NEW!

SpaceJoist™
METAL OPEN WEB FLOOR SOLUTION

SpaceRafter™
VALUE OPEN WEB RAFTER SOLUTION

SpaceStud™
HIGH PERFORMANCE WALL STUD

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METAL WEB ROOF, FLOOR & WALL SYSTEMS

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GANG-NAIL®

SPACEJOIST

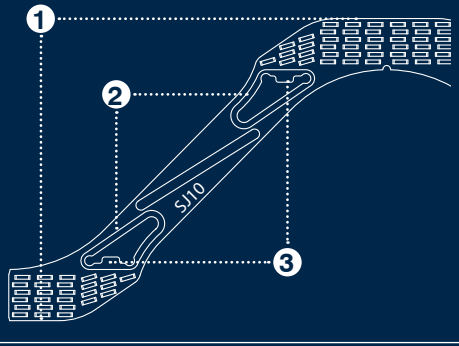
Now with more *BITE!*

SpaceJoist™
METAL OPEN WEB FLOOR SOLUTION

Attack your joist quotations with a *BETTER PERFORMING WEB* that could *SAVE* you *TIMBER* and *WEBS* for frenzied order conversions!

Typically achieve greater maximum spans with less double webs and timber:

1. Extra teeth improve SpaceJoist stiffness and strength which reduces deflection
2. Burst-through holes increase web strength in compression
3. Contact tabs aid load transfer from webs to timber chords - increasing web capacity
4. Achieves 43db sound resistance as required by Scottish regulations without the need for insulation, resilient bars or additional plasterboard



Percent increase in performance of the new SpaceJoist 10" metal web over others
Metal webs compared in November 2012

	Alpine Old	Gang-Nail Old	Competitor A	Competitor B
Single Web Slip Moduli	80%	119%	39%	117%
Tension End Single Web	45%	25%	17%	33%
Tension Integral Single Web	41%	25%	16%	40%
Compression Single Web	42%	51%	0.4%	29%
Compression Double Web	52%	37%	1%	5%

ALPINE GANG-NAIL | Now for use with Alpine and Gang-Nail software

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Benefits of the SpaceJoist system

Long spans: Longer spans are achievable in comparison to solid timber. This may eliminate the need for intermediate load bearing internal walls, thus reducing a building's overall cost.

Reduced wastage: Manufactured to size eliminates site alterations saving time on site.

Design flexibility: SpaceJoists can be designed top hung to eliminate the rim board, decreasing the risk of timber shrinkage to improve air tightness.

Less timber and fewer webs: Tests show that the NEW SpaceJoist system requires less construction material - saving cost.

Sound performance: SpaceJoist delivers outstanding acoustic performance to comfortably pass English and Welsh regulations, even complying with the more stringent 43dB Scottish regs without additional insulation, plasterboard or resilient bars.

Easy to handle: Now even lighter, the lightweight construction makes SpaceJoist easy to individually manhandle on site without the need for crane hire. Alternatively, floor and roof sections (cassettes) can be delivered to site and craned into position to save build time.

Wide nailing surface: Fixing of floor and ceiling materials is simpler and quicker due to the minimum chord width of 72mm.

Engineered: SpaceJoists are manufactured offsite ensuring consistent quality and reliability.

Open web design: Fast and simple installation of services, without the need for drilling or notching. Joists can accommodate large services such as Mechanical Heat Recovery Systems.

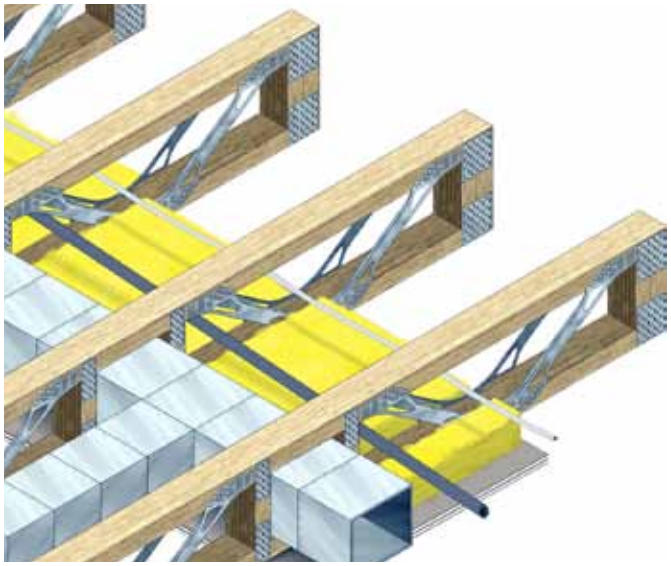
Home grown timber: SpaceJoists can be manufactured in home grown timber - reducing carbon footprint.

