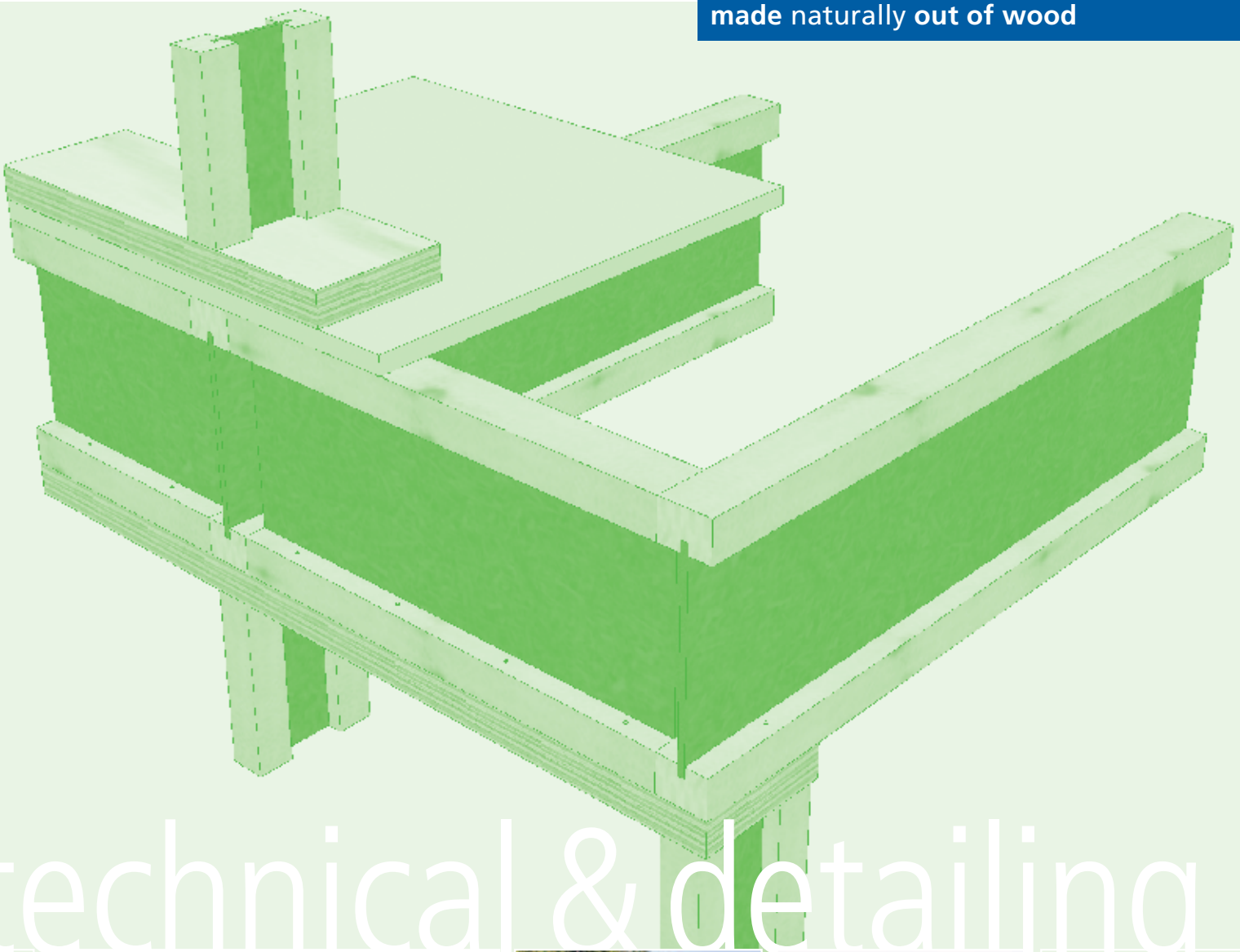
Technical Guide
STEICO *construction*

Construction elements –
made naturally **out of wood**



technical & detailing

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STEICO
engineered by nature

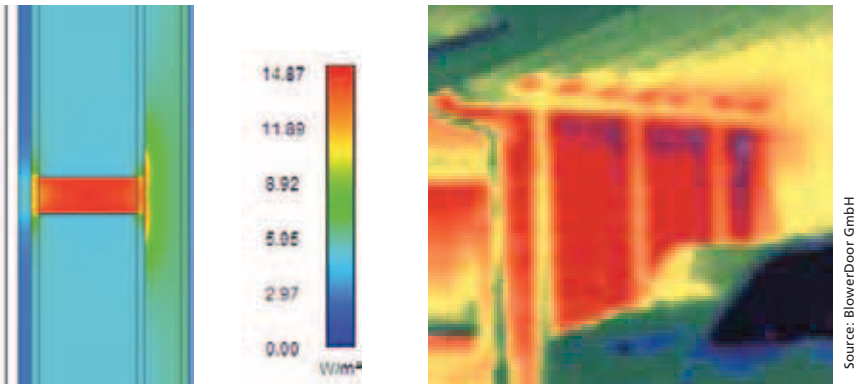
CONTENTS

ENVIRONMENTALLY FRIENDLY BUILDING PRODUCTS MANUFACTURED FROM SUSTAINABLE RESOURCES

How can we build in an energy efficient, environmentally responsible and sustainable way? This question has fascinated us since the start of our company in 1959, and in asking this we set ourselves a high standard for our products. Stringent tests and voluntary quality checks ensure that our products meet the highest requirements for ecological building and modern methods of construction. Natureplus®, an independent environmental certification organisation, certifies our insulation materials, and we only use raw materials certified by the FSC® in our production.

As an insulation specialist we continually work to improve the energy efficiency of buildings and to increase their comfort to the occupier. The STEICO range of products includes products for both timber and masonry structures, for new buildings, refurbishments and renovations. Using STEICO products in a renovation project can increase the energy efficiency of the structure by up to twenty times.

Protecting our environment and the increasing costs of energy are the two main drivers for the continued development of this system, with the production of I-Joists a logical step forward. Lightweight and efficient engineered timber elements combined with high quality insulation materials form the basis for sustainable building and offering both security and comfort for future generations.



Source: BlowerDoor GmbH

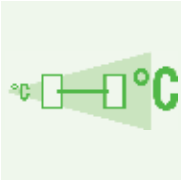
Where high quality insulation materials are used, traditional solid wood often poses a technical challenge to designers due to its thermal inefficiency where it acts as a thermal bridge.

Solid timber wall joists or rafters are construction elements that can be inefficient where they act as a thermal bridge. With the STEICO*construction* building system such thermal bridges are reduced to a minimum due to the inherent efficiency of the I-Section profile.

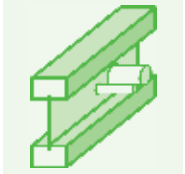
FOLLOWING NATURE'S STEPS: I-JOISTS ARE IDEAL BUILDING ELEMENTS

In nature we find numerous examples of highly efficient structures using a simple principle: where no materials are needed, none are used. The results speak for themselves: consistent performance values, lightweight, low embodied energy and improved energy efficiency in use.

STEICO I-Joists follow these principles and due to their characteristic profile offer the following advantages:



Reduction of thermal bridging

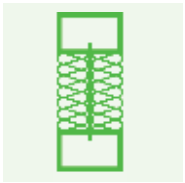


Easy installation of services

Lightweight. Easy to handle and install

Manufactured to standard depths and widths to match industry standards

High dimensional stability through controlled moisture content



Available pre-insulated to form a solid cross section for ease of installation

High load bearing capacity

Easy to machine

Strict manufacturing tolerances

STEICO*joist* and STEICO*wall* have the following certificates:

FSC MIX Wood FSC® C126750

CE

BBA BRITISH BOARD OF AGRÉMENT European Technical Approval ETA-06/0238

QUALITY ASSURED UKTFA

The STEICO*construction* Building System meets the requirements of:

- The Building Regulations
- NHBC Standards
- ZURICH Insurance
- Robust Details Ltd.

STEICO*joist* AND STEICO*wall* ARE NATURAL PRODUCTS

The production basis for all our joists is timber. Made from slow grown spruce, the flanges are kiln dried and machine stress graded thereby guaranteeing a consistant quality and defined mechanical properties.

The webs are made from structural fibreboard, jointed along the length with a V-groove profile, offering a very high shear capacity. Both the preparation and manufacturing processes of the flanges, the webs and the installation of durable adhesives are carried out using the latest automated assembly lines.

To guarantee a consistently high quality of our products, both internal and external parties control the production process. The I-Joist received a European technical certification from the British Board of Agrément (BBA), ETA-06/0238, and carries the CE-mark.

A unique product is the STEICO*wall* – available as a pre-insulated stud using natural wood fibres. The spaces between the flanges and the web are pre-insulated thereby eliminating the need to profile the insulation on site, and the stud can therefore be used in the same way as a traditional, solid stud. The insulation materials are made with STEICO's standard quality of natural wood fibres, ensuring excellent thermal conductivity values.

FSC MIX Wood FSC® C126750

CE

BBA BRITISH BOARD OF AGRÉMENT European Technical Approval ETA-06/0238

A PRODUCT FOR EVERY APPLICATION

STEICO joist
I-Joist Building System for roofs & floors

Joists for applications such as floors or roofs.

Special characteristics:

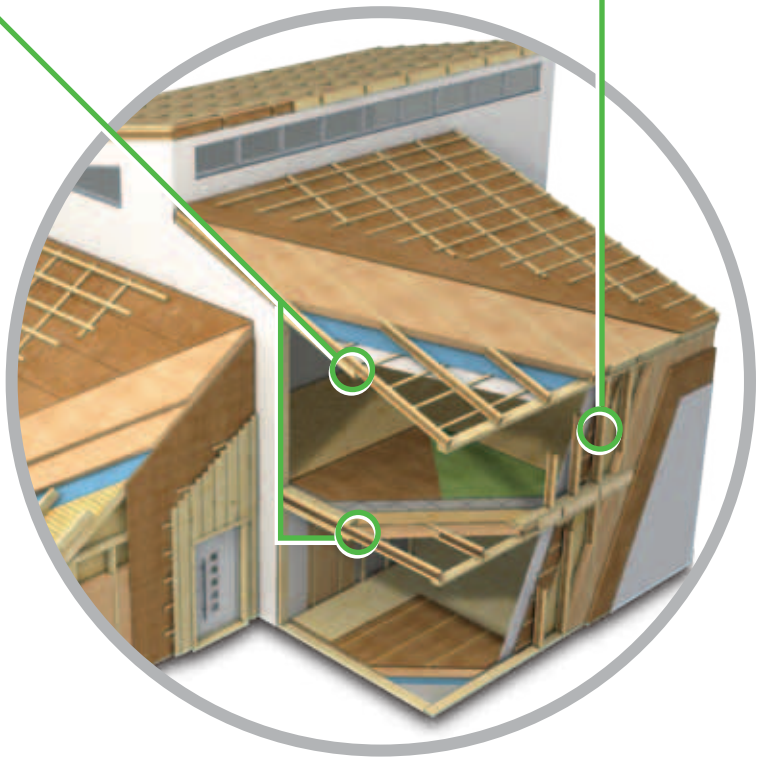
- 8 mm thick structural fibreboard web for high shear capacities
- High quality machine stress graded softwood flange material
- Available as a pre-insulated version

STEICO wall
I-Joist Building System for walls

Joists for wall stud applications.

Special characteristics:

- 6 mm thick structural fibreboard web to reduce thermal bridging
- Available as a pre-insulated stud

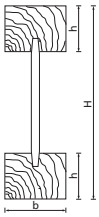


A perfect match with STEICO insulation materials

The STEICO I-Joists are suitable for use in combination with STEICO insulation materials. Whether wood, hemp or blown loose fibre insulation, fixed or flexible slabs, the complete range of STEICO's ecological insulation materials are available in conjunction with STEICO I-Joists.

For both new building and renovation projects STEICO offers an optimised system enabling high-energy efficiency.

OVERVIEW OF ALL I-JOISTS



Type	Flange b*h [mm]	Depth H [mm]	Length [m]	Weight [kg / m]
STEICO*joist* SJ 45	45*45	200		2.9
	45*45	220		3.1
	45*45	240		3.2
	45*45	300		3.7
	45*45	360		4.2
STEICO*joist* SJ 60	60*45	200	Available in lengths of 7.0 m. 9.0 m. 13.5 m, and upon request up to 16 meters	3.5
	60*45	220		3.8
	60*45	240		3.9
	60*45	300		4.3
	60*45	360		4.8
	60*45	400		5.0
STEICO*joist* SJ 90	90*45	200		4.8
	90*45	220		5.1
	90*45	240		5.1
	90*45	300		5.6
	90*45	360		6.2
	90*45	400		6.4
STEICO*wall* * SW 45	45*45	160		2.4
	45*45	200		2.7
	45*45	240		2.9
	45*45	300		3.3
	45*45	360		3.7
STEICO*wall* * SW60	60*45	160	Available in lengths of 7.0 m. 9.0 m. 13.5 m, and upon request up to 16 meters	3.0
	60*45	200		3.3
	60*45	240		3.5
	60*45	300		3.9
	60*45	360		4.3
	60*45	400		4.5
STEICO*wall* * SW90	90*45	240		4.8
	90*45	300		5.2
	90*45	360		5.7
	90*45	400		5.8

* available in a pre-insulated option

With lengths of up to 16 meters, depths from 160 – 400 mm, and the option for pre-insulation these combine to make the STEICO*construction* range a fully integrated construction system.

