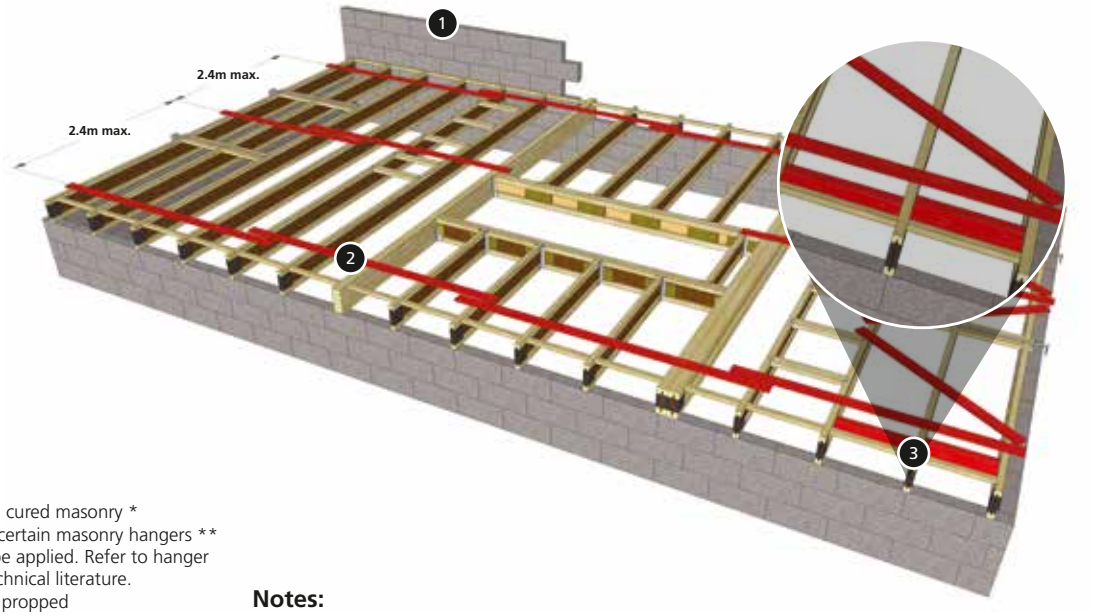
Masonite Beams Installation Guide for Floor System Construction

SÖDRA

Safety Bracing Details

UNBRACED JOISTS ARE UNSTABLE!

- Do not walk on or apply any materials to the joist area until the floor system is properly braced.
- The bracing should be removed in sequence as the decking is installed.
- The following represents a generic method of bracing a floor. Each system will be slightly different and the installer must ensure that all sections of the floor are accounted for.



1. Minimum 675mm cured masonry * is required above certain masonry hangers ** before load may be applied. Refer to hanger manufacturer's technical literature.
   * or joists may be propped
   ** safety restraint type hangers do not
2. 22 x 97mm softwood bracing members nailed with 2no. 3.35 x 65mm nails at each joist.
3. 38 x 125mm timber stability blocks to be fixed between at least 3 joists, covering at least 1.2m in length. Nail with at least 2no. 3.35 x 65mm nails each end.

Notes:

- Full depth I-joist blocking panels may be used instead of solid timber stability blocks.
- All blocks to be cut accurately and squarely to maintain spacing of joists.
- Additional blocks and bracings are required for any areas of joists running in opposite directions and for cantilevered joists (unless permanent closure piece is installed at this stage). Install further sets of blocks and diagonals at a maximum of 12m centres in long runs of joists.

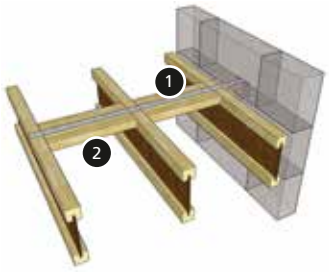
Connections

MULTIPLE PLY GLULAM MEMBERS - FIXING DETAILS
Allowable uniform load applied to multiple glulam beam kN/m

