

The logo for the Wood Panel Industries Federation (WPIF) is located at the top of the page. It consists of a dark green rectangular box with the words "WOOD", "PANEL", "INDUSTRIES", and "FEDERATION" stacked vertically in white, bold, sans-serif capital letters. Behind this box is a larger, lighter green rectangular shape that is partially obscured.

**WOOD
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FEDERATION**

Code of Practice for
Particle Board
&
Oriented Strand Board
(OSB) Floating Floors

WPIF INDUSTRY STANDARD
IS (WPIF) 3/2018

CONTENTS	PAGE
Foreword	4
Section 1: General	
1.1 Scope	4
1.2 Definitions	4
Section 2: Selection of suitable materials	
2.1 Particleboard (wood chipboard).....	6
2.2 Oriented strand board (OSB).....	6
2.3 Vapour control layer (VCL)	6
2.4 Damp-proof membrane (DPM)	6
2.5 Timber battens	7
2.6 Insulation	7
Section 3: Transport, handling and storage	
3.1 General	8
3.2 Transport and delivery	8
3.3 Storage	9
Section 4: Construction of base	
4.1 Surface finish & levels	9
4.2 Protection against ground water and construction moisture.....	10
Section 5: General requirements for the installation of particleboard & Oriented Strand Board floating floors	
5.1 Protection	10
5.2 Moisture content	11
Section 6: Installing a continuously supported floating floor	
6.1 Insulation	13
6.2 Vapour control layer	14
6.3 Particleboard and OSB floating floor overlay	14
6.4 Plasterboard planks	14
6.5 Movement gaps	15
6.6 Access to pipes & services	16
6.7 Thresholds	17
6.8 Partition loading	18
Section 7: Installing a self-supporting floating floor (with battens)	
7.1 Timber battens	21
7.2 Insulation	22
7.3 Vapour control layer (VCL).....	22
7.4 Particleboard & OSB overlay	22
7.5 Plasterboard planks	23
7.6 Movement gaps	23
7.7 Access to pipes & services	23
7.8 Thresholds	23
7.9 Partition loading	23
Section 8: Finishing	
8.1 Carpet & sheet flooring	25
8.2 Ceramic tiling	25
Appendix: Publications referred to in this code	27

NOTE

The European specification for the performance of floating floors is BS EN 13810-1 and this is the specification to which reference should be made in the UK for the requirements and design of floating floors.

Guidance on the installation of floating floors is provided in Annex A of the above specification, while the method of testing the performance of floating floors is given in DD CEN/TS 13810-2.

The Wood Panel Industries Federation industry standard for floating floors is reproduced below as it contains considerably more detailed guidance on the installation of floating floors than is contained in BS EN 13810-1, thereby complementing the European standard.

FOREWORD

The preparation of this Code of Practice IS (WPIF) 3/2018 as an Industry Standard has been undertaken by the Wood Panel Industries Federation (WPIF) under the direction of the Technical Committee of the WPIF.

As a Code of Practice, IS (WPIF) 3/2018 contains recommended provisions.

It should be noted that compliance with this standard, even where it is specified in a contract, does not itself confer immunity from legal obligations arising from common law or statute. Neither does the Wood Panel Industries Federation, in establishing the standard for the commercial assistance of buyers and sellers, enter into any legal commitment or incur any commitment other than advisory thereby.

SECTION 1: GENERAL

1.1 Scope

This Code of Practice IS (WPIF) 3/2018 gives recommendations for the selection of materials in, and the construction of, particleboard (wood chipboard) and Oriented Strand Board (OSB) floating floors, with boarding either continuously supported or self-supporting. Floating floors are suitable for use on ground or intermediate floors provided in the former the performance requirements in Approved Document Parts E (acoustics) and L (thermal) are satisfied. **It applies only to domestic floating floors subject to an imposed load not exceeding 1.5kN/m² (BS 5268 and Eurocode design) and 2.0kN pointload (Eurocode design); however, the concepts are applicable to other building types provided the floor loading and acoustic requirements are satisfied.**

Floating floors of the type described can contribute to the thermal performance and attenuation of sound transmission performance of floors, but the specifier must ensure that the required performance is met in all aspects. The design detailing shown in IS (WPIF)3/2018 is intended to maximise performance from the wood-based panel floating floor overlay, and although some of the concepts are applicable to both thermal and acoustic floors, the detailing shown in IS (WPIF)3/2018 would not necessarily satisfy all thermal or acoustic requirements nor any requirements of the supporting or adjoining structures.

1.2 Definitions

1.2.1 Continuously supported (IS (WPIF) 3/2018)

A floor system in which the wood-based panel overlay has uninterrupted support from beneath. Support is provided by a structural subfloor and insulation material is placed between the subfloor and the overlay.

1.2.2 Self supporting (IS (WPIF) 3/2018)

A floor system in which the wood-based panel overlay has discontinuous support from beneath at predetermined and regular intervals. Support is usually provided by timber battens or joists. The system may incorporate insulation material between the supports.

1.2.3 Damp-proof membrane (DPM)

Layer or sheet of material within a floor or similar construction, or vertically in a wall to prevent the passage of moisture.

1.2.4 Fabricated Underlay (BS 8203)

Wood-based panel applied to a subfloor/base/floating floor to provide a smooth, even surface suitable for the installation of a floor covering.

1.2.5 Base

Building element that supports the screed and/or the floating floor and the floor finishes.

1.2.6 Floating floor (adapted from BS EN 13810-1)

Decking of wood-based panels supported by one or more insulation materials, without being fixed to the base/subfloor.

1.2.7 Oriented strand board (OSB) (BS EN 300)

Multi-layered board made from strands of wood of predetermined shape and thickness together with a binder. The strands in the external layers are aligned and parallel to the board length or width; the strands in the centre layer or layers can be randomly oriented, or aligned, generally at right angles to the strands of the external layers.

1.2.8 Particleboard (BS EN 309)

Panel material manufactured under pressure and heat from particles of wood (wood flakes, chips, shavings, sawdust, wafers, stands and similar) and/or other lignocellulosic material in particle form (flax shives, hemp shives, bagasse fragments and similar) with the addition of an adhesive.

1.2.9 Pre-cast concrete floors

Includes concrete beams with infilling blocks; concrete planks and other types of suspended pre-cast floors.

1.2.10 Screed (BS EN 13318)

A layer or layers of screed material laid in situ, directly onto a base, bonded or unbonded, or onto an intermediate layer or insulating layer, to obtain one or more of the following purposes:

- **to obtain a defined level;**
- **to carry the final flooring;**
- **to provide a wearing surface.**

1.2.11 Levelling screed (BS 8204)

A screed suitably finished to obtain a defined level and to receive the final flooring

1.2.12 Slab

Concrete base cast as part of the building construction.

1.2.12 Subfloor

See 1.2.5 base.

1.2.14 Suspended floor

Layer or sheet of material within a floor or similar construction, or vertically in a wall to prevent the Subfloor that spans between (local) supports.

1.2.15 Vapour control layer (VCL)

Material or part of a construction element that offers a high resistance to the passage of water vapour.

SECTION 2: SELECTION OF SUITABLE MATERIALS

2.1 Particleboard (wood chipboard)

Particleboard should conform to BS EN 312 and be of grade P5 or P7 and be tongued and grooved on all four edges.

Panel thickness is dependent upon the specification and panels may have surface protection if required.

- **Note** *P5 is the most commonly available grade.*

2.2 Oriented strand board (OSB)

Oriented strand board should conform to BS EN 300 type OSB/3 or OSB/4 and be tongued and grooved on all four edges.

Panel thickness is dependent upon the specification and panels may have surface protection if required.

- **Note** *OSB/3 is the most commonly available grade.*

2.3 Vapour control layer (VCL)

A VCL providing a vapour resistance of not less than 200 MNs/g should be provided, e.g. 250 micron (minimum 1000 gauge) polythene.

2.4 Damp-proof membrane (DPM)

Materials and methods for damp-proofing solid floors are described in CP102, BS 8102 and BS 8215 and it should not be assumed that existing ground supported concrete floors are adequately damp-proofed.

Table 1: Typical alternative methods of providing a DPM for concrete floors

Below The Slab	On The Slab Surface	Between The Floor Slab And The Screed
<p><i>Membrane not less than 300 micron (1200 gauge) or 250 micron (1000 gauge) if BBA certified</i></p> <p><i>Bitumen sheet to BS 6398 "Materials for damp-proof courses for masonry"</i></p>	<p><i>Hot applied asphalt to BS 6925 or pitch mastic</i></p> <p><i>Cold applied pitch/ epoxy resin</i></p>	<p><i>Any sheet material given in the previous column</i></p> <p><i>Hot applied asphalt to BS 6925, pitch or bitumen</i></p> <p><i>Three full coats of cold applied bituminous solutions, cold tar, pitch or rubber emulsion</i></p> <p><i>Composite polyethylene and bitumen self-adhesive not less than 0.6mm thick</i></p>

2.5 Timber Battens

When used on concrete ground floors battens should be preservative treated with a suitable treatment (treat as if sole plates) for the desired service life. On timber floors and all upper floors, battens need not be treated unless there is a risk of insect attack or as insurance against premature failure (e.g. fungal attack due to prolonged unseen leakage from pipes). Factors in determining the need for treatment based on risk, consequence of failure, service life and also specifying a treatment are given in BS 8417. Battens shall have a moisture content not exceeding 20% at the time of installation. Where battens have been treated with a water-borne preservative they should be re-dried to a moisture content not exceeding 20%.