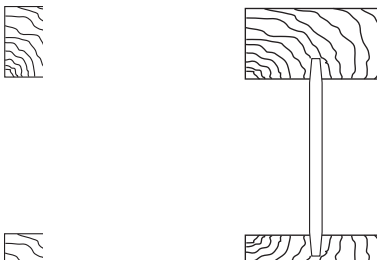
STEICO *joist*

With 8 mm thick structural fibreboard web for high shear applications

SJ 45

SJ 60

SJ 90



Properties

MATERIAL PROPERTIES

Material	Minimum density φ [kg / m³]	Declared thermal conductivity $\lambda_{\perp}$ [W/(m*K)] acc. to EN 12524	Specific heat capacity c [J/(kg*K)] acc. to EN 12524	Water vapour diffusion resistance μ acc. to EN 12524	
				Dry	Humid
Flange	500	0.13	1600	50	20
Web	900	0.18	1700	10	20

Please note: All STEICO fibreboards are made up of wood fibres aligned in the direction of the mattress. Wood is an anisotropic material with different physical properties along and across the fibres, and with differing properties between the fibreboards and flanges. For an accurate thermal conductivity calculation please use the above value for thermal conductivity, multiplied by 2.2.

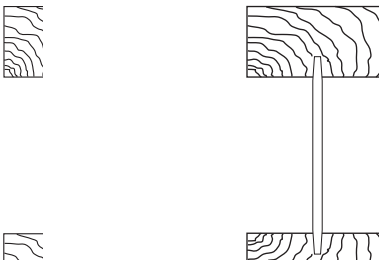
Heat transfer per meter [mW]
By using these engineered wood products in combination with an effective vapour check and airtight barrier a significant reduction of heat loss can be achieved. With a temperature difference of one Kelvin per running meter of joist the following results can be achieved.

FIRE PERFORMANCE

STEICO*joist* and STEICO*wall* have fire classifications according to EN 13501-1:2002: D-s2,d0.

Please contact STEICO Ltd. for further fire-test information (0163 473 32 20)

SW 45 SW 60 SW 90



STEICO*wall*

With 6 mm thick structural fibreboard web to reduce thermal bridging

Available in a pre-insulated option

CHARACTERISTIC DESIGN VALUES TO EC 5

Characteristic design values to EC 5

Refer to page 12 for "Permissible design properties to BS 5268"

Type	Depth H [mm]	Moment capacity[a] $M_{y,k}$ [kNm]	Flexural rigidity $EI_{y,\,mean}$ [$Nmm^2 * 10^9$]	Shear capacity max V_k [kN]	Shear rigidity $GA_{y,\,mean}$ [MN]
STEICO*joist* SJ 45	200	7.09	327	10.92	2.09
	220	8.00	416	11.85	2.42
	240	8.92	516	12.75	2.76
	300	11.74	888	15.36	3.77
	360	14.01	1369	17.84	4.78
STEICO*joist* SJ 60	200	9.45	436	10.84	2.09
	220	10.66	554	11.75	2.42
	240	11.87	687	12.64	2.76
	300	15.57	1177	15.17	3.77
	360	18.52	1808	17.55	4.78
	400	20.45	2310	19.07	5.45
STEICO*joist* SJ 90	200	14.13	651	10.76	2.09
	220	15.96	827	11.65	2.42
	240	17.75	1025	12.51	2.76
	300	23.21	1752	14.97	3.77
	360	27.51	2683	17.25	4.78
	400	30.30	3419	18.71	5.45
STEICO*wall* SW 45	160	2.49	127	4.50	1.12
	200	3.56	227	5.47	1.63
	240	4.48	359	6.40	2.13
	300	5.90	618	7.72	2.89
	360	7.05	954	8.98	3.64
STEICO*wall* SW 60	160	3.32	169	4.48	1.12
	200	4.74	302	5.43	1.63
	240	5.95	477	6.34	2.13
	300	7.82	818	7.61	2.89
	360	9.30	1258	8.75	3.64
	400	10.28	1608	8.23	4.15
STEICO*wall* SW 90	240	8.89	711	6.27	2.13
	300	11.64	1216	7.50	2.89
	360	13.80	1863	8.66	3.64
	400	15.21	2376	8.23	4.15

Characteristic values prepared in accordance with the recommendations of ETAG 011 and BSEN 1995-1-1.

[a] The characteristic bending moments are based on the assumption that lateral bracing to the compression flange (at a spacing not exceeding ten times the flange width) is in place.

Characteristic bearing values to EC 5

Refer to page 15 for web stiffener installation details

Type	Depth H	End bearing [kN]				Intermediate bearing [kN]	
		Bearing length 45 mm		Bearing length 90 mm		Bearing length 90 mm	
		Web stiffener		Web stiffener		Web stiffener	
		no	yes	no	yes	no	yes
STEICO*joist* SJ 45	200	8.1	9.7	8.7	10.7	16.0	16.1
	220		10.0		11.0		16.4
	240		10.3		11.3		16.7
	300		11.2		12.2		17.6
	360		12.1		13.1		18.5
STEICO*joist* SJ 60	200	12.0	12.7	12.6	14.2	21.6	23.0
	220		13.0		14.5		23.3
	240		13.3		14.8		23.6
	300		14.2		15.7		24.5
	360		15.1		16.6		25.4
	400		15.7		17.2		26.0
STEICO*joist* SJ 90	200	12.9	13.8	15.3	15.4	29.3	35.9
	220		14.1		15.7		36.2
	240		14.4		16.0		36.5
	300		15.3		16.9		37.4
	360		16.2		17.8		38.2
	400		16.8		18.4		38.9

Values of k_{mod} to be used with EC 5 when designing STEICO I-joist products

Duration of load	Bending and axial resistance		Shear resistance		Bearing resistance	
	Service class 1	Service class 2	Service class 1	Service class 2	Service class 1	Service class 2
Permanent	0.60	0.60	0.30	0.20	0.60	0.60
Long term	0.70	0.70	0.45	0.30	0.70	0.70
Medium term	0.80	0.80	0.65	0.45	0.80	0.80
Short term	0.90	0.90	0.85	0.60	0.90	0.90
Instantaneous	1.10	1.10	1.10	0.80	1.10	1.10

γ_m can be taken as 1.3 in general

PERMISSIBLE DESIGN PROPERTIES TO BS 5268 FOR STEICO*joist* IN SERVICE CLASS 1

Design values for Service Class 1

Type	Depth H [mm]	Moment[a)] [kNm]	Bending rigidity [Nmm² * 10⁹]	Shear [kN]	Shear rigidity [MN]
STEICO*joist* SJ 45	200	2.73	327	2.70	1.25
	220	3.08	416	2.93	1.45
	240	3.43	516	3.15	1.66
	300	4.52	888	3.79	2.26
	360	5.40	1369	4.41	2.87
STEICO*joist* SJ 60	200	3.64	436	2.68	1.25
	220	4.10	554	2.90	1.45
	240	4.57	687	3.12	1.66
	300	6.00	1177	3.75	2.26
	360	7.13	1808	4.33	2.87
	400	7.87	2310	4.71	3.27
STEICO*joist* SJ 90	200	5.44	651	2.66	1.25
	220	6.14	827	2.88	1.45
	240	6.83	1025	3.09	1.66
	300	8.94	1752	3.70	2.26
	360	10.59	2683	4.26	2.87
	400	11.67	3419	4.62	3.27

[a)] The characteristic bending moments are based on the assumption that lateral bracing to the compression flange (at a spacing not exceeding ten times the flange width) is in place.

BS 5268 bearing values for Service Class 1

Refer to page 15 for web stiffener installation details

Type	Depth H	End bearing [kN] Bearing length 45 mm		End bearing [kN] Bearing length 90 mm		Intermediate bearing [kN] Bearing length 90 mm	
		Web stiffener		Web stiffener		Web stiffener	
		no	yes	no	yes	no	yes
STEICO*joist* SJ 45	200	3.12	3.73	3.35	4.12	6.16	6.20
	220		3.85		4.24		6.31
	240		3.97		4.35		6.43
	300		4.31		4.70		6.78
	360		4.66		5.04		7.12
STEICO*joist* SJ 60	200	4.62	4.89	4.85	5.47	8.32	8.86
	220		5.01		5.58		8.97
	240		5.12		5.70		9.09
	300		5.47		6.04		9.43
	360		5.81		6.39		9.78
	400		6.04		6.62		10.01
STEICO*joist* SJ 90	200	4.97	5.31	5.89	5.93	11.28	13.82
	220		5.43		6.04		13.94
	240		5.54		6.16		14.05
	300		5.89		6.51		14.40
	360		6.24		6.85		14.75
	400		6.47		7.08		14.98

Notes: please refer to page 14.

PERMISSIBLE DESIGN PROPERTIES TO BS 5268 FOR STEICO*joist* IN SERVICE CLASS 2

Design values for Service Class 2

Type	Depth H [mm]	Moment[a)] [kNm]	Bending rigidity [Nmm²*10⁹]	Shear [kN]	Shear rigidity [MN]
STEICO*joist* SJ 45	200	2.73	303	1.80	1.06
	220	3.08	386	1.95	1.23
	240	3.43	479	2.10	1.41
	300	4.52	823	2.53	1.92
	360	5.40	1269	2.94	2.43
STEICO*joist* SJ 60	200	3.64	404	1.79	1.06
	220	4.10	513	1.94	1.23
	240	4.57	636	2.08	1.41
	300	6.00	1091	2.50	1.92
	360	7.13	1676	2.89	2.43
	400	7.87	2141	3.14	2.78
STEICO*joist* SJ 90	200	5.44	604	1.77	1.06
	220	6.14	767	1.92	1.23
	240	6.83	950	2.06	1.41
	300	8.94	1624	2.46	1.92
	360	10.59	2487	2.84	2.43
	400	11.67	3169	3.08	2.78

[a)] The characteristic bending moments are based on the assumption that lateral bracing to compression flange (at a spacing not exceeding ten times the flange width) is in place.

BS 5268 values for Service Class 2

Refer to page 15 for web stiffener installation details

Type	Depth H	End bearing [kN] Bearing length 45 mm		End bearing [kN] Bearing length 90 mm		Intermediate bearing [kN] Bearing length 90 mm	
		Web stiffener		Web stiffener		Web stiffener	
		no	yes	no	yes	no	yes
STEICO*joist* SJ 45	200	3.12	3.73	3.35	4.12	6.16	6.20
	220		3.85		4.24		6.31
	240		3.97		4.35		6.43
	300		4.31		4.70		6.78
	360		4.66		5.04		7.12
STEICO*joist* SJ 60	200	4.62	4.89	4.85	5.47	8.32	8.86
	220		5.01		5.58		8.97
	240		5.12		5.70		9.09
	300		5.47		6.04		9.43
	360		5.81		6.39		9.78
	400		6.04		6.62		10.01
STEICO*joist* SJ 90	200	4.97	5.31	5.89	5.93	11.28	13.82
	220		5.43		6.04		13.94
	240		5.54		6.16		14.05
	300		5.89		6.51		14.40
	360		6.24		6.85		14.75
	400		6.47		7.08		14.98

Notes: please refer to page 14.

PERMISSIBLE DESIGN PROPERTIES TO BS 5268 FOR STEICO*wall* IN SERVICE CLASS 2

Design values STEICOwall to BS 5268 – Service Class II

Type	Depth H [mm]	Moment[a)] [kNm]	Bending rigidity [Nmm²*10⁹]	Shear [kN]	Shear rigidity [MN]
STEICO*wall* SW 45	160	0.96	118	0.74	0.57
	200	1.37	211	0.90	0.83
	240	1.72	333	1.05	1.09
	300	2.27	573	1.27	1.47
	360	2.72	884	1.48	1.86
STEICO*wall* SW 60	160	1.28	157	0.74	0.57
	200	1.82	280	0.89	0.83
	240	2.29	442	1.04	1.09
	300	3.01	758	1.25	1.47
	360	3.58	1166	1.44	1.86
	400	3.96	1490	1.36	2.11
STEICO*wall* SW 90	240	3.42	659	1.03	1.09
	300	4.48	1127	1.24	1.47
	360	5.31	1727	1.43	1.86
	400	5.86	2202	1.36	2.11

[a)] The characteristic bending moments are based on the assumption that lateral bracing to compression flange (at a spacing not exceeding ten times the flange width) is in place.

Notes:

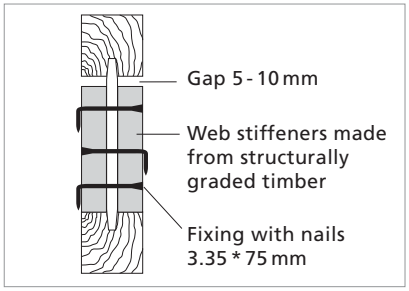
- Values shown are for non-loadsharing conditions. Where the joist centres are < 610 mm a load-sharing factor K_3 of 1,10 should be applied to the permissible moment, shear and bearing values in accordance with BS 5268.
- A K_{dom} factor of 1.12 can be adopted when designing residential floors within self contained dwellings where the imposed load is no greater than 1,5kN/m². This is applicable to the permissible moment, shear and bearing values.
- Data shown is taken from characteristic values, page 10.

WEB STIFFENERS AND BACKER BLOCKS

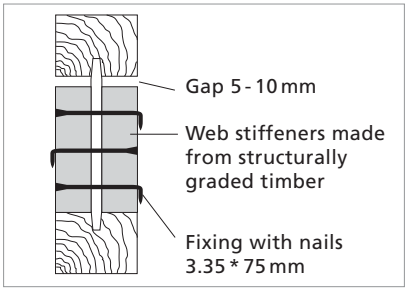
In certain conditions or construction solutions web stiffeners are required. Web stiffeners are used specifically to increase the load capacity of intermediate and end bearings, to allow high point loads and to laterally support the top flange of the joist for some hanger applications.

