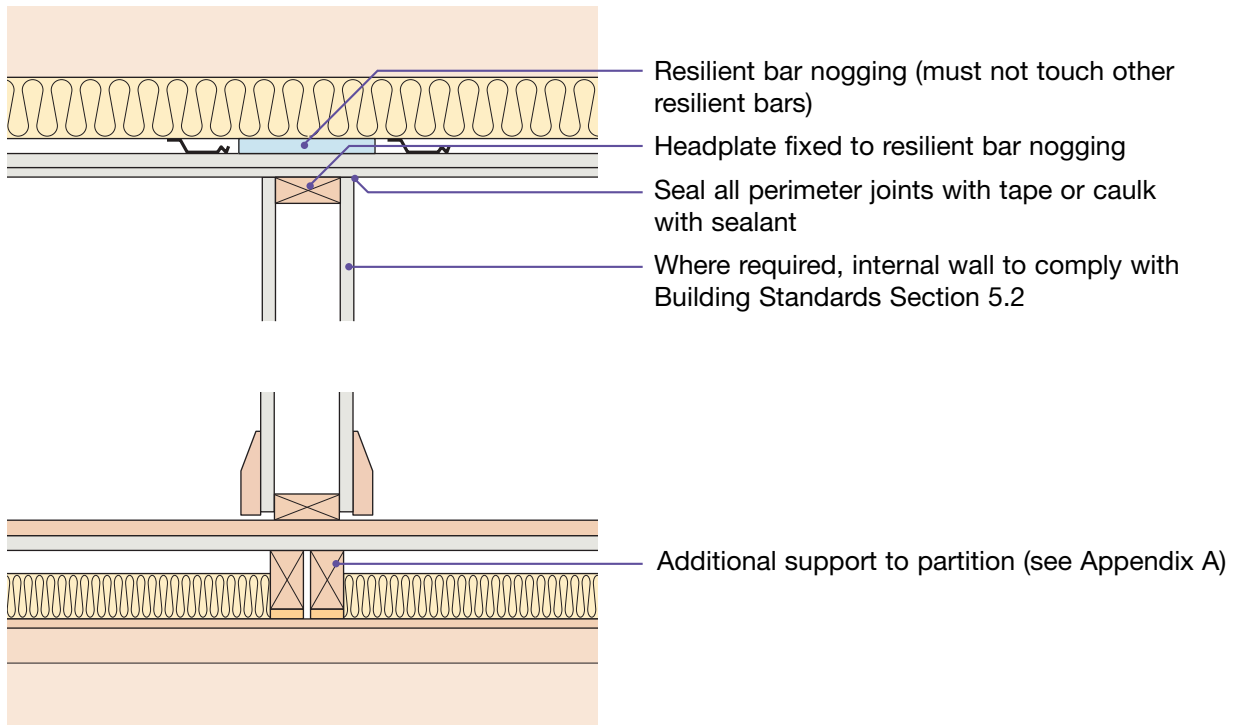
1. External (flanking) wall junction



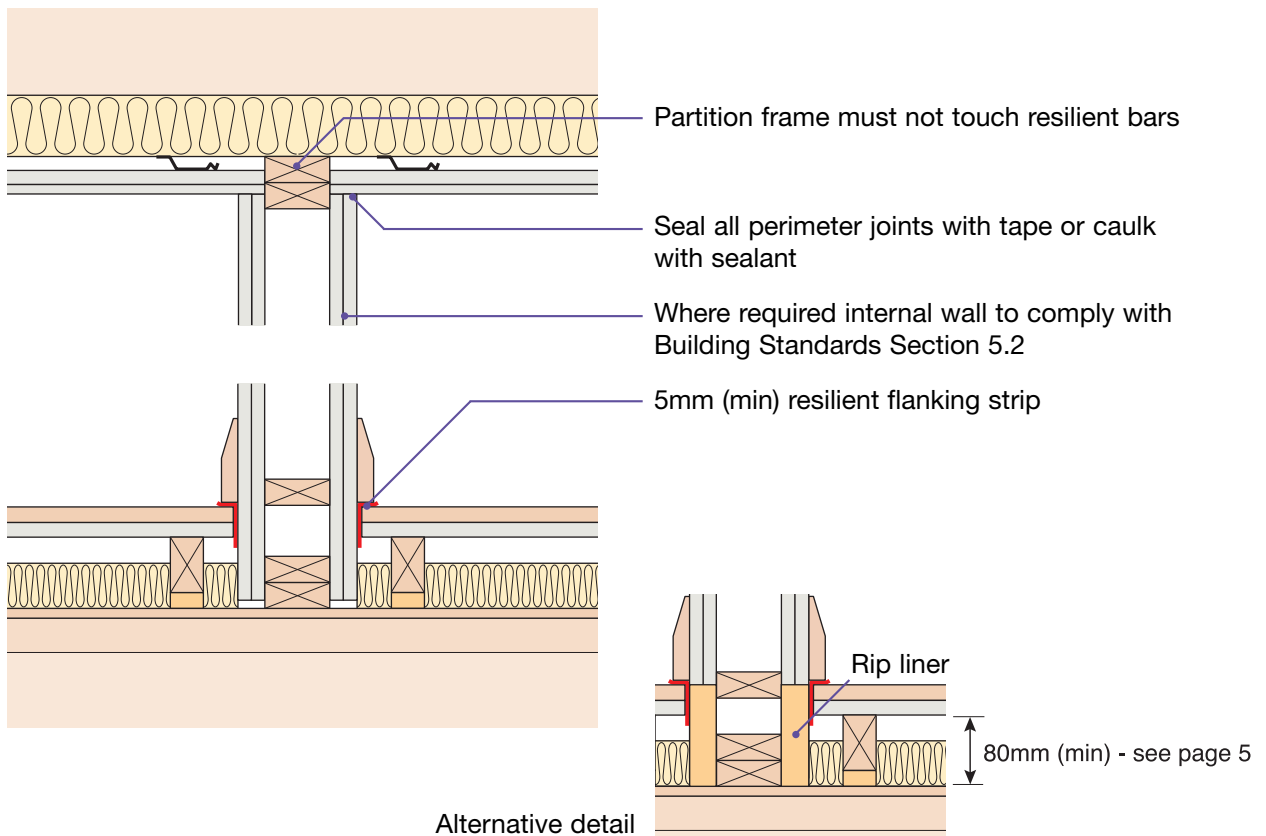
2. Separating wall junction



3. Internal wall junction (non loadbearing)



4. Internal wall junction (loadbearing)



5. Ceiling treatment for V-FT-1

Timber floor ceiling treatment must be CT1, (see below). All joints to outer layers of ceiling must be sealed with tape or caulked with sealant.

The maximum load on resilient bars should not exceed that specified in the manufacturer's instructions.

Ensure ceiling layers have staggered joints.

Services must not puncture ceiling linings (except cables, which should be sealed around with flexible sealant)

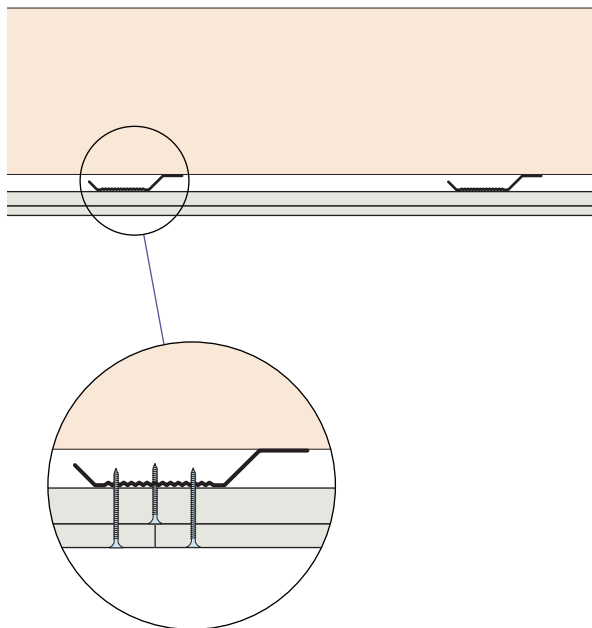
Downlighters and recessed lighting

Downlighters or recessed lighting may be installed in the ceiling:

- in accordance with the manufacturer's instructions
- at no more than one light per 2m² of ceiling area in each room unless the use of a greater density of light fittings is supported by testing undertaken in accordance with Appendix F
- at centres not less than 0.75m
- into openings not exceeding 100mm diameter or 100x100mm

Particular attention should also be paid to Building Standards Section 2: Fire

Note: Only downlighters which have been satisfactorily assessed in accordance with the procedure described in Appendix F "Determination of the acoustic performance of downlighters and recessed lighting in timber separating floors" are acceptable.



CEILING BOARD FIXINGS MUST NOT PENETRATE OR TOUCH JOISTS

16mm (min) resilient bars with CT1

16mm (min) metal resilient ceiling bars mounted at right angles to the joists at 400mm centres (bars must achieve a minimum laboratory performance of $rd\Delta R_w + C_{tr} = 17\text{dB}$, $rd\Delta R_w = 18\text{dB}$ and $rd\Delta L_w = 16\text{dB}$) – see Appendix E

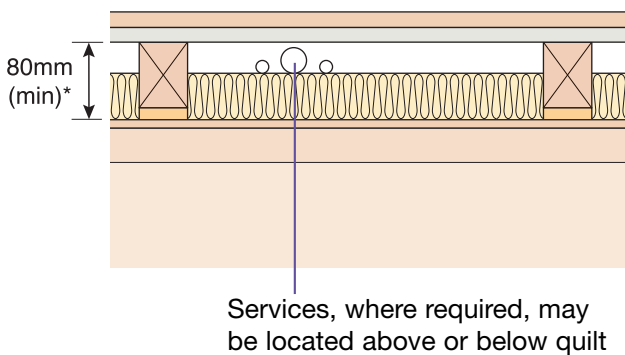
Ceiling treatment CT1

Two layers of gypsum-based board, composed of 19mm (nominal 13.5 kg/m²) fixed with 32mm screws, and 12.5mm (nominal 10 kg/m²) fixed with 42 mm screws

6. Floating floor treatment for V-FT-1

Floating floor treatment:

- Must achieve a minimum laboratory performance of $rd\Delta R_w + C_{tr} = 13\text{dB}$, $rd\Delta R_w = 17\text{dB}$ and $rd\Delta L_w = 16\text{dB}$ - see Appendix C.
- Must be installed in accordance with the manufacturer's instructions.
- Require 5mm (min) resilient flanking strips around the perimeter of the flooring board to isolate floor from walls and skirting.



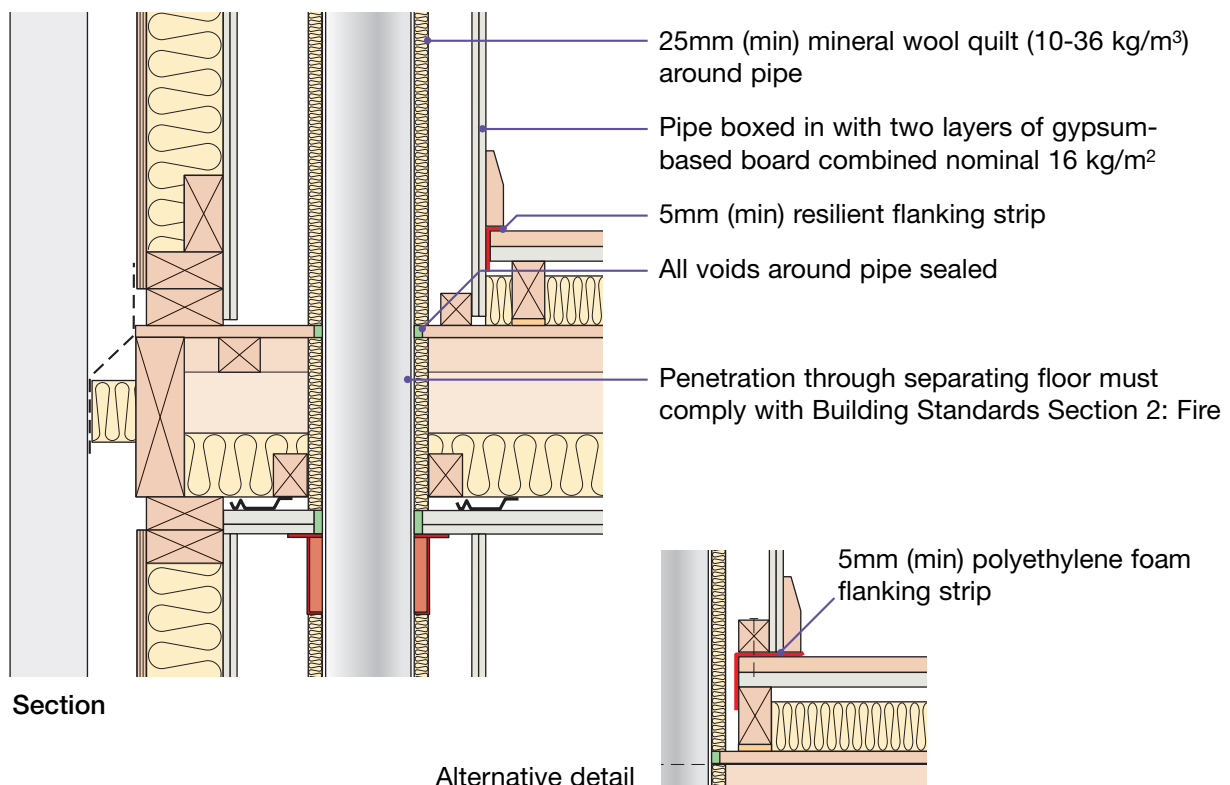
- For further guidance on floating floor treatments and flanking strips, please refer to Appendix A.

* **Note - 80mm void dimension indicated is when floor is loaded to 25 kg/m².**

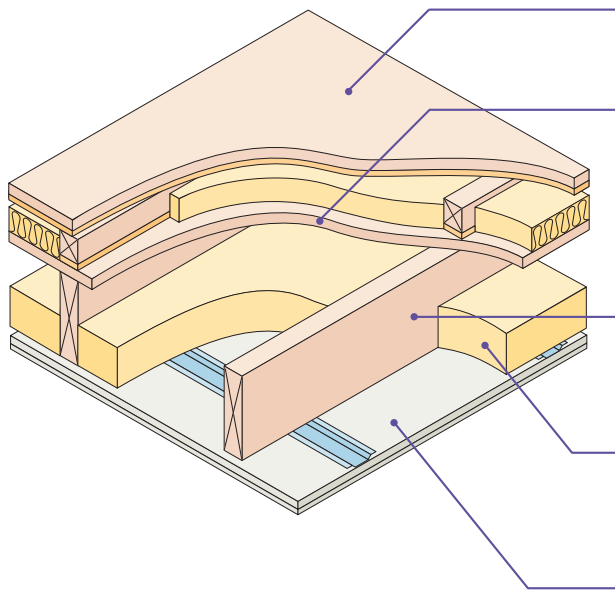
FFT80 – Resilient composite deep batten system for V-FT-1

- 22mm (min) t&g flooring board - 600 kg/m² (min)
- gypsum-based board nominal 13.5 kg/m²
- FFT80 resilient composite deep battens
- resilient layer must be continuous and pre-bonded to batten
- battens may have the resilient layer at the top or the bottom
- mineral wool quilt laid between battens – 50mm (min) 10-36 kg/m³
- ensure any services do not bridge the resilient layer

7. Services – pipes through separating floor



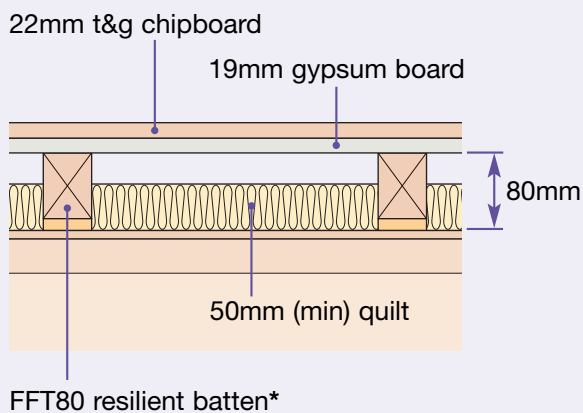
Timber Solid Joists ■
Use with timber frame walls only ■



Floating floor	See page 5 for suitable floating floor treatment
Floor decking	15mm thick (min) wood based board, density 600 kg/m ³ (min)
Joists	240mm (min) solid timber joists at maximum 400mm centres
Absorbent material	100mm (min) mineral wool quilt insulation (10–36 kg/m ³) between joists
Ceiling	See page 4 for suitable ceiling treatment

Note: Structural framing details may vary slightly between different manufacturers and this is permitted, however, all dimension specifications within this Robust Detail must be adhered to.