FIXINGS	PLY THICKNESS						
	2 PLY MEMBERS			3 PLY MEMBERS		4 PLY MEMBERS	
	38mm	45mm	90mm	38mm	45mm	38mm	45mm
2 rows 3.00mm x 75mm long nails at 300mm centres	4.34	4.34	–	3.24	3.24	–	–
3 rows 3.00mm x 75mm long nails at 300mm centres	6.51	6.51	–	4.86	4.86	–	–
2 rows M12 bolts at 600mm centres	9.46	11.20	19.66	7.06	8.36	6.31	7.47
2 rows M12 bolts at 300mm centres	18.92	22.40	39.32	14.12	16.72	12.62	14.94

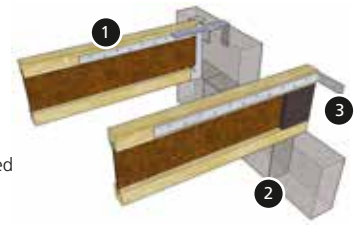
A1 MASONRY WALL RESTRAINT – PERPENDICULAR TO JOIST

1. Thin metal restraint strap installed in accordance with the manufacturer's instructions
2. Min. 38 x 97mm nogging fixed to joists by skew nails



A2 MASONRY WALL RESTRAINT – PARALLEL TO JOIST

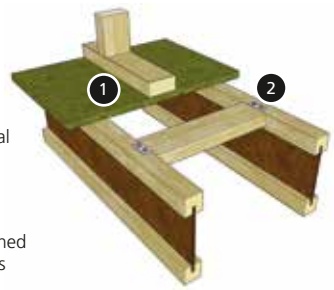
1. Restraint strap fitted to joist on non-restraint type masonry hanger
2. Parallel restraint straps may only be omitted if the joist has at least 90mm of direct bearing on the wall, provided that the height of the wall does not exceed 2 storeys
3. Restraint strap on built-in joist



A3 PARALLEL PARTITION NOGGINGS

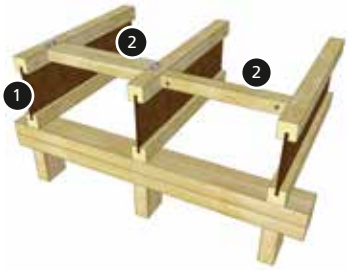
1. Non-load bearing stud partition fixed to noggings (max. self-weight of partition 0.8kN/m run)
2. 38 x 75mm partition noggings supported by metal z-clips, nailed in accordance with the manufacturer's instructions

i Noggings may also be attached with 2no. 3.35 x 65mm nails skew nailed at each end



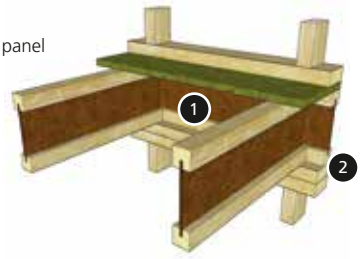
A4 PERIMETER NOGGINGS

1. Timber noggings fitted between joists to support free edges of decking at external or internal walls. Also applicable to masonry walls
2. Noggings may be skew nailed to joists or supported on z-clips



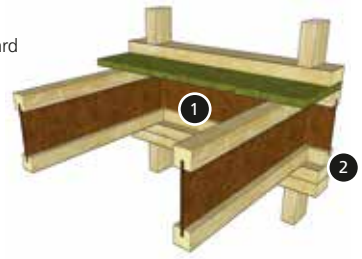
B1 I-JOIST BLOCKING PANEL

1. Masonite I-Joist blocking panel
2. Joist has full bearing on timber plate



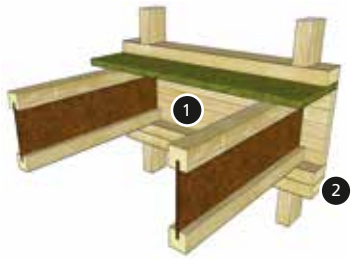
B2 RIM I-JOIST

1. Masonite I-Joist rim board
2. Joist requires 45mm minimum bearing



B3 RIM BOARD

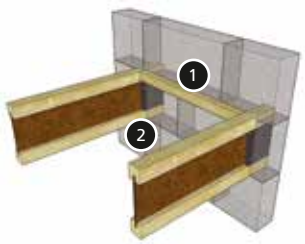
1. 38mm Glulam or similar approved
2. Joist requires 45mm minimum bearing