Attic bottom chords: SpaceJoists can be incorporated into attic truss bottom chords to achieve greater spans, deeper insulation and provide a service void.

SpaceJoist™
METAL OPEN WEB FLOOR SOLUTION

The open web feature

SpaceJoist offers a comprehensive range of depths from 195mm as a direct competitor to solid timber joists and I-joists, up to 424mm which is ideal for large spanning commercial applications.



Services can be passed through the open web feature. The table below gives the maximum opening sizes for each depth:

Opening sizes

Web	Depth	D*	H*	W*	S*	X	Y
TW8	195	120	73	208	107	605	125
SJ9	219	120	75	210	105	505	125
SJ10	254	154	97	208	133	505	158
SJ12	304	192	121	215	155	505	209
TW14	375	252	160	283	204	505	285
TW16	424	265	178	264	212	705	330

Dimensions shown in mm.
*These dimensions include a 3mm clearance.
Dimensions are approximate as discrepancies may occur in manufacture.

SpaceJoist indicative span tables

Span tables available on request. Call 01252 551960 or email helpdesk@itw-industry.com

ETA and CE marking

SpaceJoists have European Technical Approval (ETA). All ITW Industry licenced fabricators CE mark their SpaceJoists or SpaceRafters to legally comply with the Construction Products Regulation. This includes an external Quality Assurance system and clear labelling of every joist and rafter.

Product information

Joist depth (mm)	SpaceJoist code	Carton quantity	ITW product code
195	TW8	1440	028588
219	SJ9	1120	028598
254	SJ10	1120	028297
304	SJ12	1120	028599
375	TW14	700	551400
375	TW14i	100	551401
424	TW16	550	028593
424	TW16i	100	028594

Sound and fire performance

Sound performance - intermediate floors

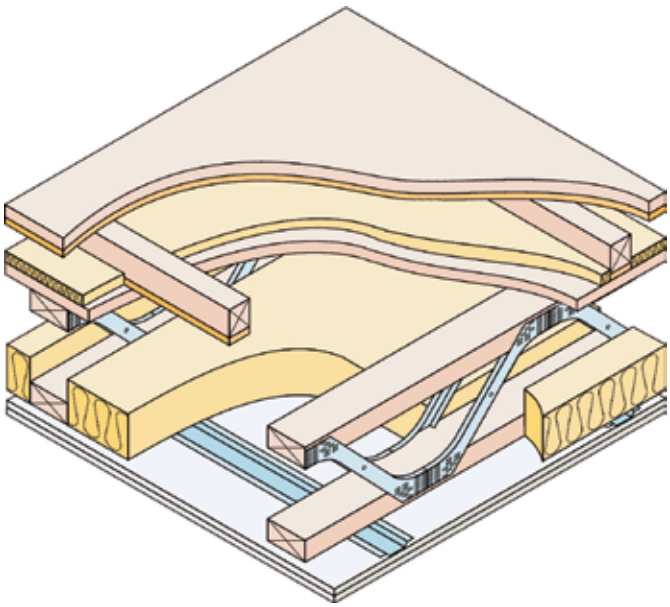
Independent testing proved the new SpaceJoist delivers outstanding acoustic performance to comfortably pass English and Welsh sound regulations. The joists even comply with the more stringent 43dB Scottish regulations without additional insulation, plasterboard or resilient bars.

SpaceJoist depth (mm)	Floor build-up	Scotland requirements for non separate domestic floors (43db)	England & Wales requirements for non separate domestic floors (40db)
219	22mm chipboard on 219mm SpaceJoist at 600mm centres lined to the underside with 15mm plasterboard (standard wall board)	✓	✓
254	22mm chipboard on 254mm SpaceJoist at 600mm centres lined to the underside with 15mm plasterboard (standard wall board)	✓	✓
304	22mm chipboard on 304mm SpaceJoist at 600mm centres lined to the underside with 15mm plasterboard (standard wall board)	✓	✓

Robust Details - separating floors

SpaceJoists comply with Robust Detail "E-FT-3 Separating Floor - Metal Web Joists." Floors built to this specification will require no pre-completion testing to comply with "Approved Document Part E - Resistance to the passage of sound" and avoid possible call backs.