Backer blocks may be required where hangers are fitted to I-joists. Please refer to detail G4, G5, R11 and the hanger manufacturers literature for further information.

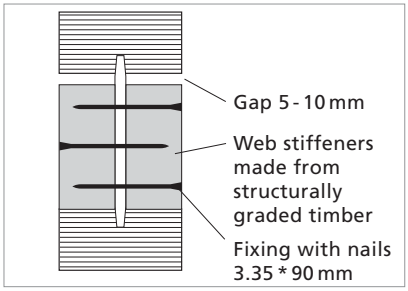
STEICO*joist* SJ 45



STEICO*joist* SJ 60



STEICO*joist* SJ 90



Installation of Web Stiffeners and Backer Blocks:

- For enhanced bearings, all pitched hangers, birdsmouth cut locations and where hangers do not restrain the top flange, web stiffeners must be fitted so that they are tight to the bottom flange and there is a 5-10 mm gap between the stiffeners and the top flange.
- Where concentrated point loads are applied onto the top flange, web stiffeners must be fitted so that they are tight to the top flange, leaving a 5-10 mm gap between the stiffeners and the bottom flange.

For web stiffener applications, please refer to Floor and Roof Construction Details

Backer Block & Web Stiffener table

	STEICOjoist		
Depth	SJ45	SJ60	SJ90
200	19 * 105 mm	24 * 105 mm	38 * 105 mm
220	19 * 125 mm	24 * 125 mm	38 * 125 mm
240	19 * 145 mm	24 * 145 mm	38 * 145 mm
300	19 * 205 mm	24 * 205 mm	38 * 205 mm
360	19 * 265 mm	24 * 265 mm	38 * 265 mm
400	19 * 305 mm	24 * 305 mm	38 * 305 mm

All Backer blocks to be minimum 250 mm wide. All web stiffeners to be minimum 100 mm wide. Use solid timber, OSB 3 or structural ply to BS 5268

For connectors please contact:

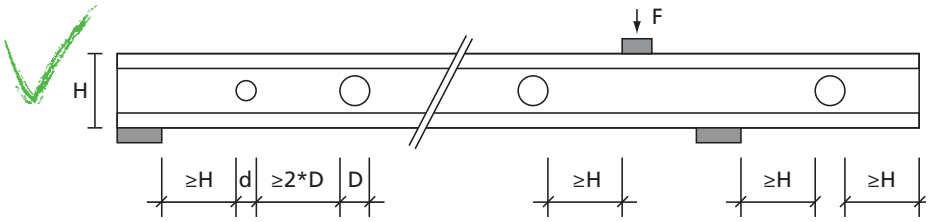
Simpson Strong-Tie®
Winchester Road
Cardinal Point Tamworth
Staffordshire
B78 3HG
Tel.: 01827 255600 Fax: 01827 255616
www.strongtie.co.uk

Cullen Building Products
1 Wheatstone Place
Southfield Industrial Estate
Glenrothes
Fife KY6 2SW
Tel.: 01592 771132 Fax: 01592 771182
www.cullen-bp.com

ACCESS AND SERVICE HOLES

Holes should be positioned in the middle of the web. The location and maximum sizes of the holes can be calculated in accordance with the drawing and table below.

Holes up to a maximum diameter of 20 mm can be made in any part of the web, as long as the distance between the hole edges is a minimum of 40 mm. For other hole diameters please refer to the table below.

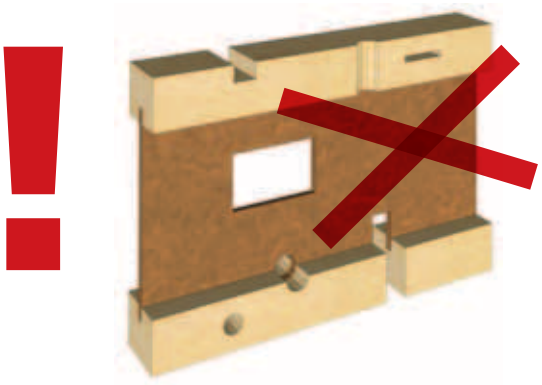


Joist depth	200 mm	220 mm	240 mm	300 mm	360 mm	400 mm
Minimum distance to bearing or point load F	200 mm	220 mm	240 mm	300 mm	360 mm	400 mm
Minimum distance between two holes	2 * diameter of largest hole					
Maximum diameter D	100 mm	120 mm	140 mm	200 mm	200 mm	200 mm

Note: For holes with a diameter greater than 20 mm please refer to the STEICO European Technical Approval ETA-06/0238 for information on calculating the reduction in the characteristic shear value of the joist. Where holes are required in trimmers, headers, beams or joists which are not uniformly loaded please contact your floor designer or engineer. Holes which do not meet the requirements of the above hole chart may be checked by the floor designer using our design software. Please contact STEICO technical support for further information on 0163 473 32 20.

INCORRECT HANDLING AND HOLES

- **Notches and holes in the flanges are not allowed**
- **Holes have to be drilled**
- **Rectangular holes are not allowed**



Floors

FLOOR APPLICATIONS

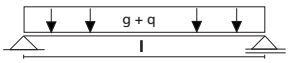
Engineers have long recognised the advantages of an I section in structural elements. Suitable material is only used in those places where it meets the needs, resulting in a slender and economical building element for floors, walls and roofs.

Modern structures require high performance and cost efficient constructions in which shrinkage and movement are a thing of the past. The carefully selected components used in the flange and web create a high quality engineered wood product, designed to reduce movement and other problems associated with solid timber floors.

Thanks to its engineered properties the STEICO*joist* is dimensionally stable, avoiding the need for mid span blocking to be installed and reduces the risk of nail popping in plasterboard caused by timber shrinkage.

Due to its light-weight properties, new floors are easily incorporated into renovation projects where access is limited and handling issues are important.

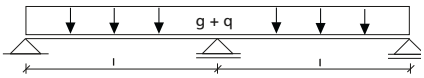
SPAN TABLES FOR STEICO*joist* TO BS 5268



Maximum single spans l in [m],
max. deflection = 12 mm or 0,003 * l

Live load Q=1,5 kN/m²

Type	Depth H [mm]	G=0,75 kN/m² Joist centers [mm]			G=1,25 kN/m² Joist centers [mm]		
		400	480	600	400	480	600
STEICO*joist* SJ 45	200	4.13	3.92	3.60	3.89	3.64	3.34
	220	4.39	4.19	3.92	4.16	3.95	3.64
	240	4.64	4.42	4.16	4.40	4.19	3.92
	300	5.32	5.07	4.78	5.05	4.80	4.52
	360	5.93	5.65	5.33	5.63	5.36	4.66
STEICO*joist* SJ 60	200	4.42	4.21	3.94	4.18	3.98	3.65
	220	4.70	4.47	4.21	4.45	4.23	3.98
	240	4.96	4.72	4.44	4.70	4.47	4.21
	300	5.68	5.41	5.09	5.39	5.13	4.82
	360	6.33	6.03	5.68	6.00	5.71	5.38
	400	6.73	6.41	6.04	6.38	6.08	5.72
STEICO*joist* SJ 90	200	4.84	4.61	4.33	4.58	4.36	3.97
	220	5.15	4.90	4.60	4.87	4.63	4.30
	240	5.44	5.17	4.86	5.15	4.89	4.60
	300	6.23	5.93	5.57	5.90	5.61	5.27
	360	6.94	6.60	6.21	6.57	6.25	5.87
	400	7.37	7.02	6.60	6.98	6.64	6.24



Maximum double spans with mid span support l in [m],
max. deflection = 12 mm or 0,003 * l

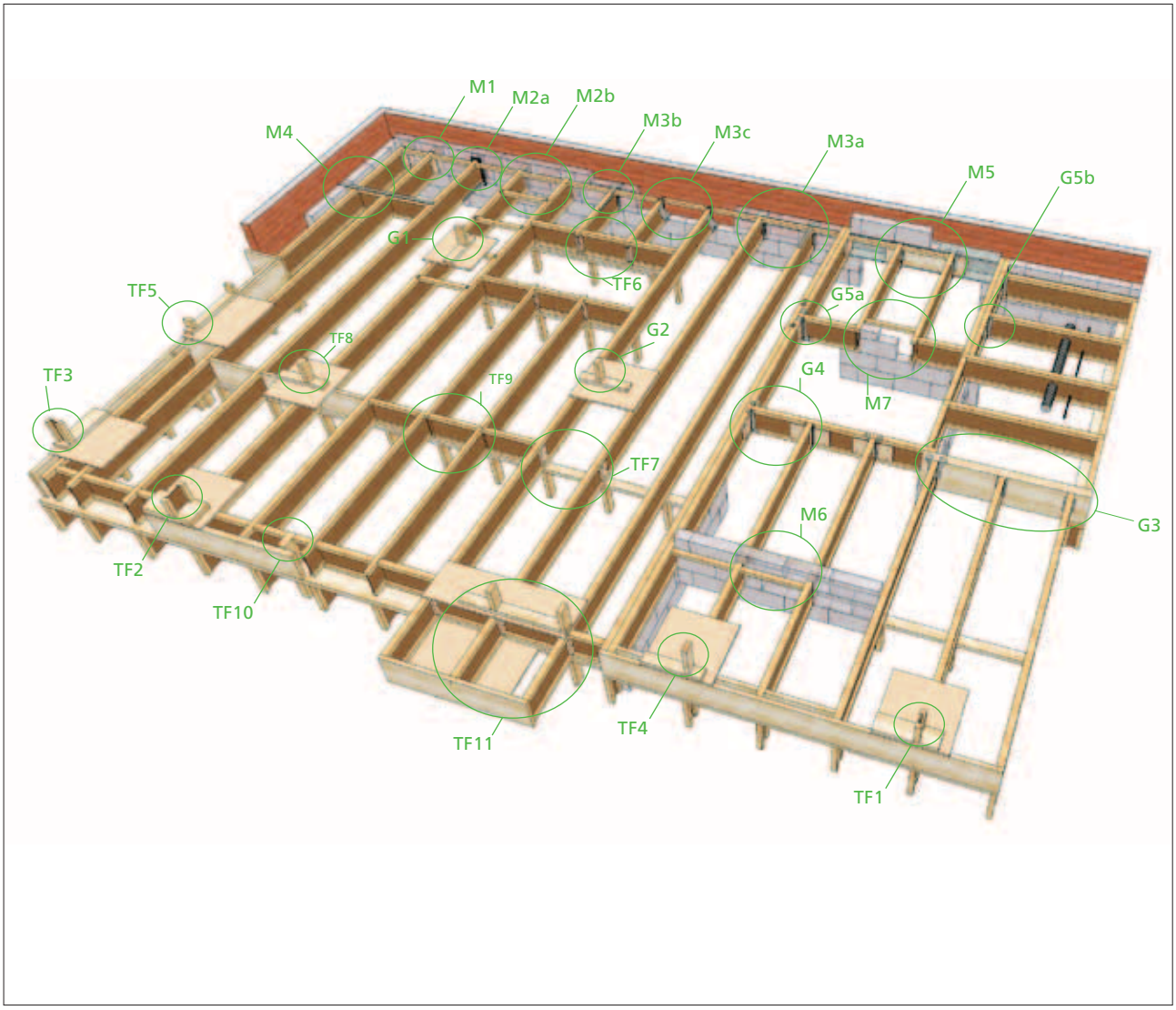
Live load Q=1,5 kN/m²

Type	Depth H [mm]	G=0,75 kN/m² Joist centers [mm]			G=1,25 kN/m² Joist centers [mm]		
		400	480	600	400	480	600
STEICO*joist* SJ 45	200	4.70	4.47	4.21	4.52	4.30	3.61
	220	4.99	4.76	4.48	4.80	4.58	3.68
	240	5.27	5.02	4.50	5.08	4.60	3.68
	300	6.04	5.62	4.50	5.52	4.60	3.68
	360	6.74	5.62	4.50	5.52	4.60	3.68
STEICO*joist* SJ 60	200	5.02	4.78	4.30	4.83	4.39	3.59
	220	5.34	5.08	4.66	5.13	4.76	3.89
	240	5.64	5.37	5.01	5.42	5.12	4.19
	300	6.46	6.15	5.79	6.21	5.92	4.97
	360	7.19	6.85	6.07	6.92	6.21	4.97
	400	7.65	7.29	6.07	7.36	6.21	4.97
STEICO*joist* SJ 90	200	5.51	5.24	4.27	5.15	4.36	3.57
	220	5.86	5.57	4.63	5.58	4.72	3.86
	240	6.18	5.88	4.97	5.95	5.07	4.15
	300	7.08	6.74	5.95	6.81	6.07	4.97
	360	7.89	7.51	6.87	7.58	7.01	5.72
	400	8.38	7.98	7.46	8.06	7.61	6.23

General comments:

- These tables serve as a guide only and do not replace independent structural calculations prepared by a qualified structural engineer.
- Please pay special attention to the bearing conditions.
- Do not use these tables to calculate point or irregular loads.
- Spans indicated are between centres of supports.
- Q = design imposed loads. G= design dead loads. The UKTFA Engineered Wood Products Committee recommends a minimum dead load for single occupancy domestic floors of 0.41 kN/m² plus an allowance of 0.22 kN/2 for non-load-bearing partitions (up to 27 kg/m²), irrespective of whether they are present on the floor. Where partition positions are known, the final design should reflect the worst case of either the blanket UDL (incl partitions) or the dead load plus a minimum line load of 0.64 kN/m at partition locations. Where the calculated dead loads exceed the recommended minimum (ie: compartment floors and multi-boarded partitions), these must be adopted.
- Dead loads (G) include the self weight of the joists.
- Span tables are for floor joists under service class 1 conditions only.