Battens should be not less than 45mm wide finished and where insulation is used the depth should be greater than the insulation thickness to allow for shrinkage of the batten resulting from drying to its equilibrium moisture content.

Where timber battens act structurally (i.e. spanning between supports) they must be strength graded and capable of withstanding the relevant ultimate (ULS) and serviceability (SLS) limit states.

- **Note** *For the improvement of acoustic properties battens often have a layer of resilient material on the bottom face.*

2.6 Insulation

Insulation materials may include the following (see Table 2), however the insulation manufacturer should be consulted regarding suitability for the floor performance requirements e.g. load, sound and thermal performance (see 1.1).

Table 2: *Insulation materials and densities for use in floating floors*

Material	Continuously supported Minimum Density kg/m ³	Self supporting Minimum Density kg/m ³
<i>Expanded polystyrene</i>	15	15
<i>Extruded polystyrene</i>	25	25
<i>Mineral wood slab</i>	150	80
<i>Mineral wool quilt</i>	-	12
<i>Polyurethane foam board</i>	26	26
<i>Phenolic foam board</i>	40	40

- **Note 1** *Dwellings will have to comply with building regulations which use the Standard Assessment Procedure (SAP) tool for calculating the energy efficiency of the building, CIBSE Guide A Environmental design may also be used for the design of the building with respect to insulation performance requirements.*
- **Note 2** *The insulation layer should be continuous i.e. without gaps. When fitting insulation between battens it is essential to avoid gaps which would create cold bridges.*
- **Note 3** *Proprietary pre-bonded flooring products are available which combine the insulation with the wood-based panel floating floor overlay.*

SECTION 3: TRANSPORT, HANDLING AND STORAGE

3.1 General

Panels are designed for use in a dry and humid conditions (according to Eurocode 5 service classes 1& 2). However precautions should be taken during storage prior to delivery, during transport, and on site, to ensure that the panels are adequately protected from damage and wetting.

3.2 Transport and delivery

Panels should be adequately protected by a waterproof covering during all transportation and should be fully protected from damage by lashings or other bindings and should be loaded to avoid distortion.

3.3 Storage

Panels should be stored undercover and should be stacked flat, off the ground on a dry level surface, with all four edges flush. The height off the ground should be sufficient to avoid rain splashback.

The top of the stack should be covered with a weighted protective covering to counteract any tendency of the topmost panel to warp.

- **Note 1** *The ideal base is a close boarded or slatted pallet. If this is not possible the panels should be carefully stacked on battens of equal thickness at centres not exceeding 600mm. Where stacks are placed on top of one another, bearers should line up to prevent localised distortion.*

Where storage outside is unavoidable, stack on dry level ground and protect with a waterproof sheet. Ensure all edges are covered and secured to avoid lifting by the wind.

Containerised storage is recommended.

- **Note 2** *PanelGuide section 4 has further information on the transportation, storage and handling of wood based panels.*

SECTION 4: CONSTRUCTION OF BASE

4.1 Surface finish and levels

The surface finish of a concrete or screed base should be similar to that produced by a float finish. Surface regularity should be class SR2 or better to BS 8204 part 1, i.e. maximum 5mm deviation from under a 2 metre straightedge. Particular attention should be paid to movement joints and to screed and bay junctions so as to avoid undulations and other surface irregularities.

Pre-cast concrete floors should have a level flat surface (see figure 2). If deviations occur a levelling screed may be required.

- **Note 1** *Where deviations occur in the base, these can be telegraphed into the particleboard or OSB overlay (this applies particularly to isolated deviations even where they may be within the allowable tolerance).*
- **Note 2** *Consideration should be given at the design stage to allow for any loading restrictions that may be encountered with block and beam construction.*
- **Note 3** *Certain floor coverings or acoustic battens may require surface regularity of SR1 i.e. 3mm deviation from under a 2 metre straightedge.*

4.2 Protection against ground water and construction moisture

In all cases where floating floors, as described in this standard, are used over an in-situ concrete slab construction (with or without a screed), a DPM (See 2.4) should be positioned over the slab or screed to protect the floating floor from moisture.

Where a pre-cast concrete upper or a suspended ground floor (with or without a screed), is considered wet i.e. greater than 75% RH when tested according to Annex A of BS8201, or in case of doubt, a DPM should be placed over the screed or subfloor surface before laying the floating floor.

- **Note 1** *A DPM above the slab or screed may not be necessary if there is a DPM below the slab or screed and the slab or screed moisture content has been determined by test as being below 75% relative humidity when tested according to Annex A of BS 8201.*

It is possible to estimate drying times for purposes of planning and decision making but are influenced by many variables and therefore cannot substitute testing. For example a cement-sand screed laid directly over a DPM, one day drying time should be allowed for each millimetre up to 50mm and thicker than 50mm the drying will slow. A 150mm concrete base drying from one surface could take up to a year to dry sufficiently (visual inspection should not be used, as a slab can have a relatively high moisture content even when the surface appears dry).

- **Note 2** *Where block and beam construction is used at ground floor level (suspended floor), the void beneath should be fully ventilated in accordance with the Building Regulations and recommendations in BS 5250. A DPM is required above a block and beam floor if the minimum clearance is below 75mm, or the void is unventilated or the ground in the void is below the surrounding ground level and not effectively drained.*
- **Note 3** *Where a suspended timber ground floor is present it is essential for there to be an adequate ventilation (see BS 5250) and other preventative measures to reduce the risk of build-up of moisture and resultant decay in the construction. Aspects to consider are the distance between the ground cover and the timber joists in the sub floor (normally 150mm minimum), the minimum amount of free flowing cross ventilation for the size of the floor, the*

SECTION 5: GENERAL REQUIREMENTS FOR THE INSTALLATION OF PARTICLEBOARD AND ORIENTED STRANDBOARD FLOATING FLOORS

5.1 Protection

Unless otherwise advised by the manufacturer, panels should not be laid until all wet trades are completed and the building has dried out. In wet construction (i.e. brick and block work) the floating floor should not be installed until the latest opportunity. In dry conditions, e.g. Timber Frame, the floating floor should only be installed as a working platform once the building is watertight. After laying, the floor should be protected from dirt and moisture. Any factory applied temporary protective layer should be retained in place for as long as possible.

5.2 Moisture content

Panels should be conditioned to a moisture content appropriate for the intended use. When conditioning, packs should be opened, panels separated to allow free air movement and left in the building where they are to be fitted for at least 48 hours before laying (preferably 1 week).

- **Note** Particleboard and OSB (as given in 2.1 & 2.2) can have an ex works moisture content of 5% to 13% and 2% to 12% respectively but is typically 7%-10% and 5% to 9% respectively. When installed into the building the moisture content can increase to around 16% in a building under construction during winter months. After completion, the moisture content of the particleboard and OSB will generally reduce to a value of between 6 to 10%.

As a guide, a change in moisture content of 1% typically results in a corresponding dimensional increase or decrease in length and width of 0.3mm per metre.

Although expansion is the most usual movement encountered, in areas with higher than average temperatures, shrinkage can occur e.g. nursing homes.

SECTION 6: INSTALLING A CONTINUOUSLY SUPPORTED FLOATING FLOOR (Typical construction is shown in Figures 1 and 2 below)

VCL (For proprietary bonded wood based panel and insulation floors refer to manufacturers recommendations in respect of VCL requirements.)

Tongued and grooved floor with all joints glued. Joints in the chipboard and the insulation should be staggered and not coincident.