To find out how to comply with the detail, visit www.robustdetails.com or scan the QR code.



Fire performance

SpaceJoists have been independently tested in accordance with BS 476 part 2: 1987 for both 30 and 90 minute fire resistance.

SpaceRafter™
VALUE OPEN WEB RAFTER SOLUTION

Benefits of SpaceRafter

Long spans: Longer clear spans than solid timber can be achieved, requiring fewer intermediate supports - saving time on site.

Cassettes: Available in cassettes to increase construction speed on site.

Hinge: Butterfly cassettes available with a hinged ridge and eaves connectors to eliminate ridge beams - saving time and improving health & safety.

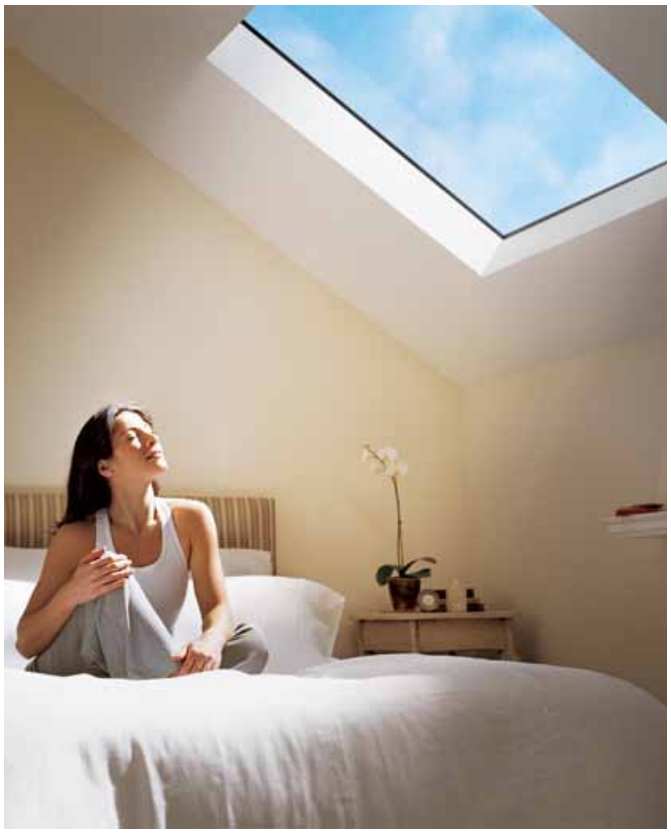
Versatile: Can be used on both residential and commercial buildings

Thermal performance: Rigid, blown or quilt insulation can be fitted inside voids to improve thermal efficiency.

Home grown: Can be manufactured with home grown timber to reduce carbon impact.

Loose SpaceRafter

SpaceRafters can be supplied loose for both residential and commercial builds. The rafters can be supplied with rigid insulation between the timber chords for improved thermal efficiency.



Retrofit SpaceRafter

SpaceRafter combined with SpaceJoist can be a quick method of replacing standard trusses with a large room in the roof space. Below describes a typical method for retrofit conversion. Please ensure roof alterations have been approved by an engineer or a fabricator before commencing.

1: Remove tiles, battens and felt from the existing roof.

2: Position SpaceJoist floor members beside the existing ceiling joists. These may be fastened together if suitable.

3: Cut away all webs, rafters and bracing from existing the existing truss.

4: Crane on the SpaceRafter hinged cassettes.

Call our technical team on 01252 551960 to find out if your roof is suitable for conversion.

Cassetted SpaceRafter

SpaceRafters can be supplied as cassettes for residential and commercial projects. The roof cassettes can comprise a number of SpaceRafters, complete with sheathing, plasterboard and insulation for fast installation on site.

Duo-pitch SpaceRafter roofs can even be supplied as “butterfly” cassettes. These panels arrive on site folded flat for transporting and are opened up by the means of a hinge at the apex. Not only does this method massively save site labour costs, but it also negates the cost of a ridge beam.