FLOOR CONSTRUCTION DETAILS



NOTES TO THE DETAILS

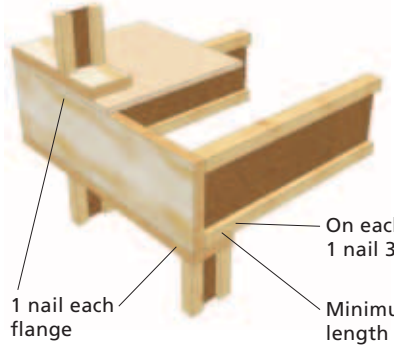
Bearing lengths

- End bearing minimum 45 mm
- Intermediate bearing minimum 90 mm

Fastening

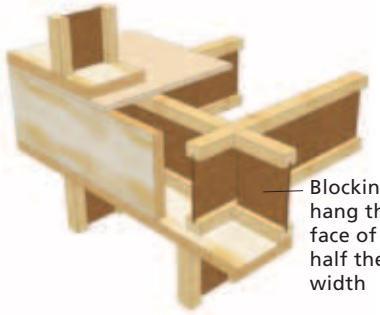
- Where bearing onto an external timber frame wall, STEICO*joists* must be secured to a Glulam (e.g. Panelam) rim board, a rim joist or other suitable EWP using nails or suitable hangers.
- STEICO*joists* to be nailed to head plates using minimum 2 No. 3.35 * 90 ring shank nails, located a minimum of 38 mm from the end of the joist. Nails may need to be skewed slightly to avoid splitting the bearing plate.
- Where required, compression blocks are to be fixed to each flange using a minimum of one 3.35 dia nail. Ensure the block is cut from graded timber or an EWP to the same depth as the joist.
- The typical details shown are for guidance only and should be used in conjunction with the recommendations and requirements of the UKTFA, British Standards, NHBC, Zurich, Robust Details Ltd, Building regulations and all other statutory bodies.

TF1 Rim Board (e.g. LVL / Glulam)



Minimum nailing for class 1 structures to be 3.00*75 nails at 300 mm centres which should be applied at each interface where lateral loads are to be transferred. Refer to UKTFA "Design Guidance on Disproportionate Collapse" for further information

TF2 Rim board (e.g. LVL / Glulam) with STEICO*joist* blocking

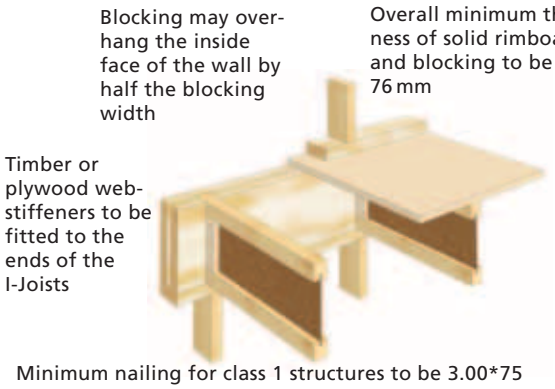


Minimum nailing for class 1 structures to be 3.00*75 nails at 300 mm centres which should be applied at each interface where lateral loads are to be transferred. Refer to UKTFA "Design Guidance on Disproportionate Collapse" for further information

TF3 Joist parallel to external wall

Minimum nailing for class 1 structures to be 3.00*75 nails at 300 mm centres which should be applied at each interface where lateral loads are to be transferred. Refer to UKTFA "Design Guidance on Disproportionate Collapse" for further information

TF4 Joist bearing on party walls

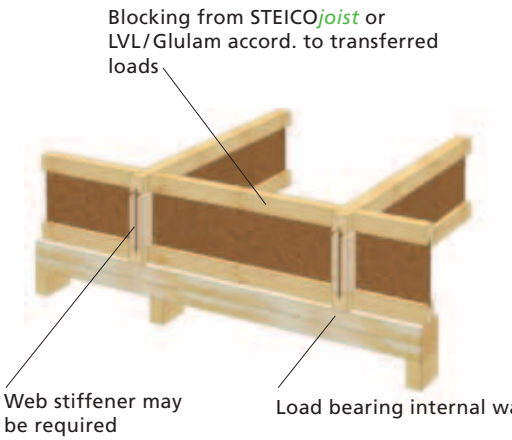


Minimum nailing for class 1 structures to be 3.00*75 nails at 300 mm centres which should be applied at each interface where lateral loads are to be transferred. Refer to UKTFA "Design Guidance on Disproportionate Collapse" for further information

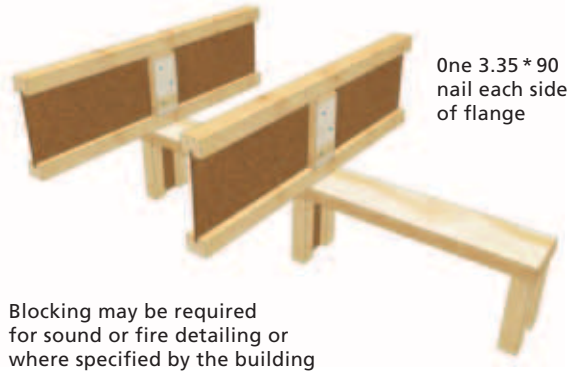
TF5 Joist parallel to party wall

Minimum nailing for class 1 structures to be 3.00*75 nails at 300 mm centres which should be applied at each interface where lateral loads are to be transferred. Refer to UKTFA "Design Guidance on Disproportionate Collapse" for further information

TF6 Joist ending on internal wall



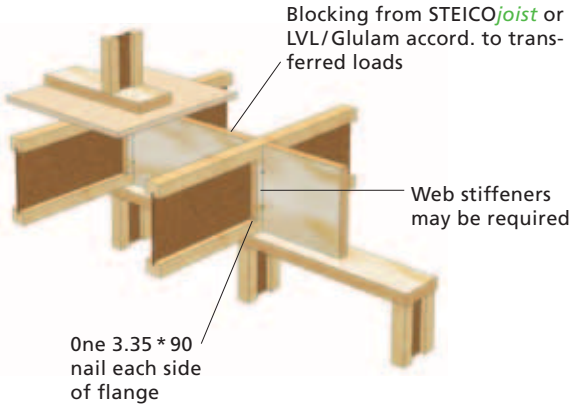
TF7 Intermediate bearing with continuous joists



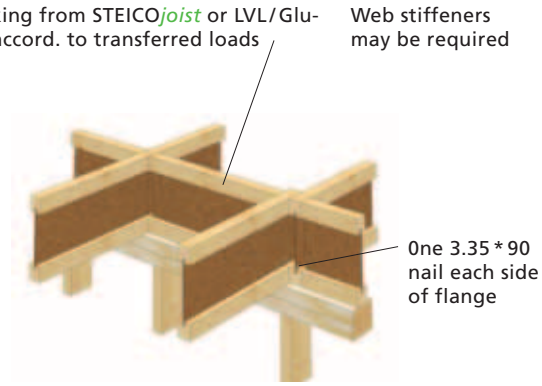
Blocking may be required for sound or fire detailing or where specified by the building designer

Web stiffeners may be required by design

TF8 Intermediate bearing with load bearing wall above

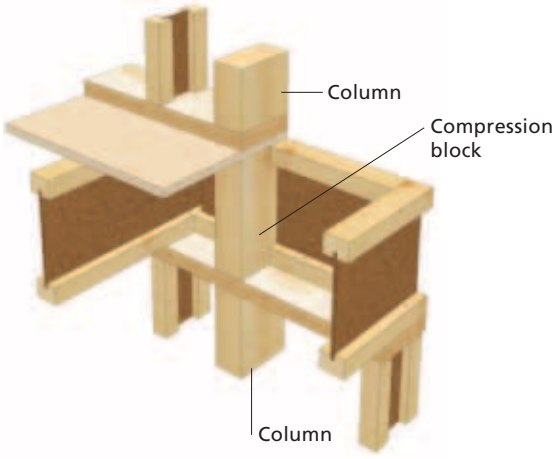


TF9 Discontinuous joists on intermediate bearing

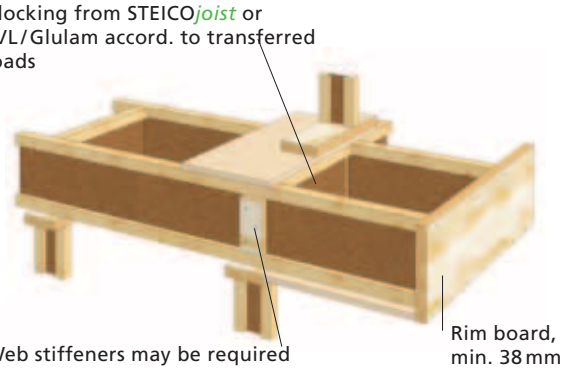


Joists may be butt jointed where there is a minimum of 45 mm bearing available. If this is not possible joists are to be staggered and provided with full bearing.

TF10 Transfer of high point loads



TF11 Cantilever



Please make sure that external parts are protected against weather

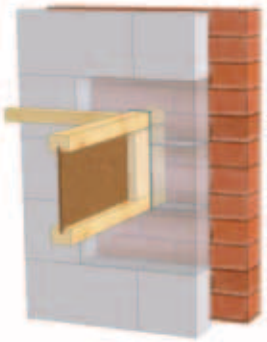
MASONRY DETAILS

M1 Bearing onto blockwork cavity wall

All joists to have a minimum bearing of 90 mm. Ensure all bearings are flat, level an that the joists are vertical.

Minimum 38 * 38 perimeter noggin skew nailed or fixed to joist using propriety clip. noggin to be fixed 25 - 75 mm from face of wall.

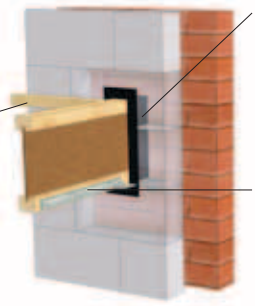
Web stiffeners fitted to end of joists. Junction between wall and joists to be sealed with silicon mastic.



Restraint straps may be required for buildings over 2 storeys or where joists have less than 90 mm of bearing. Please consult hanger manufacturers literature for further information

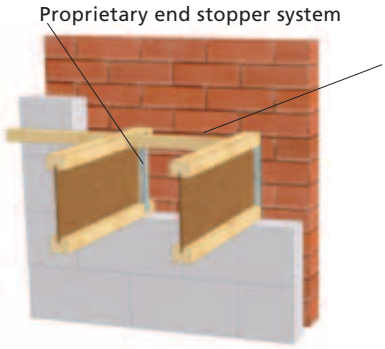
M2a Bearing onto blockwork cavity wall using proprietary seal

Minimum 38 * 38 perimeter noggin skew nailed or fixed to joist using propriety clip. Noggin to be fixed 25 - 75 mm from face of wall



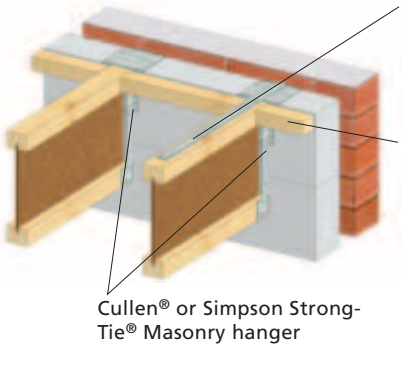
Please refer to manufactureres details for full installation details and restraint strap requirements.

M2b Bearing onto blockwork cavity wall using proprietary end stopper



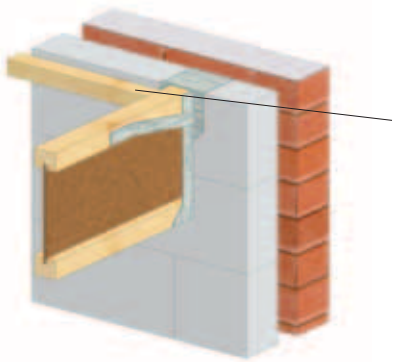
Ensure all bearings are flat, level and that the joists are vertical. Please refer to manufactureres details for full installation details and restraint strap requirements.

M3a Masonry Hanger



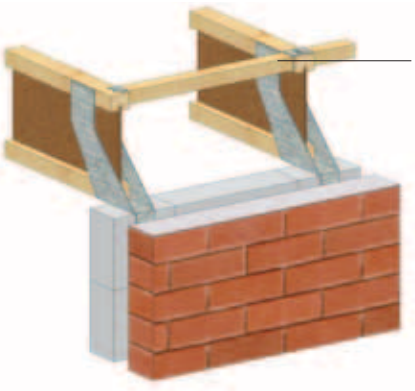
Restraint straps to be fitted at no more than 2 m centres or at spacing specified by the building designer.

M3b Restraint type hanger (Simpson Strong Tie®)



Refer to Simpson® Technical Literature for specification an installation details

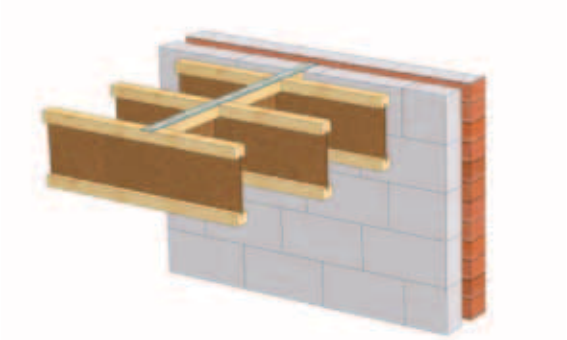
M3c Restraint type hanger (Cullen®)



Refer to Cullen® Technical Literature for specification and installation details

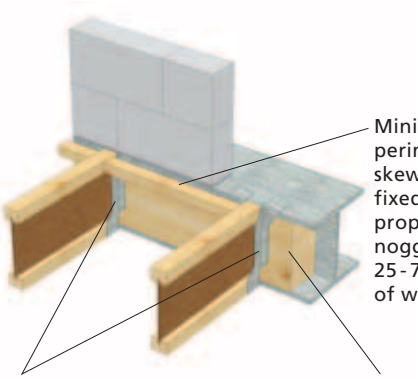
MASONRY DETAILS

M4 Masonry wall restraint



Galvanised masonry restraint strap fixed to minimum 3 joists in accordance with manufacturers recommendations. Blocking may be full depth I-joists or solid timber. Where solid timber is used ensure the size is a minimum of 38 mm x half the joist depth. Do not notch the flanges.

