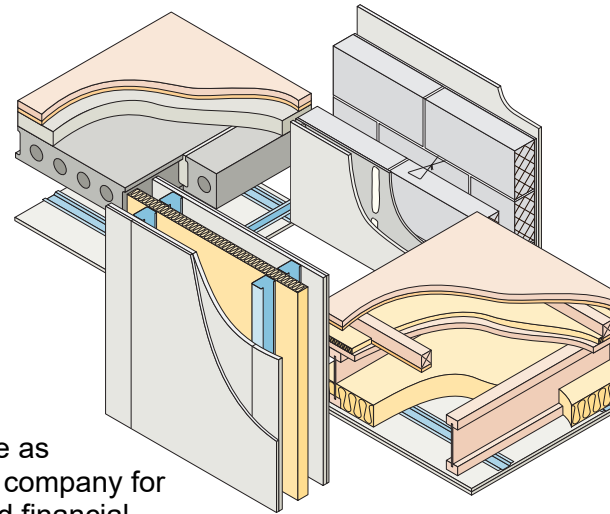


## January 2018 Update Pack



Dear Colleague,

The first Update Pack of the year, and the first welcome from me as Chief Executive. Although new to the role, I have been with the company for nine years with responsibility for the commercial, operational and financial aspects of the business.

Now onto the Update, and in response to a large number of technical queries, we have added guidance on the use of plain dense blocks in place of the rebated blocks shown in E-FC-6 and E-FC-7. While this can help with procurement, it can also add to the overall floor thickness, so refer to the revised pages to see if it could work for you.

The flanking walls on pages 2 and 3 of E-FC-18 revert to 20 kg/m<sup>2</sup> of gypsum board, down from the 22 kg/m<sup>2</sup> included in the June 2017 Update.

In Appendix A1, we have given additional guidance on the correct use of Type A wall ties; and have also clarified the requirements regarding lining the generic spandrels and rooms-in-roofs.

### **Please update your October 2017, 4th Edition Handbook as follows:**

1. Remove and replace **just page 5/6** of E-FC-6.
2. Remove and replace **just page 5/6** of E-FC-7.
3. Remove and replace **just pages 1 to 4** of E-FC-18.
4. Remove and replace **just pages 1/2 and 5/6** of Appendix A1.

Yours sincerely

A handwritten signature in black ink, appearing to read 'John Thompson'. The signature is written in a cursive style and is positioned above a horizontal line.

**John Thompson**  
Chief Executive,  
Robust Details Limited





# Changes to the fourth edition following January 2018 update

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Section Page Amendment

## Separating Floor – Concrete

### E-FC-6

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Floor block types	5	Guidance added relating to plain dense blocks.
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### E-FC-7

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Floor block types	5	Guidance added relating to plain dense blocks.
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### E-FC-18

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External flanking walls	2-3	Wallboard weight amended from 22 kg/m <sup>2</sup> to 20 kg/m <sup>2</sup> .
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## Appendix A1

Wall ties	1	Guidance added relating to wall tie density and spacing.
Spandrel panels	5	Section reworded to improve clarity of the specification.
Room-in-roof	5	Section reworded to improve clarity of the specification.
Gypsum-based board	5	Section reworded to improve clarity of the specification.



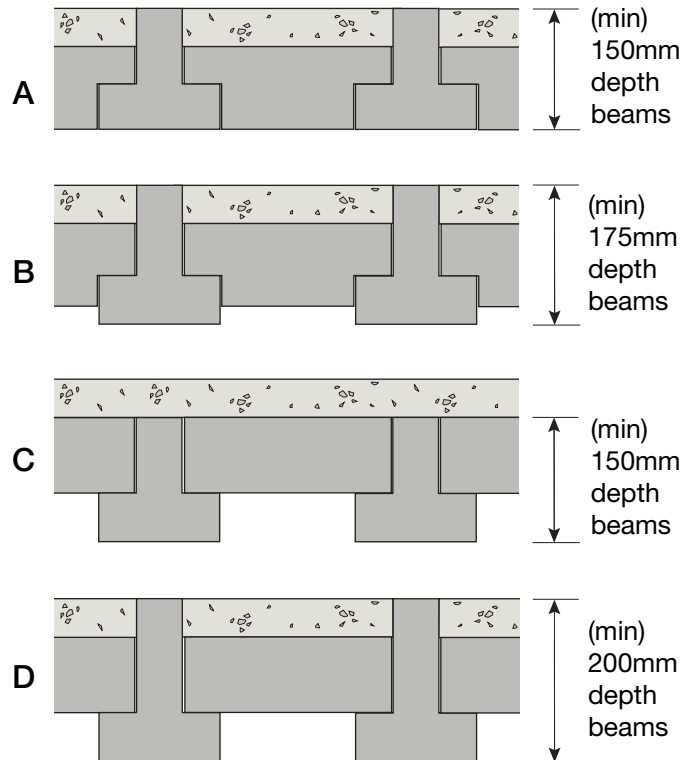
## 7. Floor block types

### Beam/block variations

To minimise the overall floor depth, rebated or 'T' shape dense blocks may be used.

Alternatively, as indicated in 'C' and 'D' below, plain dense blocks may be used.

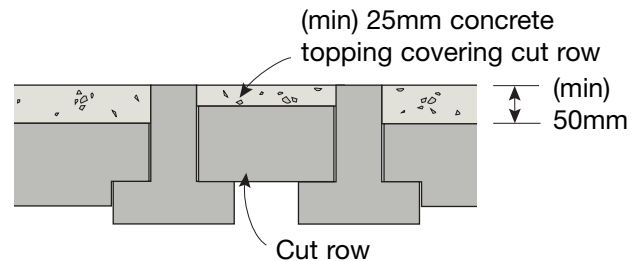
In all cases, the C20 topping must be applied such that it provides a minimum 50mm cover to the blocks.



### Cut rows

No more than one cut row of floor blocks may be used per room floor with minimum 25mm concrete topping.