B4 MASONRY HANGER

1. Perimeter nogging for decking support where required
2. Proprietary approved masonry joist hangers - web stiffeners may be required, refer to layout drawing

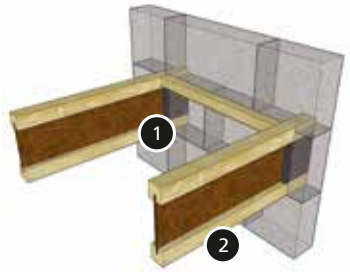
i Parallel restraint straps will be required with non-restraining hangers - see A2



B5 MASONRY WALL BEARING

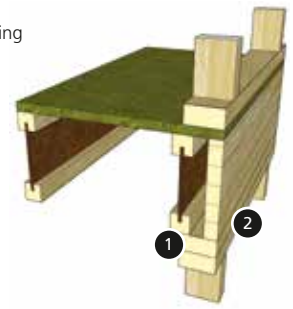
1. Joist end built into wall. Note some capping devices may require less than a full bearing to prevent fouling the cavity
2. Perimeter nogging

i The joist bearing must be sealed to prevent air leakage. This may achieved by the use of proprietary capping devices or end blocks fitted to the joist webs with sealant around the joist ends.



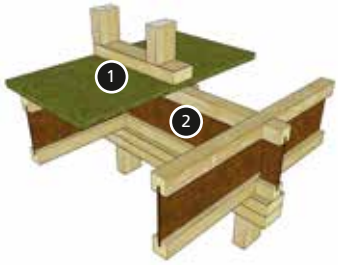
B6 PARALLEL TIMBER FRAME WALL

1. Masonite I-Joist with half bearing into wall
2. Rim board to suit wall load



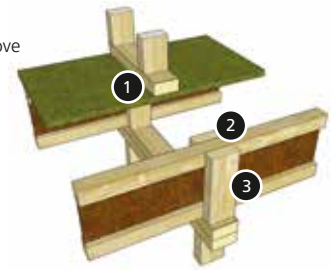
B7 INTERMEDIATE BEARING — LOAD BEARING WALL ABOVE

1. Load bearing wall directly above wall below
2. Masonite I-Joist blocking panels between joists



B8 INTERMEDIATE BEARING COMPRESSION BLOCKS

1. Load bearing wall directly above wall below
2. Height of compression blocks = joist depth + 2m
3. 38 x 89mm minimum softwood compression blocks

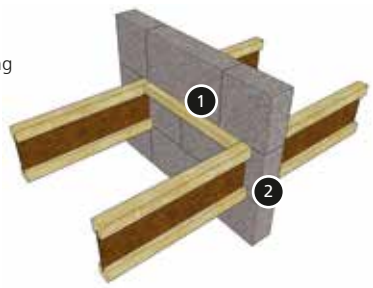


B9 INTERMEDIATE BEARING NO LOAD BEARING WALL ABOVE

1. Web stiffeners where required

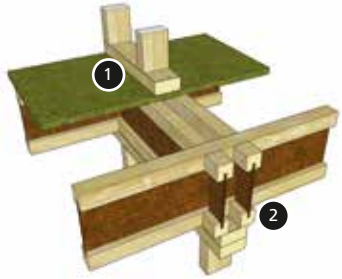
B10 INTERMEDIATE BEARING MASONRY WALL

1. Perimeter nogging
2. Minimum 89mm bearing



B11 INTERMEDIATE BEARING DOUBLE BLOCKING

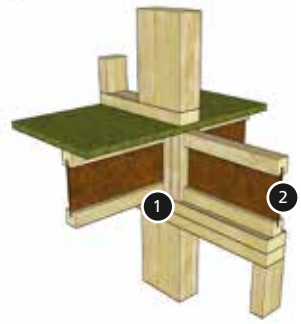
1. Load bearing wall directly above wall below
2. Webs of blocking in line with edge of stud wall above and below