M5 Steel Beam masonry above



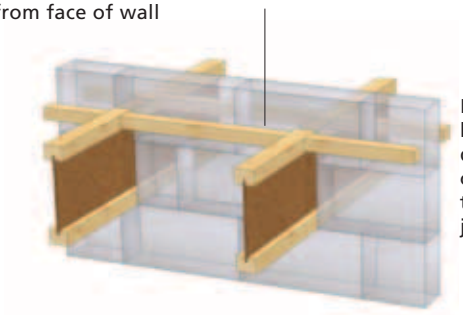
Minimum 38 * 38 perimeter noggin skew nailed or fixed to joist using proprietry clip. noggin to be fixed 25 - 75 mm from face of wall

Masonry Hanger bedded in mortar joint. Refer to manufacturers details.

Timber packer to steel beam designers requirements

M6 Internal wall built around joists

Minimum 38 * 38 perimeter noggin skew nailed or fixed to joist using proprietry clip. Noggin to be fixed 25 - 75 mm from face of wall



Ensure blockwork does not contact the top of the joists

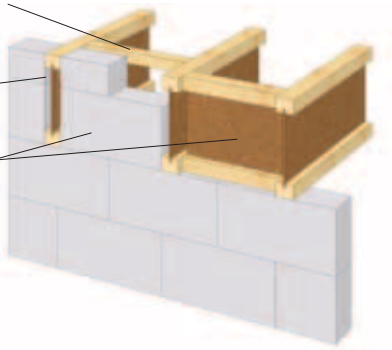
89 mm minimum bearing for continuous joists. Ensure discontinuous joists have a minimum of 45 mm bearing. Joists may be lapped for full bearing.

M7 Joists ending on internal wall

Minimum 38 * 38 perimeter noggin skew nailed or fixed to joist using proprietry clip. Noggin to be fixed 25 - 75 mm from face of wall. Noggin not required where I-Joist blocking is used.

Mortar fill may be required

Blockwork may be built up around I-Joists or blocking pieces used to restrain the end of I-Joists

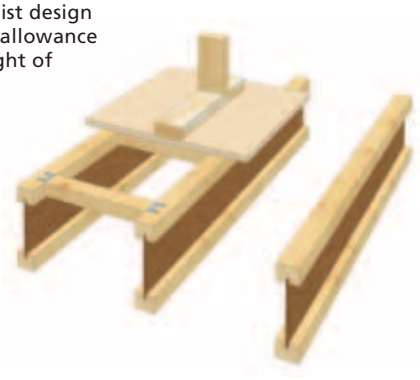


GENERAL DETAILS

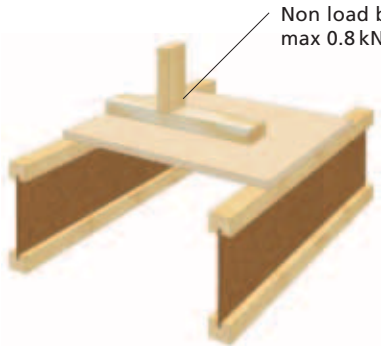
G1 Non load bearing wall parallel to the joists

Maximum weight of non load bearing wall 0.8 kN/m. Designers to ensure joist design includes an allowance for the weight of walls above

Minimum 38 * 75 mm partition noggin fixed to joist using Z-clip



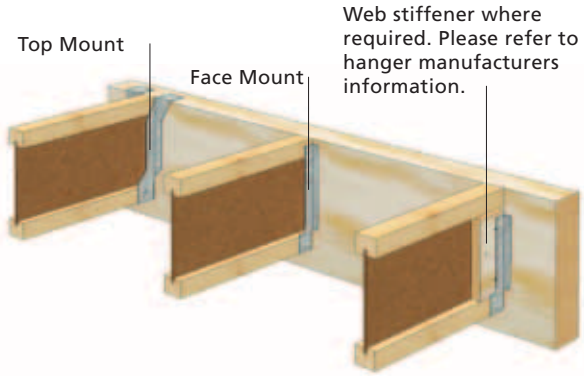
G2 Non load bearing wall across the joists



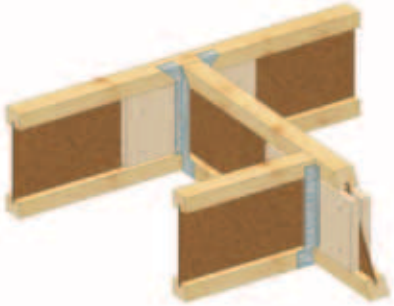
Sole plate of partition wall to be nailed to joists below

The designer is responsible for ensuring the I-Joist design is adequate to support the wall. See span tables.

G3 Different hanger applications



G4 STEICO*joist* to STEICO*joist* connection



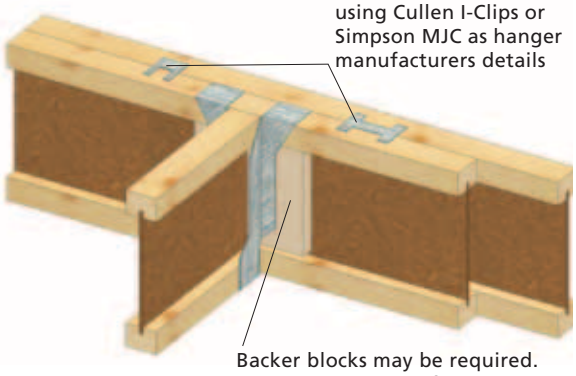
Install Backer blocks on both sides of STEICO*joist*. Attach with 10 no. 3.75 * 75 nails, clenched where possible. Backer block to be a minimum of 250 mm wide.

Install Backer blocks tight to top flange for top mount hangers and tight to bottom flange for face mount hangers.

Please refer to hanger manufacturers literature for alternative hanger options.

G5a 2-ply I-joist connection

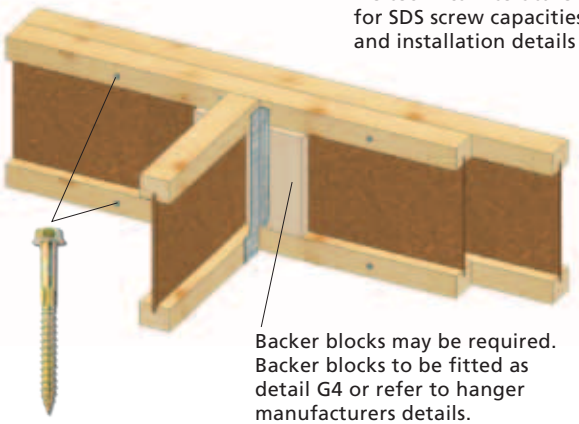
2 ply I-joist connected using Cullen I-Clips or Simpson MJC as hanger manufacturers details



Backer blocks may be required. Backer blocks to be fitted as detail G4 or refer to hanger manufacturers details.

G5b 2-ply I-joist connection

Refer to Simpson Strong-Tie technical literature for SDS screw capacities and installation details

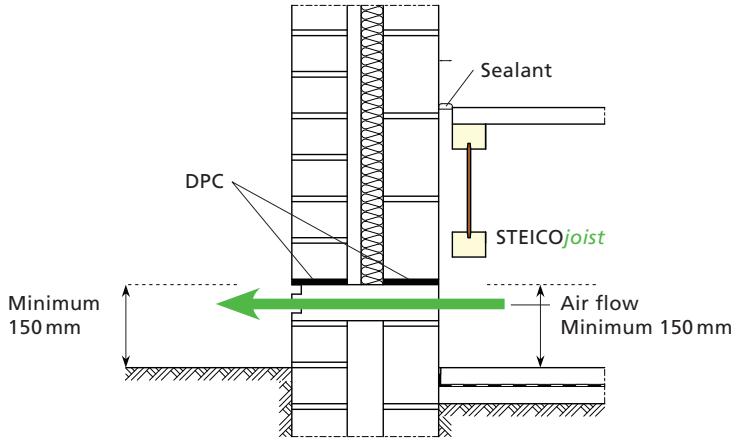


Backer blocks may be required. Backer blocks to be fitted as detail G4 or refer to hanger manufacturers details.

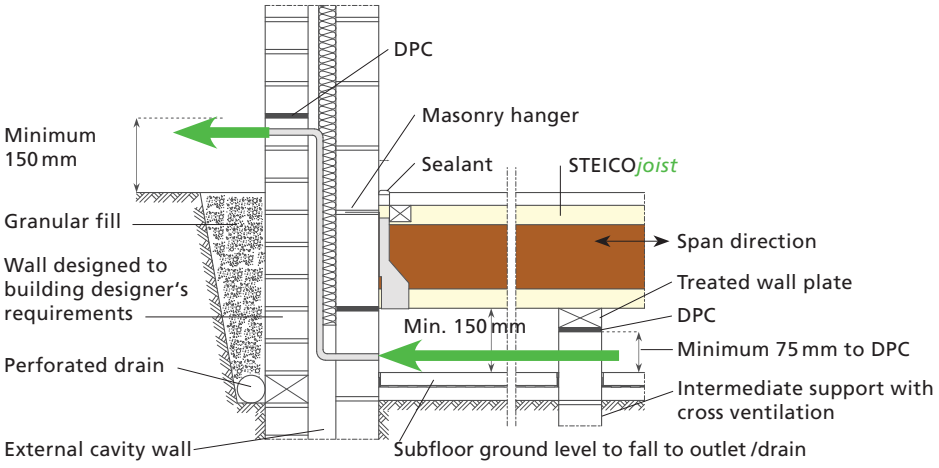
GROUND FLOOR DETAILS

Joists to be designed to service class 2

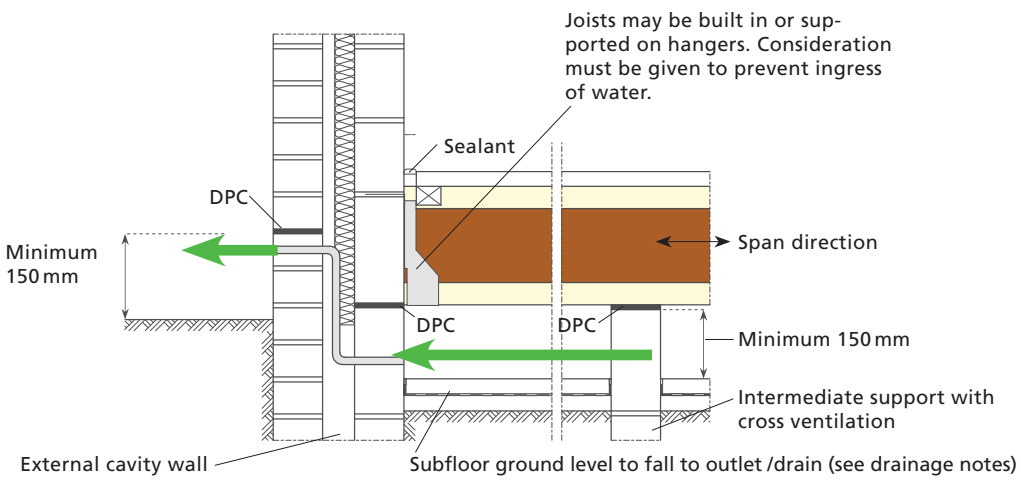
GF1 STEICO*joist* parallel to wall



GF2 STEICO*joist* bearing on external wall



GF3 STEICO*joist* bearing on external wall



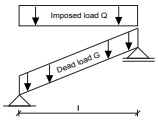
Roofs

ROOF APPLICATIONS

Highly insulated roof constructions are easily achieved with the STEICO*joist*. The light-weight joist provides the user a fast and efficient installation for which your carpenter will thank you.