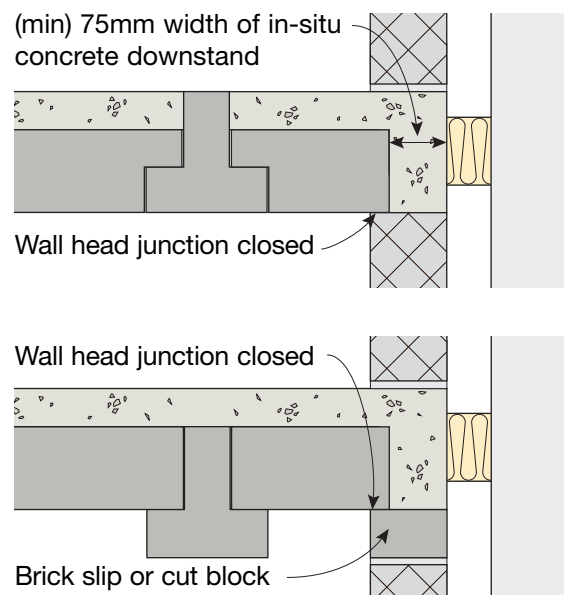
Where a cut row junctions with perimeter walls ensure that no gap is left and that a cut block or brick slip is used to seal this junction prior to applying concrete topping.



### Wall head and floor block junctions

No gaps should remain where the last floor block junctions at the wall head.

Where the floor block does not close this gap, brick slips or cut blocks may be used.



## 8. Ceiling treatments for E-FC-6

All ceiling treatments must be installed in accordance with the manufacturer's instructions. All ceiling joints must be sealed with tape or caulked with sealant.

The minimum depth between top of beams and ceiling board **must not be less** than 300mm.

Note: the sound insulation performance of all ceiling treatments is increased if:

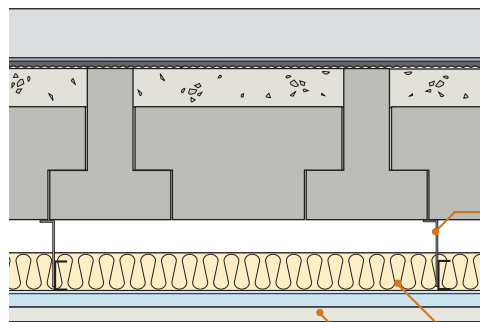
- resilient hangers are used
- increased thickness or density of mineral fibre quilt is used. (Do not fully fill the ceiling void with quilt.)

### 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 2m<sup>2</sup> 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 Regulations Part B – Fire Safety.



### Floor depth requirements and ceiling treatments

All E-FC-6 floors must have a minimum depth of 300mm **between top of beam and ceiling board**

Only suspended metal frame ceilings systems may be used

Min 50mm mineral fibre quilt (min 10kg/m<sup>3</sup>) in the ceiling void to cover whole ceiling board area

One layer of nominal 10kg/m<sup>2</sup> gypsum-based board

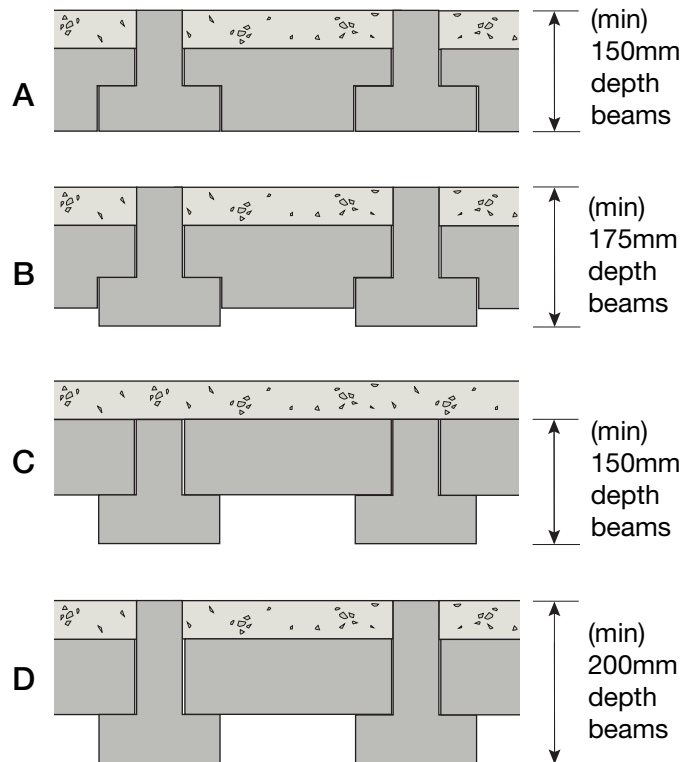
## 7. Floor block types

### Beam/block variations

To minimise the overall floor depth, rebated or 'T' shape dense blocks may be used.

Alternatively, as indicated in 'C' and 'D' below, plain dense blocks may be used.

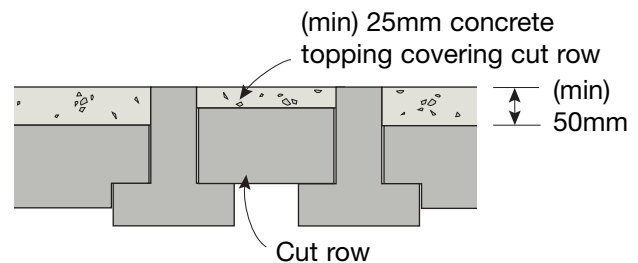
In all cases, the C20 topping must be applied such that it provides a minimum 50mm cover to the blocks.



### Cut rows

No more than one cut row of floor blocks may be used per room floor with minimum 25mm concrete topping.

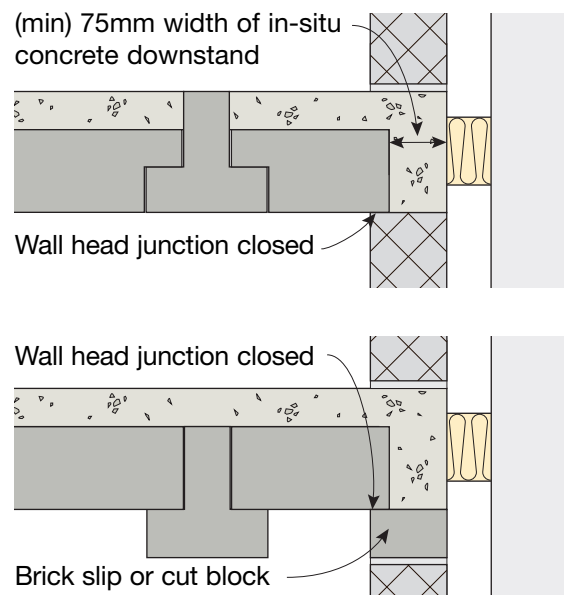
Where a cut row junctions with perimeter walls ensure that no gap is left and that a cut block or brick slip is used to seal this junction prior to applying concrete topping.