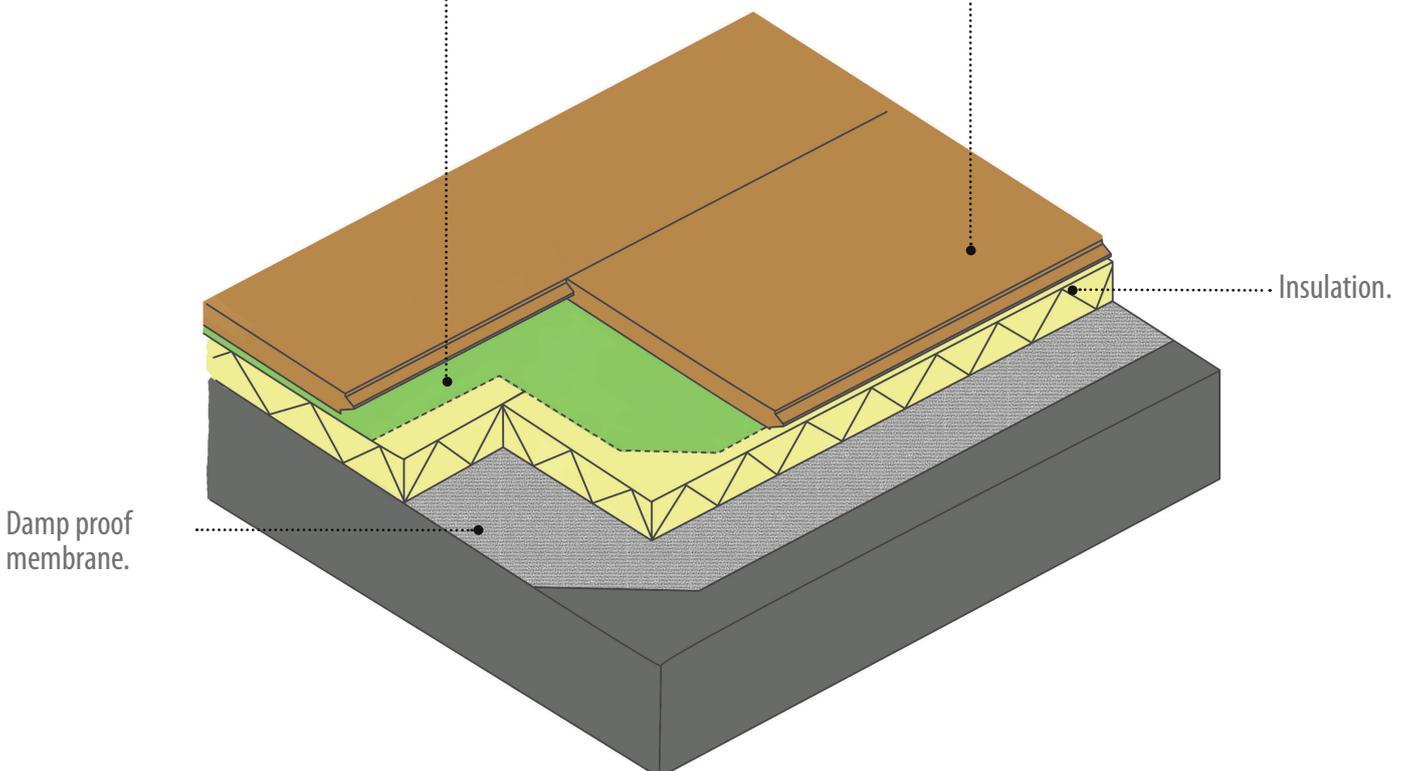
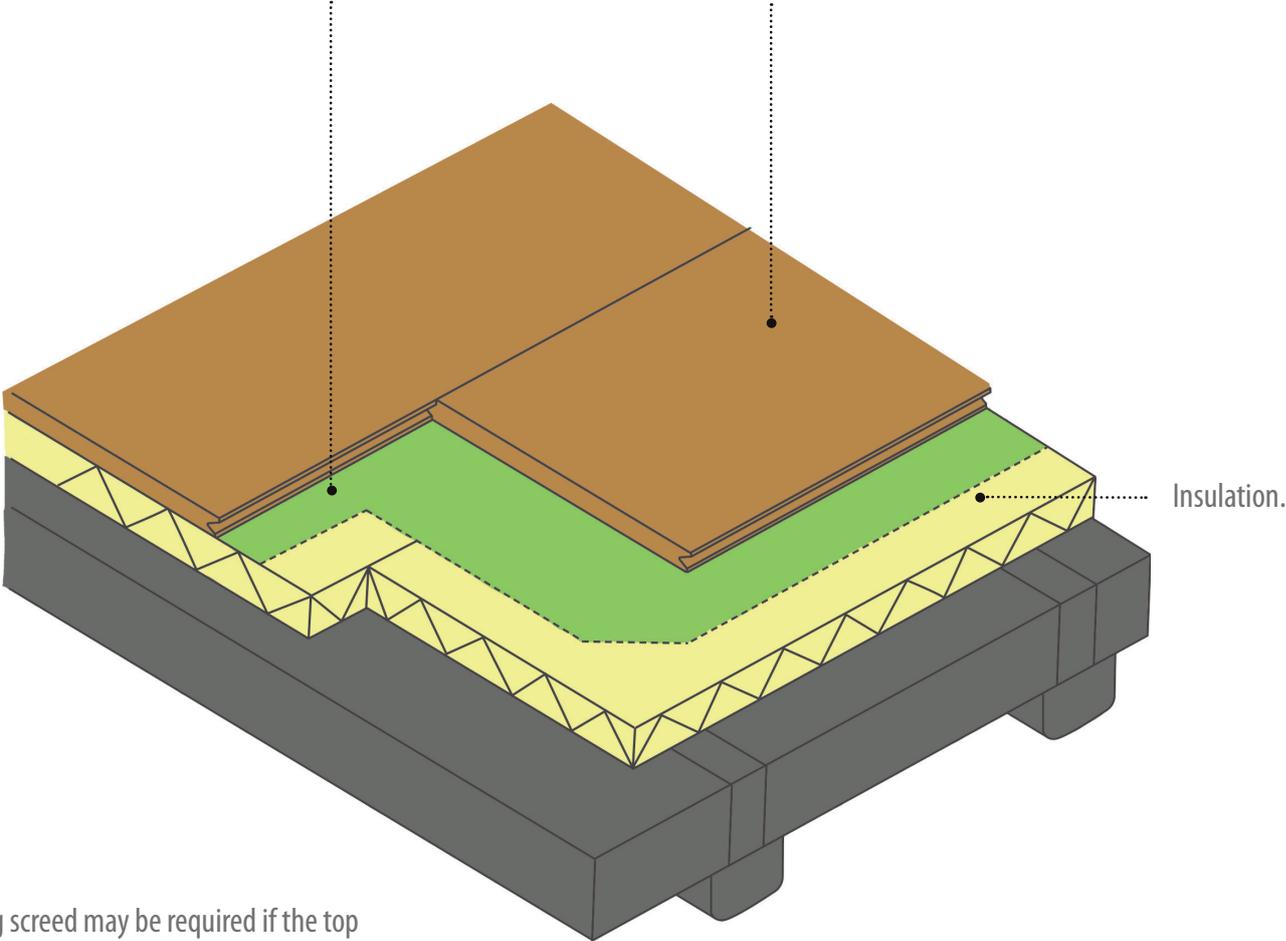


Figure 1: Floating floor on an in situ concrete slab

VCL (for proprietary bonded wood based panel and insulation floors refer to manufacturers recommendations in respect of VCL requirements).

Tongued and grooved floor with all joints glued. Joints in the floor and the insulation should be staggered and not coincident.



A levelling screed may be required if the top surface of the subfloor is not adequately flat. Screed should be fully dry before the floating floor is laid.

Figure 2: Floating floor on a precast concrete substructure

6.1 Insulation

The insulation should be placed on the subfloor, butting the joints tightly together with no gaps between adjoining sections (see clause 2.6). Battens should be provided where recommended by the insulation manufacturer, at room perimeters, access traps, thresholds etc. (see Figure 3). Sheets should be laid so that joints will not be coincident with the wood-based panel floating floor overlay. Additional advice on the positioning of insulation is given in the BRE Publication “Thermal insulation: avoiding risks”.

- **Note** *The thickness of insulation is dependent upon the U-value required and the insulation type specified (see clause 2.6).*