SPAN TABLES FOR STEICO*joist* TO BS 5268

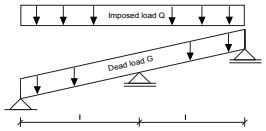
Single span max. deflection = 0,003 * l



Maximum single spans l in [m] Imposed load Q = 0,75 kN / m²

Type	Depth H [mm]	0,5 kN / m² < G ≤ 0,75 kN / ²						0,75 kN / m² < G ≤ 1,0 kN / ²					
		α < 5°		5° ≤ α < 30°		30° ≤ α < 45°		α < 5°		5° ≤ α < 30°		30° ≤ α < 45°	
		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]	
		400	600	400	600	400	600	400	600	400	600	400	600
STEICO*joist* SJ 45	200	4.83	4.18	4.52	3.92	4.09	3.55	4.57	3.95	4.27	3.69	3.84	3.33
	220	5.25	4.54	4.91	4.25	4.44	3.85	4.97	4.29	4.63	4.01	4.17	3.62
	240	5.65	4.89	5.29	4.58	4.78	4.15	5.35	4.63	4.99	4.32	4.49	3.89
	300	6.80	5.89	6.35	5.51	5.74	4.99	6.44	5.57	6.00	5.20	5.40	4.68
	350	7.70	6.67	7.19	6.24	6.50	5.64	7.29	6.32	6.79	5.89	6.11	5.30
STEICO*joist* SJ 60	200	5.30	4.58	4.96	4.29	4.49	3.89	5.01	4.32	4.68	4.04	4.22	3.65
	220	5.76	4.97	5.39	4.66	4.87	4.22	5.45	4.70	5.08	4.39	4.58	3.96
	240	6.20	5.36	5.80	5.02	5.24	4.55	5.86	5.06	5.47	4.73	4.93	4.27
	300	7.45	6.45	6.96	6.04	6.29	5.46	7.05	6.10	6.57	5.69	5.91	5.13
	350	8.42	7.30	7.88	6.83	7.12	6.18	7.98	6.91	7.44	6.44	6.69	5.80
	400	9.36	8.11	8.75	7.59	7.90	6.86	8.87	7.68	8.26	7.16	7.43	6.45
STEICO*joist* SJ 90	200	6.03	5.20	5.65	4.88	5.12	4.43	5.70	4.90	5.32	4.59	4.80	4.15
	220	6.55	5.65	6.13	5.30	5.55	4.81	6.19	5.33	5.78	4.99	5.21	4.51
	240	7.05	6.08	6.60	5.71	5.97	5.17	6.67	5.75	6.22	5.37	5.61	4.85
	300	8.47	7.32	7.92	6.86	7.16	6.21	8.01	6.92	7.47	6.46	6.73	5.83
	350	9.57	8.28	8.95	7.76	8.10	7.02	9.06	7.83	8.45	7.31	7.61	6.60
	400	10.63	9.20	9.94	8.62	8.98	7.80	10.06	8.71	9.38	8.12	8.44	7.32

Double span max. deflection = 0,003 * l



Maximum double spans l in [m] Imposed load Q = 0,75 kN / m²

Type	Depth H [mm]	0,5 kN / m² < G ≤ 0,75 kN / ²						0,75 kN / m² < G ≤ 1,0 kN / ²					
		α < 5°		5° ≤ α < 30°		30° ≤ α < 45°		α < 5°		5° ≤ α < 30°		30° ≤ α < 45°	
		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]		Joist centers [mm]	
		400	600	400	600	400	600	400	600	400	600	400	600
STEICO*joist* SJ 45	200	6.03	5.26	5.66	4.93	5.14	4.49	5.80	5.06	5.42	4.73	4.91	4.28
	220	6.53	5.70	6.13	5.35	5.57	4.86	6.29	5.48	5.88	5.13	5.32	4.64
	240	7.02	6.13	6.59	5.75	5.99	5.23	6.76	5.89	6.32	5.51	5.72	4.99
	300	8.42	7.35	7.90	6.89	7.18	6.27	8.10	6.46	7.58	6.33	6.85	5.82
	350	9.52	7.54	8.93	7.40	8.11	6.84	9.02	6.46	8.39	6.79	7.72	6.22
STEICO*joist* SJ 60	200	6.63	5.78	6.22	5.42	5.66	4.93	6.38	5.56	5.97	5.20	5.40	4.71
	220	7.18	6.26	6.74	5.88	6.13	5.35	6.91	6.03	6.46	5.64	5.85	5.10
	240	7.72	6.73	7.24	6.32	6.58	5.75	7.43	6.48	6.95	6.06	6.28	5.48
	300	9.25	8.06	8.67	7.57	7.88	6.88	8.89	7.76	8.32	7.26	7.52	6.57
	350	10.44	9.11	9.79	8.55	8.90	7.77	10.04	8.46	9.39	7.86	8.49	7.23
	400	11.58	9.73	10.87	9.08	9.88	8.41	11.04	8.73	10.29	8.34	9.42	7.65
STEICO*joist* SJ 90	200	7.57	6.60	7.11	6.20	6.46	5.64	7.29	5.97	6.82	5.94	6.17	5.38
	220	8.20	7.15	7.70	6.71	7.00	6.11	7.89	6.46	7.38	6.44	6.68	5.83
	240	8.81	7.68	8.27	7.21	7.52	6.56	8.48	6.94	7.93	6.92	7.18	6.26
	300	10.55	9.20	9.90	8.63	9.00	7.85	10.15	8.31	9.49	8.28	8.59	7.49
	350	11.90	10.38	11.17	9.74	10.15	8.86	11.45	9.38	10.71	9.34	9.69	8.45
	400	13.19	11.51	12.38	10.80	11.25	9.82	12.69	10.41	11.87	10.23	10.73	9.37

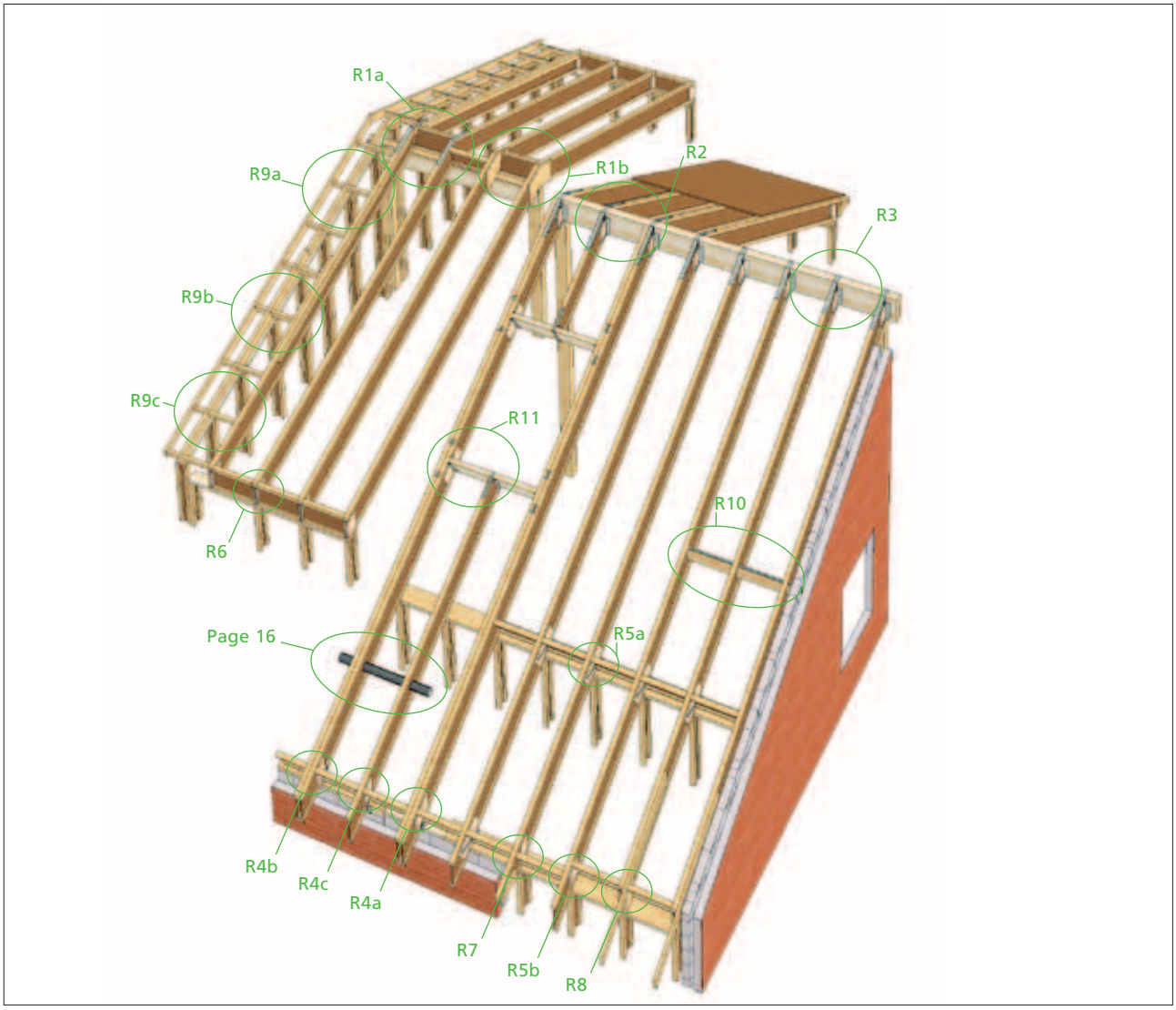
SPAN TABLES FOR STEICO*joist*

Different roof constructions require varying dead loads and pitches from 5 degrees upwards. In the tables these dead loads are summarised, with a difference made for light roofs (e.g. sheeting roofs) and heavier roofs (e.g. tiled roofs) and guidance on pitches between 5 degrees up to 45 degrees.

General comments:

- These tables serve as a guide only and do not replace independent structural calculations prepared by a qualified structural engineer.
- Please pay special attention to the bearing conditions.
- Do not use these tables to calculate point or irregular loads.
- Spans indicated are between centres of supports.
- Calculations are based on BS 5268.
- Lateral bracing is required to the flange at a spacing not exceeding ten times the flange width.
- Q = design imposed loads on plan. G = design dead loads acting perpendicular with the roof slope. Imposed loads are from BS6399-3 clause 4.3.2 for small buildings. Dead loads will vary for differing roof finishes and manufacturers technical literature should be consulted to ensure adequate allowance is made when assessing the design dead load.
- Span tables are for roof joists under service class 1 conditions only and assume continuous lateral restraint is provided to the top flange from either tiling battens combined with suitable diagonal bracing or from a sheathing board. Where load reversal due to wind uplift is probable, suitable restraint from sheathing of plasterboard must be provided to the bottom flange.

ROOF CONSTRUCTION DETAILS



NOTES TO THE DETAILS

Bearing lengths

- A minimum end bearing of 45 mm is required
- Intermediate bearing minimum 90 mm

Fastening

- STEICO*joist* to be nailed to head plates using a minimum of 2 No. 3.35 * 90 ring shank nails, located a minimum of 38 mm from the end of the joist. Nails may need to be skewed slightly to avoid splitting the bearing plate. For roofs pitched > 25 degrees, lateral forces may be significant and additional fixings to prevent roof spread may be required.
- Typical details shown are for guidance only and should be used in conjunction with the recommendations and requirements of the UKTFA, British Standards, NHBC, Zurich, Robust Details Ltd, Building regulations and all other statutory bodies.

Web stiffeners

- Web stiffeners are required for birdsmouth cuts and should be independently verified by a suitably qualified structural engineer.
- Web stiffeners should be applied where the sides of the hanger do not laterally support the top flange of the joist.

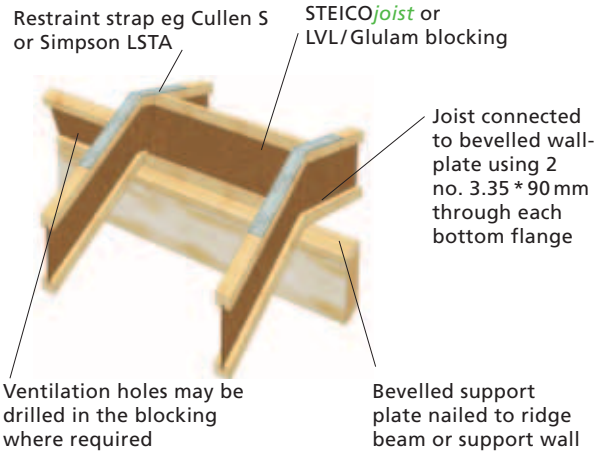
Blocking

- Blocking to provide lateral restraint must be installed at bearings. Blocking can be from EWP such as glulam or STEICO*joist*.

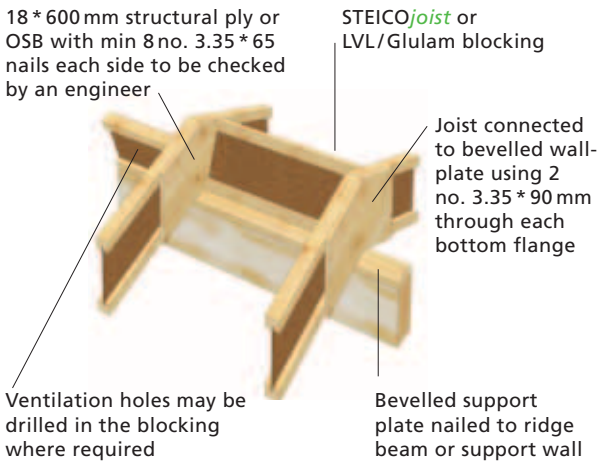
Cantilevers

- Cantilevers should be restricted to a maximum of 750 mm past the centre of the bearing to the end of the joist. Ensure that blocking is installed at the bearing and that the top and bottom flanges are restrained by sheathing.