### Wall head and floor block junctions

No gaps should remain where the last floor block junctions at the wall head.

Where the floor block does not close this gap, brick slips or cut blocks may be used.



## 8. Ceiling treatments for E-FC-7

All ceiling treatments must be installed in accordance with the manufacturer's instructions. All ceiling joints must be sealed with tape or caulked with sealant.

The minimum depth between top of beams and ceiling board **must not be less** than 300mm.

Note: the sound insulation performance of all ceiling treatments is increased if:

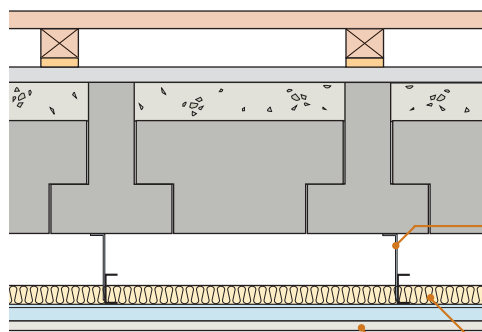
- resilient hangers are used
- increased thickness or density of mineral fibre quilt is used. (Do not fully fill the ceiling void with quilt.)

### 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 2m<sup>2</sup> 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 Regulations Part B – Fire Safety.



### Floor depth requirements and ceiling treatments

All E-FC-7 floors must have a minimum depth of 300mm **between top of beam and ceiling board**

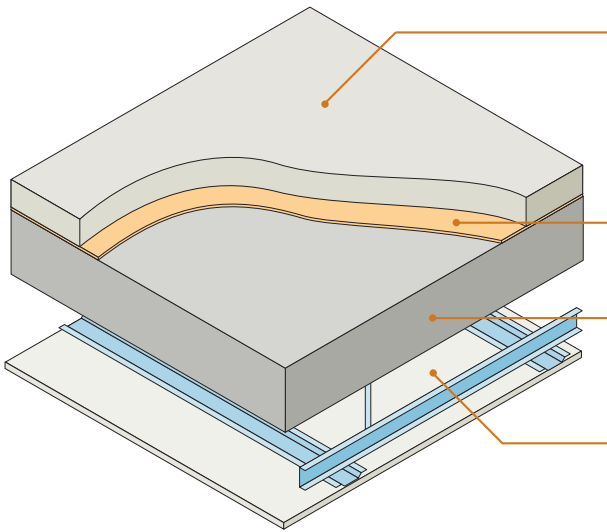
Only suspended metal frame ceilings systems may be used

Min 25mm mineral fibre quilt (min 10kg/m<sup>3</sup>) in the ceiling void to cover whole ceiling board area

One layer of nominal 10kg/m<sup>2</sup> gypsum-based board



- Insitu concrete slab with flat soffit
- For use in reinforced concrete frame construction
- Bonded resilient floor covering, or screed laid on resilient layer system



<b>Screed</b>	65mm (min) cement:sand screed or 40mm (min) proprietary screed of nominal 80 kg/m <sup>2</sup> mass per unit area
<b>Resilient layer</b>	See list below and section 7, or see section 8 for bonded resilient floor coverings
<b>Structural floor</b>	225mm (min) insitu concrete floor slab, 2400 kg/m <sup>3</sup> (min) density without screed
<b>Ceiling</b>	See section 9 for suitable ceiling treatment

**Reinforced concrete frame construction - alternative external (flanking) wall construction**

Storey height glazing units and external insulated cladding panels are an acceptable alternative to the cavity walls illustrated provided:

- Glazing units should not be continuous between storeys
- Mullion or transom supports/framing should not be continuous between dwellings
- Refer to Appendix A

**Under-screed Resilient Layer systems**

Only the following under-screed Resilient Layer systems may be used on E-FC-18 (see also Section 7):

- Thermal Economics 6mm Iso Rubber and IsoEdge
- *Cellecta*® YELOfon® HD10+ and E-strip
- Icopal-MONARFLOOR® TRANQUILT® system
- Thermal Economics IsoRubber Base HP3 and IsoEdge
- InstaCoustic InstaLay 65
- Thermal Economics Iso Rubber Code and IsoEdge 6/260
- Regupol Quietlay