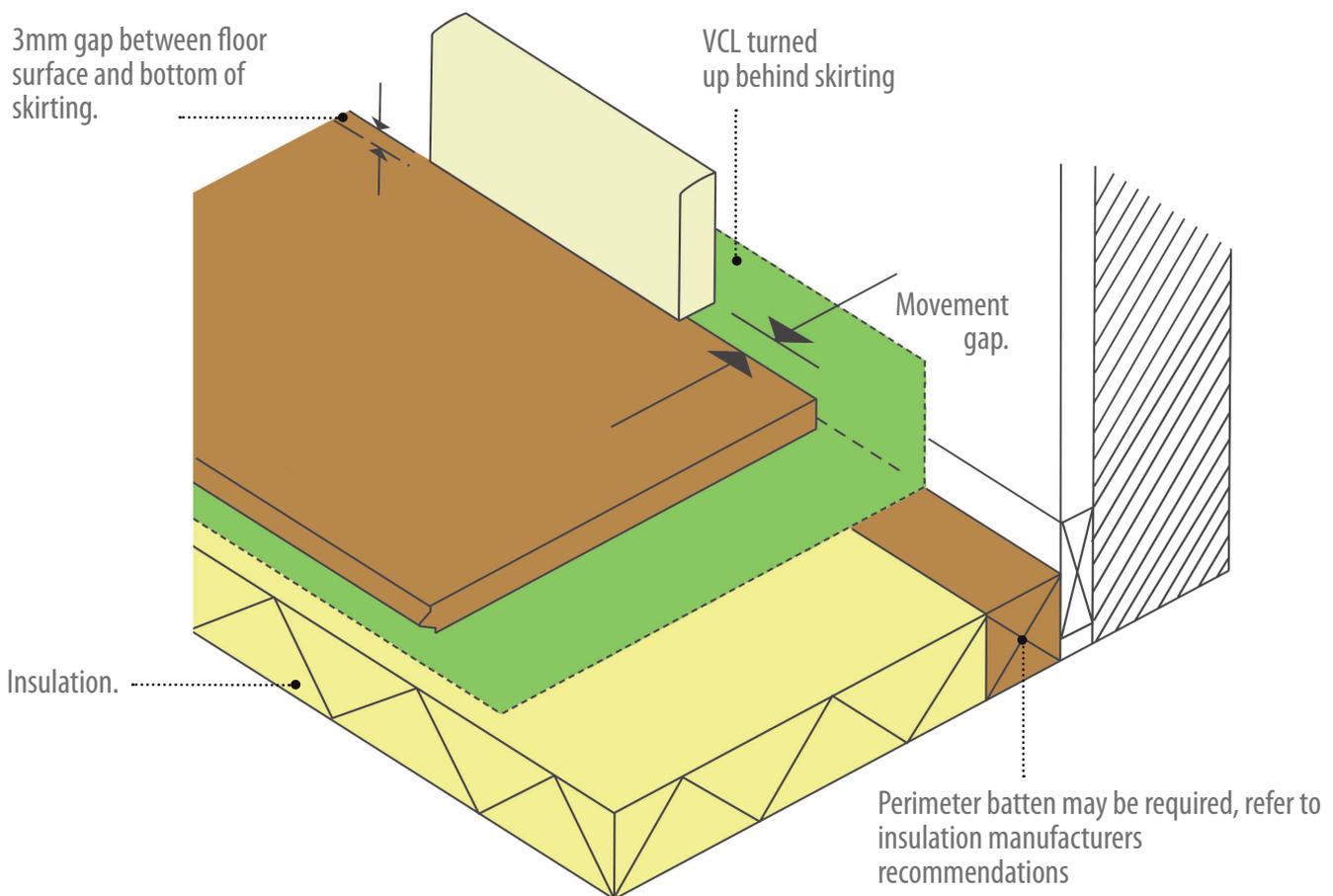


Figure 3: Detail of perimeter floor

6.2 Vapour control layer (VCL)

All floating floors should incorporate a VCL. A VCL providing a vapour resistance of not less than 200 MNs/g e.g. 250 micron (minimum 1000 gauge) should be laid above the insulation layer and should be upturned by at least 38mm around perimeter walls. Any joints in the sheet should be lapped 150mm (minimum) and the joints taped with a vapour resistant tape.

For proprietary composite floor panels with pre bonded insulation, the manufacturer's recommendations should be sought as to the VCL requirement and specification.

- **Note** *Where a self supporting floating floor is installed above ground floor level for acoustic purposes, a VCL is not be necessary. It is however still recommended for continuously supported floating floors as it can act as a 'slip' layer between the wood-based panel overlay and the insulation.*

6.3 Particleboard & OSB floating floor overlay

Only particleboard types P5 or P7 or OSB/3 or OSB/4 (see clause 2.1 and 2.2) should be used as the wood-based panel floating floor overlay on a continuously supported floor. For domestic use, panels of not less than 18mm for particleboard and 15mm for OSB should be used. (For floors requiring restricted deflection, panels of not less than 22mm for particleboard and 18mm for OSB should be used).

Panel joints should be staggered and should not coincide with the joints in the insulation. All tongued and grooved joints should be glued with an adhesive conforming to at least durability class D3 of EN 204. Adhesive should be liberally applied so as to coat both surfaces of the tongue and groove. Where manufacturer's flooring systems are used, their products (panel and adhesives etc...) and installation requirements should be followed.

- **Note** *For non-domestic floors, the wood-based panel floating floor overlay will need to be assessed to ensure compliance with the loading and deformation requirements (ultimate limit state and serviceability limit state – Eurocode design) for a given thickness of wood based panel floating floor overlay.*

6.4 Plasterboard planks

There are many different systems available on the market where plasterboard planks are used to provide added acoustic performance for floating floors. Where a plasterboard plank is employed, the planks should be at 90° and the joints should not coincide with the wood-based panel floating floor overlay above.

Manufacturer's instructions should be followed for the fixing details and materials used for their particular system.

- **Note** *Where a VCL is employed it should be placed below the plasterboard planks and the wood-based panel floating floor overlay.*

6.5 Movement gaps

It is essential to allow for possible expansion by providing a gap wherever panels abut any rigid upstand such as a perimeter wall/internal load-bearing walls, column, pipes or fireplace surround. The gap at each edge of the floor should be equal to 2mm/metre run of floor but not less than 10mm wide. Movement gaps should be kept free of debris. For floors where the movement gap cannot be dealt with at the perimeter alone or which are in excess of 10 metres long e.g. corridors, intermediate movement gaps (minimum 10mm) should be incorporated (see Figure 4).

- **Note 1** *Intermediate movement gaps should be filled with resin bonded cork, impregnated softboard or equivalent, (maximum density 160kg/m³) or covered with cover strip. It may be necessary to increase the size of the movement gap to allow for the relative compressibility of the different filler materials that may be used.*
- **Note 2** *Where manufacturer's instructions are supplied with the panels, their recommendations should be followed.*
- **Note 3** *Packers or wedges should be used to maintain perimeter gaps and can also be used to assist in tightening board joints. Packers or wedges should be removed immediately once the adhesive has set. The floor should be kept free of pedestrian traffic before the adhesive has set.*
- **Note 4** *Floor expansion is the most common effect encountered, however in areas with higher than average temperatures e.g. nursing homes, hospitals etc shrinkage can occur.*

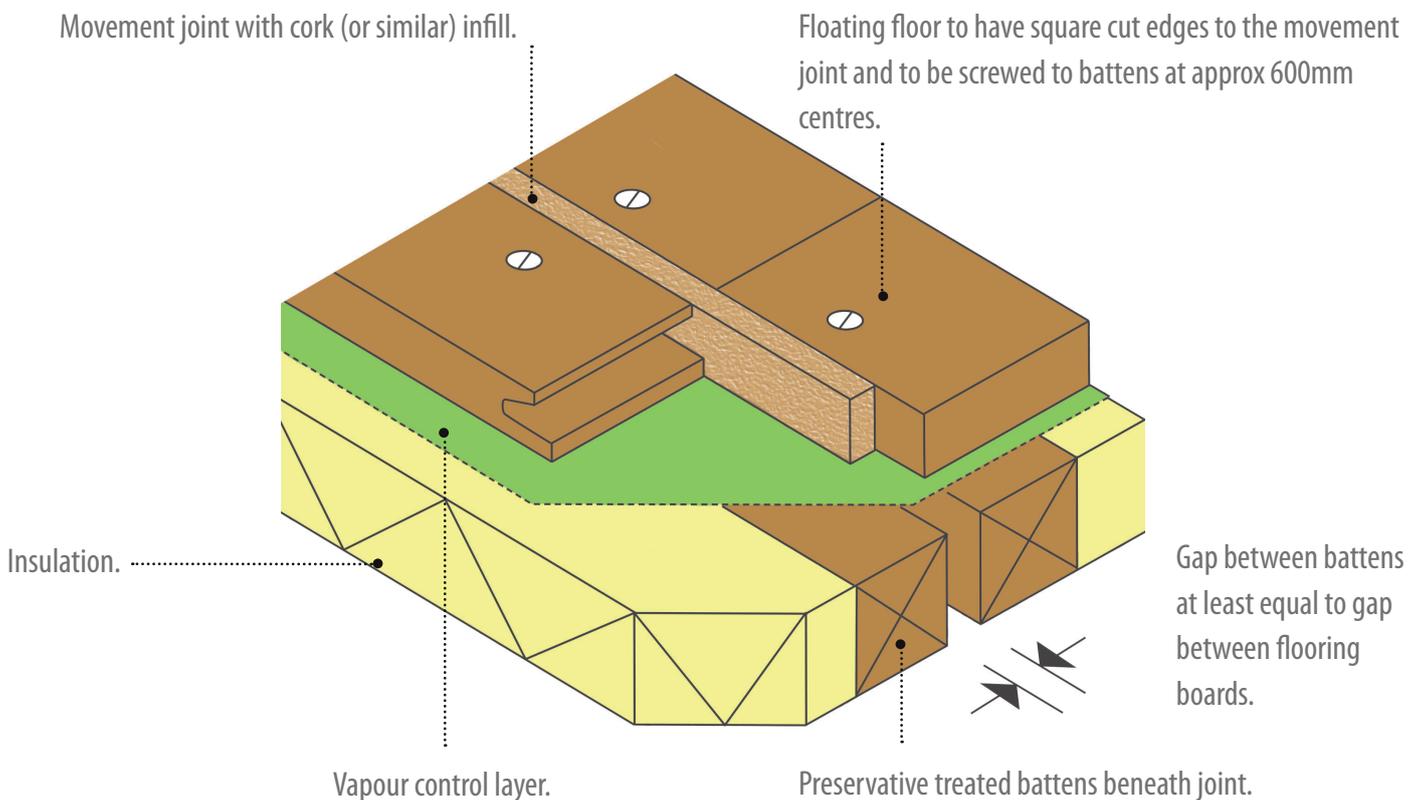


Figure 4: Detail of typical intermediate movement joint

6.6 Access to pipes and services

Before laying the floating floor, consideration should be given to the provision of access to pipes and services.

Proprietary systems or square edged panels screwed to timber battens to allow access should be used (see Figure 5).