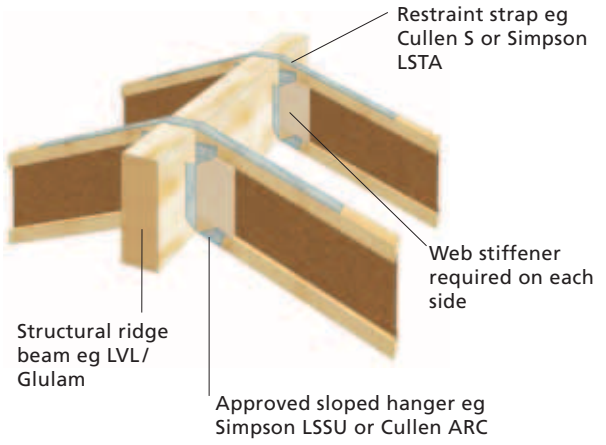
R1a Ridge beam with bevelled plate



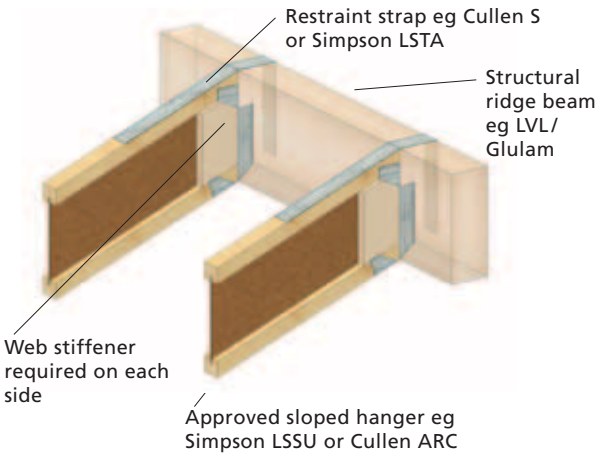
R1b Ridge beam with bevelled plate



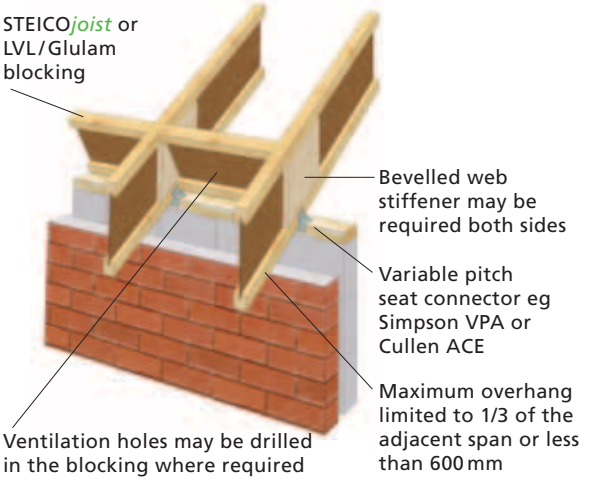
R2 Ridge beam with sloped hangers



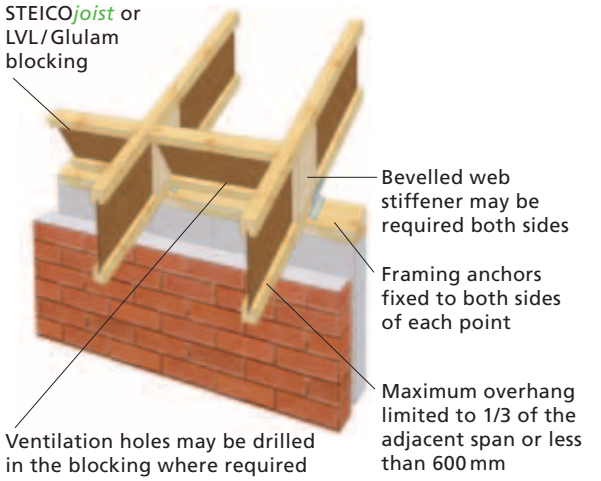
R3 Mono pitch ridge beam with sloped hangers



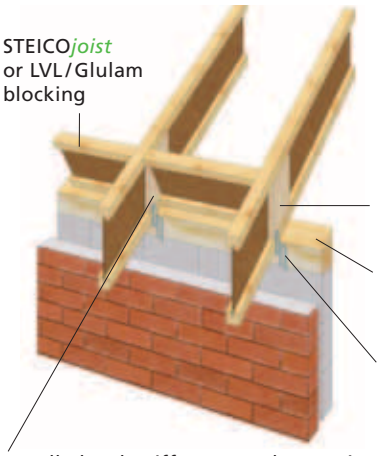
R4a Adjustable hanger at eaves



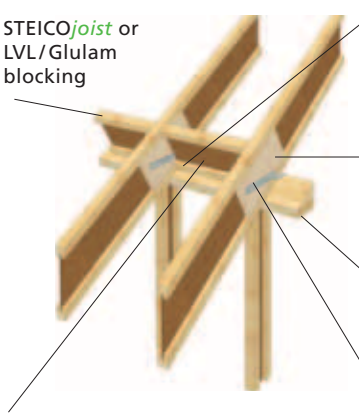
R4b Bevelled wallplate at eaves



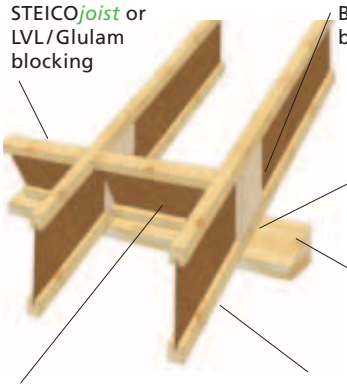
R4c Bevelled wallplate at eaves



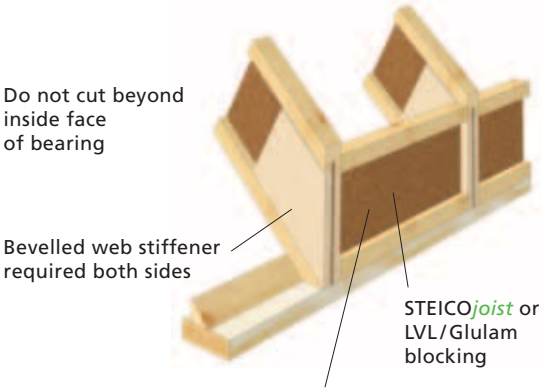
R5a Bevelled wallplate at eaves



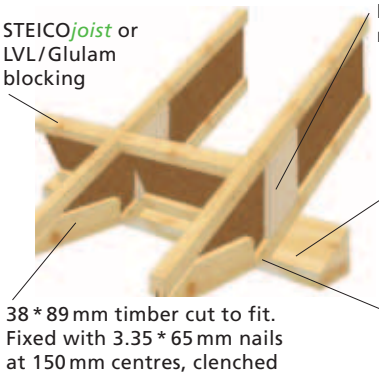
R5b Bevelled wallplate at eaves



R6 Birdsmouth cut at eaves

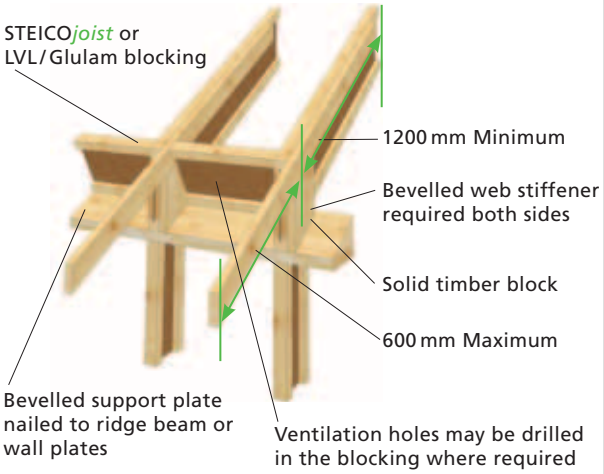


R7 STEICO*joist* cut to form eaves

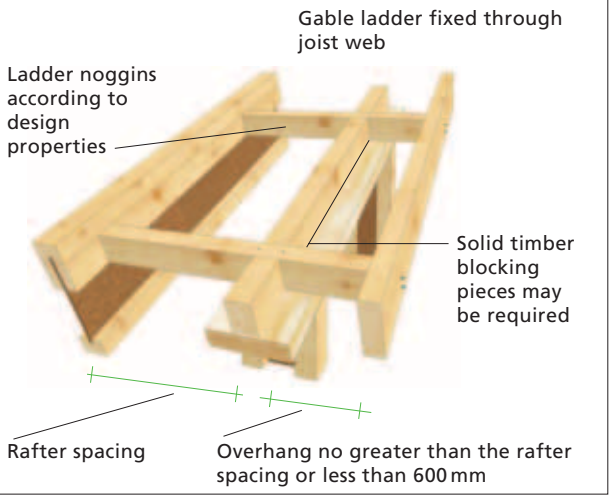


Maximim overhang limited to 1/3 of the rafter span or less than 600 mm.

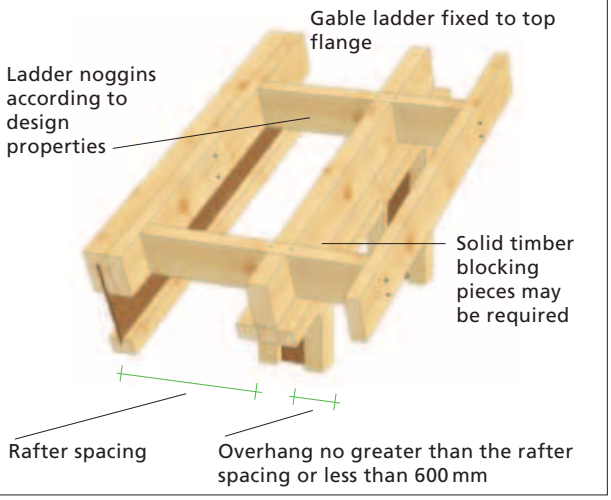
R8 Site fitted overhangs



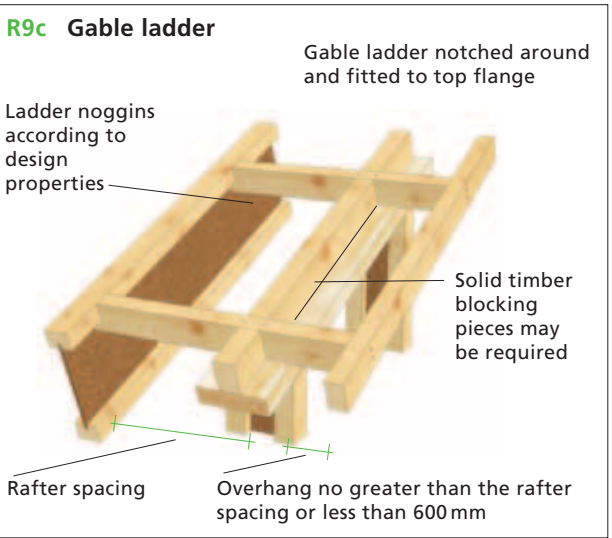
R9a Gable ladder



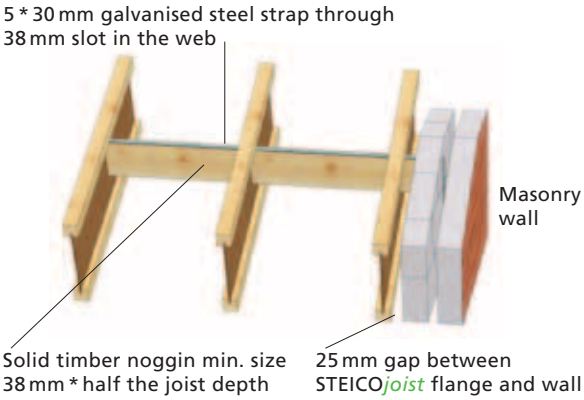
R9b Gable ladder



R9c Gable ladder

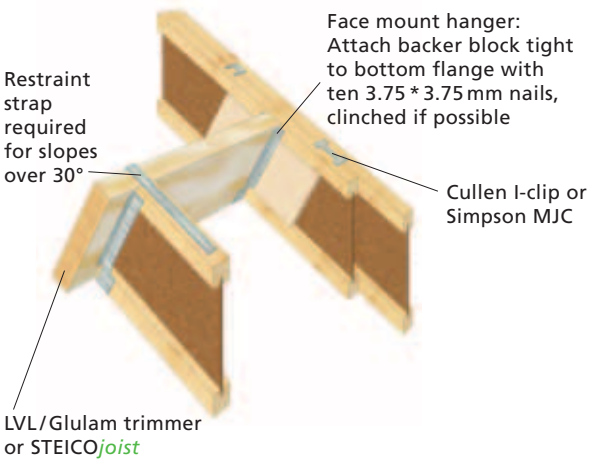


R10 Restraint strap



Do not cut the flange. Restraint strap from an approved connector supplier; install as per manufacturer's instructions.

R11 Hanger applications



WALL APPLICATIONS

STEICO*wall* is a slender, efficient building element for wall constructions that demand a high level of both energy efficiency and strength. Using pre-insulated STEICO*wall* studs facilitates easy insulation of the structure and thereby contributes to overall cost savings.

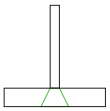
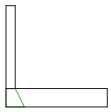
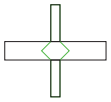
CHARACTERISTIC AXIAL COMPRESSION LOADS FOR STEICO*wall* TO EC 5

Type	Flange b*h [mm]	With one side only sheathed[a)] N_k [kN]	With both sides sheathed[a)] N_k [kN]
STEICO*wall* SW 45	45*45	6.1	55.5
STEICO*wall* SW 60	60*45	14.2	74.9
STEICO*wall* SW 90	90*45	45.0	124.9

Note: The above tables are based on a wall panel height of 2,5 m.

Sheathing to the requirements of BS 5268 to provide lateral restraint to the flanges and it is recommended that in all construction this is provided to both sides of the stud. Where the studs are part of a system offering lateral restraint to a structure, a minimum of 1 layer of category 1 or 2 sheathing must be provided. Where wind reversal occurs, both faces must be sheathed to prevent buckling.