FLOATING FLOOR

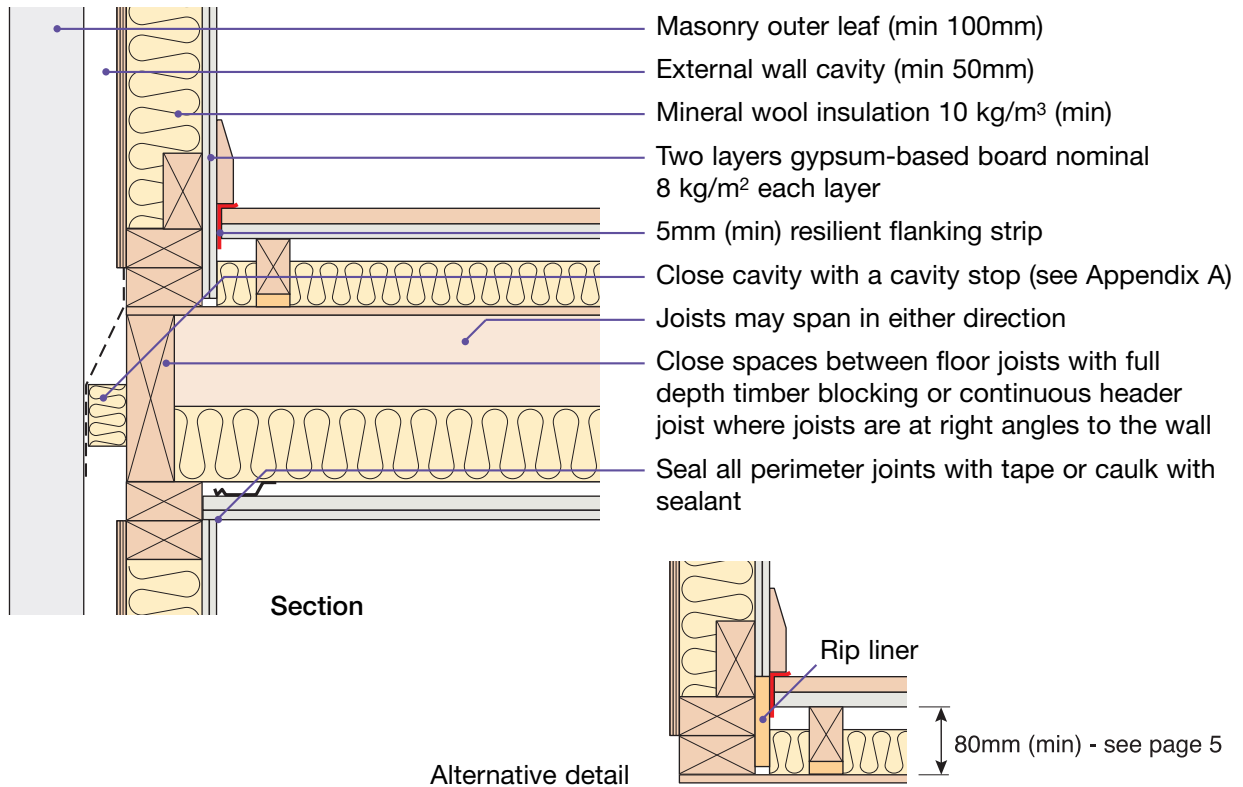


* FFT80 resilient batten must comply with laboratory performance requirements detailed on page 5

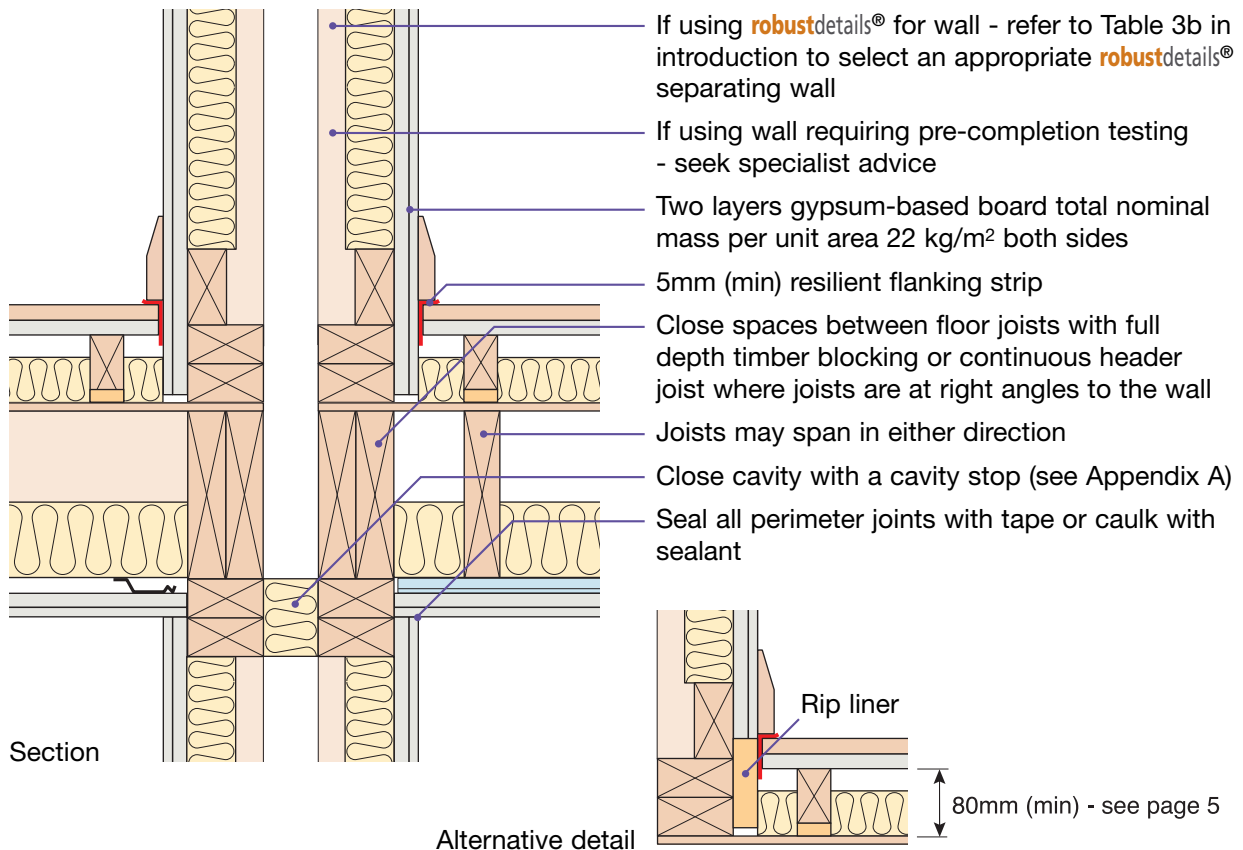
DO

- Lay quilt (min 100mm thick) between joists ensuring no gaps remain
- Ensure floating floor treatment is suitable and is installed in accordance with the manufacturer's instructions
- Ensure sub-deck quilt is laid between and not under flooring battens
- Install flanking strips around the perimeter of the flooring board to isolate floor from walls and skirtings
- Ensure resilient ceiling bars are fixed at right angles to the joists
- Ensure timber floor ceiling treatment is CT1, and is fixed correctly (see page 4)
- Stagger joints in ceiling layers
- Refer to Appendix A

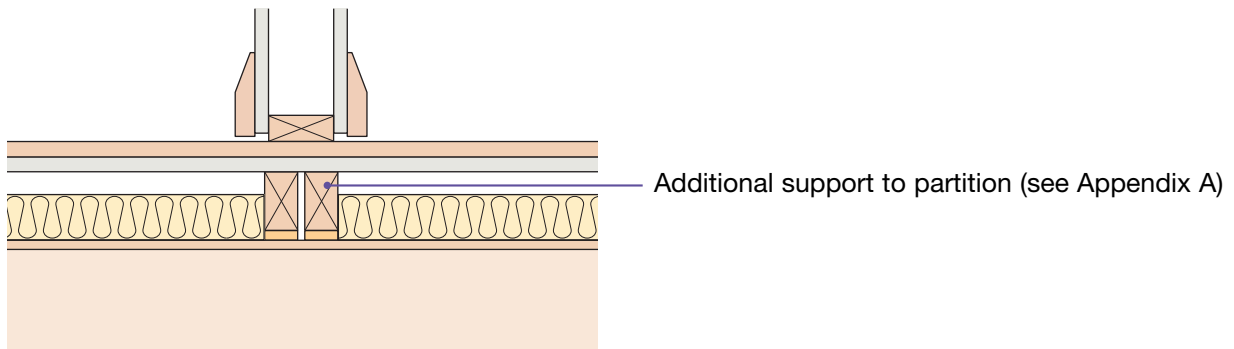
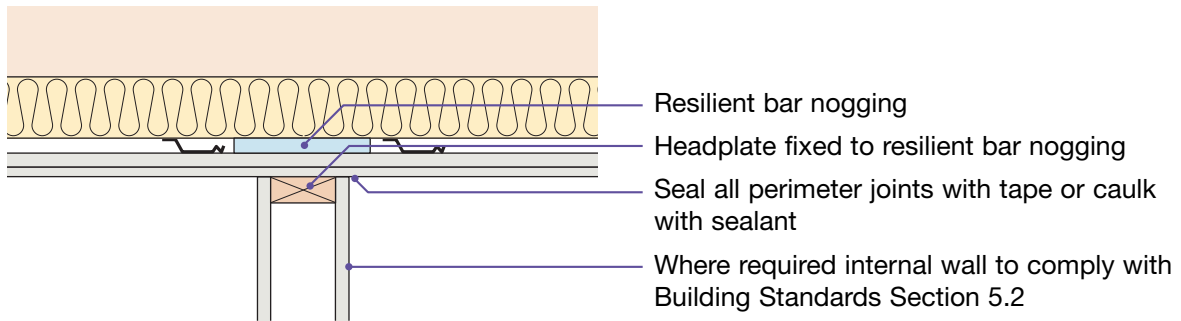
1. External (flanking) wall junction



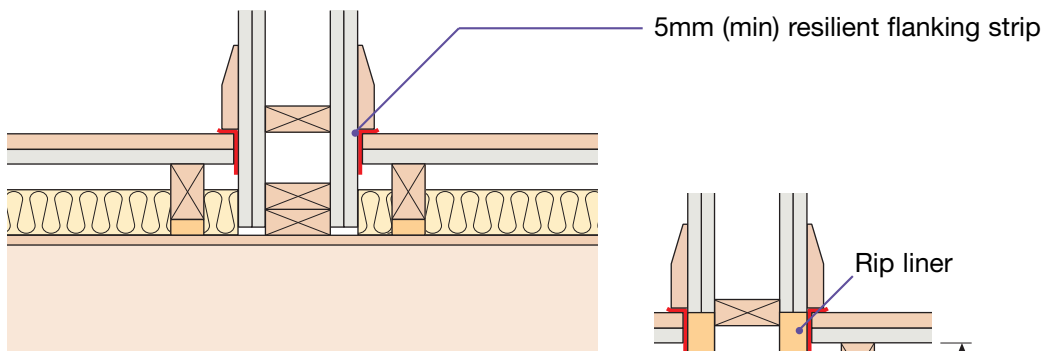
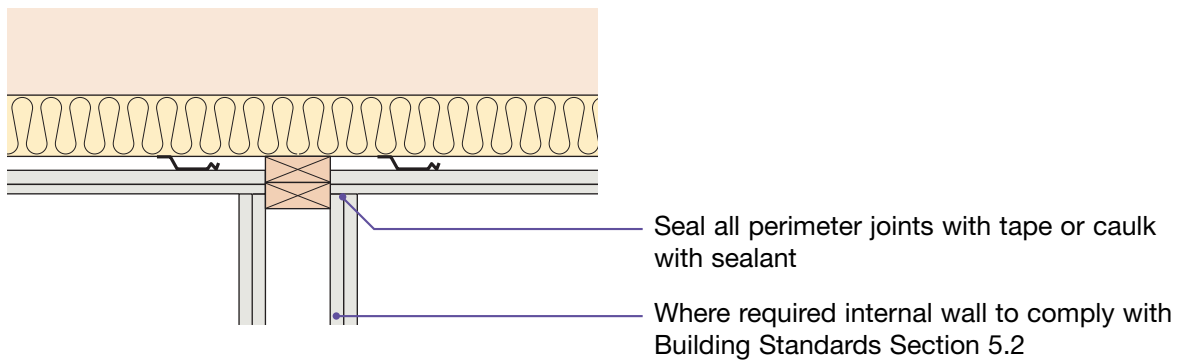
2. Separating wall junction



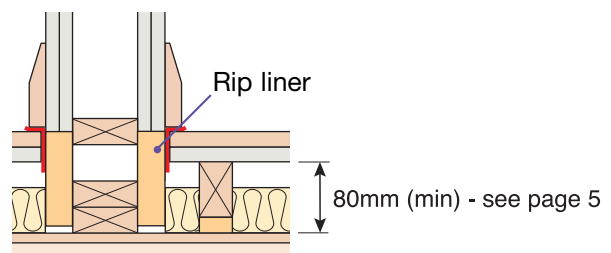
3. Internal wall junction (non loadbearing)



4. Internal wall junction (loadbearing)



Alternative detail



5. Ceiling treatment for V-FT-2

Timber floor ceiling treatment must be CT1 (see below). All joints to outer layers of ceiling must be sealed with tape or caulked with sealant.

The maximum load on resilient bars should not exceed that specified in the manufacturer's instructions.

Ensure ceiling layers have staggered joints.

Services must not puncture ceiling linings (except cables, which should be sealed around with flexible sealant)

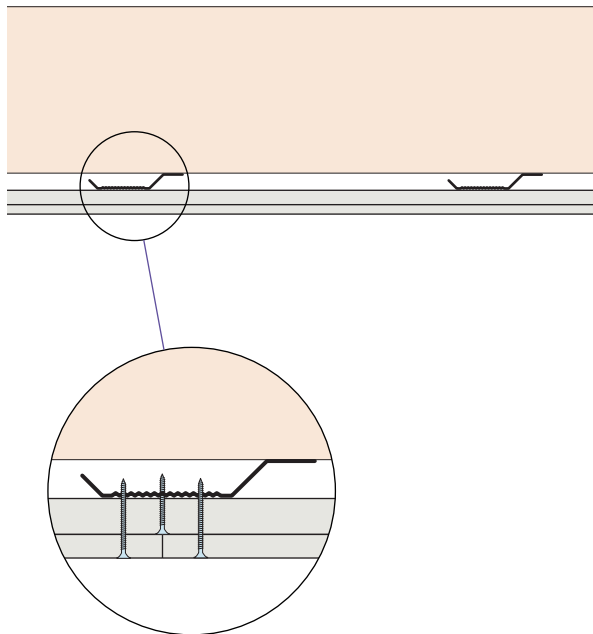
Downlighters and recessed lighting

Downlighters or recessed lighting may be installed in the ceiling:

- in accordance with the manufacturer's instructions
- at no more than one light per 2m² of ceiling area in each room unless the use of a greater density of light fittings is supported by testing undertaken in accordance with Appendix F
- at centres not less than 0.75m
- into openings not exceeding 100mm diameter or 100x100mm

Particular attention should also be paid to Building Standards Section 2: Fire

Note: Only downlighters which have been satisfactorily assessed in accordance with the procedure described in Appendix F "Determination of the acoustic performance of downlighters and recessed lighting in timber separating floors" are acceptable.



CEILING BOARD FIXINGS MUST NOT PENETRATE OR TOUCH JOISTS

16mm (min) resilient bars with CT1

16mm (min) metal resilient ceiling bars mounted at right angles to the joists at 400mm centres (bars must achieve a minimum laboratory performance of $rd\Delta R_w + C_{tr} = 17\text{dB}$, $rd\Delta R_w = 18\text{dB}$ and $rd\Delta L_w = 16\text{dB}$) – see Appendix E

Ceiling treatment CT1

Two layers of gypsum-based board, composed of 19mm (nominal 13.5 kg/m²) fixed with 32mm screws, and 12.5mm (nominal 8 kg/m²) fixed with 42 mm screws

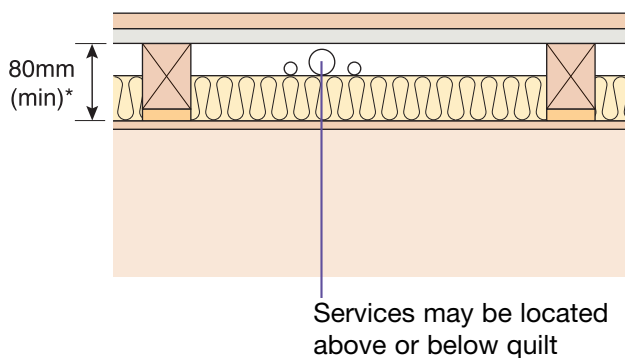
6. Floating floor treatment for V-FT-2

Floating floor treatment:

- a) Must achieve a minimum laboratory performance of $rd\Delta R_w + C_{tr} = 13\text{dB}$, $rd\Delta R_w = 17\text{dB}$ and $rd\Delta L_w = 16\text{dB}$ - see Appendix C.
- b) Must be installed in accordance with the manufacturer's instructions.
- c) Require 5mm (min) resilient flanking strips around the perimeter of the flooring board to isolate floor from walls and skirting.

d) For further guidance on floating floor treatments and flanking strips, please refer to Appendix A.

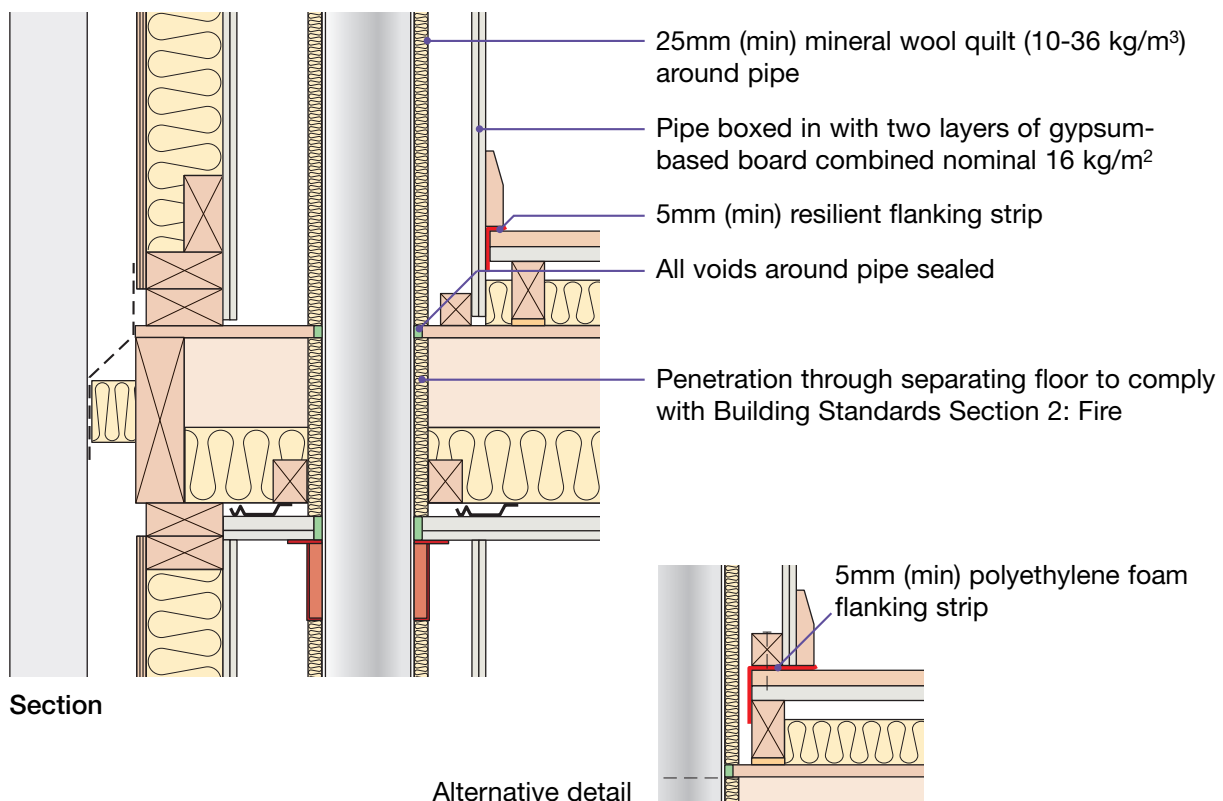
*** Note - 80mm void dimension indicated is when floor is loaded to 25 kg/m².**



FFT80 – Resilient composite deep batten system for V-FT-2

- 22 mm (min) t&g flooring board - 600 kg/m³ (min)
- gypsum-based board nominal 13.5 kg/m²
- FFT80 resilient composite deep battens
- resilient layer must be continuous and pre-bonded to batten
- battens may have the resilient layer at the top or the bottom
- 50mm (min) 10-36 kg/m³ mineral wool quilt laid between battens
- ensure any services do not bridge the resilient layer

7. Services – pipes through separating floor



CHECKLIST (to be completed by site manager/supervisor)

Company: _____

Site: _____

Plot: _____ Site manager/supervisor: _____

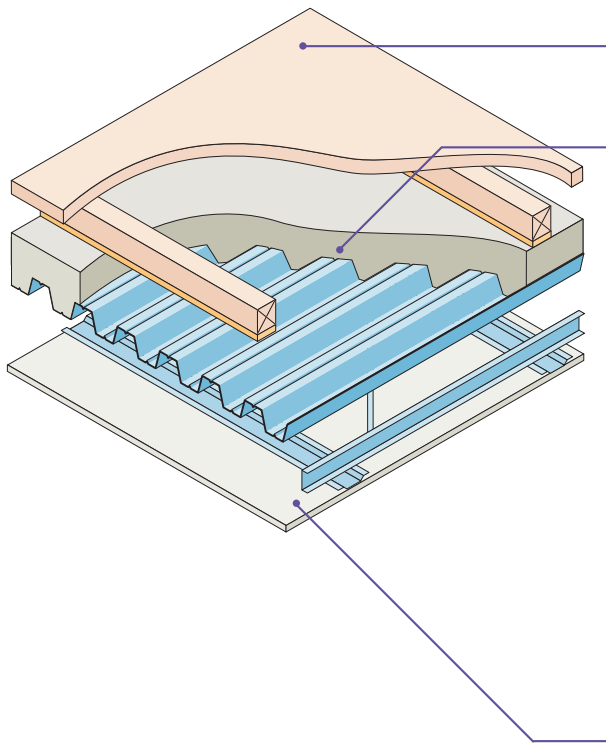
Ref.	Item	Yes (✓)	No (✓)	Inspected (initials & date)
1.	Are solid timber joists at least 240mm deep installed at no greater than 400mm centres?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
2.	Has quilt (min 100mm thick) been fitted between the joists?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
3.	Are resilient ceiling bars fitted at right angles to the joists?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
4.	Has ceiling system been fitted in accordance with the manufacturer’s instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
5.	Is floor decking 15mm thick (min)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
6.	Has floating floor treatment FFT80 been fitted in accordance with the manufacturer’s instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
7.	Has 50mm (min) quilt been fitted between the floor battens?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
8.	Is ceiling treatment CT1 fixed to the resilient bars with correct screws such that the screws do not touch or penetrate the joists?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
9.	Are all joints sealed with tape or caulked with sealant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
10.	Are vertical service pipes wrapped in quilt and boxed in with two layers of gypsum-based board combined nominal mass per unit area of 16 kg/m ² ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
11.	Have all resilient flanking strips been fitted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>
12.	Is separating floor satisfactorily complete?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/>

Notes (include details of any corrective action)

Site manager/supervisor signature

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 Warning: the doing of an unauthorised act in relation to a copyright work may result in both a civil claim for damages and criminal prosecution.