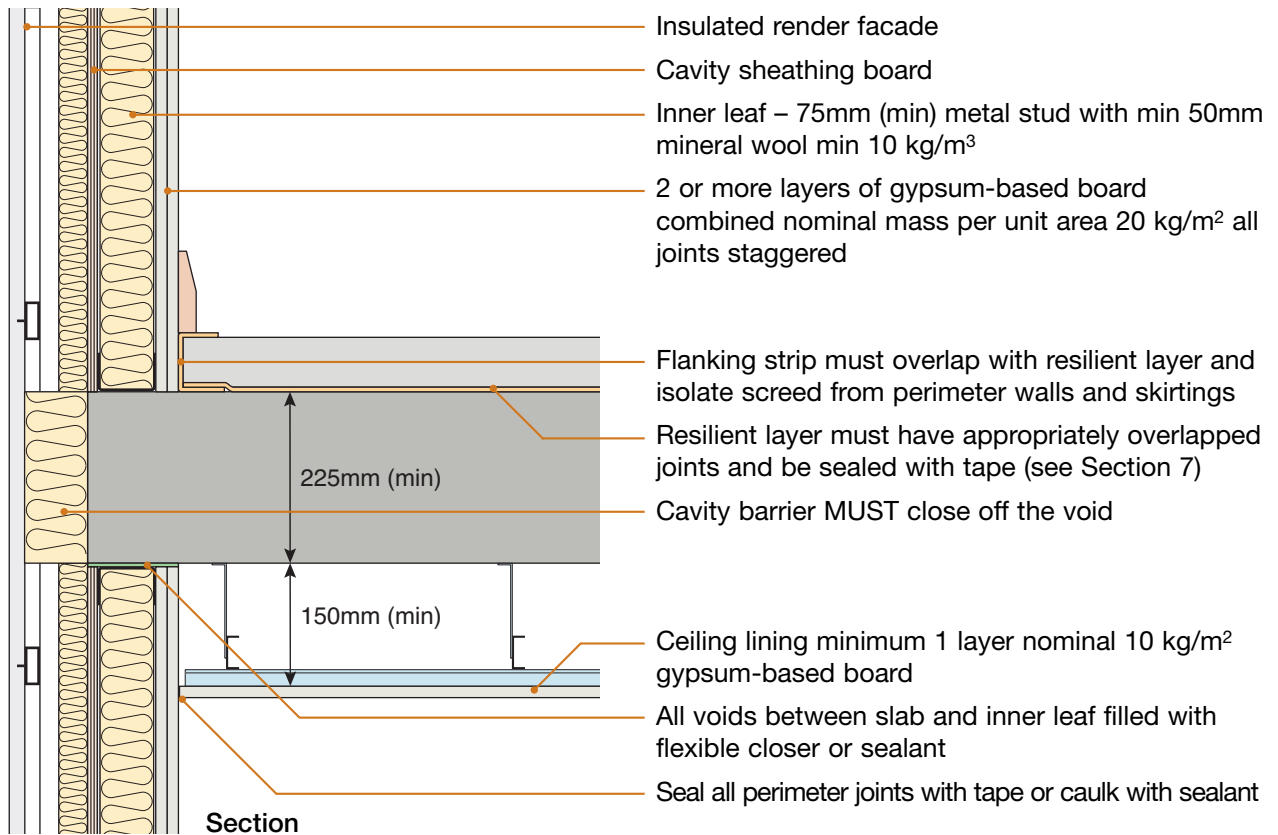
**When using under-screed resilient layer systems:**

- Ensure resilient layer is laid over the entire floor surface and has overlapped joints appropriately sealed with tape
- Ensure resilient layer overlaps with flanking strip and is taped and sealed at joints. On no account should the screed come into contact with the floor slab or perimeter walls
- Ensure the flanking strip isolates the skirting and wall linings. On no account should the screed come into contact with the wall lining and skirting
- Refer to Section 7 for details of installation, and requirements for proprietary screeds
- Refer to Appendix A