B12 COLUMN WITH COMPRESSION BLOCKS

1. Softwood compressionblocks, min. 38 x 89mm,height = joist depth + 2mm
2. I-Joist blocking panels

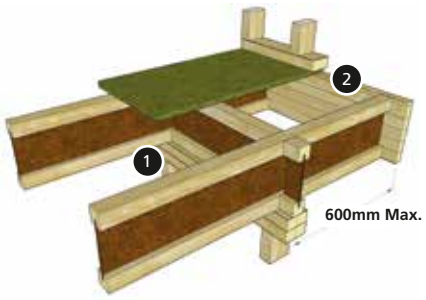
i Number of blocks to suit width of column above



B13 CANTILEVER SUPPORTING WALL

1. I-Joist Blocking
2. 38mm Glulam or similar approved

i Structural cantilever must not exceed 600mm



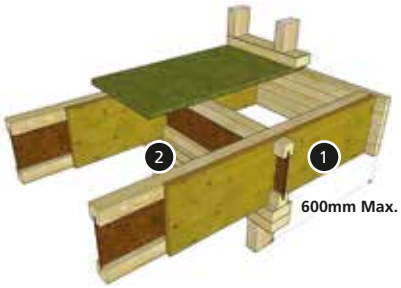
B14 REINFORCED CANTILEVER SUPPORTING WALL

1

19mm ply reinforcement one or both sides of cantilevered joists, (determined by loading) nailed at 150mm centres with 3.35mm dia. nails, 65mm long. Stagger nails when fixing ply both sides

2. I-Joist Blocking

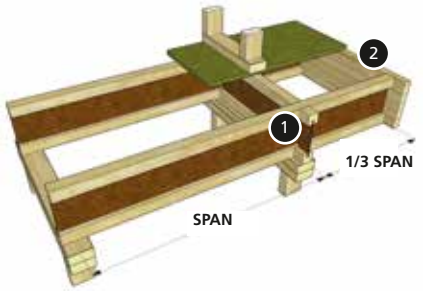
i Structural cantilever must not exceed 600mm



B15 NON LOAD BEARING CANTILEVER

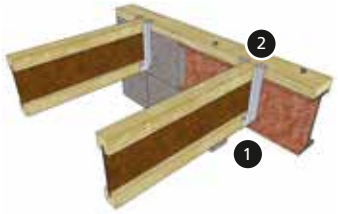
1. I-Joist Blocking
2. 38mm Glulam or similar approved

i Max. cantilever length is 1200mm. No load applied on cantilever



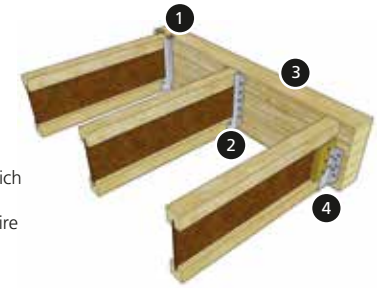
B16 WALLPLATE CONNECTION

1. Top mount hangers
2. Timber bearing plate securely fixed to flange of steel beam/masonry wall (design of fixings by Building Designer



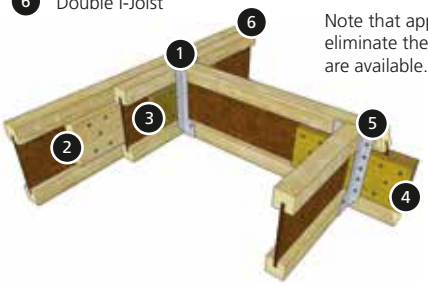
C1 I-JOIST TO SOLID BEAM CONNECTION

1. Top mount hanger
2. Face mount hanger
3. Glulam beam or similar approved
4. Face mount hangers which do not laterally support the joist top flange require webstiffeners



C2 I-JOIST TO I-JOIST CONNECTION

1. Top mount hanger
2. Filler block or proprietary metal clips must be installed with multiple joists
3. Backer block on hanger face only for double joist
4. Backer block both sides of single joist
5. Face mount hanger
6. Double I-Joist



i Backer blocks nailed with 10no. 3.75mm diameter nails x 75mm long, with ends clinched if possible.

For top mount hangers, backer block tight to top flange of joist.