In-situ concrete slab supported by profiled metal deck ■
 Use with steel frame construction only ■



- Floating Floor** See page 4 for suitable floating floor treatment
- Structural floor** In-situ concrete slab supported by profiled metal decking:
 - “shallow” or “deep” profiled metal decking
 - overall distance from top surface of concrete to underside of ceiling treatment 300mm (min)
 - concrete thickness – 80mm (min) at shallowest point, and – 130mm (min) at deepest point
 - concrete density 2200 kg/m³ (min)
- Ceiling** See page 3 for suitable ceiling treatment

All sketches show “shallow” trapezoidal profiled metal decking. “Deep” trapezoidal and “shallow” or “deep” re-entrant profiled metal decking are also acceptable.

Alternative external (flanking) wall construction

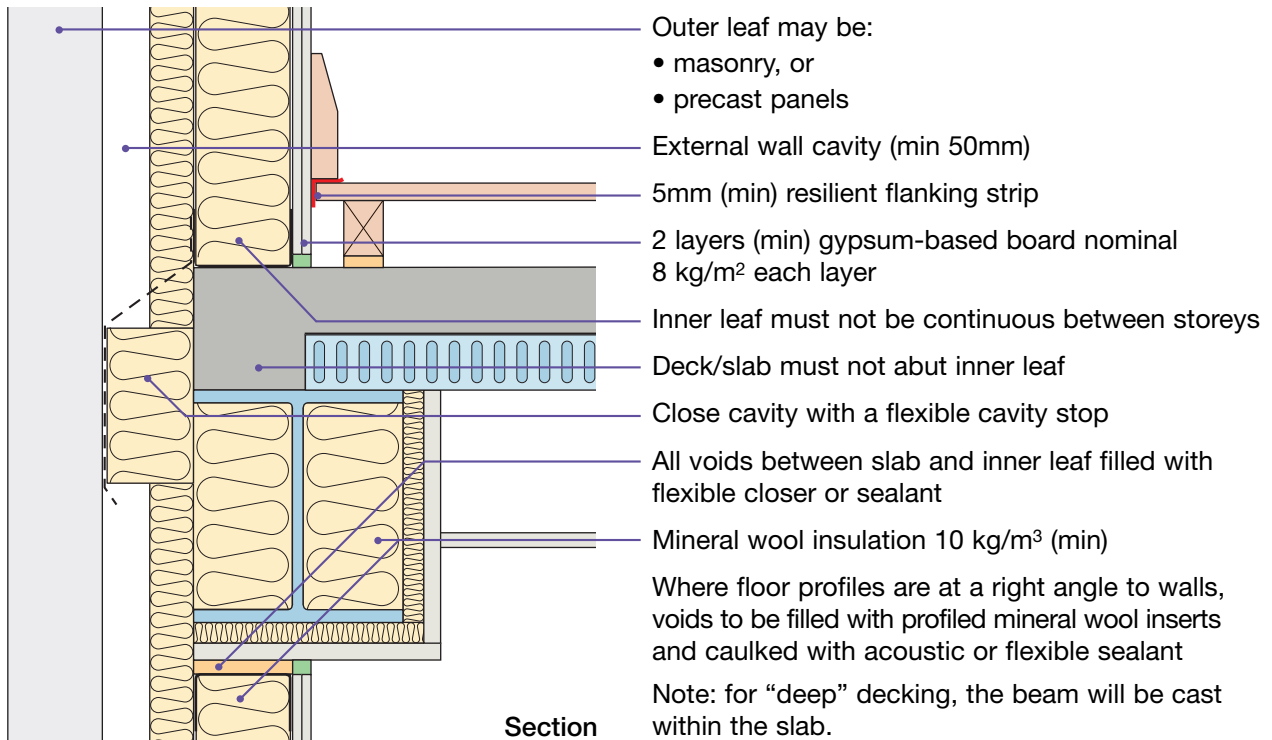
Storey height glazing units are an acceptable alternative to the external walls illustrated:

- glazing units should not be continuous between storeys
- mullion or transom supports/framing should not be continuous between dwellings
- refer to Appendix A

DO

- Ensure floor slab density is 2200kg/m³ (min)
- Fill all voids between walls and floor
- Ensure that where floor profiles are at a right angle to walls the voids are filled with profiled mineral wool inserts and caulked with acoustic or flexible sealant
- Ensure minimum concrete thickness - 80mm at shallowest point and 130mm at deepest point
- Ensure floating floor treatment is suitable and install in accordance with the manufacturer’s instructions
- Install flanking strips around the perimeter of the flooring board to isolate floor from walls and skirtings
- Ensure that the overall distance from top surface of concrete to underside of ceiling treatment is at least 300mm
- Ensure ceiling board is not in direct contact with any steel beams/columns
- Refer to Appendix A

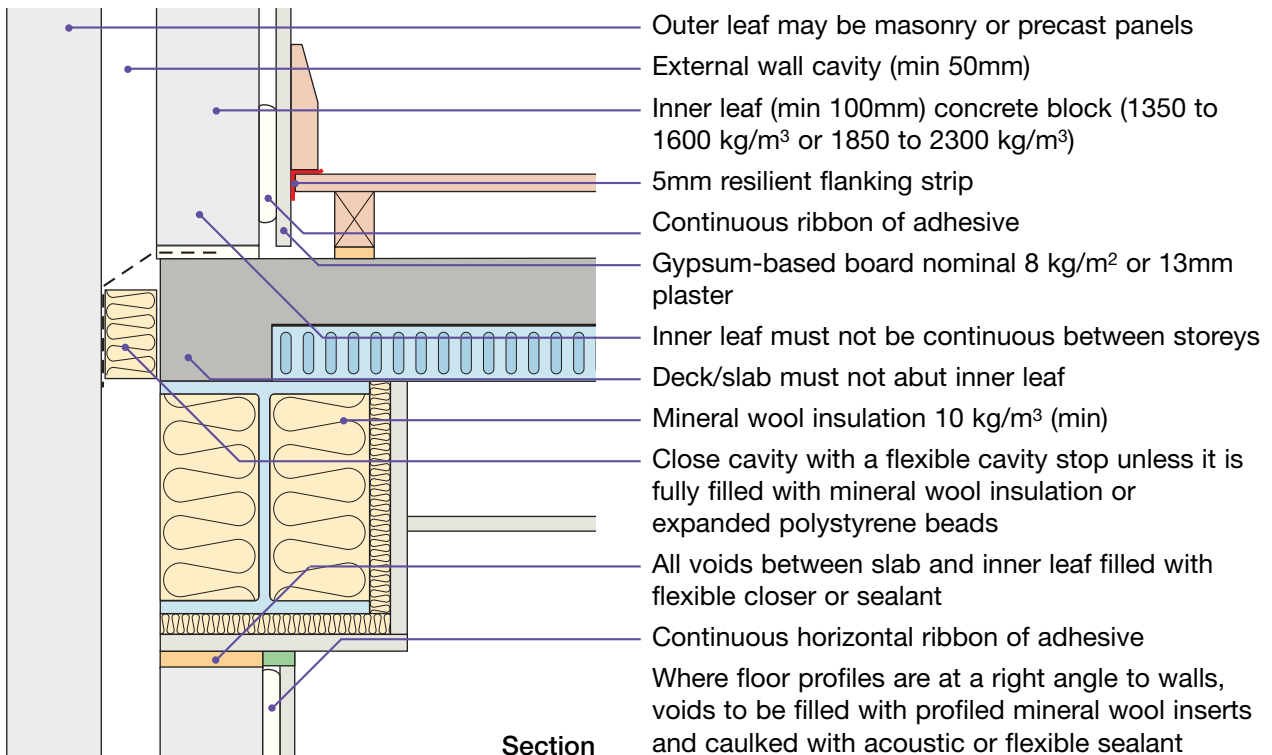
1. External (flanking) wall junction - steel or timber frame inner leaf



Sketch shows FFT1 type floating floor treatment

Particular attention should also be paid to Building (Scotland) Regulations Section 2 - Fire.

2. External (flanking) wall junction - masonry inner leaf



Sketch shows FFT1 type floating floor treatment

Particular attention should also be paid to Building (Scotland) Regulations Section 2 - Fire.

3. Ceiling treatment for V-FS-1

Ceiling treatment must be installed in accordance with the manufacturer's instructions

All ceiling joints must be sealed with tape or caulked with sealant

The maximum load on resilient bars shall not exceed that specified in the manufacturer's instructions

Note: the sound insulation performance of ceiling treatment is increased if:

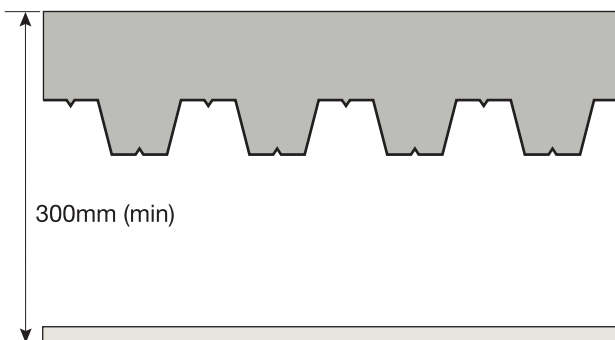
- 25mm (min) mineral wool quilt is placed in the ceiling void, and/or
- resilient hangers are used

Downlighters and recessed lighting

Provided there is a minimum ceiling void of 75mm downlighters or recessed lighting may be installed in the ceiling:

- in accordance with the manufacturer's instructions
- at no more than one light per 2m² of ceiling area in each room or see Appendix F
- at centres not less than 0.75m
- into openings not exceeding 100mm diameter or 100x100mm

Particular attention should also be paid to Building (Scotland) Regulations Section 2 - Fire.



Any ceiling system

- one layer of nominal 8 kg/m² gypsum-based board

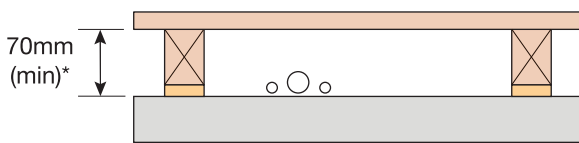
4. Floating floor treatments for V-FS-1

All floating floor treatments :

- Must achieve a minimum laboratory performance of $rd\Delta L_w = 17\text{dB}$ - see Appendix D.
- Must be installed in accordance with the manufacturer's instructions.
- Require 5mm (min) resilient flanking strips around the perimeter of the flooring board to isolate floor from walls and skirting.

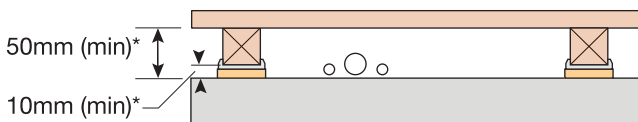
d) For further guidance on floating floor treatments and flanking strips please refer to Appendix A.

* Note - void dimensions indicated are when floor is loaded to 25 kg/m^2 .



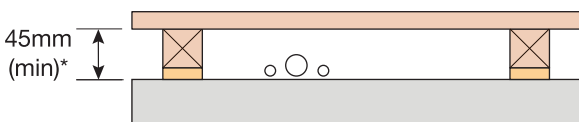
FFT 1 – Resilient composite deep batten system

- 18mm (min) t&g flooring board
- resilient layer must be continuous and pre-bonded to batten
- resilient composite deep battens
- ensure any services do not bridge the resilient layer
- battens may have the resilient layer at the top or the bottom



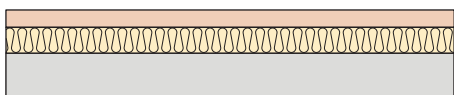
FFT 2 – Resilient cradle and batten system

- 18mm (min) t&g flooring board
- cradle and batten
- ensure any services do not bridge the resilient layer



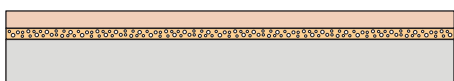
FFT 3 – Resilient composite standard batten system

- 18mm (min) t&g flooring board
- resilient layer must be continuous and pre-bonded to batten
- resilient composite standard battens
- ensure any services do not bridge the resilient layer
- battens may have the resilient layer at the top or the bottom



FFT 4 – Resilient overlay platform floor system

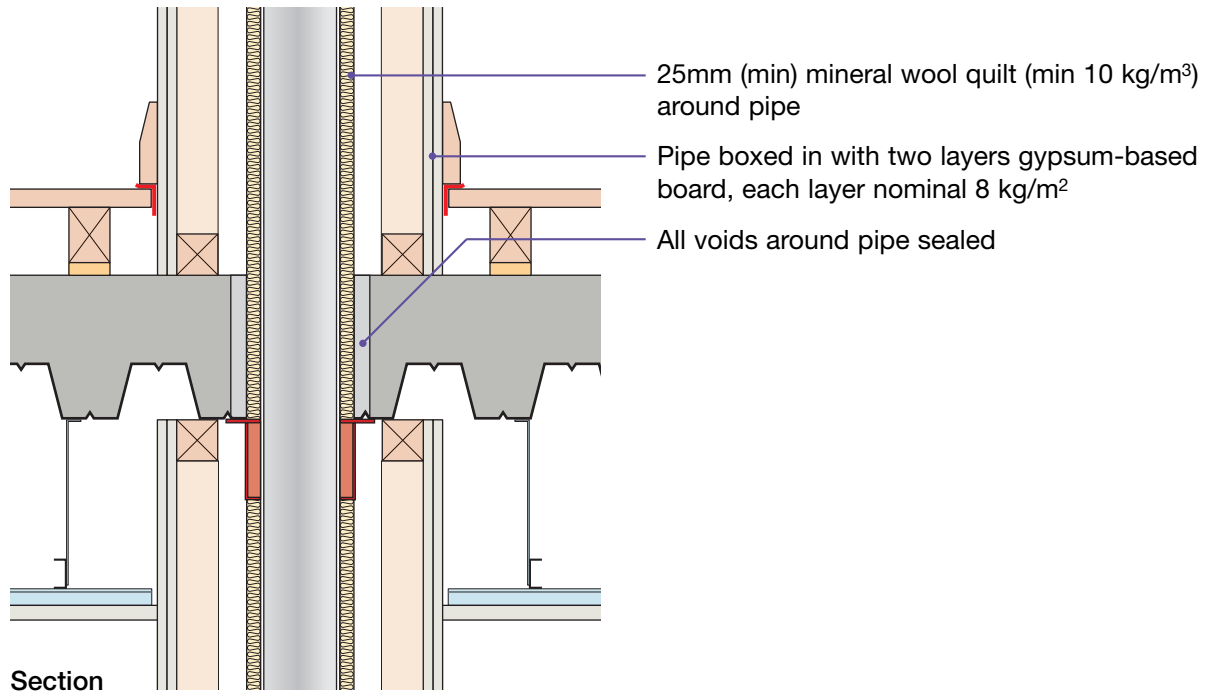
- proprietary platform system inclusive of resilient layer greater than or equal to 16 kg/m^2 mass per unit area
- no services to be installed in floor system



FFT 5 – Resilient overlay shallow platform floor system

- 9mm (min) t & g flooring board
- resilient layer pre-bonded to flooring board
- no services to be installed in floor system

5. Services – Service pipes through separating floor



Sketch shows FFT1 type floating floor treatment and metal ceiling treatment

CHECKLIST (to be completed by site manager/supervisor)

Company:

Site:

Plot: Site manager/supervisor:

Table with 4 columns: Ref., Item, Yes (✓), No (✓), Inspected (initials & date). Contains 10 checklist items related to concrete density, thickness, ceiling treatment, and floor completion.

Notes (include details of any corrective action)
Site manager/supervisor signature

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Appendix A1 – Additional Guidance

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Wall ties in cavity masonry separating walls

Only “type A” wall ties are suitable for use with masonry cavity separating wall Robust Details.

Tie Type A (separating walls) are described as follows:

Tie type A

Connect the leaves of a masonry cavity wall only where necessary by butterfly ties as described in BS 1243: 1978 Metal ties for cavity wall construction, and spaced as required for structural purposes (BS 5628-3: 2001 Code of practice for use of masonry. Materials and components, design and workmanship, which limits this tie type and spacing to cavity widths of 50mm to 75mm with a minimum masonry leaf thickness of 90mm). Alternatively, use wall ties with an appropriate measured dynamic stiffness for the cavity width. The specification for wall ties of dynamic stiffness, $k_{\chi\text{mm}}$ in MN/m with a cavity width of X mm and n ties/m² is $n.k_{\chi\text{mm}} < 4.8 \text{ MN/m}^2$.

When using wall ties for masonry separating walls the specifier should ensure that the wall tie manufacturer has a test report that demonstrates compliance with the required ADE criteria.

Wall ties in cavity masonry external walls

Type A or Type B ties may be used in external masonry walls. However, consideration needs to be given to other regulations and standards.