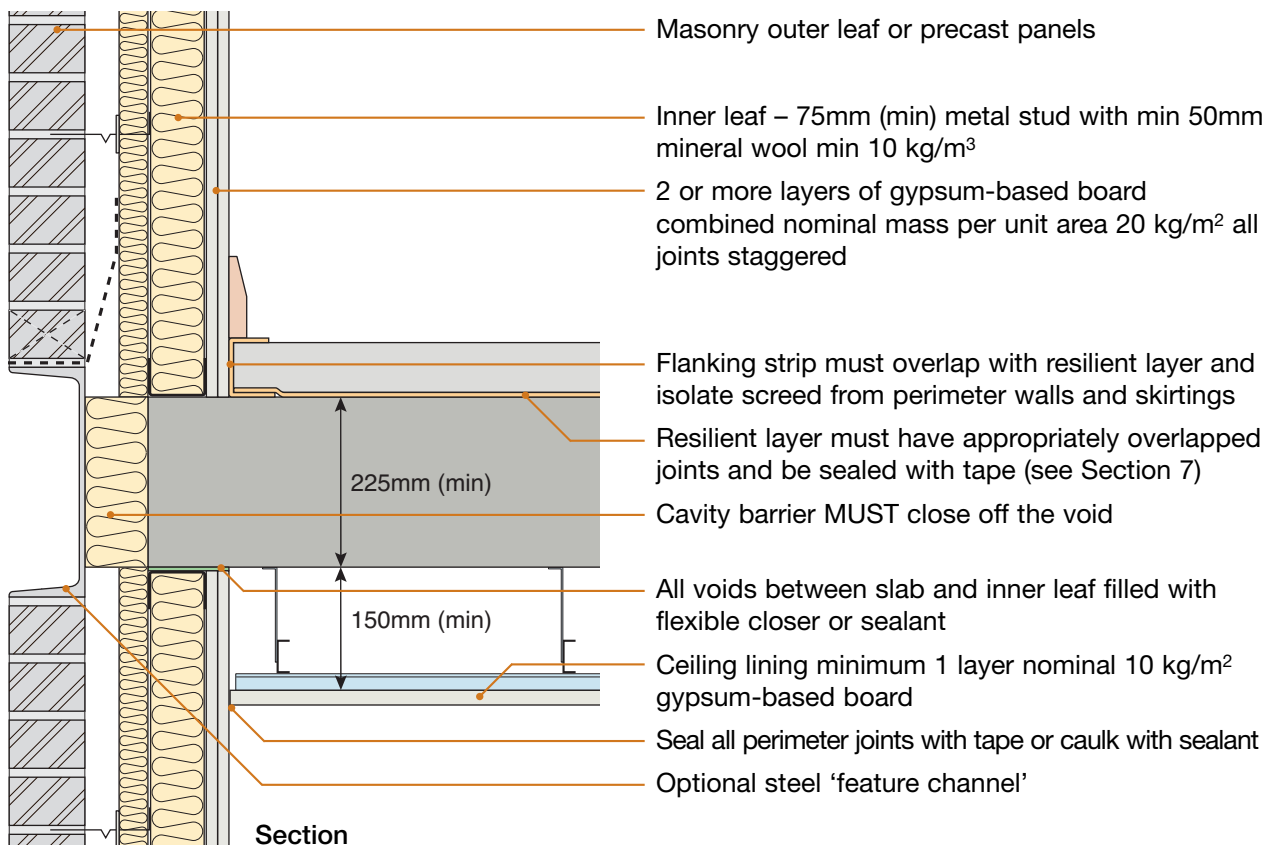
**Bonded Resilient floor coverings**

Refer to Section 8 for bonded resilient floor covering requirements

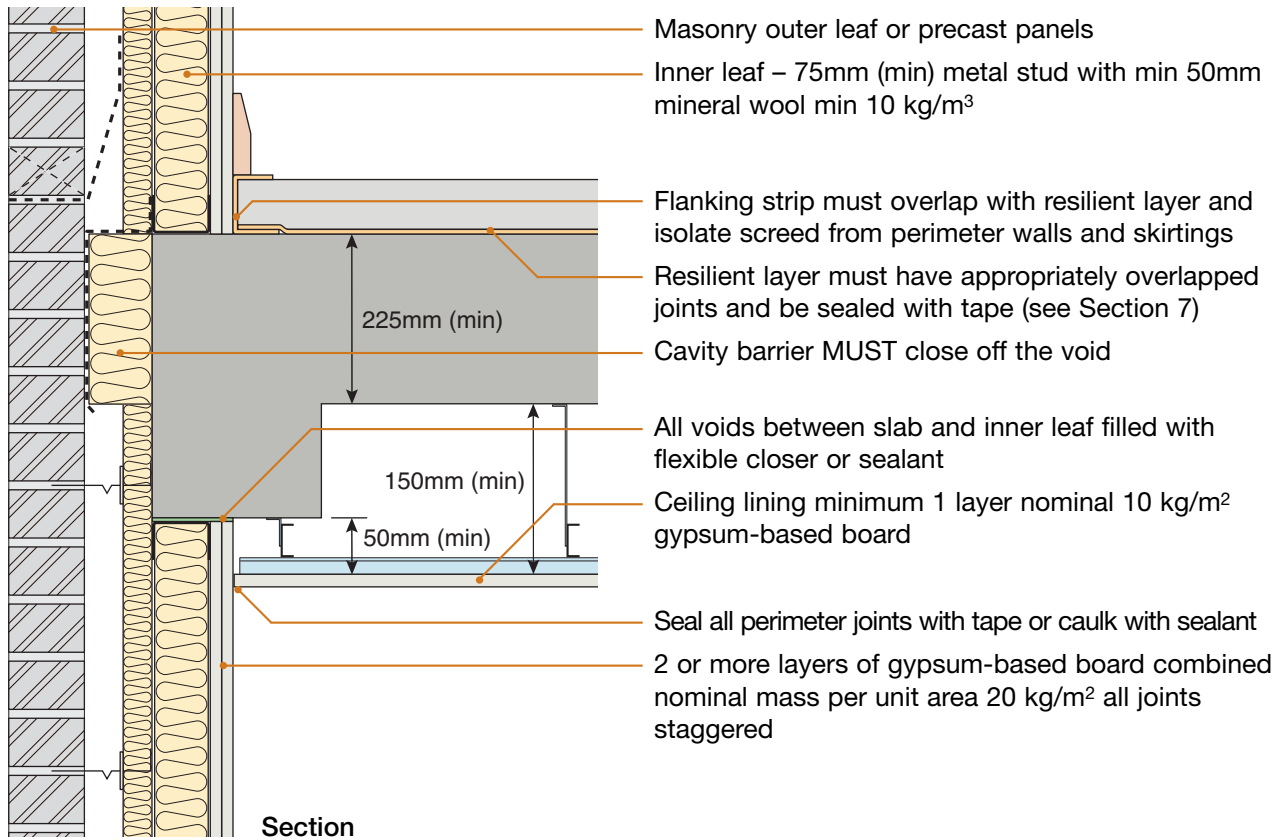
1. External (flanking) wall junction – insulated cladding



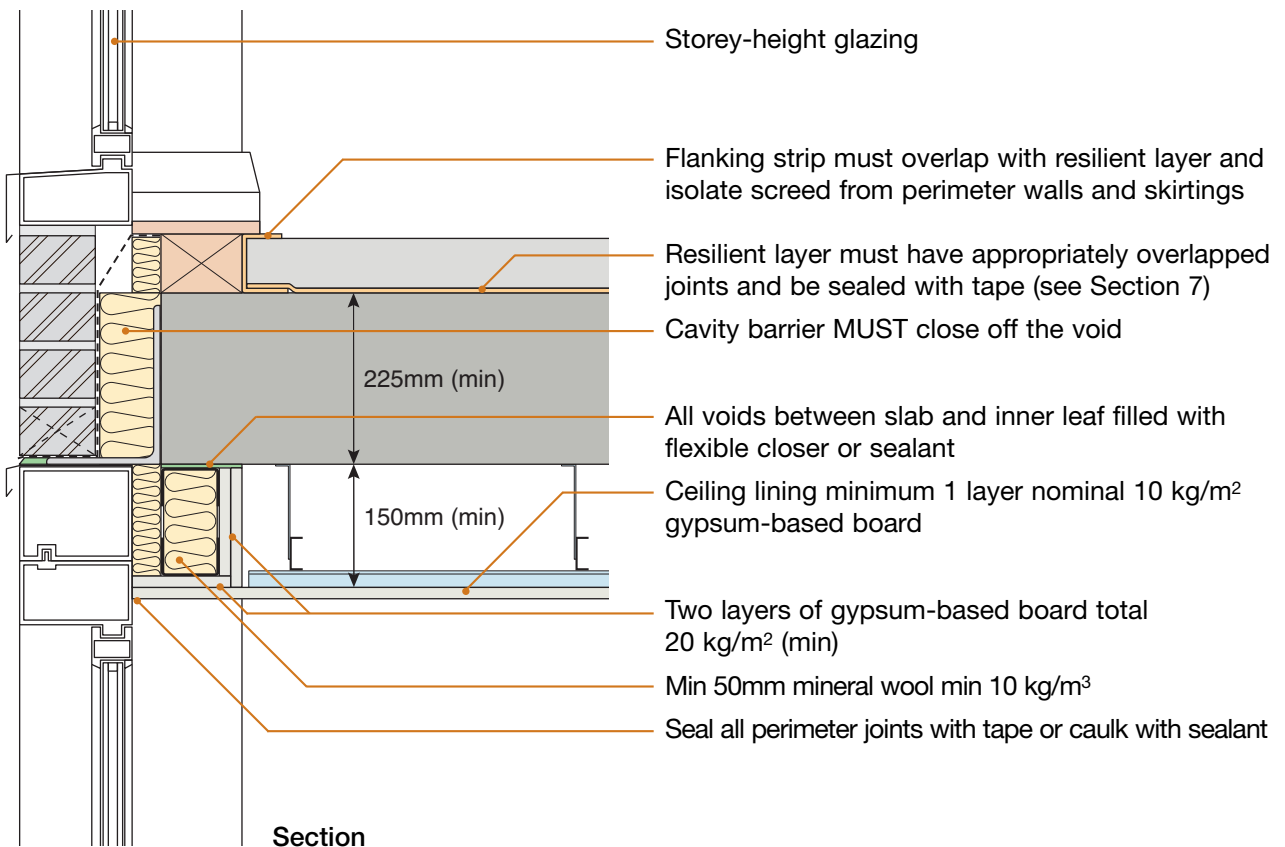
2. External (flanking) wall junction – masonry outer leaf