Indicative roof spans

Web type	Depth (mm)	Centres (mm)	Width (mm)	Max span at 0° (mm)	Max span at 45° (mm)
TW8	195	600	72	4880	4190
			97	5310	4570
			122	5640	1870
SJ9	219	600	72	4950	4220
			97	5390	4600
			122	5740	4930
SJ10	254	600	72	5730	4810
			97	6260	5250
			122	6690	5620
SJ12	304	600	72	6320	5370
			97	6880	5840
			122	7330	6250
TW14	375	600	72	7400	6280
			97	8050	6850
			122	8530	7300
TW16	424	600	72	8050	6800
			97	8760	7400
			122	9320	7880

Due to the design flexibility of the SpaceRafter system, many variables affect the maximum span. Therefore this span table is indicative and to be used only as an estimating / feasibility tool. These spans have been calculated with typical roof loading applied.

Loading at 45°:
Top chord dead: 500 N/m²
Top chord live: 750 N/m²
Bottom chord dead: 200 N/m²
Pitch: 0°

Loading at 0°:
Top chord dead: 900 N/m²
Top chord live: 200 N/m²
Bottom chord dead: 600 N/m²
Pitch: 45°

U-values

Rafter make up	Web	Chord depths (mm)	Gap (mm)	Rafter overall depth (mm)	U-Value: Thermal conductivity of insulation W/m.K 0.04	0.034	0.02
72x125x72	SJ9	72	125	269	0.157	0.136	0.085
97x125x97	SJ9	97	125	319	0.132	0.114	0.071
72x160x72	SJ10	72	160	304	0.141	0.122	0.077
97x160x97	SJ10	97	160	354	0.121	0.104	0.065

Breather membrane, OSB, SpaceRafter (as above), vapour barrier and 12.5mm plasterboard. SpaceRafter overall depth is achieved using rotated timber as the flanges in the vertical plane.

SpaceStud™
HIGH PERFORMANCE WALL STUD

SpaceStud overview

The innovative Alpine SpaceStud system from ITW Industry has been specifically developed to meet the thermal requirements of the Building Regulations and the Code for Sustainable Homes.

The Code is the national standard for the sustainable design and construction of new homes. The Code aims to reduce our carbon emissions and create homes that are more sustainable.

The Code measures the sustainability of a new home against nine categories of sustainable design, rating the 'whole home' as a complete package. A one to six star rating system communicates the overall sustainability performance of a new home. The Code sets minimum standards for energy and water use at each level.

Scottish Building Standard 2010, section 6.1.2, have given target U-values for walls of 0.19 and a maximim wall u-value of 0.25.

TABLE: REGULATORY STEPS TO ZERO CARBON & CORRESPONDING CODE LEVELS

Code level	Current energy standard (% improvement over 2006 Part L)	Regulation date of en-forcement	2009 Code consultation proposals (% improvement over 2006 Part L)
1	10%	-	25%
2	18%	-	25%
3	25%	2010	25%
4	44%	2013	44%
5	100% regulated emissions	-	70% onsite + 30% allowable solutions
6	Zero carbon onsite - 100% onsite plus appliances (equivalent to approximately 150% in total)	2016	"Zero Carbon Home" - 70% onsite + allowable solutions to reach zero carbon

Key benefits of the SpaceStud system

Code for Sustainable Housing
SpaceStud complies to The Code for Sustainable Homes to level 4 and above.

Economical
SpaceStud is one of the most cost effective wall stud systems on the market to comply to The Code for Sustainable Homes to level 4 and above.

Thermal performance
SpaceStud creates the wall thicknesses required to reduce U-values and thermal bridging compared to solid timber.

No drilling or notching
Fast and simple installation of services, without the need for drilling or notching.

Improved racking resistance
SpaceStud provides a 20% greater racking performance than a standard 38x140mm timber frame stud construction.

Software flexibility
SpaceStud can be priced and detailed in ITW Industry's management and detailing packages AiMS and hsbCAD software.

UKTFA "Fabric First"
SpaceStud supports the UK Timber Frame Association's "Fabric First" campaign which highlights the benefits of using timber frame as the core fabric of a building to achieve higher levels of The Code for Sustainable Homes.

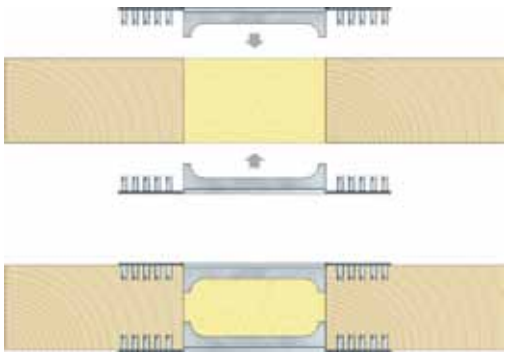
Quality
NHBC stipulate treated timber must be used in wall stud construction. SpaceStud is manufactured with standard treated timber sizes.