Tie Type B (external walls) are described as follows:

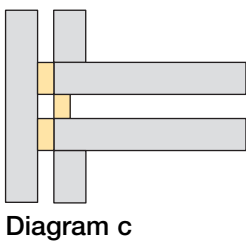
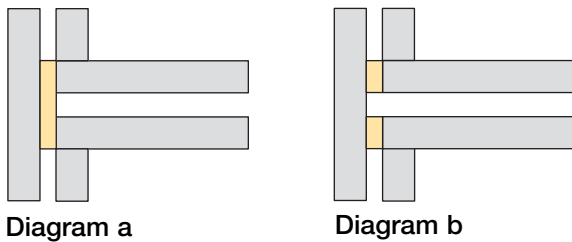
Tie type B

Connect the leaves of a masonry cavity wall only where necessary by double-triangle ties as described in BS 1243: 1978 Metal ties for cavity wall construction, and spaced as required for structural purposes (BS 5628-3: 2001 Code of practice for use of masonry. Materials and components, design and workmanship, which limits this tie type and spacing to cavity widths of 50mm to 75mm with a minimum masonry leaf thickness of 90mm). Alternatively, use wall ties with an appropriate measured dynamic stiffness for the cavity width. The specification for wall ties of dynamic stiffness, $k_{\chi\text{mm}}$ in MN/m with a cavity width of X mm and n ties/m² is $n.k_{\chi\text{mm}} < 113 \text{ MN/m}^3$.

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Cavity stops

The flexible cavity stops at the junction of the separating wall and the external (flanking) wall are shown in the Robust Details as a single piece of material (diagram a). It is acceptable for these to be provided as two separate pieces (diagram b), or three separate pieces (diagram c).



The following types of cavity stop may be used:

- single mineral wool batt cavity stops
- dual rigid cavity stops on either side of the external wall cavity (not for masonry separating walls)
- single rigid cavity stop attached to one leaf of the separating wall only (not for masonry separating walls)
- flexible single cavity stop such as the mineral wool “tubular style”
- flexible double cavity stops such as the mineral wool “tubular style” where one is fitted in line with each leaf of the separating wall.

Single rigid cavity stops which structurally couple both leaves of the separating wall are not permitted.

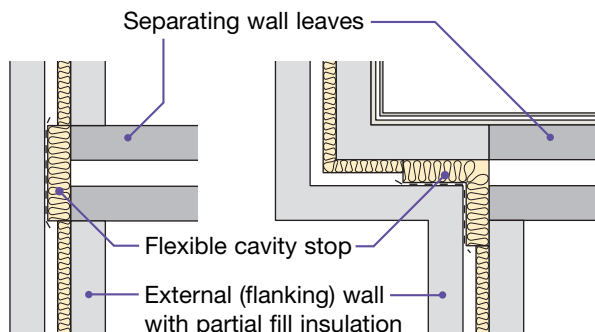


Diagram d

Partial fill insulation should be installed up to the cavity stop.

Cavity trays

The cavity trays shown above the cavity stops are included for illustrative purposes only and not for acoustic reasons.

Movement joints in cavity masonry separating walls

Separating walls with a gypsum-based board finish

Where possible, movement joints should be avoided in separating walls with a gypsum-based board finish. Where they are essential, they should be formed as follows:

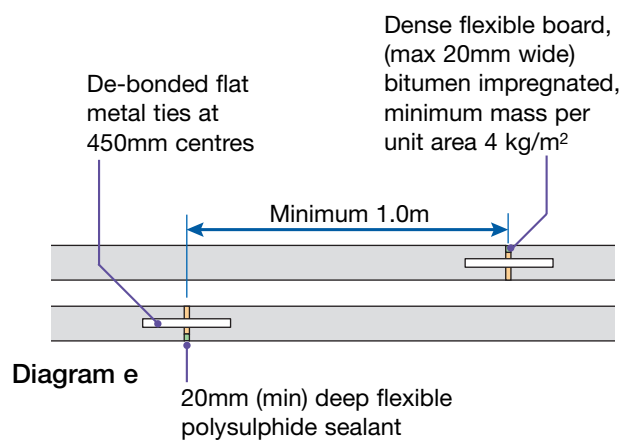


Diagram e

Where possible, movement joints should be located in bathrooms or other minor rooms or behind cupboards, etc.

Separating walls with wet plaster finish

Movement joints are not acceptable in **robustdetails**[®] separating walls with a wet plaster finish unless they are strategically placed behind internal wall junctions or service pipe casings.

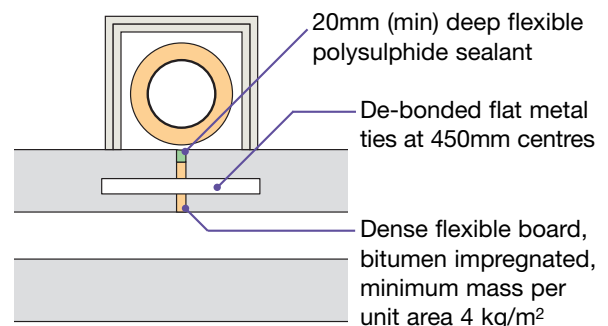


Diagram f

The movement joints must also be staggered and spaced not less than 1m apart, as shown in Diagram d above.

Appendix A1 – Additional Guidance

Bed joint reinforcement

It is acceptable to install masonry reinforcement within the horizontal bed joints of the cavity masonry separating provided:

- the masonry reinforcement is contained wholly within the mortar bed joint of each individual leaf of masonry
- the masonry reinforcement does not connect the two leaves of the cavity walls together or bridge the cavity in any way

Internal floor joists/floor beams and masonry separating walls

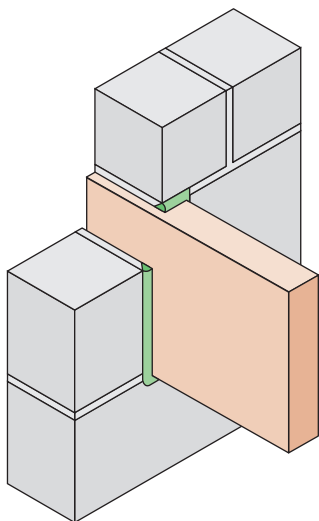
Internal floor joists at right angles to the separating wall may be supported by metal joist hangers or be built into the wall.

The acoustic performance of separating walls is adversely affected by any gaps in the masonry as these provide a direct sound transmission path. **It is essential that joists and beams are built in only if a high standard of workmanship can be guaranteed.**

Solid timber joists

Solid timber joists may be built into the separating wall, provided that:

- the mortar joints around each joist perimeter are recessed or struck, and
- the joint between the masonry and the timber is carefully pointed with silicone sealant.



Alternatively, proprietary joist caps/ends designed to satisfy air leakage requirements may be used. They should be installed in accordance with the manufacturer's

instructions.

In circumstances where the joist end cap is larger than the depth of the joist, such that there is a gap between the top of the joist and the joist end cap, this should be filled with mineral wool or other suitable material such that the acoustic performance of the wall is maintained.

Metal web joists

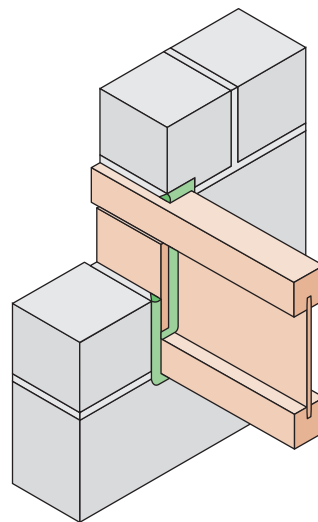
Metal web joists may be built into the separating wall following the guidance for solid timber joists above. Metal web joists must have solid ends.

Timber I-Joists

Timber I-joists may be built into the separating wall, provided that:

- proprietary filler pieces are fitted on both sides of the web between the top and bottom flanges. These filler pieces must not damage the joist flanges - their depth should be slightly less than the dimension between the joist flanges to achieve a "loose fit".
- the mortar joints around each joist perimeter are recessed or struck, and
- the joint between the masonry and the timber and any other air paths are carefully pointed with silicone sealant.

Alternatively, proprietary joist caps/ends designed to satisfy air leakage requirements may be used.

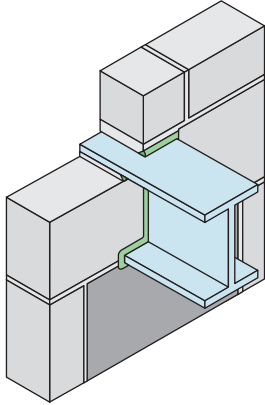


They should be installed in accordance with the manufacturer's instructions. In circumstances where the joist end cap is larger than the depth of the joist, such that there is a gap between the top of the joist and the joist end cap, this should be filled with mineral wool or other suitable material such that the acoustic performance of the wall is maintained.

Appendix A1 – Additional Guidance

Steel beams

Steel beams may be built into the separating wall, provided that all voids around the beam ends are filled with mortar or flexible sealant.



Separating walls should not be constructed off steel beams.

Structural steelwork in masonry separating walls

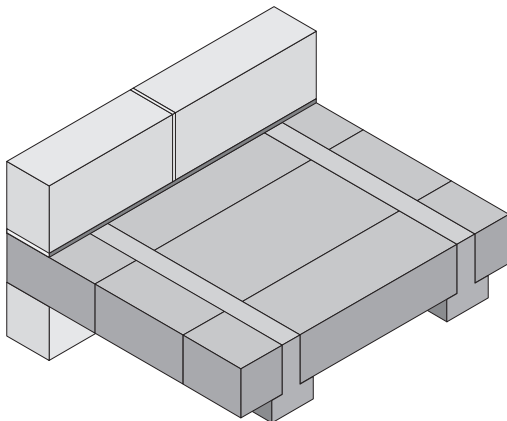
Steel columns built into masonry separating walls are not permitted.

Separating walls should not be constructed off steel beams.

Concrete beam and block ground and internal floors

Concrete beam and block floors may be built into the separating wall, provided:

- all voids are carefully filled with mortar
- the floor does not bridge the cavity leaves.



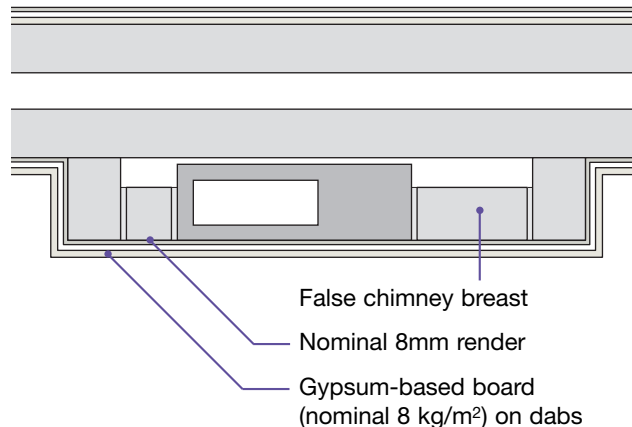
Coursing in blockwork separating walls

For the purposes of adjusting coursing it is permissible to use smaller units of **robustdetails**® separating wall material (e.g. brick sized), provided the density of the smaller units is at least the same as the separating wall material.

Flues in separating walls

Flue blocks may not be built into the separating wall where the finish is wet plaster. Flue blocks may only be built into the normal width of a separating wall where a diagram is included in the Robust Details.

Any of the **robustdetails**® masonry separating walls with gypsum-based board on dabs finish, may use the following alternative detail:



Internal render

Some of the **robustdetails**® for masonry separating walls indicate the use of an internal render (parge) coat prior to the application of dry lining. Where a cement:sand render coat is used it should not be float or skim finished but preferably applied in an uneven manner with a trowel (or equivalent) and scratch finished.

Internal render may be omitted from the following locations:

- wall surfaces not facing into a room
- floor joist/beam zone
- roof space (where there are no rooms in the roof)
- staircases may be installed prior to the application of render, and the render and gypsum-based board are not required behind the stair string.

Mixes quoted are for cement, lime and sand by volume based on damp sand. Mixes made with cement, sand and plasticiser are also acceptable.

Appendix A1 – Additional Guidance

Spandrel panels

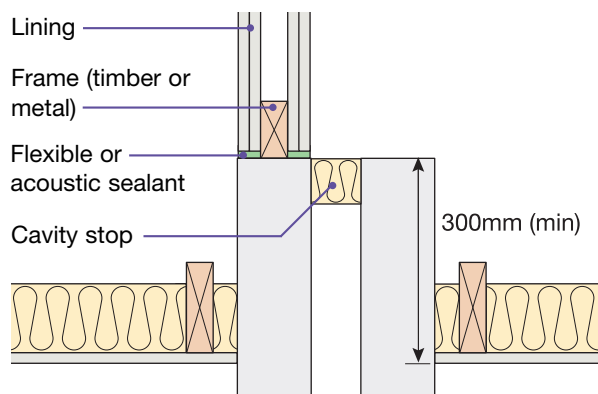
Where stated in the Robust Details, spandrel panels are an acceptable alternative to building the cavity separating wall in the roof space (without room-in-roof).

When adopting spandrel panels particular attention should be paid to Building (Scotland) Regulations Section 2 - Fire. The dimensions given below are the minimum required to maintain only the acoustic integrity.

The supporting blockwork should extend at least 300mm above the finished ceiling layer. The top of the cavity wall should be closed with a cavity stop. The junction between the spandrel panel and supporting blockwork should be sealed with flexible or acoustic sealant. The spandrel panel may be mounted on a mineral fibre panel.

The spandrel panel should consist of:

2 layers of gypsum-based board lining each side of a minimum 35x45mm timber frame, each layer to be a nominal 8 kg/m². Alternatively, framing can be formed from lightweight steel instead of timber.



Two panels may be adopted provided a minimum 50mm cavity is maintained between the opposing sheathing faces, or to the stud frame where no sheathing is fitted.

Wall cavities must be maintained within roof voids. Linking of wall leaves by spandrel panels is not permitted.

Services and chases in separating walls

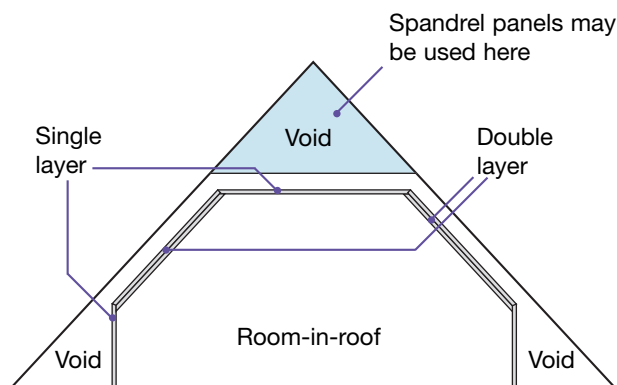
Where possible, services should not be built into the separating wall.

However, where chasing is permitted in the Robust Details, they should be kept to a minimum. Chases must not be located back to back. Care must be taken to ensure all voids are fully filled with mortar. Where conduits or cappings are used they should not be in contact with the gypsum-based board.

The Robust Details for timber and steel framed walls show how services should be built in.

Room-in-roof for masonry walls – requirements for gypsum-based boards

Room-in-roof constructions are permitted in masonry separating walls. Where the ceiling to the room is directly beneath the roof structure, typically the sloping areas, two layers of gypsum-based board are required, as per the relevant room-in-roof detail for the adopted separating wall. A single layer of gypsum-based board may be adopted in other areas.



Section through room-in-roof

Gypsum-based board

Gypsum-based boards may be either plaster gypsum-based or cement gypsum-based.

The mass per unit area or surface density specified is a nominal minimum value in kilograms per square metre (kg/m²): the use of a higher density board will increase the sound insulation performance.

Boards should be abutted and all joints sealed with tape or caulked with sealant. Where two or more layers of gypsum-based board are required on separating walls or ceilings all joints should be staggered, and only the outer layer boards need to be sealed with tape or caulked with sealant. The order in which boards are fitted and lapped is not critical provided the overall mass per unit area is maintained. The same applies to combined render/plaster finishes.

Boards fitted to steel and timber frame separating walls should be mounted in accordance with the manufacturer's instructions – some boards may need to be mounted horizontally.

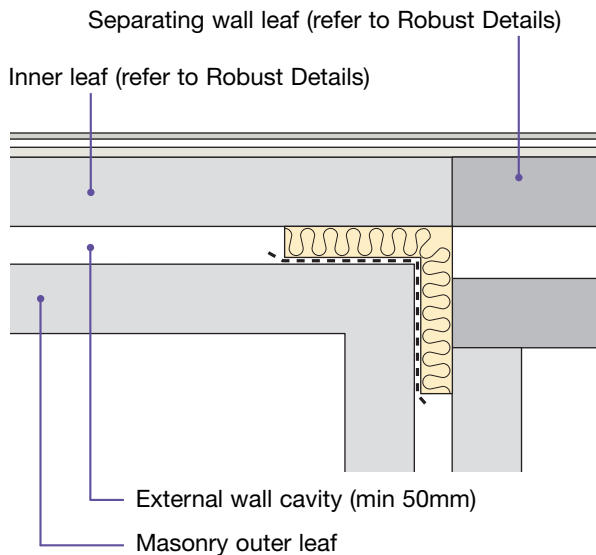
Thermal laminate boards may be used as the wall finish to masonry walls, provided the nominal mass per unit area indicated in the Robust Details is maintained - seek advice from the manufacturer.

An acceptable alternative to caulking or sealing the joint between the wall and the ceiling is to use gypsum coving.

Appendix A1 – Additional Guidance

Cavity masonry separating walls – staggered external (flanking) wall junction

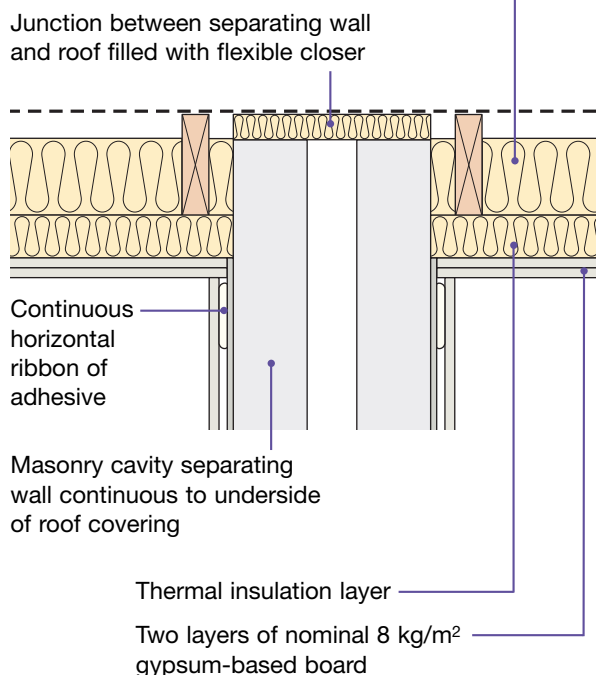
As an alternative to the junction shown in the Robust Details, it is acceptable for the inner leaf blockwork to extend to the inner face of the external wall cavity, as shown below.