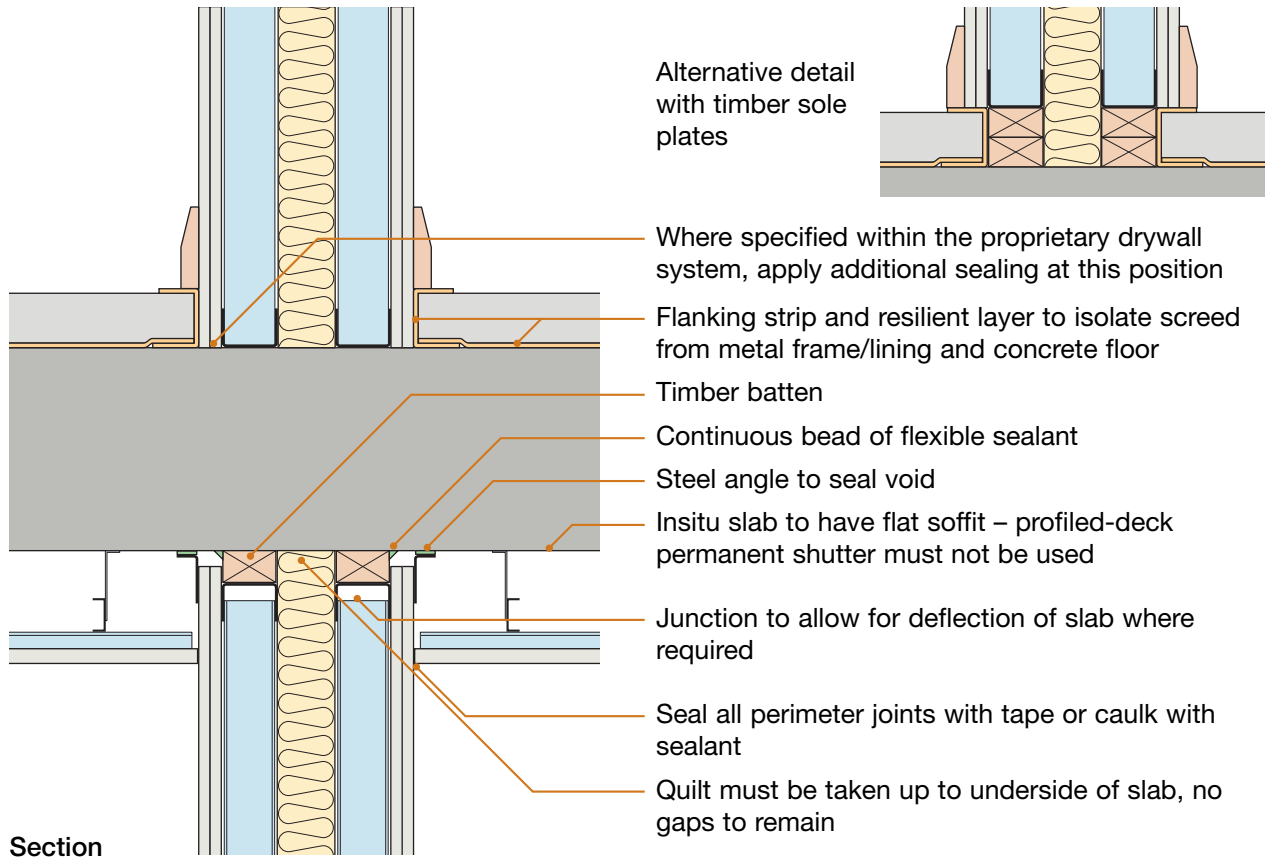
3. External (flanking) wall junction – with concrete downstand beam



4. External (flanking) wall junction – storey-height glazing

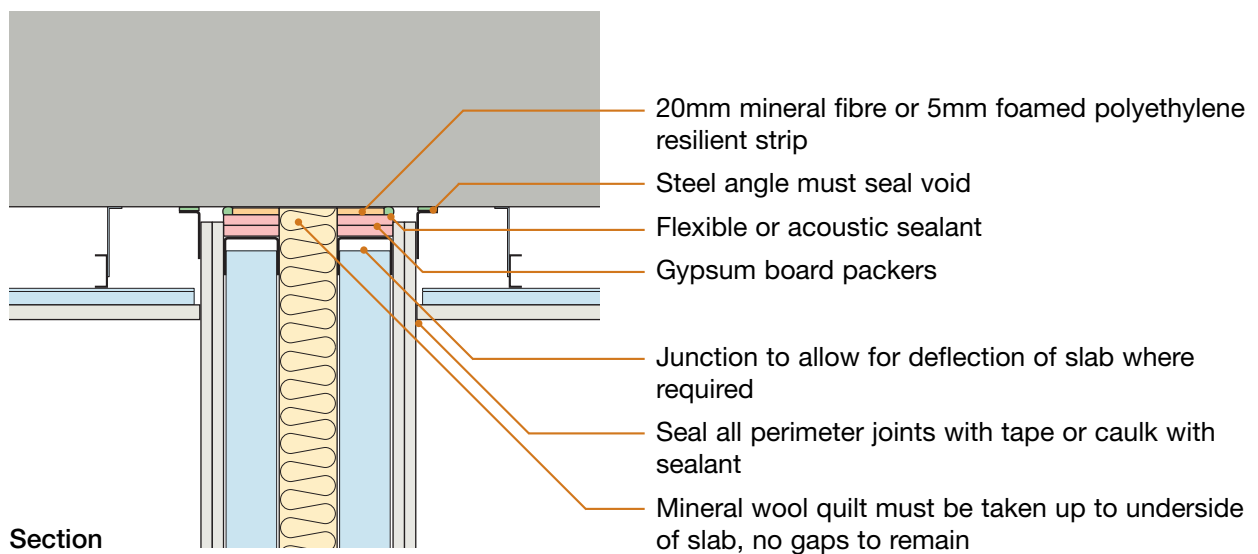


5. Separating wall junction



An alternative deflection head detail is shown below

6. Slab junction (with alternative deflection head detail)



# Appendix A1 – Additional Guidance

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Cavity masonry separating walls – staggered external (flanking) wall junction	6
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### Wall ties in cavity masonry separating walls