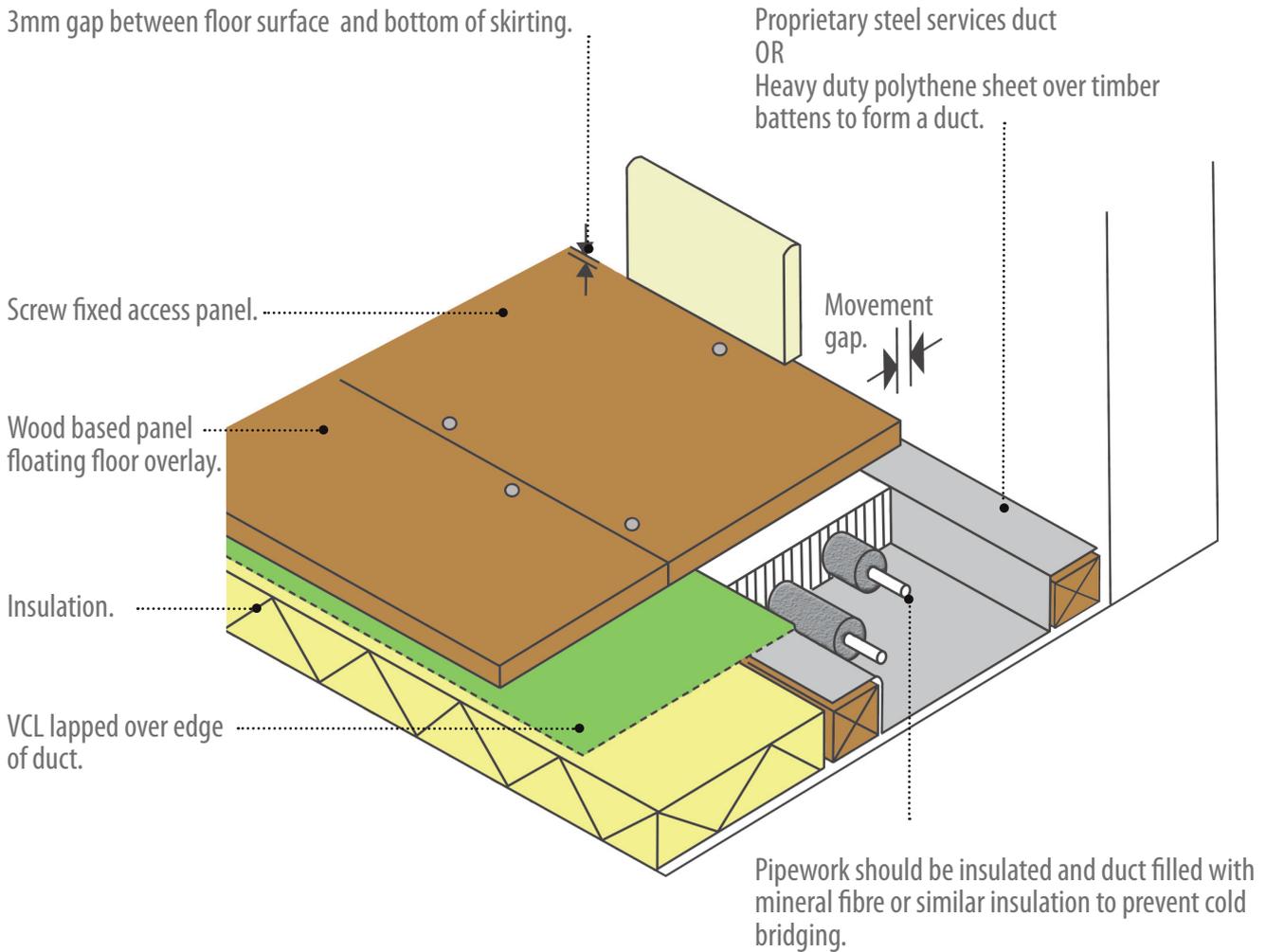


Figure 5: Typical service duct detail

6.7 Thresholds

At openings in walls built directly off the concrete substructure a movement gap should be installed. Battens should be inserted beneath the floating layer at the point of loading in order to counteract localised compression and to provide support beneath the cut edges of the floating floor (see Figure 6).

- **Note** *In a non-load-bearing wall condition where the floating floor is continuous beneath the wall, (as shown in Fig. 8) the floor can continue beneath the door opening without incorporating a movement gap.*

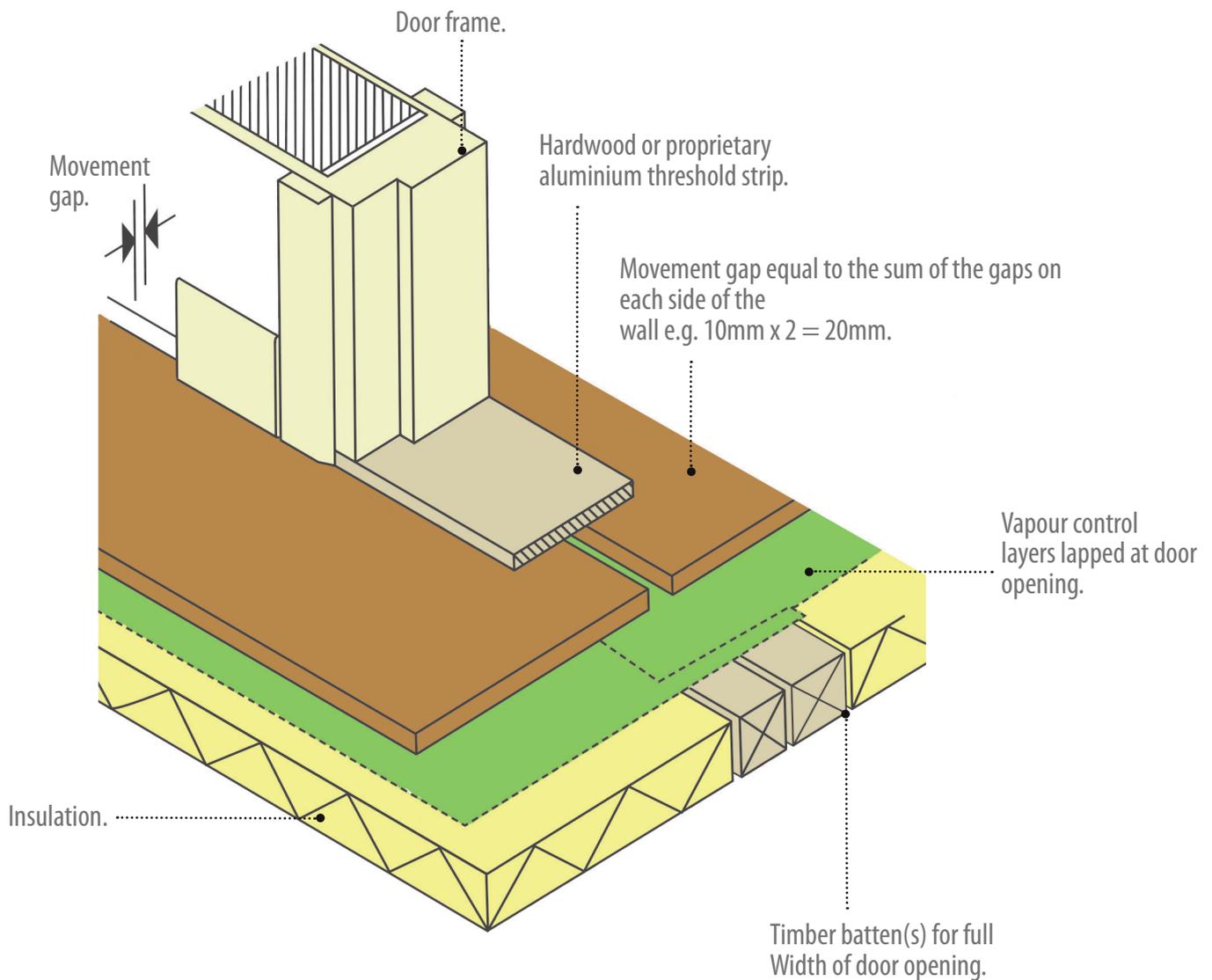


Figure 6: Details at the threshold of a doorway in a wall which is built off the supporting concrete structure when a continuously supported floor is used.

6.8 Partition loading

Load-bearing partitions should not be built on top of a floating floor, but should be continuously supported from beneath (as Figure 7). It is essential that care is taken in setting out partitions in order to ensure that the floor support is in the correct position.