Roof junctions – thermal insulation

Additional layers of thermal insulation may be added as follows:

100mm (min) mineral wool insulation minimum density 10 kg/m³ or 60mm (min) foil faced PUR or PIR insulation, minimum density 30 kg/m³



Building (Scotland) Regulations Section 1 - Structure: disproportionate collapse

Masonry construction

Lateral restraint straps may be used at floor junctions, roof level and other junctions, if necessary to meet the requirements of Section 1, provided they do not bridge the cavity separating wall leaves and that no voids remain at the mortar joints.

Internal walls (minimum mass requirements)

Junctions with cavity masonry separating walls

- masonry internal walls where there is no separating floor (e.g. houses) – no restrictions
- masonry internal walls where there is a separating floor (e.g. flats/apartments) – internal wall should have a minimum mass per unit area of 120 kg/m² (including the finish) OR at least that of the approved flanking wall inner leaf, if this is less.
- timber frame and steel frame internal walls – no restrictions.

Junctions with timber and steel frame separating walls

No minimum mass requirements.

Junctions with concrete or steel-concrete composite separating floors

- masonry internal walls – internal wall should have a minimum mass per unit area of 120 kg/m² (including the finish) OR at least that of the approved flanking wall inner leaf, if this is less.
- timber frame and steel frame internal walls – no restrictions.

Junctions with timber or light steel separating floors

No minimum mass requirements.

Junctions between internal partition walls and concrete separating floors

The junction between internal partition walls and concrete separating floors should be formed as follows:

1. Install internal lightweight stud partitions either up to the ceiling lining or through the ceiling lining, provided the head channel of metal stud partitions or timber frame, as appropriate, fully seals the void between the wall linings, such that there are no air paths from the ceiling void to the partition void.
2. Install loadbearing masonry internal partition walls up to the underside of the floor, provided the floor is continuous over the wall and the wall has a minimum mass per unit area of 120kg/m² (including the finish) OR at least that of the approved flanking wall inner leaf, if this is less.

Appendix A1 – Additional Guidance

- Construct the internal wall directly off core floor with the floating floor treatment (FFT) or screed installed around the internal walls, provided:
 - the 5mm (min) resilient flanking strip or isolating edge strip, as appropriate for the Robust Details adopted, is correctly installed to all perimeters of the FFT or screed to isolate the floor from all the walls and skirtings
- Construct the internal wall off the floating floor treatment flooring board or screed, provided:
 - the floating floor treatment is installed in accordance with the manufacturer's instructions, including the provision of additional battens to support the internal walls if necessary

Subfloor ventilation

Where possible it would be preferable to avoid providing ventilation for the sub floor void through the separating walls.

However, where necessary, the ventilation of the sub floor void of Section 5 **robustdetails**[®] separating walls may be achieved through the installation of ducts through the separating wall, provided:

- the top of the duct is at least 300mm below the finished floor surface of the ground floor structure
- the number of ducts passing through the separating wall is kept to the minimum necessary.

Radon and methane barriers

It is acceptable to install a radon or methane barrier and comply with the Robust Details. The ground floor junction detail would need to follow that described in the Robust Details and as such the 225mm (min) clear cavity indicated in the ground floor junction to masonry separating walls would need to be maintained. Alternatively, refer to Appendix A2.

Ground floor junctions

5mm (min) flanking strips are recommended to isolate floating floor finishes, where provided, from walls and skirtings.

Screed thickness

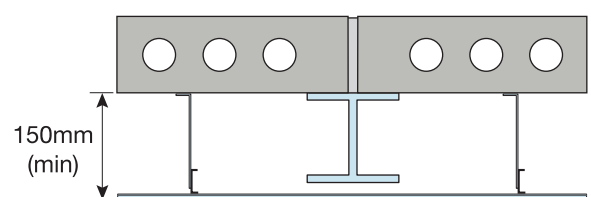
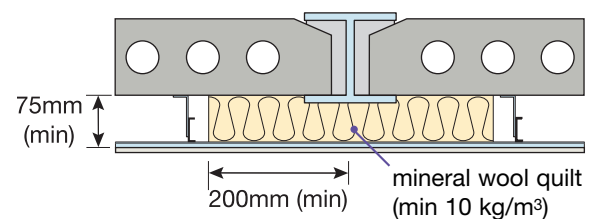
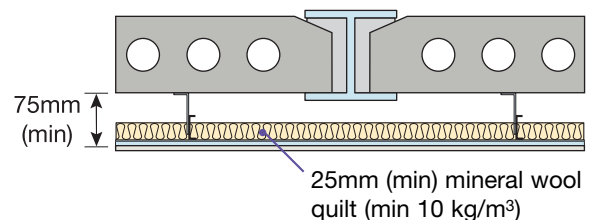
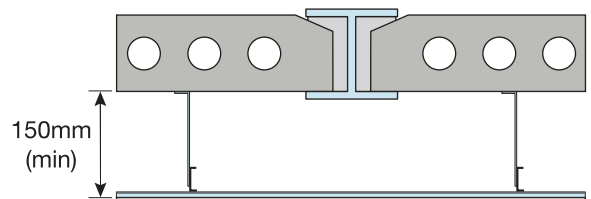
The screed thickness stated is the minimum thickness at any point and a greater thickness should be specified to take account of deviations in the finished levels of the surfaces of bases and any reinforcement provided.

Cement:sand screed should be at least 50mm to comply with BS 8204. Concrete screed is acceptable.

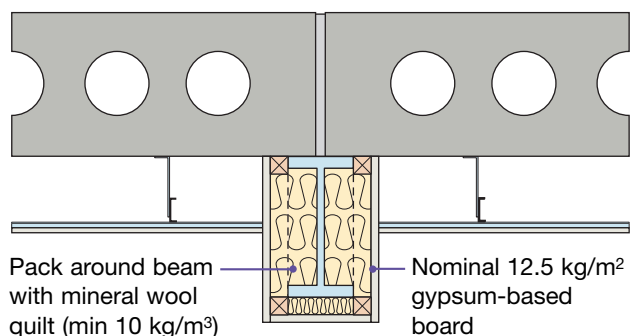
Precast concrete plank separating floors with steel beams

In some situations precast concrete planks may require intermediate support by steel beams supported on masonry.

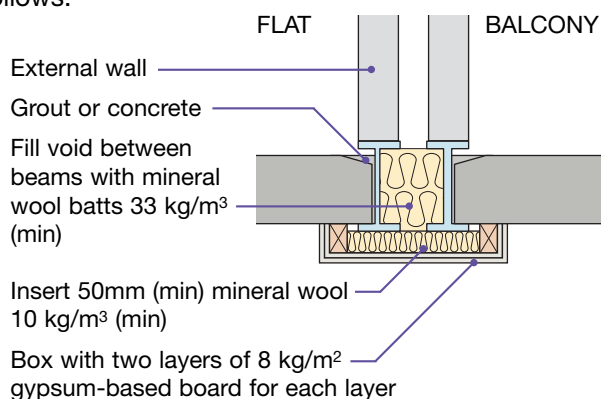
- cavity masonry separating walls must not be built off steel beams – where necessary, external cavity walls may be built off steel beams
- all voids between the steel beam and the slabs should be fully filled with grout or concrete, and
- the supports for the ceiling treatment and the ceiling lining should not come into contact with the steel beam, and
- the depth of the ceiling void from the underside of the plank should be as shown in the following diagrams and in accordance with the corresponding separating floor Robust Details
- mineral wool quilt should be provided if shown in the following diagrams



Appendix A1 – Additional Guidance



An alternative detail where two steel beams are required to support the external cavity wall is as follows:



Separating walls should not be constructed off steel beams.

Services in separating floors

Downlighters or recessed lighting

Where possible, downlighters or recessed lighting should not be built into the separating floor. If they must be built in, they should be kept to a minimum and the guidance included in the Robust Details followed. For timber separating floors, see Appendix F also.

Particular attention should also be paid to Building (Scotland) Regulations Section 2 - Fire.

Other services

Electrical and plumbing services may be installed in the separating floor. All penetrations through the ceiling lining, floor decking and flooring board should be cut carefully. The gap around the service should be carefully sealed with flexible sealant.

Where services are installed within a floating floor treatment, the manufacturer's instructions should be followed. It is acceptable to leave a gap of up to 50mm in the batten to allow services to cross at right angles.

Ducts for extract ventilation, etc. may run within the separating floor, provided the acoustic integrity is maintained.

Ducting which drops from the ceiling void needs to be enclosed in boxing of gypsum-based board of the same composition and mass per unit area as the relevant Robust Details ceiling treatment.

It is permissible to install services within the screed of concrete floors, provided that:

- the minimum thickness and mass per unit area of the screed is maintained as detailed in the relevant Robust Details
- the minimum cover on services is maintained
- the services do not break into or bridge the resilient layer(s). In the case of floors which also have a floating timber floor treatment (FFT), it is permissible for services to rise vertically out of the screed and through the FFT, provided the FFT flooring boards do not touch the services and the gaps around the services are sealed with a flexible sealant.

Services may be installed within a secondary ceiling lining system that is only supported from the resilient bars of a ceiling treatment, provided:

- the resilient bars can support the full load;
- the resilient bars achieve the minimum laboratory performance of Appendix E.

Particular attention should also be paid to Building (Scotland) Regulations Section 2 - Fire. Secondary ceilings to timber floors may also be supported by perimeter channels.

Underfloor heating systems in separating floors

With timber floating floor treatments

Underfloor heating may be used with timber floating floor treatments FFT1, FFT2 and FFT3. Underfloor heating may not be used with FFT4 or FFT5.

Where underfloor heating is supported by mineral wool or foil-wrapped quilt, this may be used in place of the mineral wool that is specified between the battens on certain floors. Where underfloor heating is supported on rigid insulation (e.g. polystyrene), this may be used in addition to the mineral wool specified on certain floors. If this results in the batten void being filled, a polythene layer should be included to prevent direct contact with the underside of the floating deck. On floors where no mineral wool is specified, rigid insulation may be used alone, provided it does not bridge the resilient layer by providing a connection between the structural floor and any of the floating elements.

With floating screed floors

If underfloor heating systems are required to be installed within the screed they must not penetrate through the resilient layers and must avoid bridging the screed to the slab. Where rigid insulation boards

Appendix A1 – Additional Guidance

are used which have surface indents for the heating conduits to be situated within, this is acceptable. For floors that incorporate an insulation layer, such indented boards may be used as part of the resilient layers, provided they are of an appropriate type of material, and that the minimum thickness of the resilient layer is maintained.

Resilient bars

When using resilient bars the specifier should ensure that the resilient bar manufacturer has a laboratory sound test report (as outlined in Appendix E) that demonstrates compliance with the **robustdetails**[®] performance criteria.

Timber floating floor treatments

When using timber floating floor treatments (e.g. battens, cradles, platforms) the specifier should ensure that the floating floor treatment manufacturer has a laboratory sound test report (as outlined in Appendix C or D) that demonstrates compliance with **robustdetails**[®] performance criteria.

It may be necessary for battens to be installed at closer centres or for additional support to be provided under heavy loads from internal walls, sanitary ware and kitchen units, etc. in accordance with the manufacturer's instructions.

Rigid insulation boards (e.g. expanded, extruded or bead polystyrene) are not acceptable for use as the resilient layer or as a flanking strip with a floating floor treatment where the walking surface is board based.

Mineral wool may not be used as a resilient flanking strip. See Appendix B, Glossary, for definition of a resilient flanking strip.

Floating Floor Treatments in kitchens and bathrooms

It is permissible to install kitchen units and appliances along with bathroom sanitary fittings directly onto the sub floor construction. In all cases it is recommended that you contact the manufacturer directly to seek their advice relating to the specific FFT.

Laminated or ceramic flooring on separating floors

In principle it is acceptable to install laminate timber floor finishes on top of the timber floating floor treatments (FFT's) indicated in Section 5 Robust Details, provided:

- the manufacturer of the FFT system confirms that the performance of the FFT will not be affected;

- any specific guidelines, regarding the installation of such finishes, stipulated by the manufacturer of the FFT system are strictly followed;
- the laminate timber floor finish does not bypass the isolation provided by the flanking strips at the perimeters of the FFT by being in direct contact with the wall or skirting;

In the case of the Section 5 Robust Details with floating screed, it would also be acceptable in principle to provide a laminate timber floor finish, provided:

- the laminate timber floor finish does not bypass the isolation provided by the isolating edge strips at the perimeters of the screed by being in direct contact with the wall or skirting;

Screed floating floor treatments

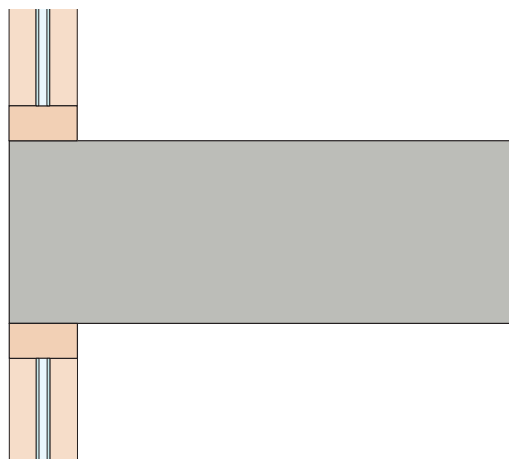
Where screeds are separated from the core floor by resilient layers the screed must be fully isolated from the floor slabs, perimeter walls and skirtings and must not come into direct contact with these areas. The resilient layer(s) should completely cover the core floor surface and be wrapped round the edge of the screed to isolate the screed from the perimeter walls and skirtings.

Masonry angle supports

The masonry outer leaf of external walls used with **robustdetails**[®] concrete or steel-concrete composite separating floors, may be supported on suitable proprietary masonry angle supports that are fixed to the edge of the separating floors.

Full height glazing units junction with **robustdetails**[®] separating floor

If referred to in the detail, full height glazing units may be used. Where there is no inner leaf and a full height glazing unit, the core floor slab must break the vertical continuity of the glazing facade, as shown below.



Appendix A1 – Additional Guidance

Specification requirements

Where details have “minimum” in their specification, it indicates that the value should not be lower than that stated. It does not preclude the use of higher values.

For example, where a 75mm (min) cavity size is specified, it does not preclude the use of wider cavities. Similarly, a reference to a wall finish with 8 kg/m² gypsum-based board does not preclude the use of boards with a greater mass per unit area.

Lifting holes in cassette floors

The required acoustic performance of any of the **robustdetails**[®] timber or steel frame separating floors would not be affected if lifting holes within the sub-deck remain untreated, provided:

- each lifting hole is no larger than 120mm in diameter
- mineral wool quilt, of the appropriate specification as indicated in the relevant separating floor specification, is provided covering the whole area of the floor, between the joists/battens, in both the structural floor void and the floating floor void
- all other relevant requirements are strictly followed.

Lifting holes that are larger than 120mm in diameter should be sealed or covered with a board or panel of similar or greater density than the sub-deck board.

Appendix A2 – Proprietary Flanking Conditions

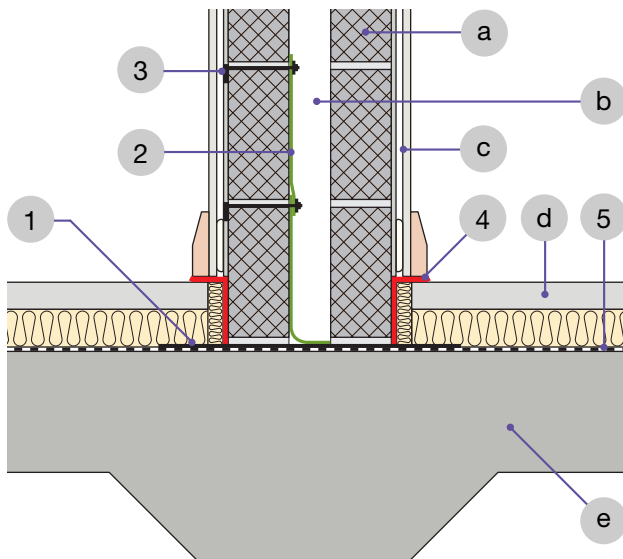
Contents

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Icopal-MONARFLOOR® BRIDGESTOP® System for robustdetails ® cavity masonry walls	2
Smartroof complete Interlocking “room-in-roof” panel system using robustdetails ® timber or masonry cavity walls	3
Kingspan TEK inner leaf flanking condition for robustdetails ® timber separating walls	4
Prestoplan PresPeak 60 interlocking single spandrel panel system for robustdetails ® timber separating walls	5
RoofSpace I-Roof™ “room-in-roof” panel system using robustdetails ® timber or masonry cavity walls	6

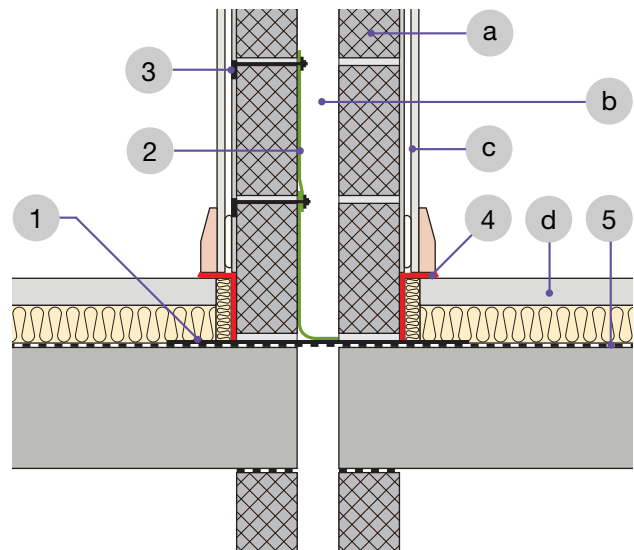
Appendix A2 – Proprietary Flanking Conditions

Icopal-MONARFLOOR® BRIDGESTOP® System for **robustdetails®** cavity masonry walls. Refer to Table 6 in Introduction.