Cavity masonry separating wall Robust Details must have no greater than a type A connection of one leaf to the other. This is achieved by using wall ties specifically tested for type A status over the cavity width being built, positioned 900mm horizontally (staggered) and 450mm vertically to give 2.5 ties/m<sup>2</sup>. If a greater number of ties is required, check with the tie manufacturer that a type A connection can still be achieved.

Special consideration should be given in respect of movement joints, where de-bonded ties should be used across the movement joint to allow fewer wall ties across the cavity (see Movement Joints section on page 2).

Approved Document E clause 2.19 describes the requirements for Tie Type A (separating walls) 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,  $k_{xmm}$  in MN/m with a cavity width of  $X$  mm and  $n$  ties/m<sup>2</sup> is  $n \cdot k_{xmm} < 4.8$  MN/m<sup>3</sup>.

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

In relation to the wall tie requirements for external walls tie “Type A” may be used if it satisfies the requirements of Building Regulation Part A – Structure. However, where tie “Type A” does not meet these requirements for external walls tie “type B” wall ties should be used.

Approved Document E clause 2.20 describes the requirements for Tie Type B (external walls).

## Appendix A1 – Additional Guidance

### 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).

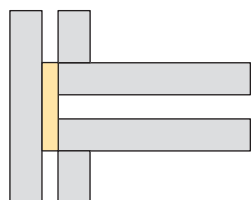


Diagram a

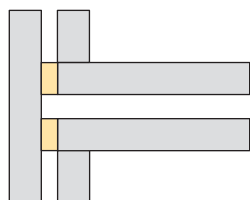


Diagram b

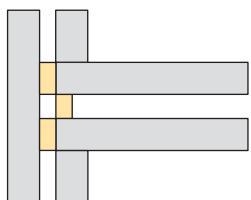


Diagram c

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.

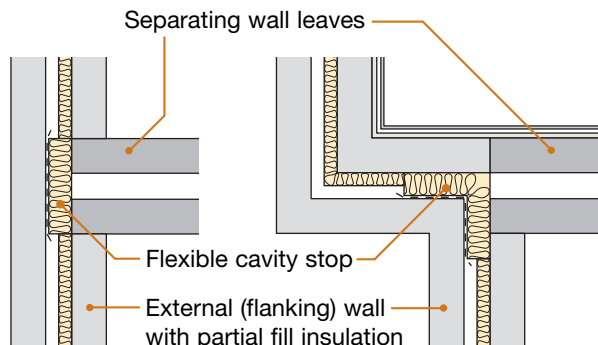


Diagram d

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:

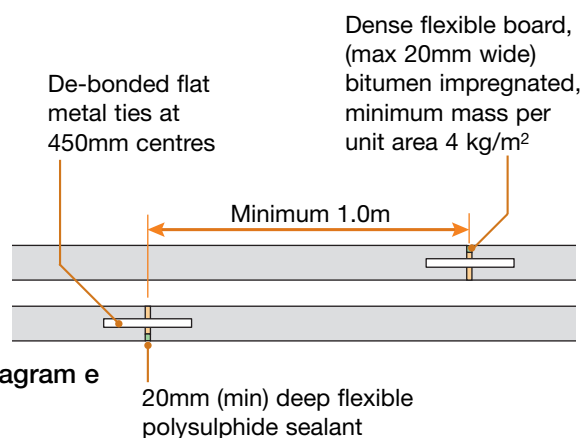


Diagram e

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.

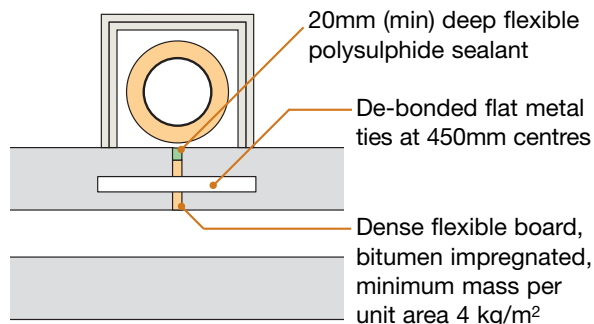


Diagram f

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



## Appendix A1 – Additional Guidance

### Spandrel panels

Where stated in the Robust Detail, spandrel panels are an acceptable alternative to continuing the separating wall to the underside of the roof covering in non-room-in-roof situations.

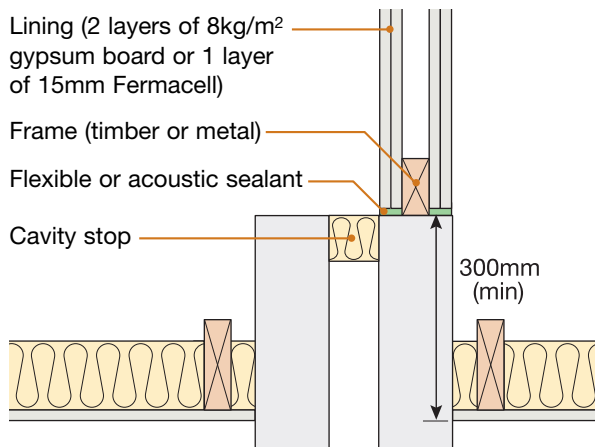
When adopting spandrel panels, particular attention should be paid to Building Regulations Part B - Fire Safety. Below is the minimum specification required to maintain just the acoustic integrity.