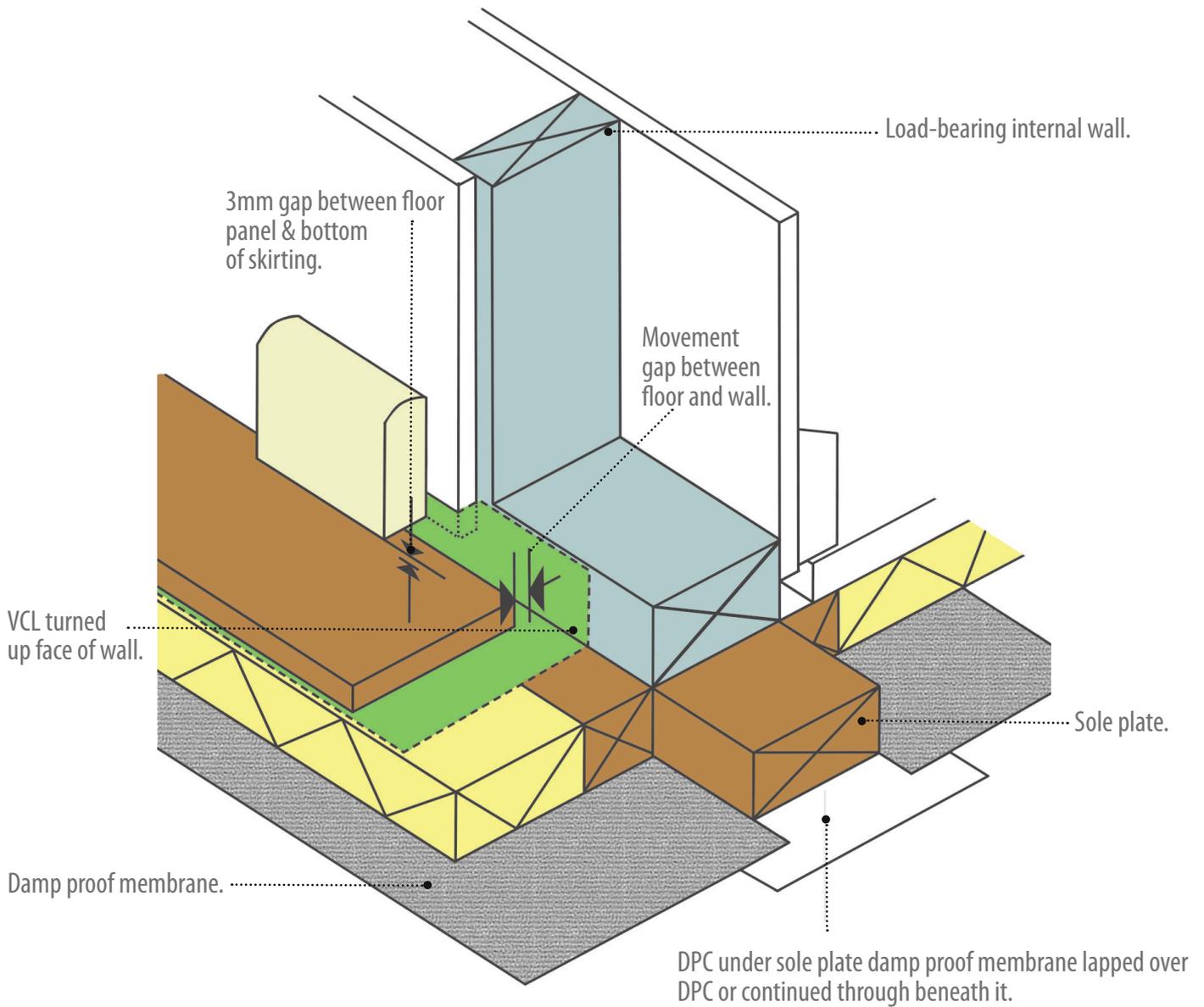


Figure 7: Detail at a load-bearing wall.

Non-load-bearing partitions can be built directly on top of the floating floor (see Figure 8) provided that the insulation is specifically manufactured for this end use and the loads that it will subject to. Where the insulation is not rigid enough for the weight of the partition, timber battens under the partition are recommended (see figure 7).

Where intermediate expansion gaps are required, i.e. in a large floor area, it may be possible to position them under non-load-bearing partitions.

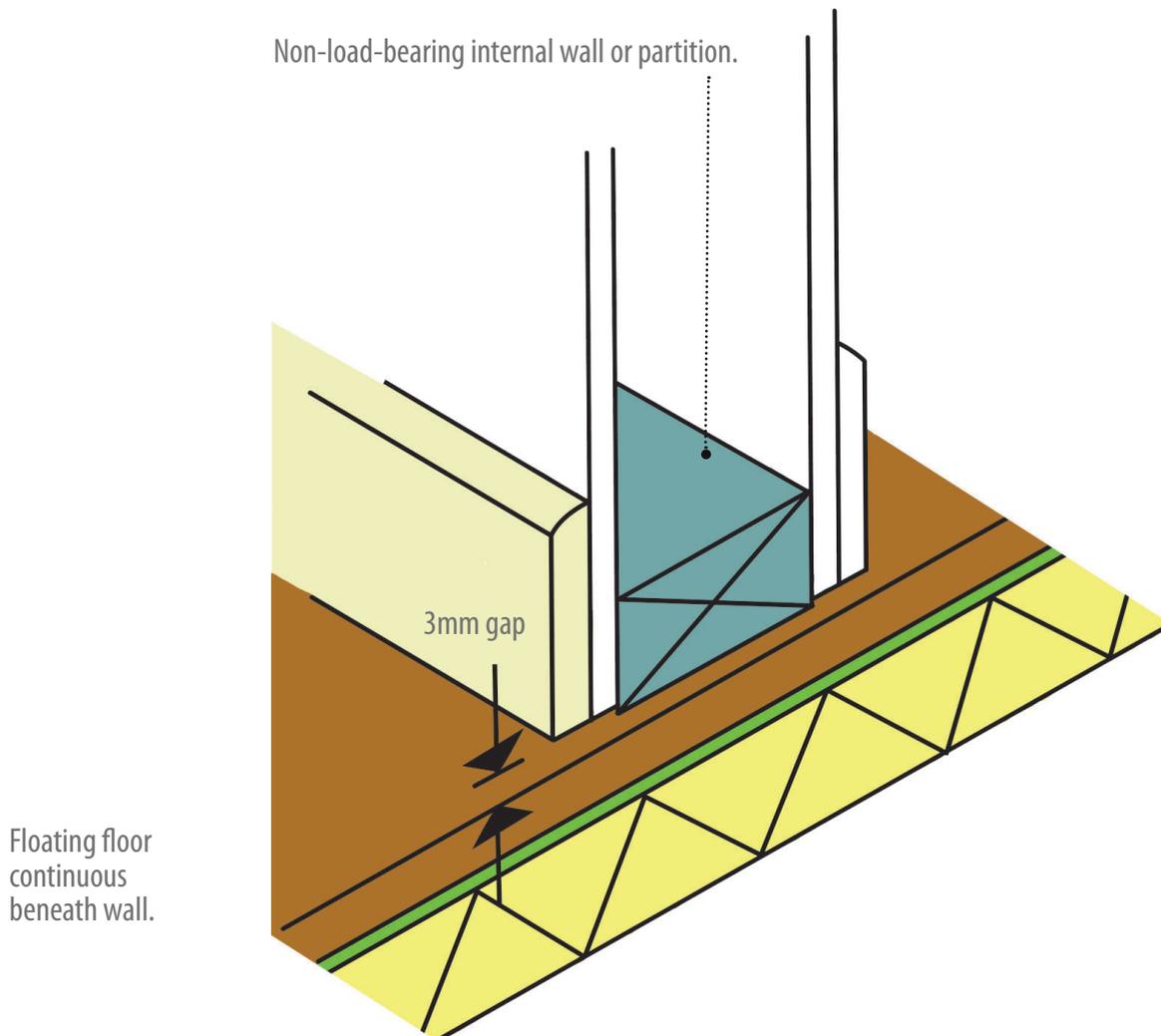


Figure 8: Supporting a non-load-bearing wall.

SECTION 7: INSTALLING A SELF-SUPPORTING FLOATING FLOOR (WITH BATTENS)

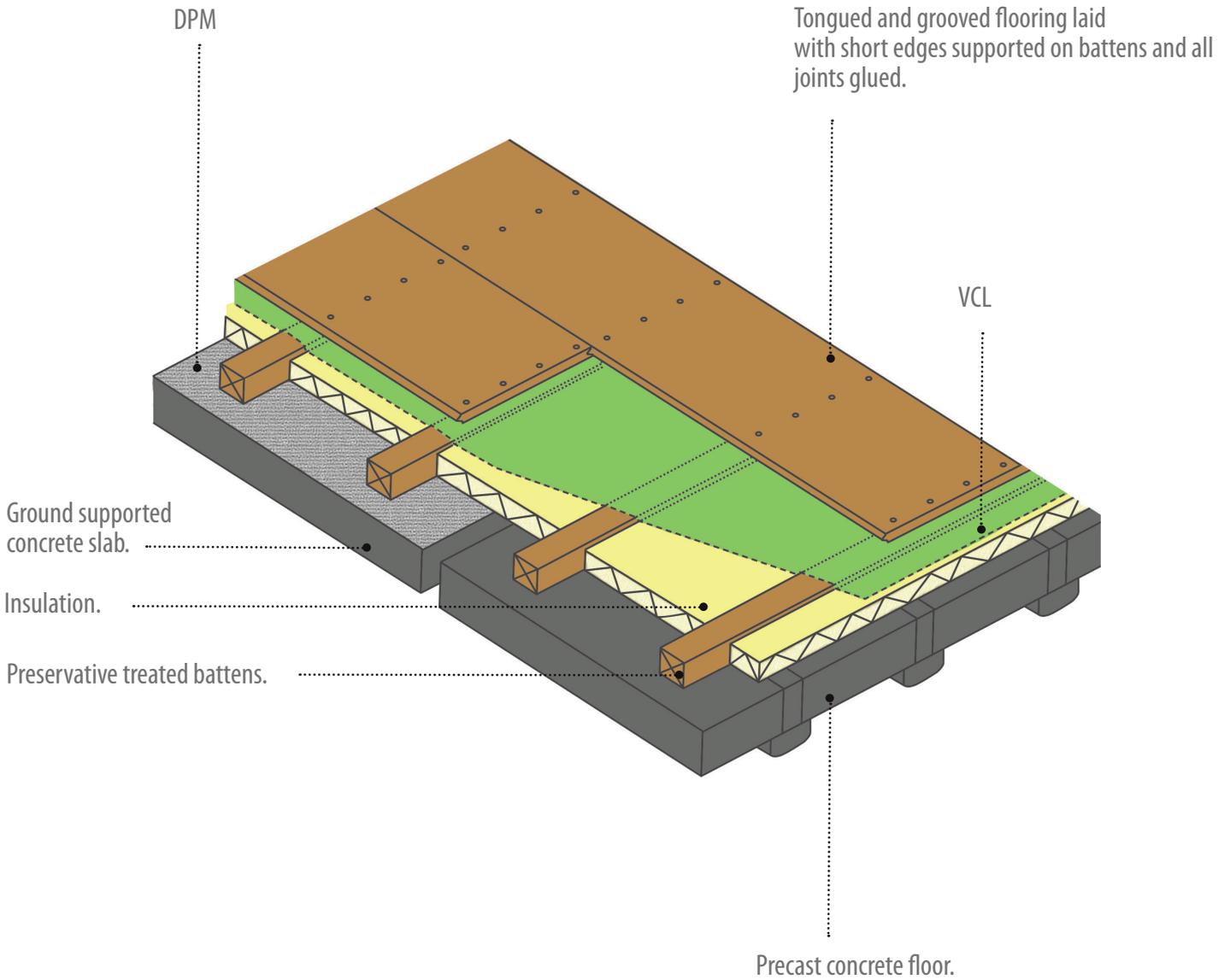


Figure 9: Self-supporting OSB or particleboard floating floor over ground supported concrete slab and precast concrete floor.