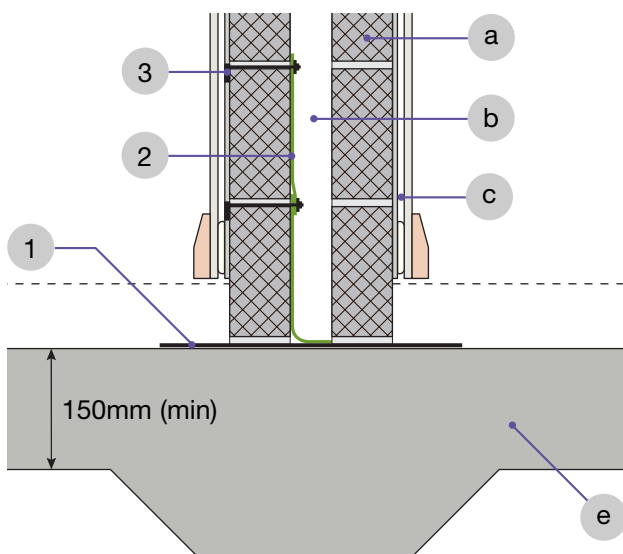
1. Separating wall – direct support on raft



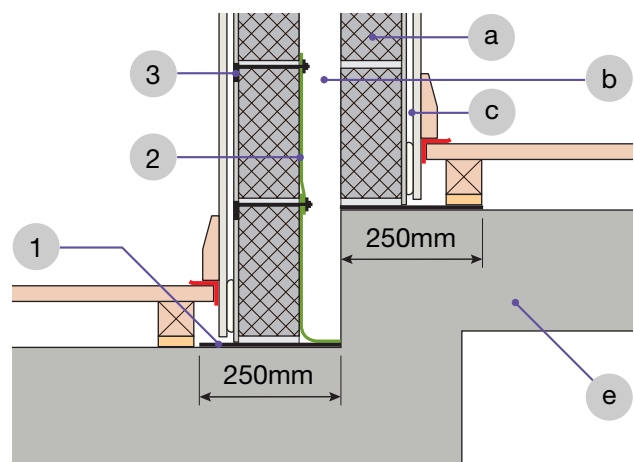
2. Separating wall – suspended floor with gas membrane



3. Insulated raft foundation



4. Stepped foundation



Key

- 1 500mm wide (or 250mm where shown) MONARFLOOR® BRIDGESTOP® 3mm HP Acoustic Membrane laid under the party wall over the dpm. This is an integral part of the system.
- 2 MONARFLOOR® BRIDGESTOP® Quilt in two lifts to prevent mortar droppings touching both masonry leaves.
- 3 MONARFLOOR® BRIDGESTOP® Tie to penetrate at max 450mm centres. Ties are reversible. May also be used as render depth marker.
- 4 MONARFLOOR® 6mm Acoustic Angled Flanking Strip to isolate screed/insulation from party wall and to isolate skirting board from screed.
- 5 Continuous dpm over the raft where ground gasses are an issue. Contact Icopal for specification.

- a Min 100mm block (with appropriate Type A wall ties) dependent on Robust Details being used. Refer to Table 6 in the Introduction.
- b Min 75mm or 100mm cavity width dependent on Robust Details being used.
- c Wall finish dependent on Robust Details used.
- d Floating screed on insulation; or timber floating floor types FFT2 resilient cradle and batten, FFT3 resilient batten, or FFT4 deep platform system.
- e Insitu concrete 365 kg/m² (min) mass per unit area.

Contact details for Icopal-MONARFLOOR®:

Telephone: 0161 866 6540

Fax: 0161 865 8433

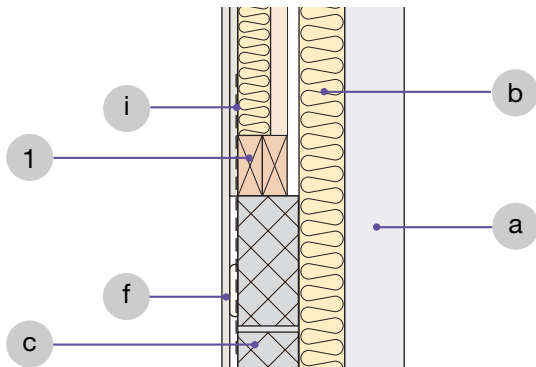
E-mail: acoustics.uk@icopal.com

The trade marks MONARFLOOR and BRIDGESTOP are the subject of UK trade mark registrations owned by Icopal Limited

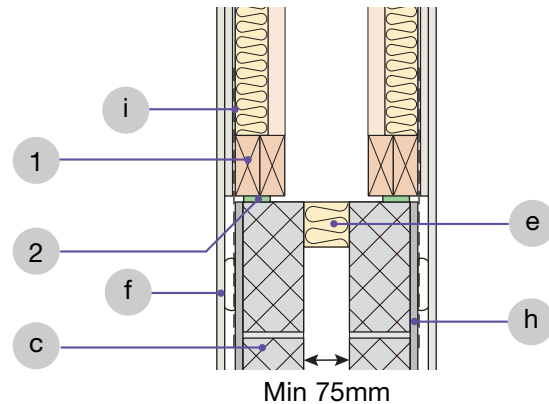
Appendix A2 – Proprietary Flanking Conditions

Smartroof complete interlocking “room-in-roof” panel system using **robustdetails**[®] timber or masonry cavity walls. Refer to Table 6 in Introduction.

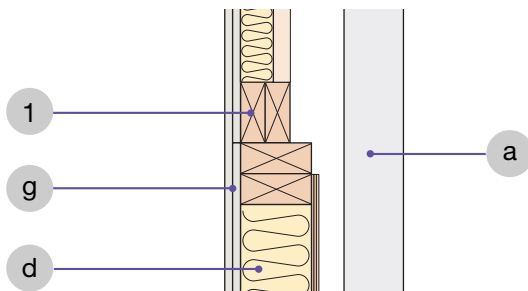
1. Gable flanking junction – masonry



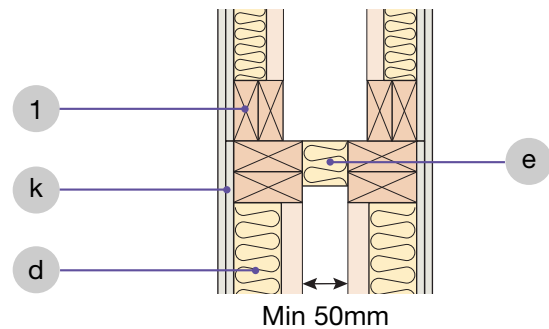
2. Room-in-roof junction with masonry cavity walls



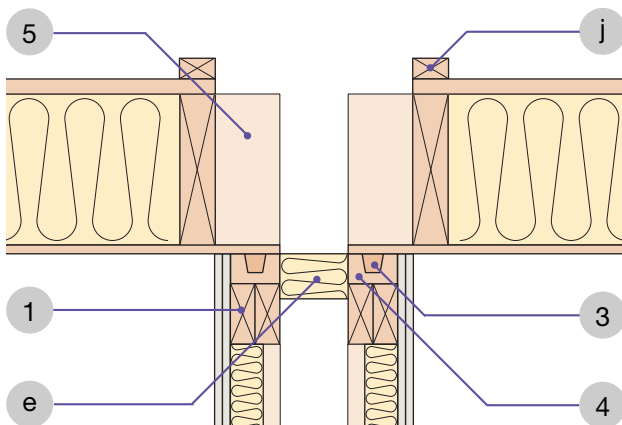
3. Gable flanking junction – timber frame



4. Room-in-roof junction with timber frame cavity walls



5. Separating wall – roof junction



Key

- 1 Smartroof panel.
- 2 Smartroof thin-joint compressed foam to take up unevenness in blockwork.
- 3 Smarttongue 35 x 72mm.
- 4 Smartchannel.
- 5 Smartroof roof panel.

- a Outer leaf of external wall.
- b Continue cavity batts up to gable end if required.
- c Minimum 100mm blockwork.
- d Timber frame inner leaf.
- e Cavity closer.
- f Gypsum-based board dependent on Robust Details being used.
- g Gypsum-based board nominal 8 kg/m². 2 layers required where separating floors are used (refer to **robustdetails**[®] separating floor).
- h Nominal 8mm render coat (refer to relevant **robustdetails**[®] separating wall).
- i Vertical metal straps at 1200mm centres if required.
- j 35 x 50mm counterbatten.
- k 2 layers gypsum-based board total nominal 22 kg/m².

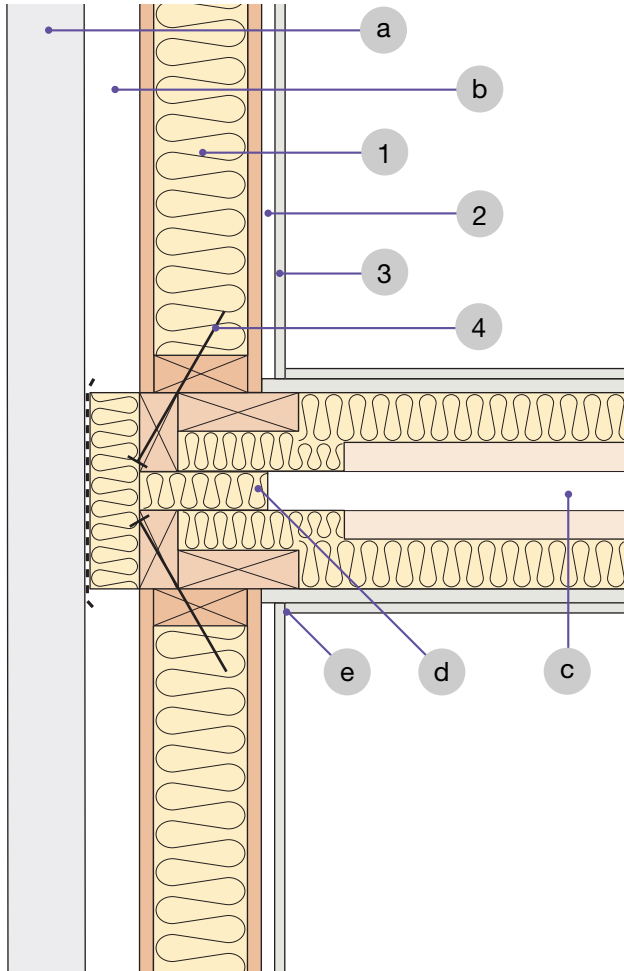
Contact details for smartroof Limited:

Telephone: 01675 44 23 45
Fax: 01675 44 30 95
E-mail: info@smartroof.co.uk
Web: www.smartroof.co.uk

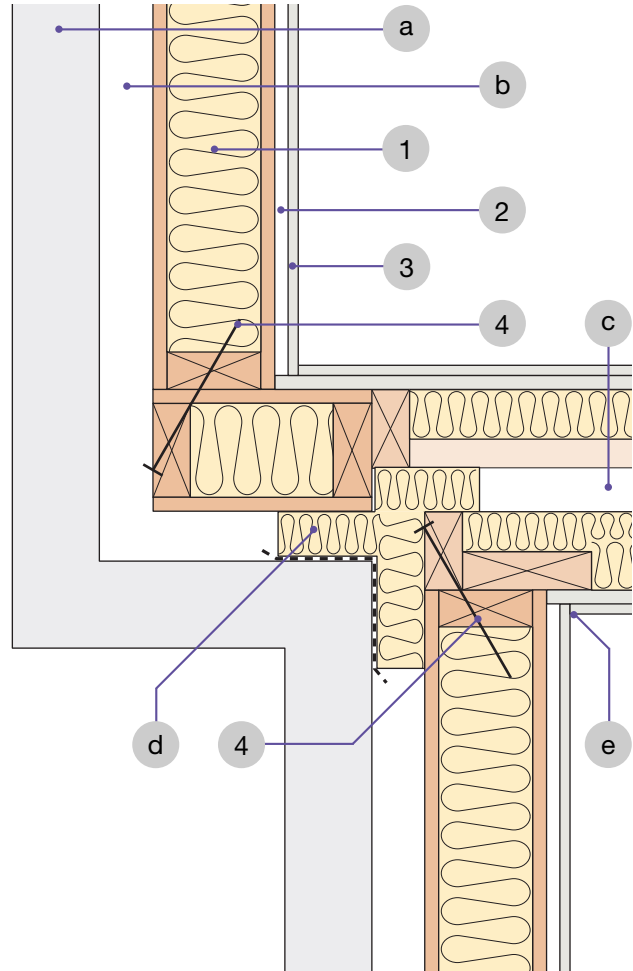
Appendix A2 – Proprietary Flanking Conditions

Kingspan TEK inner leaf flanking condition for **robustdetails**[®] timber separating walls. Refer to Table 6 in Introduction. *Currently when used with separating floors in apartments, separating floors will require pre-completion testing.*

1. External (flanking) wall junction



2. Staggered external (flanking) wall junction



Key

- 1 Kingspan TEK – 142 Panel.
- 2 Service void (if required).
- 3 One layer of gypsum-based board nominal 8 kg/m² on inner leaf where there is no separating floor, e.g. for houses.
Two layers of gypsum-based board nominal 8 kg/m² each on inner leaf where there is a separating floor (non-**robustdetails**[®] floor), e.g. for flats and apartments.
- 4 Approved fixings to TEK BBA Cert No. 02/S029.

- a Masonry outer leaf (min 100mm thick).
- b External wall cavity (min 50mm).
- c **robustdetails**[®] timber frame separating wall. (Refer to Table 6 in Introduction and relevant timber frame Robust Details in Handbook).
- d Close cavity with flexible cavity stop (see Appendix A).
- e Seal all joints with tape or caulk with sealant.

Contact details for Kingspan TEK,
Kingspan Insulation Limited:

Telephone: 01544 387382

Fax: 01544 387482

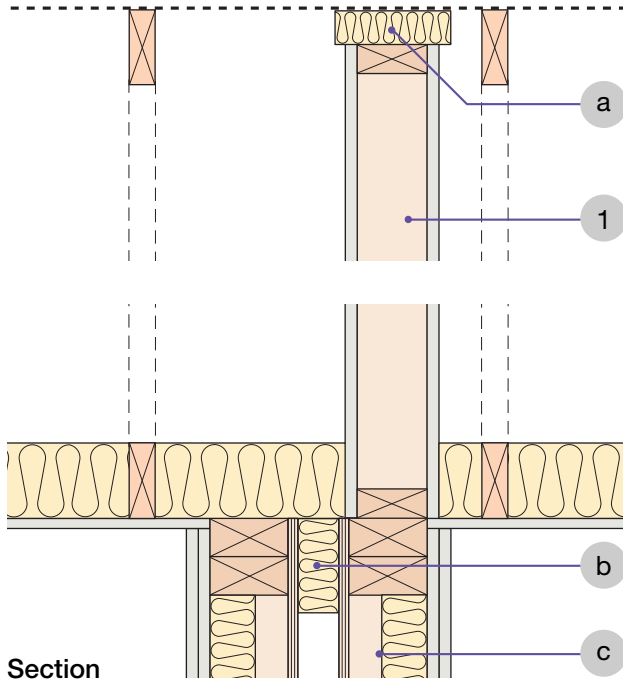
E-mail: technical.uk@tek.kingspan.com

Web: www.tek.kingspan.com

Appendix A2 – Proprietary Flanking Conditions

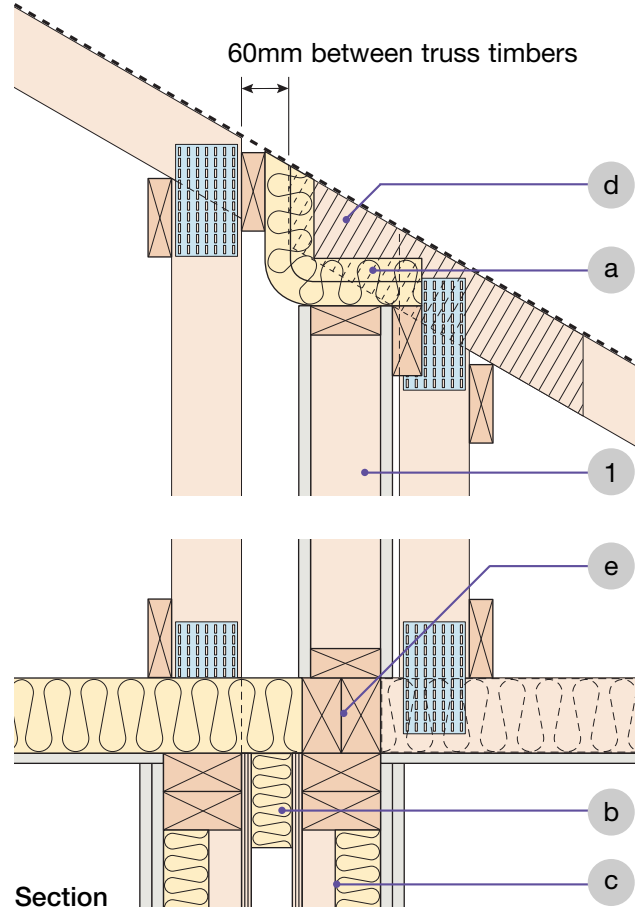
Prestoplan PresPeak 60 interlocking single spandrel panel system for use on **robustdetails**® timber separating walls in non room-in-roof situations.
Refer to Table 6 in Introduction.

1. Spandrel panel located parallel to trussed rafters



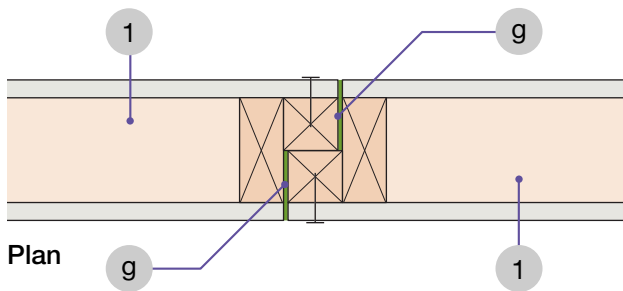
Section

2. Spandrel panel located across trussed rafters



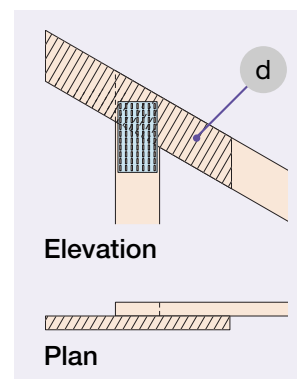
Section

3. Spandrel panel joint detail



Plan

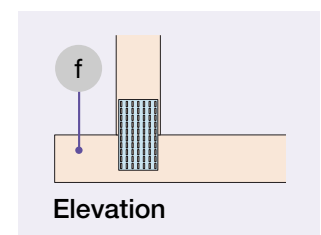
Top chord detail



Elevation

Plan

Bottom chord detail



Elevation

Key

- 1 PresPeak 60 spandrel panels.
- a Firestop wired mineral wool closer.
- b Flexible cavity stop.
- c Timber frame separating wall.
- d Site-fixed rafter extension.
- e Continuous blocking between bottom chords of trusses.
- f Bottom chord extended for support.
- g Intumescent tape.

Refer also to manufacturer's guidance

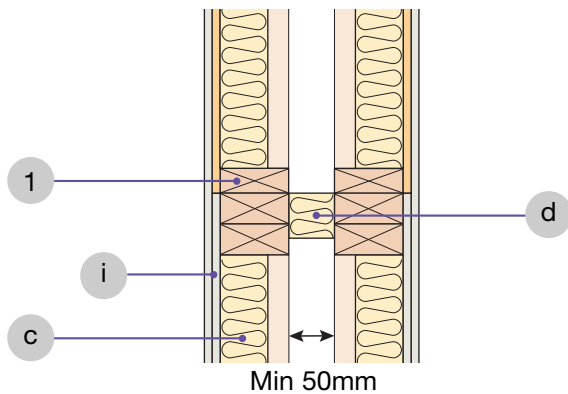
Contact details for Prestoplan Limited:

Telephone: 01772 627373
Fax: 01772 627575
Web: www.prestoplan.co.uk

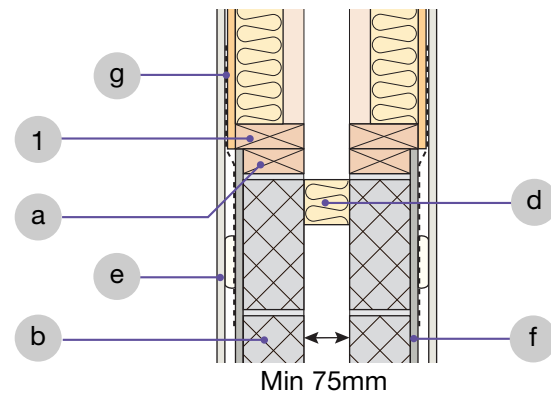
Appendix A2 – Proprietary Flanking Conditions

RoofSpace I-Roof™ “room-in-roof” panel system using **robustdetails**® timber or masonry cavity walls. Refer to Table 6 in Introduction.