The spandrel panel should comprise:

2 layers of nominal 8 kg/m<sup>2</sup> gypsum-based board (staggered joints) or 1 layer of 15mm Fermacell board (tight butted joints) fitted each side of a 35x45mm (min) timber or lightweight steel frame. Lapped joints or those backed by timber members do not require sealing, but gaps should be treated with sealant or cover strips.

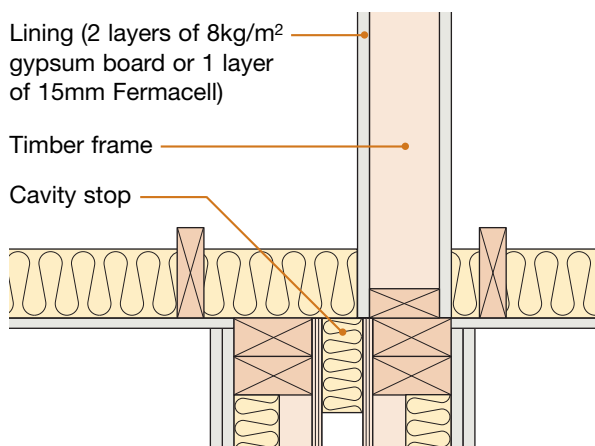
Two panels may be adopted provided a 50mm (min.) cavity is maintained between the sheathing faces, or the stud frames where no sheathing is fitted. Spandrel panels must not connect the wall leaves.

#### Masonry construction



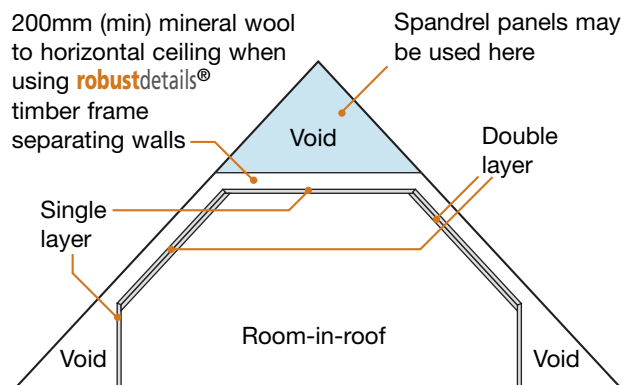
The spandrel panel may be mounted on a layer of mineral wool laid along the blockwork leaf as an alternative to the flexible or acoustic sealant.

#### Timber frame construction



### Room-in-roof – requirements for gypsum-based boards

Where stated in the Robust Detail, the separating wall can continue up to form a room-in-roof. 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. See also Gypsum-based board section below.



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/m<sup>2</sup>): the use of a higher density board will increase the sound insulation performance.

Boards should be tightly abutted, and final layer boards facing into a room should have all joints sealed with tape or caulked with sealant. Where two or more layers of gypsum-based board are required, all joints should be staggered.

Thermal laminate boards may be used as the wall finish to masonry walls, provided the nominal mass per unit area indicated in the Robust Detail is maintained.

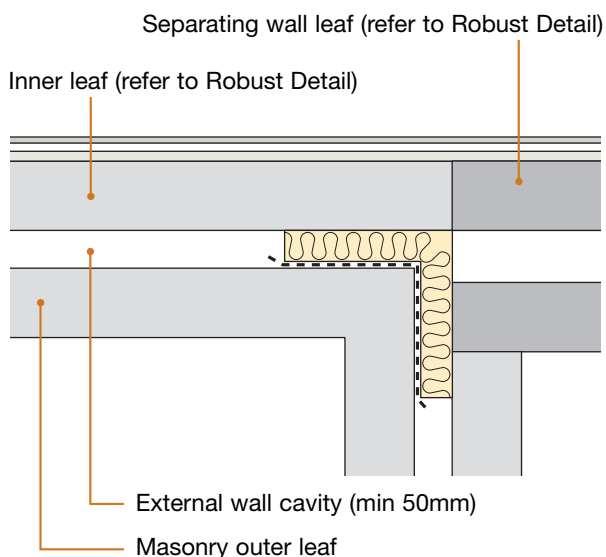
Gypsum coving is an acceptable alternative to caulking or sealing the joint between the wall and the ceiling.

Installation instructions and further guidance should also be sought from the board manufacturer.

## Appendix A1 – Additional Guidance

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

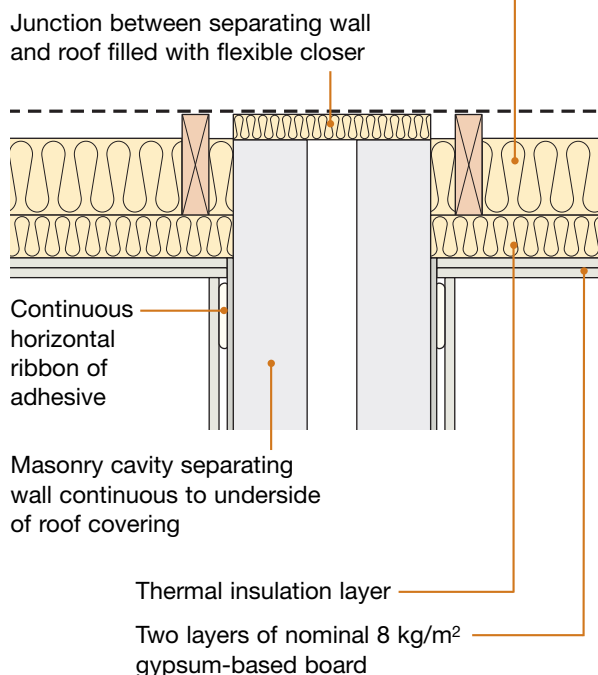
As an alternative to the junction shown in the Robust Detail, it is acceptable for the inner leaf blockwork to extend to the inner face of the external wall cavity, as shown below.



### Roof junctions – thermal insulation

Additional layers of thermal insulation may be added as follows:

100mm (min) mineral wool insulation minimum density 10 kg/m<sup>3</sup> or 60mm (min) foil faced PUR or PIR insulation, minimum density 30 kg/m<sup>3</sup>



### Building Regulations Part A (2004) – 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 Part A, 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/m<sup>2</sup> (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/m<sup>2</sup> (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/m<sup>2</sup> (including the finish) OR at least that of the approved flanking wall inner leaf, if this is less.