7.1 Timber battens

When installing a self-supporting floating floor timber battens as described in clause 2.5 should be used.

The appropriate centres for different wood based panel floating floor overlay panels are 450mm (maximum) centres for 18mm particleboard or 15mm OSB and 600mm (maximum) centres for 22mm particleboard or 18mm OSB.

For a self-supporting floating floor that is installed over a timber subfloor, the battens of the floating floor should be at 90° to the joists of the timber subfloor below (see figure 10). Where the timber subfloor decking is either non-structural, in the case of a working deck, or its structural capabilities are unknown, a batten and an appropriate thickness wood-based panel floating floor overlay capable of withstanding the relevant ultimate (ULS) and serviceability (SLS) limit states should be used.

- **Note 1** Any gaps beneath the battens caused by unevenness in the sub structure should be packed with a durable rigid material (e.g. preservative treated timber, tempered hardboard, dry mix sand and cement mortar).
- **Note 2** Timber battens can be laid in the same direction as, and directly over the joists below the timber deck, but achieving this over the whole area of a floor can be difficult.

If the battens were to be laid parallel to the joists below, falling in between the joists, it may lead to excessive deflection of the timber subfloor decking. In this case calculations should be carried out to demonstrate that the subfloor has acceptable load capacity and deformation levels (ultimate limit state and serviceability limit state – Eurocode design) to avoid unacceptable deflection and sagging of the floating floor.

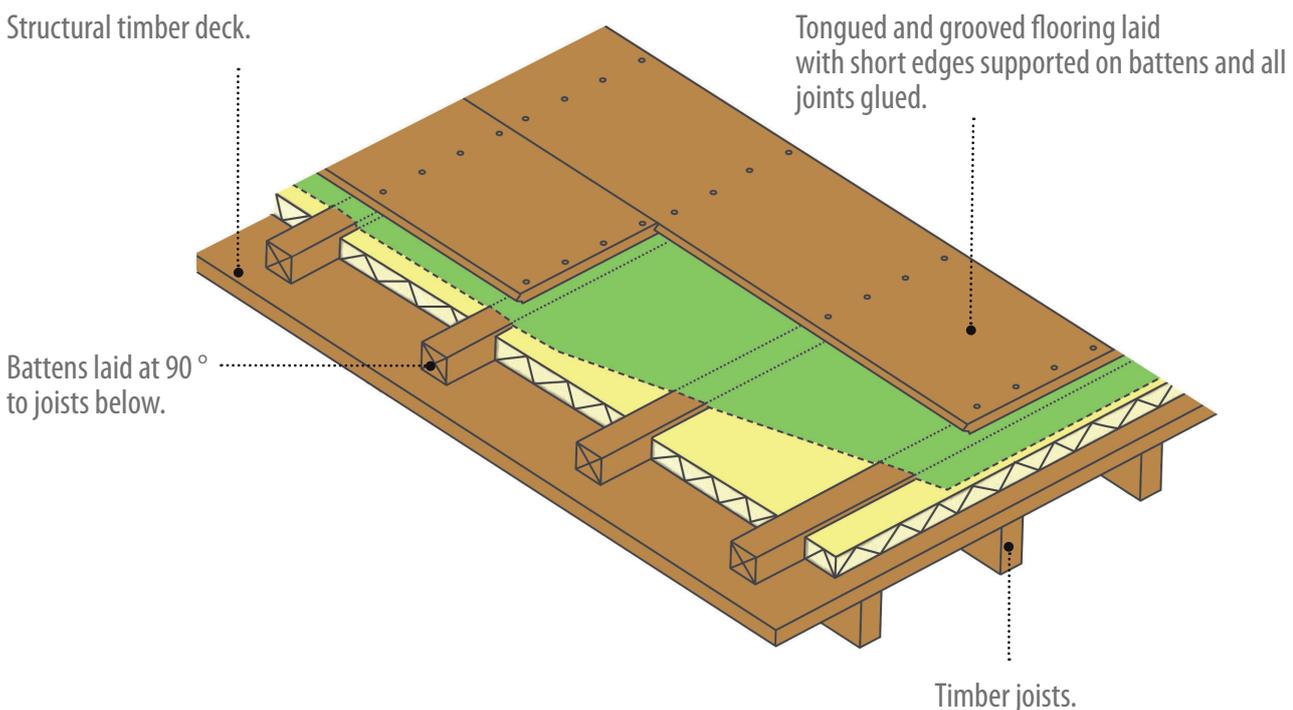


Figure 10: Self-supporting OSB or particleboard floating floor over timber sub-floor.

7.2 Insulation

The insulation should be placed between the battens, butting all joints tightly together with no gaps (see clause 2.6).

7.3 VCL

All floating floors should incorporate a VCL. A VCL providing a vapour resistance of not less than 200 MNs/g e.g. 250 micron (minimum 1000 gauge) should be laid above the insulation layer and should be upturned by at least 38mm around perimeter walls. Any joints in the sheet should be lapped 150mm (minimum) and the joints taped with a vapour resistant tape.

- **Note** *Where a self supporting floating floor is installed above ground floor level for acoustic purposes, a VCL is not be necessary. It is however still recommended for continuously supported floating floors as it can act as a 'slip' layer between the wood-based panel overlay and the insulation.*

7.4 Particleboard and OSB floating floor overlay

Only types P5 or P7 particleboard (see clause 2.1) and types OSB/3 or OSB/4 oriented strand board (see clause 2.2) should be used as the floating floor overlay panel on a self-supporting floor. For domestic use, particleboard of not less than 18mm and OSB of not less than 15mm should be used at 450mm (maximum) centres and 22mm particleboard or 18mm OSB for 600mm (maximum) centres. For floors requiring restricted deflection, panels of not less than 22mm for particleboard and 18mm for OSB should be used.

The panels should be laid with their long edges across the supporting battens. The short edges should be supported along the centre line of a batten. Short edge joints should be staggered and the panel length should be not less than two batten spacings. It is essential that the edges around the perimeter of the floor are continuously supported by battens.

All tongued and grooved joints should be glued with an adhesive conforming to at least durability class D3 of EN 204. Adhesive should be liberally applied to the tongue and to the groove.

Panels should be fixed to battens using mechanical fixings as specified by the manufacturer. When nails or screws are specified, use corrosion resistant fixings. Corrosion resistant materials include brass, galvanised steel, sheradised steel or austenitic stainless steel.

When nailing, flat headed annular grooved or ringshank nails, or other improved nails which have superior holding power should be used. Minimum nail length should be 2.5 times the panel thickness, and minimum diameter 3mm or 0.16 times the thickness whichever is the greater.

Mechanical fixings should be 300mm centres (max) and the minimum edge distance should be 8mm. All nail heads should be punched home by 2-3mm. Screws should be countersunk below the top surface.

Where manufacturer's flooring systems are used, their products (panel and adhesives/fixings etc...) and installation requirements should be followed.

- **Note** *For non-domestic floors, the floating floor will need to be assessed to ensure compliance with the loading and deformation requirements (ultimate limit state and serviceability limit state – Eurocode design) for a given thickness of floating floor overlay and batten spacing.*

7.5 Plasterboard planks

Where a plasterboard plank is employed between the batten and the floating floor wood-based panel overlay, the plasterboard should be laid at 90° to the battens below, the wood based panel overlay should be laid in the same direction but the joints should not coincide with those of the plasterboard planks.

Manufacturer's instructions for the plasterboard plank system being used should be followed for details on fixing and the materials to be employed.

- **Note** *The VCL should be placed below the plasterboard planks and the wood-based panel overlay.*

7.6 Movement gaps

It is essential to allow for possible expansion by providing a gap wherever panels abut any rigid upstand such as a perimeter wall/internal load-bearing walls, column, pipes or fireplace surround. (See clause 6.5).

7.7 Access to pipes and services

Before laying the battens and the floating floor wood-based panel overlay, consideration should be given to the provision of access to pipes and services (see clause 6.6).

7.8 Thresholds

At openings in walls built directly on the concrete substructure a movement gap should be provided. Treated timber battens should be inserted beneath the floating floor wood-based panel overlay at the point of loading in order to counteract localised compression and to provide support beneath the cut edges of the particleboard (see Figure 11).