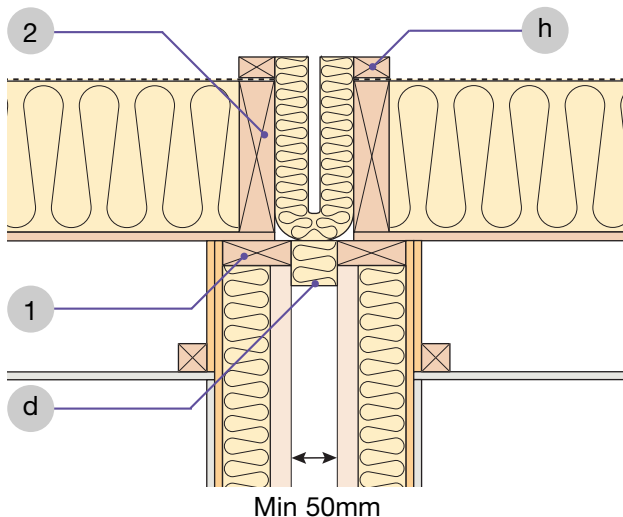
1. Room-in-roof junction with timber frame cavity walls



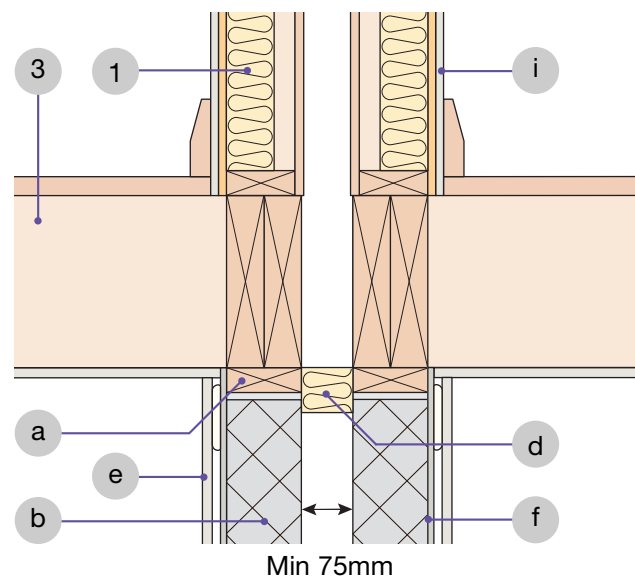
2. Room-in-roof junction with masonry cavity walls



3. Separating wall – roof junction



4. Internal floor cassette junction option



Key

- 1 RoofSpace I-Roof™ spandrel panel.
- 2 RoofSpace I-Roof™ roof panel.
- 3 RoofSpace internal floor cassette.
- a Timber wall plate bedded on 10mm mortar bed to take out unevenness in blockwork.
- b Minimum 100mm blockwork.
- c Timber frame separating wall leaf.
- d Cavity closer.
- e Gypsum-based board dependent on Robust Detail being used.
- f Nominal 8mm render coat (refer to relevant **robustdetails**® separating wall).
- g Vertical metal straps at 1200mm centres if required.
- h 25 x 38mm counterbatten.
- i 2 layers gypsum-based board total nominal 22 kg/m².

Contact details for SIG RoofSpace:

Telephone: 01789 209 006

Fax: 01789 292 858

E-mail: technical@sigroofspace.co.uk

Web: www.sigroofspace.co.uk

Appendix A3 – Specific Proprietary Products

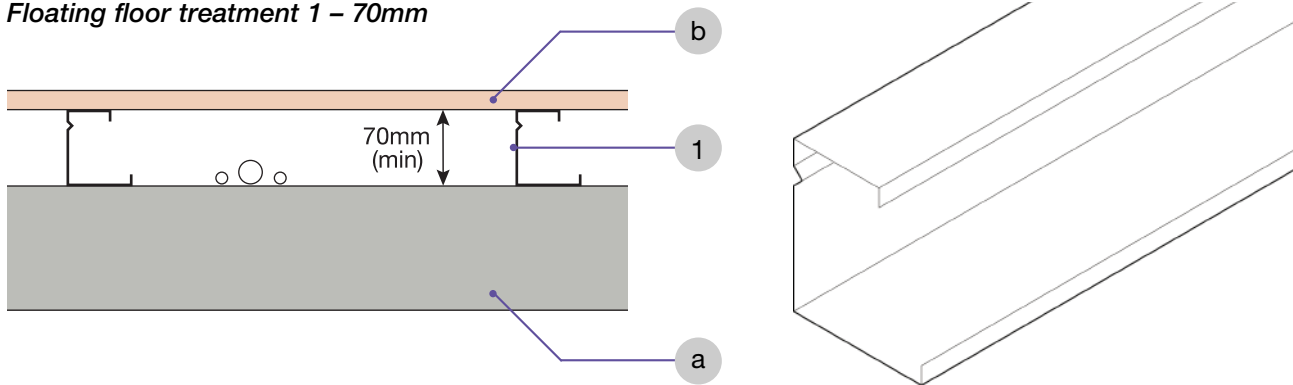
Contents

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British Gypsum GypFloor SB floating floor treatment for robust details® concrete separating floors	2
Insumate Limited insulation support tray for robust details® timber joist separating floors	3

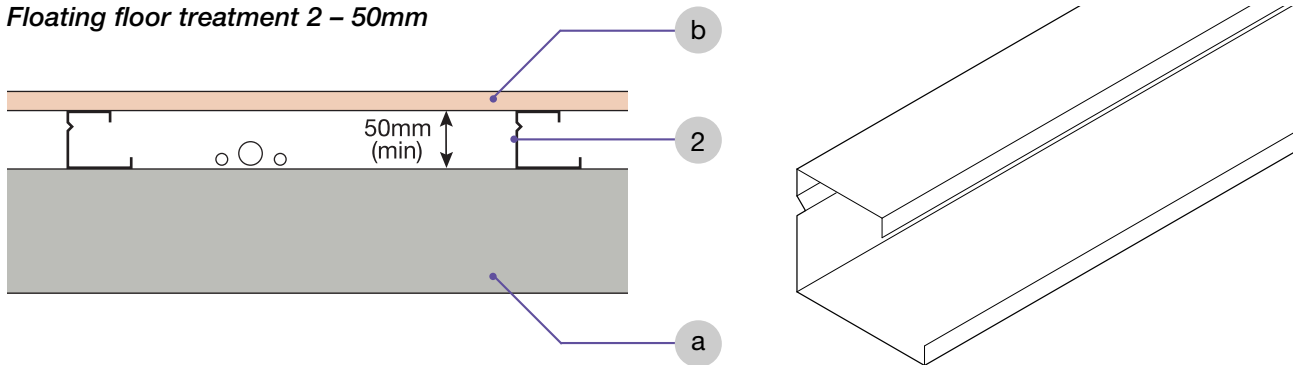
Appendix A3 – Specific Proprietary Products

British Gypsum GypFloor SB floating floor treatment for **robustdetails**[®] concrete separating floors. Refer to Table 7 in Introduction.

Floating floor treatment 1 – 70mm



Floating floor treatment 2 – 50mm



Key

- 1 British Gypsum 70 SB 65 steel batten.
- 2 British Gypsum 50 SB 65 steel batten.

- a **robustdetails**[®] concrete separating floor.
- b 18mm (min) t&g flooring board.

Note: The **robustdetails**[®] separating floor may require a levelling screed. Please refer to the relevant floor details in the Handbook.

This system must be installed in accordance with the manufacturer's instructions.

Gypframe GypFloor SB flanking strip SB3 must be applied around the perimeter of the flooring board to isolate floor from walls and skirting.

For further guidance on floating floor treatments and flanking strips, please refer to Appendix A1.

Contact details for British Gypsum Limited:

Telephone: 08705 456 123

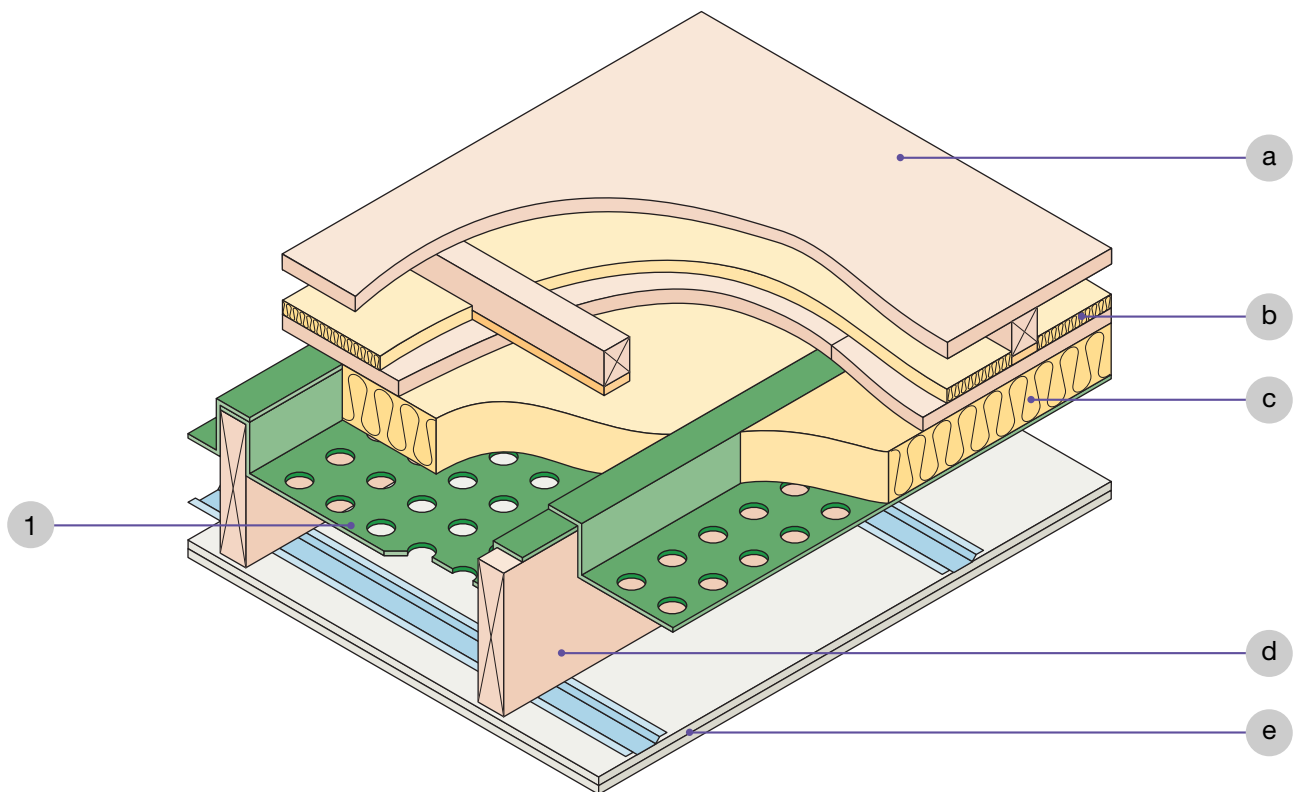
Fax: 08705 456 356

E-mail: bgtechnical.enquiries@bpb.com

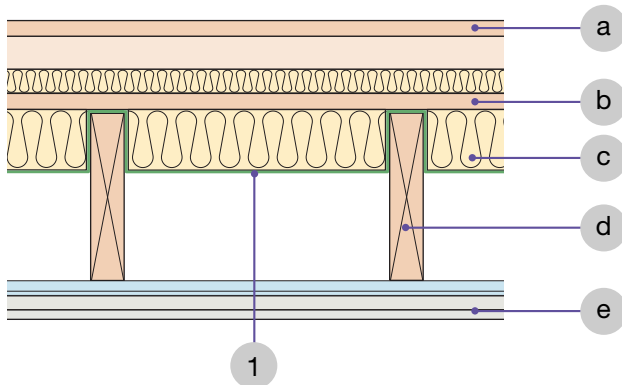
Web: www.british-gypsum.com

Appendix A3 – Specific Proprietary Products

Insumate insulation support tray for **robustdetails**® timber joist separating floors.
Refer to Table 7 in Introduction and the relevant Robust Details for acceptable joist types.

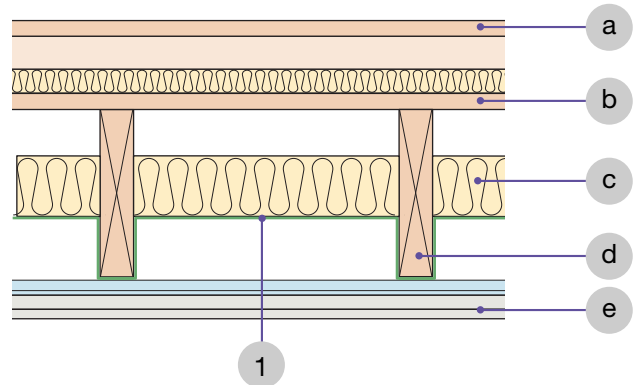


Option 1



Option 2

Insumate trays may be inverted



Key

- 1 Insumate insulation support tray.
 - a Floating floor treatment.
 - b Floor sub-deck.
 - c Absorbent material.
 - d Floor joist – Refer also to Table 7 in Introduction.
 - e Ceiling treatment.
- (For specification of items a to e, refer to the relevant Robust Details)

Note

Ensure absorbent material 'c' is fitted between all joists, and also between the final joist and the perimeter blocking.

Insumate must be installed in accordance with the manufacturer's instructions.

Contact details for Insumate Limited:

Telephone: 01768 398 991
Fax: 01768 398 991
E-mail: info@insumateltd.com
Web: www.insumateltd.com

Appendix A3 – Specific Proprietary Products

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Appendix B

Glossary

The definitions given below are for the purposes of this document only and are not intended to be rigorous.

Absorption

Conversion of sound energy into heat, often by the use of a porous material.

Absorbent material

Material that absorbs sound energy.

Airborne sound

Sound propagating through the air, often linked to noise sources such as speech and television.

Airborne sound insulation

Sound insulation that reduces the transmission of airborne sound between adjoining dwellings or parts of adjoining dwellings.

Block density

The net density of the block (kg/m^3), measured at the appropriate moisture content from Table 3.2 CIBSE Guide A (1999), necessary to achieve the required mass per unit area (kg/m^2) of wall.

Block thickness

The block thickness quoted is the work size. Permissible manufacturing tolerances in accordance with the appropriate material part of BS EN 771.

Built in insulation

Insulation batts built in during construction (not pumped or blown material).

Cavity stop

A proprietary product or material such as mineral wool (fibre) used to close the gap in a cavity wall.

Composite resilient batten

A timber batten which is composed of a timber batten with a prebonded resilient material to provide isolation between the flooring surface layers and floor base.

Cradle / Saddle

An intermediate support system (with a resilient layer base) which uses levelling packer pieces to support a timber batten, isolating it from the floor base.

C_{tr} (see also $rd \Delta R_w + C_{tr}$)

Spectrum adaptation term (No.2) from BS EN ISO 717-1 to take account of a specific sound spectra (which are predominantly low frequency based).

Decibel (dB)

The unit used for different acoustic quantities to indicate the level with respect to a reference level.

Density (kg/m^3)

Mass per unit volume, expressed in kilograms per cubic metre (kg/m^3).

Direct transmission

Sound which is transmitted only through the main separating element and involves no other flanking element.

D_{nT}

Standardised level difference. The difference in sound level between a pair of rooms (source and receiving rooms), for a stated frequency, which is corrected (normalised) for the reverberation time (in the receiving room). See BS EN ISO 140-4.

$D_{nT,w}$

Weighted standardised level difference. A single-number quantity (weighted) which characterises the airborne sound insulation between two rooms. See BS EN ISO 717-1.

Flanking element (e.g. flanking wall)

Any building element that contributes to the airborne sound or impact transmission between rooms in a building which is not the direct separating element (i.e. not the separating wall or separating floor).

Flanking strip or edge strip

A 5mm (min) resilient strip which is located at the perimeter of a floor to isolate the floor surface layer from the **perimeter walls and skirtings**. A typical example of a flanking strip is 5mm (min) foamed polyethylene. Rigid boards, (such as extruded, expanded or bead polystyrene) or mineral wool based products may not be used as a flanking strip where the walking surface is board based.

For screed floating floors the permitted flanking strip or edge strip detail will be dependant on the resilient layer system adopted and the relevant Robust Details must be strictly followed.

Flanking transmission

Airborne sound or impact transmission between rooms which is transmitted via flanking elements and/or flanking elements in conjunction with the main separating elements.

Flexible closer

A flexible cavity stop or cavity barrier which seals the air path in cavities linking adjoining dwellings.

Floating floor treatment

A timber floating floor system which may use battens, cradles or platform base; all of which use a resilient layer to provide isolation from the base floor and adjacent wall elements.

Flooring board

The boards which form the top surface of the floor. Boards should be wood-based panels 600mm (min) wide.

Habitable room

For the purposes of Section 5 **robustdetails**[®], habitable rooms are all rooms except the hall, staircase and landing.

Internal wall

A wall or partition which divides the dwelling space into different functions but which does not provide separation between different dwellings.

Internal floor

A floor which divides the dwelling space into different functions but which does not provide separation between different dwellings.

L'_{nT}

Standardised impact sound pressure level. The impact sound pressure level in the receiving room at a stated frequency, corrected (normalised) for the reverberation time in the receiving room. See BS EN ISO 140-7.

$L'_{nT,w}$

Weighted standardised impact sound pressure level. A single-number quantity (weighted) to characterise the impact sound insulation of floors. See BS EN ISO 717-2.

Mass per unit area (or surface density)

Mass per unit area is expressed in kilograms per square metre (kg/m²).

Mineral wool

A rock or glass based mineral material which can be manufactured in a quilt form or batt (more rigid) form.

Nominal density of gypsum-based board

The density stated in the Robust Details with a tolerance of up to -0.3 kg/m² per layer.

Proprietary screed

A self-compacting floor screed, which achieves a nominal mass per unit area of 80 kg/m² as laid, without the requirement for manual or mechanical compacting.

$rd\Delta L_w$

This is specific to **robustdetails**[®] performance requirements and is the difference in weighting between two floor impact tests undertaken in an acoustic test laboratory. This should not be confused with ΔL_w using BS EN ISO 717-2.

$rd\Delta R_w+C_{tr}$

This is specific to **robustdetails**[®] performance requirements and is the difference in weighting between two floor airborne tests undertaken in an acoustic test laboratory.

Rip liner

Small section of wall lining material or any board material fitted in advance of the main wall lining to allow the installation of the floating floor treatment. This does not necessarily need to be the same thickness as the wall lining material.

Particular attention should also be paid to Building (Scotland) Regulations Section 2 - Fire.

R_w

A single-number quantity (weighted) which characterises the airborne sound insulation of a building element from measurements undertaken in an acoustic test laboratory. See BS EN ISO 717-1.