For face mount hangers, backer block tight to bottom flange.

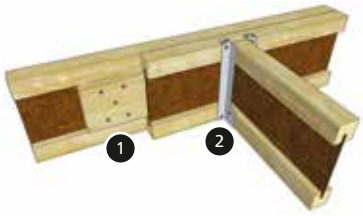
Filler blocks fitted tight to top flange.

Use 10no. 4.00mm nails x 90mm long, for HB joists.

Note that approved hangers which eliminate the need for backer blocks are available. See detail C3.

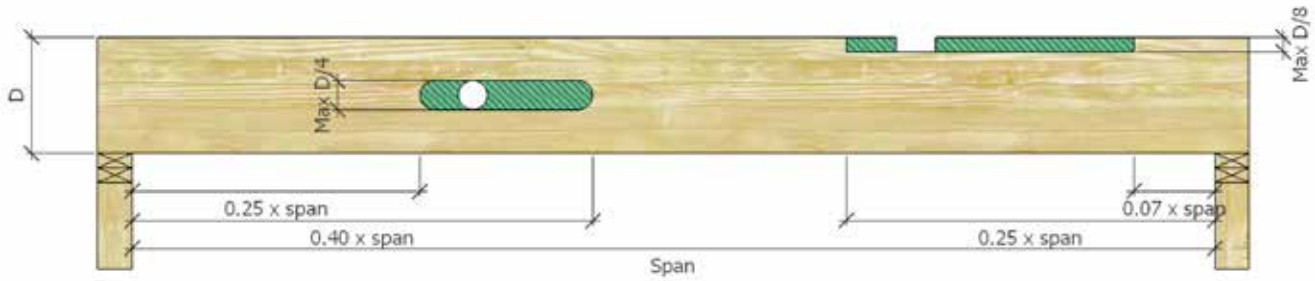
C3 I-JOIST TO I-JOIST CONNECTION — BACKERLESS

1. Filler block or proprietary metal clips must still be installed with multiple joists
2. Approved hanger designed for use without backer blocks



GLULAM BEAMS

Based on BS5268



Notes:

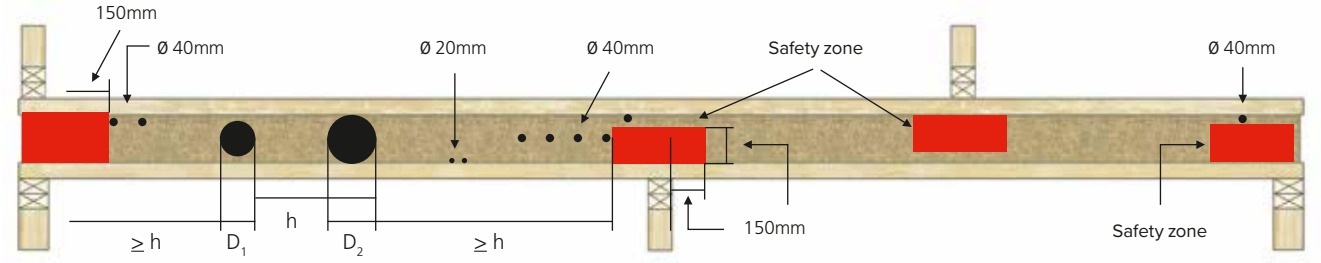
Holes must be placed along the neutral axis and spaced apart at least 3 x largest diameter hole. For holes outside these rules please contact engineering support