7.9 Partition Loading

Load-bearing partitions should not be built on top of the floating floor wood-based panel overlay, unless continuously supported from beneath. Non-load-bearing partitions may be built directly on top of the wood-based panel overlay without continuous support, provided it is on top of, and at right angles to the batten support and any resilient material on the battens is designed to withstand the imposed loads. It is essential that care is taken in setting out of partitions in order to ensure that the floor support is in the correct position.

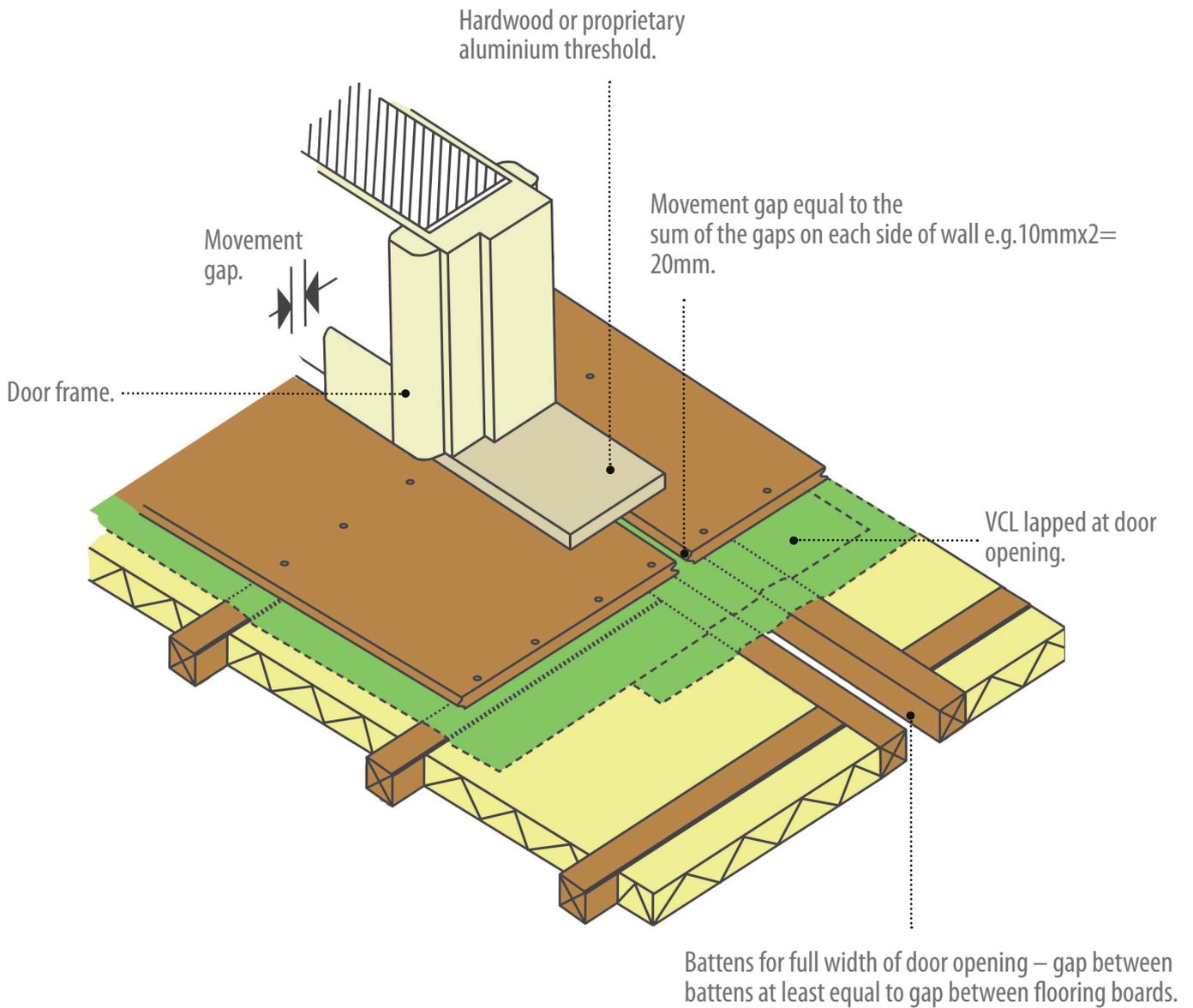


Figure 11: Detail of the threshold of a doorway in a wall which is built off the supporting concrete structure when a battened floor is used.

SECTION 8: FINISHING

8.1 Carpet and sheet flooring

The recommendations given in BS 8203 should be followed. Where carpet is to be laid over the wood panel floating floor and held in place using pre-nailed carpet gripper, adequate edge distance (minimum 25mm from the edge of the panel) should be left for the gripper nails to avoid splitting the panels.

Sheet flooring (resilient or textile flooring) can be loose laid or bonded directly to the panel surface, however BS 8203 (resilient floor covering installation code of practice) recommends that particleboard and OSB should have a 'fabricated underlay' (thin plywood or hardboard specified in BS 8203) laid before laying the floor covering to avoid the panel joints in the particleboard or OSB floating floor beneath the floor covering showing through after trafficking. BS8203 also recommends that uneven timber floors may be sanded or patch filled with suitable proprietary flexible cementitious smoothing underlayment prior to laying the fabricated underlay (the degree of surface regularity needed will be dependent on the thickness and type of floor covering used).

When using a fabricated underlay, large panels should be used and laid at right angles to the particleboard or OSB floating floor surface below. The joints of the floating floor surface and the fabricated underlay should not coincide with each other where possible and all expansion gaps should be the same as the floating floor beneath.

- **Note 1** *It is essential that the fabricated underlay is properly conditioned prior to laying. Conditioning, fixing and specifications for fabricated underlays are given in BS 8203 and/or reference should be made to the resilient or textile floor covering manufacturer's recommendations.
Sanding off more than 1mm from a raised joint may weaken the joint.*
- **Note 2** *Thin plain coloured vinyl or carpet will tend to show small irregularities in a floor surface, to a greater extent than thicker, patterned or textured finishes.*
- **Note 3** *Where fully bonded floor coverings ride over intermediate movement joints, any resulting movement may cause the covering to stretch or ridge.*

8.2 Ceramic tiling

Tiling onto wood-based panel floating floors is not recommended.

The main issue with ceramic tiling to wood-based panel floating floors is the potential movement, leading to cracking in the tiles or grout. This movement can come from loading (dynamic and static), in particular the dynamic loading when walked upon. Movement due to moisture content changes in the wood can also lead to problems following installation/during use.

Guidance on tiling to fixed timber substrates is given in the Tile Association publications “Internal Ceramic Tiling to Sheet and Board Substrates.”

- **Note** *There are proprietary systems or products offered by manufacturers that enable tiling to floating floors using specific materials and preparation with the floors needing to meet strict requirements in order for them to be successful.*

Appendix A

Publications referred to in this Code

CP102	Code of Practice for the protection of building against water from the ground.
BS EN 204	Classification of non-structural adhesives for joining of wood and derived timber products.
BS EN 300	Oriented Strand Board (OSB) – Definitions, classification and specifications.
BS EN 309	Wood Particleboards – Definition and classification.
BS EN 312	Particleboards – Specifications <u>Part 5</u> : Requirements for load-bearing boards for use in humid conditions.
BS EN 312	Particleboards – Specifications <u>Part 7</u> : Requirements for heavy duty load-bearing boards for use in humid conditions.
BS EN 1995-1-1:2004 +A2:2014	Eurocode 5: Design of timber structures. General. Common rules and rules for buildings.
BS 3837	Expanded polystyrene boards.
BS 5268	Structural use of timber. <u>Part 5</u> : Code of practice for the preservative treatment of structural timber
BS 6398	Specification for bitumen damp-proof courses for masonry.
BS 6925	Specifications for mastic asphalt for building and civil engineering.
BS 8102	Code of practice for protection of structures against water from the ground.
BS 8201	Code of practice for flooring of timber, timber products and wood-based panel products.
BS 8203	Code of practice for installation of resilient floor coverings/partitions in order to ensure that the floor support is in the correct position.
BS 8204	Screeds, bases and in-situ floorings <u>Part 1</u> : Code of Practice for concrete bases and cement sand levelling screeds to receive floorings.
BS 8215	Code of practice for design and installation of damp-proof courses in masonry construction.

Appendix A**Publications referred to in this Code**

BS 8417	Preservation of wood. Code of practice.
BS EN 13318:2000	Screed material and floor screeds. Definitions.
EN ISO 13788	Hygrothermal performance of building components and building elements. Internal surface temperature to avoid critical surface humidity and interstitial condensation. Calculation methods.
BS EN 13810	<u>Part 1:</u> Wood-based panels. Floating floors. Performance specifications and requirements.
DD CEN/TS 13810	<u>Part 2:</u> Wood-based panels. Floating floors. Test methods
PanelGuide - Published by the Wood Panel Industries Federation, TRADA Technology Ltd (a BM TRADA company), and the National Panel Products Division (a division of the Timber Trades Federation).	
CIBSE Guide A3	Thermal properties of building structures 1980

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**WPIF - Wood Panel Industries Federation
Autumn Park Business Centre
Dysart Road
Grantham
Lincolnshire
NG31 6EU
Tel: 01476 512381 Fax: 01476 575683
Email: enquiries@wpif.org.uk**



Document design and drawings by Fran Green for Engine Head Studio in Sheffield U.K.
www.engineheadstudio.co.uk