Home grown: Can be manufactured with home grown timber to reduce carbon impact.

Where on-site assembly is required SpaceStud components can be supplied loose.

Call us on 01252 551960 or email helpdesk@itw-industry.com to find a supplier near you!

SpaceStud clip installation & typical wall make up



The SpaceStud clip is pressed onto minimum C16 grade timber with a 38mm minimum depth. Pressing must be with a hydraulic press.

TABLE: STUD MAKE UP

External stud (mm)	Stud spacer (mm)	Internal stud (mm)	Total stud width (mm)
63	55	63	181
63	80	63	206
63	55	89	207
63	80	89	232
89	55	89	233
89	80	89	258

SpaceStud insulation options

U-values shown in this leaflet are based on generic insulation values. Improved values can be obtained by specifying higher performing insulation from leading insulation manufacturers such as Rockwool, Knauf, Kingspan and Isover. Fill or blown insulation systems on closed panels is also an option from insulation manufacturers such as Warmcel.

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it's time to save energy

t : 08448 000135
www.knaufinsulation.co.uk

WARMCEL®
Insulation Fibre

t : 01685 845200
www.warmcel.co.uk

Kingspan
Insulation

t : 01544 388601
www.insulation.kingspan.com

ISOVER

t : 0800 032 2555
www.isover.co.uk

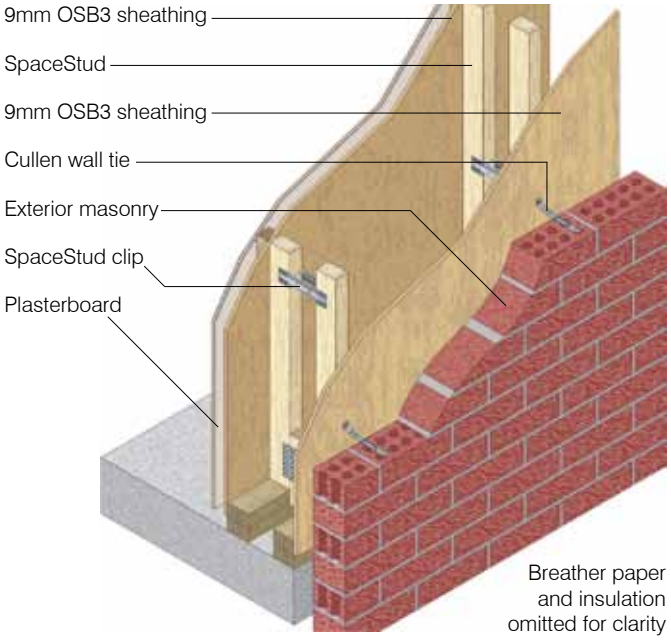
ROCKWOOL

t : 08712 221780
www.rockwool.co.uk

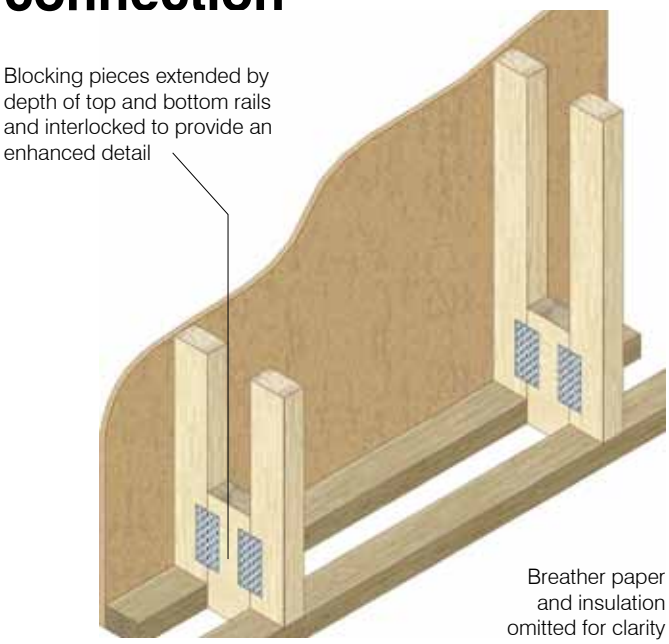
Product information

ITW product code	Description	Box quantity
120051	SpaceStud 55mm	600
120052	Spacestud 80mm	500
028502	9-1703 (43 x 88mm A9 nailplate)	440