Robust Details

A Robust Detail for Section 5 of the Building (Scotland) Regulations has been given the status of Robust Detail following analysis of test results against criteria agreed with the Local Authority Building Standards Scotland (LABSS).

Sealant (acoustic or flexible)

A gun-applied sealant which has resilience and forms a non-rigid caulking.

Separating floor

A floor that separates adjoining dwellings.

Separating wall

A wall that separates adjoining dwellings.

Spandrel panel

An element manufactured to divide or close off the profile in the roof space.

t&g

Tongue and groove edged jointing of flooring boards (bonded lapped joints are also acceptable)

Appendix C

Determination of the acoustic performance requirements for floating floor treatments used with **robustdetails**[®] timber separating floors

To determine the acoustic performance of floating floor treatments on **robustdetails**[®] timber separating floors airborne and impact measurements should be undertaken in an acoustic test laboratory. The following test procedure may be used for **robustdetails**[®] timber separating floors with floating floor treatments. The following sections C.1 to C.4 outline the measurement and performance rating criteria.

C.1 Test Laboratory Requirements

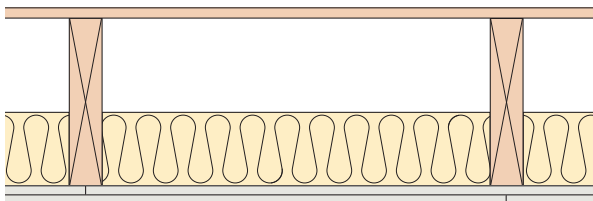
The test facility must have UKAS Accreditation (or EC equivalent) for the measurement of sound insulation in the laboratory, for both airborne sound insulation and impact sound transmission. The test measurement should be undertaken in accordance with BS EN ISO 10140-2, BS EN ISO 10140-3 and BS EN ISO 10140-4 and the performance of each measurement rated in accordance with BS EN ISO 717 (Parts 1 & 2). The measurements should be undertaken in a laboratory with suppressed flanking transmission and in accordance with BS EN ISO 10140-5.

The R'_{max} value of the laboratory test facility shall be at least 15 dB greater than the sound insulation value of the structure under test.

C.2 Core (or base) Timber Floor and Floating Floor Treatment

Testing should be undertaken on a core (or base) floor which consists of the following construction specification:

Floor Decking	18mm OSB timber decking board (or equivalent timber based board) with mass per unit area of 10-11 kg/m ²
Joists	235mm x 50mm solid timber joists C16 grade timber
Insulation	100mm glass based mineral wool insulation with a density of 10-11 kg/m ³
Ceiling	Two layers of gypsum-based board with an overall mass per unit area of 23-25 kg/m ² .



Laboratory Test Core Floor Construction

The timber joists should be mounted on joist hangers at 450mm centres and the 100mm (deep) glass based mineral wool insulation should be placed in the cavities between the joists and also between cavities formed between the joists and the test aperture border. The floor decking should be mounted on the timber joists with screws at 300mm centres. All junctions between the floor surface perimeter and test aperture should be sealed with a flexible or acoustic sealant.

The ceiling layers should be mounted with joints staggered and the first layer (inner layer) should be fixed to the underside of the joists with screws, at 300mm centres within the field of the boards and at 150mm centres at the board ends. The second layer (outer layer) should be fixed with screws, at 230mm centres within the field of the boards and at 150mm centres at the board ends. The perimeter of the ceiling should be sealed with flexible or acoustic mastic sealant and all joints and screwheads taped with self-adhesive tape.

Floating Floor Treatment

The floating floor treatment should cover the entire test area of the core floor surface and should be constructed in accordance with the manufacturer's instructions. All **robustdetails**[®] floating floor treatments require a flanking strip to isolate the edge of the floorboard from the perimeter walls. As such the manufacturer should also use the flanking strip, which they would normally use on site, in the laboratory measurements.

C.3 Testing Required

For the purposes of evaluating the performance of a floating floor treatment for **robustdetails**[®] involving timber separating floors four different measurements are required (2 airborne and 2 impact measurements). The following measurements are required:

Airborne

Test 1 Determination of $R_w+C_{tr}^*$ for the core (or base) timber floor.

Test 2 Determination of $R_w+C_{tr}^*$ for the core (or base) timber floor with the floating floor treatment applied to the core floor surface.

Impact

Test 3 Determination of $L_{n,w}$ for the core (or base) timber floor.

Test 4 Determination of $L_{n,w}$ for the core (or base) timber floor with the floating floor treatment applied to the core floor surface.

Note: Testing of floating floor treatments done in accordance with previous versions of this Appendix C, will still be valid.

C.4 Expression of Performance

The airborne sound insulation performance of the floating floor treatment should be expressed as the improvement in airborne sound insulation ($rdR_w + C_{tr}$)* as a result of the application of the floating floor treatment to the core floor ($rd\Delta R_w + C_{tr}$ * = Test 2 - Test 1).

The impact sound transmission performance of the floating floor treatment should be expressed as the reduction in impact sound transmission ($rd\Delta L_w$) as a result of the application of the floating floor treatment to the core floor ($rd\Delta L_w$ = Test 3 - Test 4).

* These are commonly referred to as delta (Δ) requirements and are measured in acoustic laboratories for specific products (e.g. resilient bars or floating floor treatments). The term C_{tr} is included for assessing the low frequency performance of such products during laboratory tests. (This is similar to the approach outlined in the Example Constructions for use with Section 5: Noise Domestic Handbook Scotland regarding such components).

Under Section 5: Noise the on-site (or field) performance requirements for separating walls and floors involving airborne sound insulation should not include C_{tr} and are only reported as $D_{nT,w}$.

Appendix D

Determination of the acoustic performance requirements for floating floor treatments used with **robustdetails**[®] concrete and steel-concrete composite separating floors

To determine the acoustic performance of floating floor treatments on **robustdetails**[®] concrete separating floors airborne and impact measurements should be undertaken in an acoustic test laboratory. The following test procedure may be used for **robustdetails**[®] concrete and steel-concrete composite separating floors with floating floor treatments. The following sections D.1 to D.4 outline the measurement and performance rating criteria.

D.1 Test Laboratory Requirements

The test facility must have UKAS Accreditation (or EC equivalent) for the measurement of sound insulation in the laboratory for impact sound transmission. The test measurement should be undertaken in accordance with BS EN ISO 10140-3 and BS EN ISO 10140-4 and the performance of each measurement rated in accordance with BS EN ISO 717-2.

The measurements should be undertaken in a laboratory with suppressed flanking transmission and in accordance with BS EN ISO 10140-5.

The R'_{max} value of the laboratory test facility shall be at least 15 dB greater than the sound insulation value of the structure under test.

D.2 Core (or base) Concrete Floor and Floating Floor Treatments

Testing should be undertaken using the heavyweight reference floor as defined within BS EN ISO 10140-5 Annex C, paragraphs C2 to C2.2.

No ceiling treatments are permitted and no additional ceiling layers should be applied.

Floating Floor Treatment

The floating floor treatment should cover the entire test area of the core floor surface and should be constructed in accordance with the manufacturer's instructions. All **robustdetails**[®] floating floor treatments require a flanking strip to isolate the edge of the flooring board from the perimeter walls. As such the manufacturer should also use the flanking strip, which they would normally use on site, in the laboratory measurements.

D.3 Testing Required

For the purposes of evaluating the performance of a floating floor treatment for **robustdetails**[®] concrete and steel-concrete composite separating floors, two different impact measurements are required. The following measurements are required:

Impact

Test 1 Determination of $L_{n,w}$ for the core (or base) concrete floor.

Test 2 Determination of $L_{n,w}$ for the core (or base) concrete floor with the floating floor treatment applied to the core floor surface.

D.4 Expression of Performance

The impact sound transmission performance of the floating floor treatment should be expressed as the reduction in impact sound transmission ($rd\Delta L_w$) as a result of the application of the floating floor treatment to the core floor ($rd\Delta L_w = \text{Test 1} - \text{Test 2}$).

Note: Testing of floating floor treatments done in accordance with previous versions of this Appendix D, will still be valid.

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Appendix E

Determination of the acoustic performance requirements for resilient bars used on ceilings

To determine the acoustic performance of resilient bars for use within **robust**details® separating floors airborne and impact measurements should be undertaken in an acoustic test laboratory. The performance of the resilient bars is calculated from the improvement in airborne and impact performance by a ceiling connected via resilient bars as opposed to a direct fix ceiling. The ceiling linings should be identical in both tests. The following sections E.1 to E.4 outline the measurement and performance rating criteria.

E.1 Test Laboratory Requirements

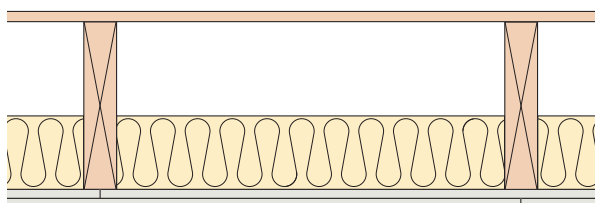
The test facility must have UKAS Accreditation (or EC equivalent) for the measurement of sound insulation in the laboratory, for both airborne sound insulation and impact sound transmission. The test measurement should be undertaken in accordance with BS EN ISO 140-3, BS EN ISO 140-6 and the performance of each measurement rated in accordance with BS EN ISO 717 (Parts 1 & 2). The measurements should be undertaken in a laboratory with suppressed flanking transmission and in accordance with BS EN ISO 140-1 and BS EN ISO 140-2.

The R'_{max} value of the laboratory test facility shall be at least 10 dB greater than the sound insulation value of the structure under test.

E.2 Direct Fix Ceiling versus Resilient Bar Ceiling

Testing should be undertaken on a floor with a direct fix ceiling which consists of the following construction specification:

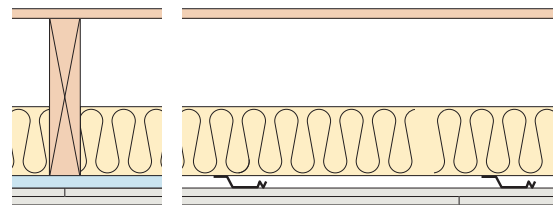
Floor Decking	15mm OSB timber decking board (or equivalent timber based board) with mass per unit area of 10-11 kg/m ²
Joists	235mm x 50mm solid timber joists C16 grade timber
Insulation	100mm glass based mineral wool insulation with a density of 10-11 kg/m ³
Ceiling	Two layers of gypsum-based board with an overall mass per unit area of 23-25 kg/m ² .



Laboratory Test Construction of Floor with Direct Fix Ceiling

The timber joists should be mounted on joist hangers at 450mm centres and the 100mm (deep) glass based mineral wool insulation should be placed in the cavities between the joists and also between cavities formed between the joists and the test aperture border. The floor decking should be mounted on the timber joists with screws at 300mm centres. All junctions between the floor surface perimeter and test aperture should be sealed with a flexible or acoustic sealant.

The direct fix ceiling is composed of two layers of gypsum-based board which have an overall mass per unit area of 23-25 kg/m² and have a minimum overall thickness of 30mm. The ceiling layers should be mounted with joints staggered and the first layer (inner layer) should be fixed to the underside of the joists with screws, at 300mm centres within the fields of the boards and 150mm centres at the board ends, and the second layer (outer layer) should be fixed with screws, at 230mm centres within the fields of the boards and at 150mm centres at the board ends. The perimeter of the ceiling should be sealed with flexible or acoustic sealant and all joints and screwheads taped with self-adhesive tape.



Laboratory Test Construction of Floor with the Ceiling Connected via Resilient Bars

The floor construction and materials used should be identical to the Direct Fix test structure except that the ceiling is only connected to the joists via the resilient bars. The resilient bars should be directly connected to the joists at 400mm centres using metal screws, mounted perpendicular to the joist span and in accordance with the manufacturer's instructions. The gypsum-based board ceiling layers should be identical in their material properties to those used for the Direct Fix ceiling.

Appendix E

E.3 Testing Required

For the purposes of evaluating the performance of resilient bars for **robustdetails**® four different measurements are required (2 airborne and 2 impact measurements). The following measurements are required:

Airborne

Test 1 Determination of $R_w+C_{tr}^*$ for the floor with a direct fix ceiling.

Test 2 Determination of $R_w+C_{tr}^*$ for the floor with a ceiling connected with resilient bars.

Impact

Test 3 Determination of $L_{n,w}$ for the floor with a direct fix ceiling.

Test 4 Determination of $L_{n,w}$ for the floor with a ceiling connected with resilient bars.

E.4 Expression of Performance

The airborne sound insulation performance of resilient bars should be expressed as the improvement in airborne sound insulation $(rd\Delta R_w+C_{tr})^*$ as a result of the application of the resilient bar connected ceiling as opposed to the direct fix ceiling $(rd\Delta R_w+C_{tr}^* = \text{Test 2} - \text{Test 1})$.

The impact sound transmission performance of resilient bars should be expressed as the reduction in impact sound transmission $(rd\Delta L_w)$ as a result of the application of the resilient bar connected ceiling as opposed to the direct fix ceiling $(rd\Delta L_w = \text{Test 3} - \text{Test 4})$.

* These are commonly referred to as delta (Δ) requirements and are measured in acoustic laboratories for specific products (e.g. resilient bars or floating floor treatments). The term C_{tr} is included for assessing the low frequency performance of such products during laboratory tests. (This is similar to the approach outlined in the Example Constructions for use with Section 5: Noise Domestic Handbook Scotland regarding such components).

Under Section 5: Noise the on-site (or field) performance requirements for separating walls and floors involving airborne sound insulation should not include C_{tr} and are only reported as $D_{nT,w}$.

Appendix F

Determination of the Influence on the Acoustic Performance of **robust**details® Timber Separating Floors due to the presence of Downlighters (Recessed Lighting)

To determine the influence on the acoustic performance due to the presence of downlighters for use within **robust**details® timber separating floors airborne and impact measurements should be undertaken in an acoustic test laboratory. For the purposes of **robust**details® separating floors the following test procedure may be used.

Note: This test method may also be used by manufacturers to demonstrate whether they can exceed the spacing/area criteria which are specified in the Robust Details specification sheets for the timber, concrete and steel-concrete composite floors.

The influence on the acoustic performance of the timber floor is calculated from airborne and impact measurements on a timber floor structure with and without downlighters present. The timber floor structure must be identical in both sets of tests (for airborne and impact) except for the presence of the downlighters.

For downlighters to qualify for inclusion in **robust**details® timber separating floors, the difference in performance with the downlighters present should be no worse than 1dB for both airborne and impact measurements, when tested under the following conditions. The following sections F.1 to F.4 outline the measurement and performance rating criteria.

F.1 Test Laboratory Requirements

The test facility must have UKAS Accreditation (or EC equivalent) for the measurement of sound insulation in the laboratory, for both airborne sound insulation and impact sound transmission. The test measurement should be undertaken in accordance with BS EN ISO 140-3, BS EN ISO 140-6 and the performance of each measurement rated in accordance with BS EN ISO 717 (Parts 1 & 2). The measurements should be undertaken in a laboratory with suppressed flanking transmission and in accordance with BS EN ISO 140-1 and BS EN ISO 140-2.

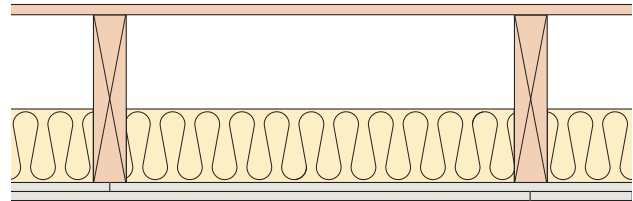
The R'_{max} value of the laboratory test facility shall be at least 10dB greater than the sound insulation value of the structure under test.

F.2 Core Timber Floor (no downlighters)

Testing should be undertaken on a floor with the following construction specification:

Floor Decking	15mm OSB timber decking board (or equivalent timber based board) with mass per unit area of 10-11 kg/m ²
Joists	235mm x 50mm solid timber joists C16 grade timber

Insulation	100mm glass based mineral wool insulation with a density of 10-11 kg/m ³
Ceiling	Two layers of gypsum-based board with an overall mass per unit area of 23-25 kg/m ² .



Construction of Initial Timber Floor (no downlighters)

The timber joists should be mounted on joist hangers at 450mm centres and the 100mm (deep) glass based mineral wool insulation should be placed in the cavities between the joists and also between cavities formed between the joists and the test aperture border. The floor decking should be mounted on the timber joists with screws at 300mm centres. All junctions between the floor surface perimeter and test aperture should be sealed with a flexible or acoustic mastic sealant.

The direct fix ceiling is composed of two layers of gypsum-based board which have an overall mass per unit area of 23-25 kg/m² and have a minimum overall thickness of 30mm. The ceiling layers should be mounted with joints staggered and the first layer (inner layer) should be fixed to the underside of the joists with screws, at 300mm centres within the fields of the boards and 150mm centres at the board ends, and the second layer (outer layer) should be fixed with screws, at 230mm centres within the fields of the boards and at 150mm centres at the board ends. The perimeter of the ceiling should be sealed with flexible or acoustic mastic sealant and all joints and screwheads taped with self adhesive tape.

Construction of Timber Floor with Downlighters

The floor construction and materials used should be identical to the initial timber floor test structure except that downlighters have been installed into the ceiling. The downlighters should be spaced at a minimum of 1 downlighter per 2m² of ceiling area and at not less than 0.75m spacings. (e.g. 10m² of ceiling area equates to at least 5 downlighters). The test results must indicate the number per unit area and the spacings used in the tests and, if successful manufacturers are expected to include this information in their test reports and fitting instructions.

F.3 Testing Required

For the purposes of evaluating the influence on performance due to downlighters for **robust**details® timber separating floors, four different measurements are required (2 airborne and 2 impact measurements). The following measurements are required:

Airborne

Test 1 Determination of $R_w+C_{tr}^*$ for the initial timber floor

Test 2 Determination of $R_w+C_{tr}^*$ for the initial timber floor plus downlighters

Impact

Test 3 Determination of $L_{n,w}$ for the initial timber floor.

Test 4 Determination of $L_{n,w}$ for the initial timber floor plus downlighters

F.4 Performance Required for **robust**details® Timber Separating Floors

For airborne sound insulation performance the difference between Test 2 and Test 1 (Test 2 -Test 1) should be no worse than (-1dB)

For impact sound transmission performance the difference between Test 3 and Test 4 (Test 3 -Test 4) should be no worse than (-1dB).

NOTE: Downlighters which qualify for the above performance requirements must also be of suitable integrity to meet the appropriate Building (Scotland) Regulations Section 2 - Fire.

* These are commonly referred to as delta (Δ) requirements and are measured in acoustic laboratories for specific products (e.g. resilient bars or floating floor treatments). The term C_{tr} is included for assessing the low frequency performance of such products during laboratory tests. (This is similar to the approach outlined in the Example Constructions for use with Section 5: Noise Domestic Handbook Scotland regarding such components).

Under Section 5: Noise the on-site (or field) performance requirements for separating walls and floors involving airborne sound insulation should not include C_{tr} and are only reported as $D_{nT,w}$.