CHARACTERISTIC LOAD ON THE SUPPORT ACCORDING TO EC 5 FOR SOLID TIMBER C 16, C 24 AND GLULAM GL 28[b)]

Type	Flange b * h [mm]									
		Characteristic load per stud in kN[a)]								
		C 16	C 24	GL 28	C 16	C 24	GL 28	C 16	C 24	GL 28
STEICO*wall* SW 45	45 * 45	25.1	28.5	30.8	22.5	25.6	27.6	22.5	25.6	27.6
STEICO*wall* SW 60	60 * 45	30.9	35.1	37.9	28.3	32.2	34.7	28.3	32.2	34.7
STEICO*wall* SW 90	90 * 45	41.3	47.0	50.7	38.8	44.0	47.6	38.8	44.0	47.6

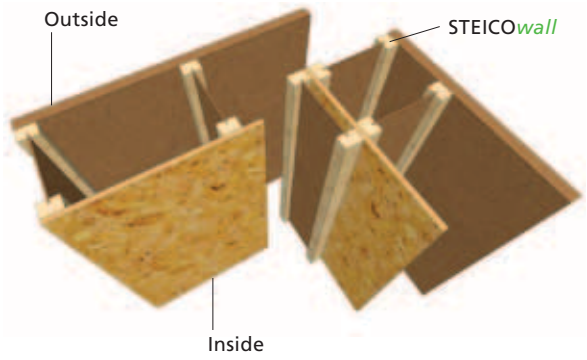
a) The design values have to be calculated in the following way:
$N_d = N_k * k_{mod} / \gamma_m$ where: N_k ≙ tabular value, k_{mod} ≙ modification factor,
γ_m ≙ partial factor for material properties
b) For sole plate / top plate of 43 mm height

Calculation Assumptions:

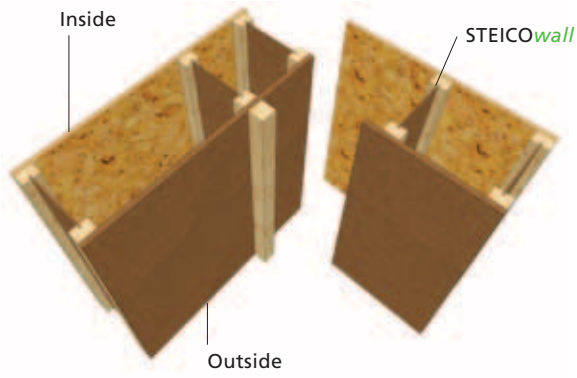
- Load discharge takes place in the middle of the joist
- Even load distribution on both flanges

WALL CONSTRUCTION DETAILS

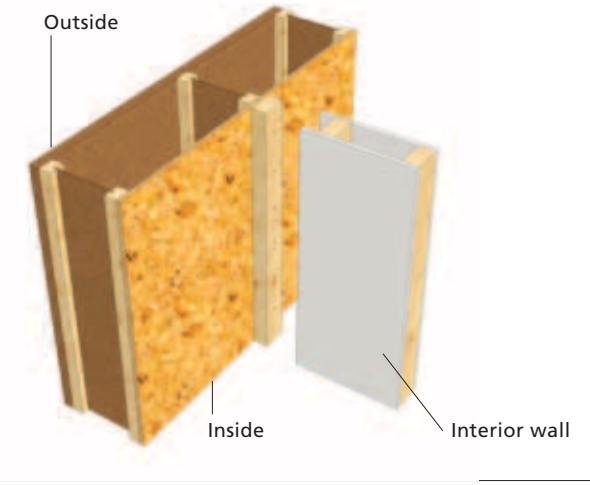
W1 Internal corner detail



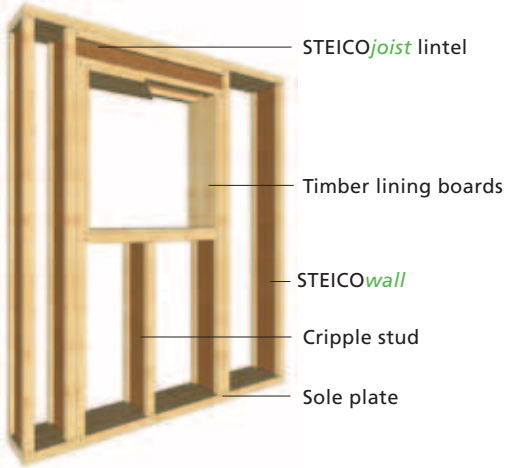
W2 External corner



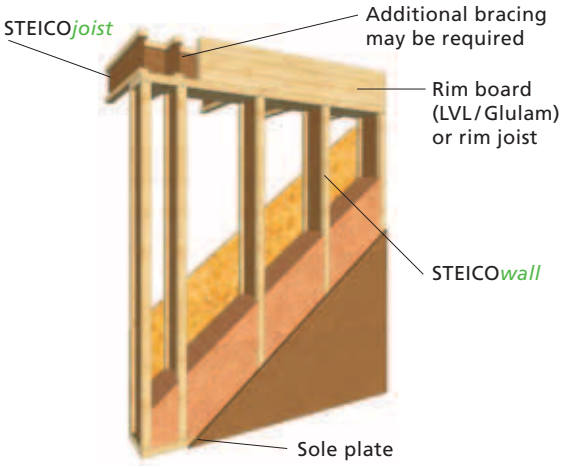
W3 External wall to partition



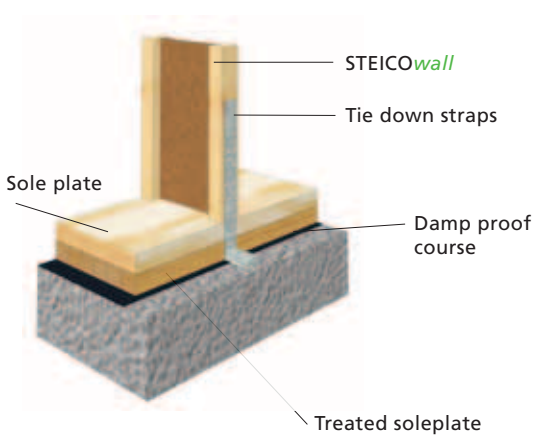
W4 Window opening



W5 Exterior wall and floor connection



W6 Connection to concrete floor



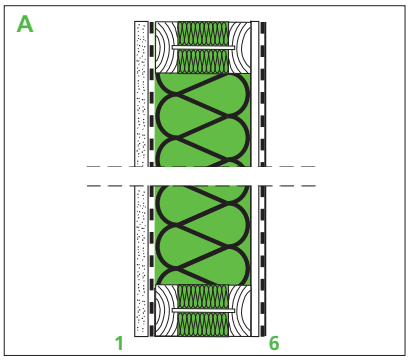
THERMAL INSULATION

With its I-section profile, the STEICO*wall* is ideally suited for wall constructions with high thermal requirements. Low energy buildings may be efficiently constructed.

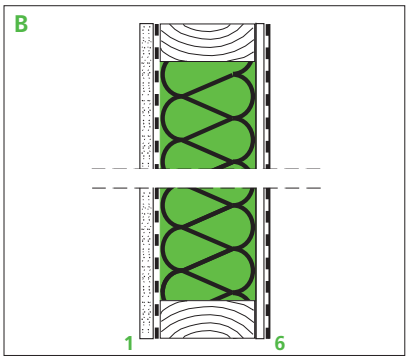
The factory-made flange filler insulation and bespoke insulation widths of the STEICO*wall* allow energy efficient design and the easy installation of the STEICO flexible insulation products.

WALL CONSTRUCTIONS

STEICO*wall*



Solid timber stud



1 Plasterboard 12.5 mm
2 Vapour barrier
3 A STEICO*wall* 45/160
B Solid stud 38/140
4 A STEICOflex 160 mm
B Mineral wool 140 mm
5 OSB 9 mm
6 Breather paper

Thermal performance

Version	Overall U-Value W/(m²*K)	Phase shift in hours
Construction A	0.238	8.3
Construction B	0.284	5.6

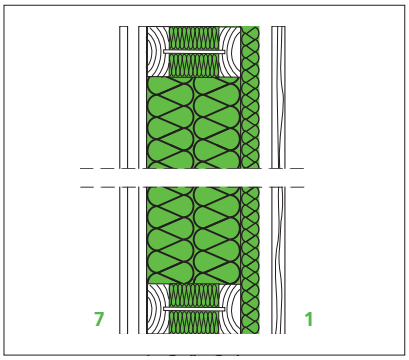
FIRE PROTECTION

STEICO products are suitable for use in wall constructions requiring fire protection. Wood and wood based products in conjunction with fire resistant materials provide positive fire protection properties with a measurable char rating.

Wall construction F 30-B
According to the general building code test certificate "AbP P-SAC 02/ III–201" from STEICO AG.

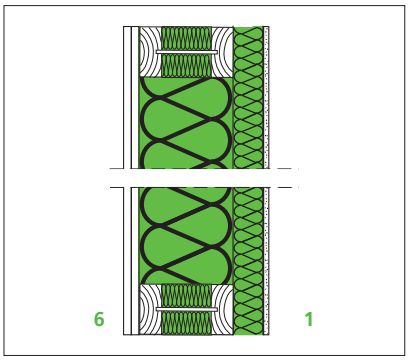
A) Wall construction with timber cladding

Timber cladding d ≥ 20 mm	1
Battens and cross battens ≥ 50 mm	2
STEICO*universal* 35 or 52 mm	3
STEICO*wall* 160-360	
Stud centers 400 - 600 mm	4
STEICO*flex* ≥ 160 mm	5
Wood based panel ≥ 15 mm	6
Plasterboard 12.5 mm	7



B) Wall construction with rendered finish

Render system d ≥ 4 mm	1
STEICO*protect* render board d ≥ 40 mm	2
STEICO*wall* 160-360	3
Stud centers 400 - 600 mm	
STEICO*flex* ≥ 160 mm	4
Wood based panel ≥ 15 mm	5
Fermacell gypsumboard d ≥ 15 mm	6

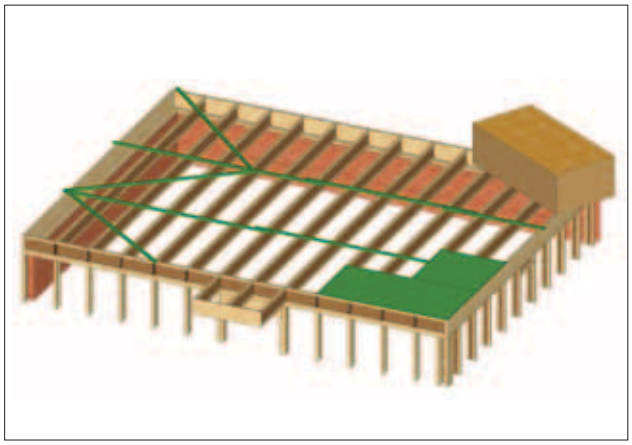


Additional construction alternatives are possible. Please contact your STEICO partner for more information.

General information

Proper erection procedures and the installation of bracing are essential to safe construction when using I-joists. The following notes may assist builders when preparing safety assessments under the CDM regulations 1994.

INSTALLATION NOTES (IN ACCORDANCE TO UKTFA-GUIDANCE)



- Under no circumstances walk on joists until they are fully braced.
- Do not store building materials on unbraced joists.
- I-joists are unstable until fully braced. This includes temporary and permanent longtitudinal and diagonal bracing, rim boards/joists, stability blocking.
- Temporary bracing to be installed as per UKTFA-guidance.
- Temporary bracing may be progressively removed as decking proceeds, leaving bracing in place on un-decked areas.

- Construction materials may only be placed on joists when all bracing is in place. Materials should be positioned so they are spread over at least 4 joists and no more than 1.5 m from a support. Floor/ceiling boards may only be stacked up to a height of 250 mm (150 kg per joist at 600 centres, 100 kg per joist at 400 centres).
- Flooring should be fully fixed to the joists in accordance with manufacturers recommendations before additional loads are placed on the system.
- STEICO AG do not currently recommend the use of “no-nails” decking solutions to be used in conjunction with their products.
- Under no circumstances use damaged joists or attempt to repair them.

STORAGE NOTES

- STEICO Joists must be stored straight and vertical.
- STEICO joists should be stored vertically, on level bearers, at least 150 mm high and spaced at approx 3.0 m centres.
- Leave banding in place until the joists are ready for use.
- When stored, protect joists at all times from direct weather exposure with an appropriate covering.
- Always lift the joists using the bottom flange.

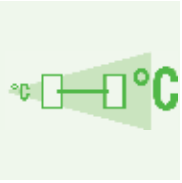
ABOUT STEICO

STEICO operates worldwide with approx. 900 employees. Steico Limited operates from offices in Harpenden, Bedfordshire and Rochester, Kent.

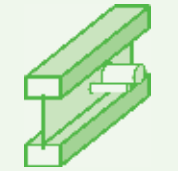
Along with I-Joists STEICO manufactures a huge product range of insulation materials made from wood fibres and hemp at three modern production facilities .

Ongoing Quality Control in our own laboratories as well as independent Quality Control by recognised European institutions, guarantees a high quality level for the products.

The STEICO production is certified according to ISO 9001:2000.

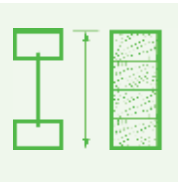


Reduction of thermal bridging

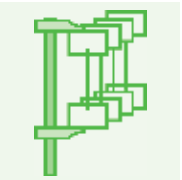


Easy installation of services

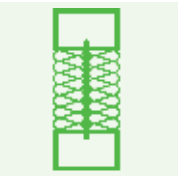
Lightweight. Easy to handle and install



Manufactured to standard depths and to match standard connectors



High dimensional stability through controlled moisture content



Available pre-insulated to form a solid cross section for ease of installation

High load bearing capacity

Easy to machine

Strict manufacturing tolerances

FSC MIX Wood FSC® C126750

CE

BBA BRITISH BOARD OF AGREMENT European Technical Approval ETA-06/0238

European Techncal Approval ETA-06/0238

QUALITY ASSURED UKTFA

Operating site certified according to ISO 9001:2008

STEICO engineered by nature

Your STEICO Partner

www.steico.com

Date 08/2016. Valid to subsequent revisions.