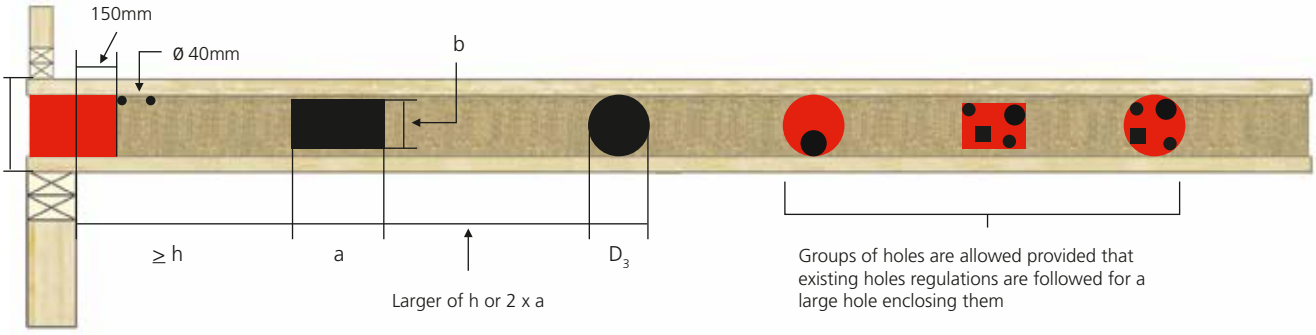
Allowable Holes

MASONITE BEAMS

Unless otherwise stated:

- All holes must be placed on the centre of the web.
- No holes are allowed in the red safety zones.
- Holes must not extend into the flange material.
- Holes with diameter less than 20 mm can be placed anywhere in the web, but with a minimum distance of 40mm between holes.
- One hole with diameter less than 40 mm can be placed anywhere in the web, except in the safety zones, providing the general rules for hole spacing are followed.
- The maximum dimensions for rectangular holes are: a = 300 mm and b = 200 mm.
- Placement restrictions and the maximum sizes of holes are shown in the diagram and table below.





PRODUCT DEPTH mm		220	240	300	350	400
Maximum Hole Diameter mm		126	146	206	256	306
Minimum Distance from Bearing or Point Load		≥h	≥h	≥h	≥h	≥h
Minimum Distance Between Circular Holes	<40mm	2 x larger of (D_1 or D_2)	2 x larger of (D_1 or D_2)	2 x larger of (D_1 or D_2)	2 x larger of (D_1 or D_2)	2 x larger of (D_1 or D_2)
	>40mm	≥h	≥h	≥h	≥h	≥h
Minimum Distance Between rectangular and other holes		Larger of h or 2 x a	Larger of h or 2 x a	Larger of h or 2 x a	Larger of h or 2 x a	Larger of h or 2 x a

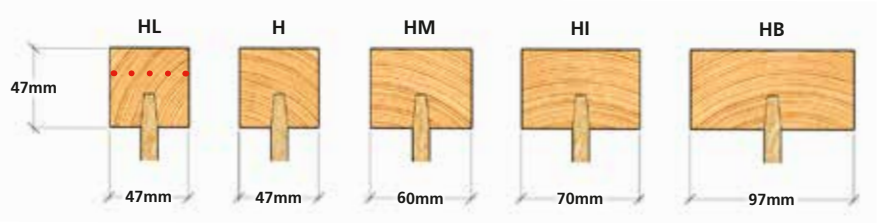
Notes:

All values above are valid for uniformly distributed loads. Information regarding the calculation of the reduction of shear capacity caused by a hole can be found in Masonite Beams European Technical approval; ETA 12/0018. Any holes falling outside of these rules must be checked by our engineering support service.

Masonite Product Profiles

Notes:

The HL Joist is identified by a RED dotted line on the flange.



STANDARD DEPTHS mm	HL	H	HM	HI	HB
220	✓	✓	✓	✓	✓
240	✓	✓	✓	✓	✓
300	✓	✓	✓	✓	✓
350			✓		✓
400			✓		✓

THESE CONDITIONS ARE NOT PERMITTED UNDER ANY CIRCUMSTANCES

If in doubt, please ask for advice before you cut.

NO holes close to joist ends
Use hole chart for max. size & min. distance to wall.

NO notches in flanges of Masonite joists

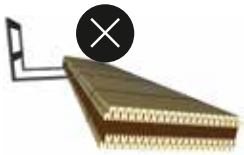
NO bevel cuts beyond the inside face of wall

NO notches or holes in Glulam
Except as advised in hole chart for the product.

Storage
Always store joist packs flat, properly covered and above the ground.

Never store joist packs vertically.

Handling
Never lift or move the joist packs by the flanges.



Always follow the HSE guidance on manual handling.

Contractors should be aware of their health and safety responsibilities under the Construction (Design and Management) Regulations 2015.

BS5268 Version

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