Closed panel detail



Enhanced base rail connection



Technical information

Thermal information

External stud width (mm)	Internal stud separation (mm)	Internal stud width (mm)	Total SpaceStud width (mm)	Wall U-Value (W/m².k) with mineral wool insulation	Wall U-Value (W/m².k) with PU insulation
63	55	63	181	0.20	0.15
63	80	63	206	0.19	0.13
89	55	89	233	0.17	0.13
89	80	89	258	0.16	0.11

Tested by C4Ci. U-Values for different variations on the above wall constructions are available upon request

Exterior	102mm brick or block cladding
	50mm normal cavity
	Breather membrane
	9mm OSB
	SpaceStud (as per table above)
	Vapour barrier
Interior	12.5mm plasterboard

Insulation type	U-Value (W/m².k)
Mineral wool	0.038
PU	0.023

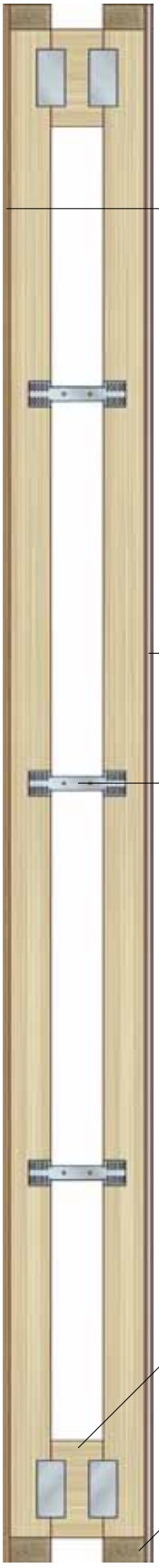
Loading

Maximum transferable surface wind pressure 9.02kN/m² for studs at 600mm centres (characteristic). 13.5kN/m² for studs at 400mm centres (characteristic) based on 3 pairs per 2.4m stud height.

Racking resistance

Improved racking resistance by approximately 20% compared to a standard single sheathed 38 x 140mm timber frame panel, determined from testing carried out to BS EN594:1996. Test carried out by a UKAS accredited laboratory. Further information on the racking resistance test results available on request.

Typical wall panel section



Breather paper and insulation omitted for clarity

External sheathing

9mm OSB3

Typical fixing pattern: Nail to external edges of sheathing at 150mm centres. Nail to internal studs at 300mm centres.

Nail spec: Duo-Fast 2.9 x 50mm smooth shank nails (product code 312619)

Racking resistance of standard panel available upon request.

Plasterboard

SpaceStud connectors

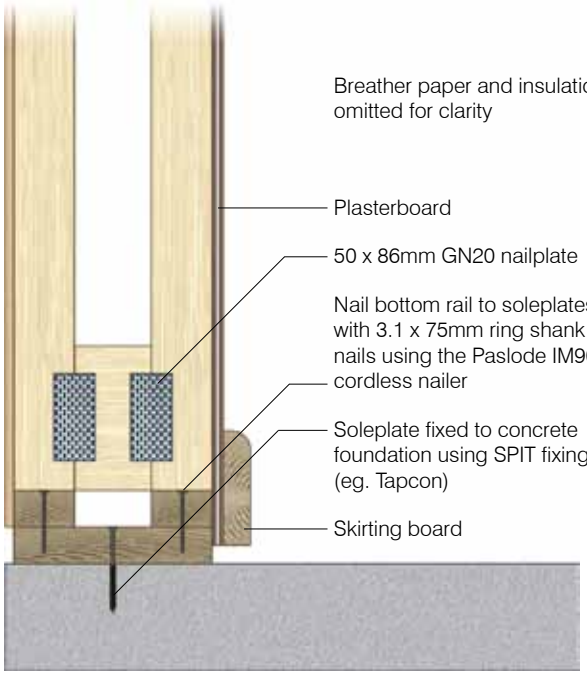
3 pairs of SpaceStud connectors, equally spaced (standard 2.4 – 2.5m high wall panel).

Timber block

Timber blocking piece plated between vertical studs using Alpine truss plates – minimum 140mm deep

Various top & bottom rail details are possible. This method shows loose 38 x 63 or 38 x 89 timbers to plated and insulated rails.

Single piece soleplate detail



Breather paper and insulation omitted for clarity

Plasterboard

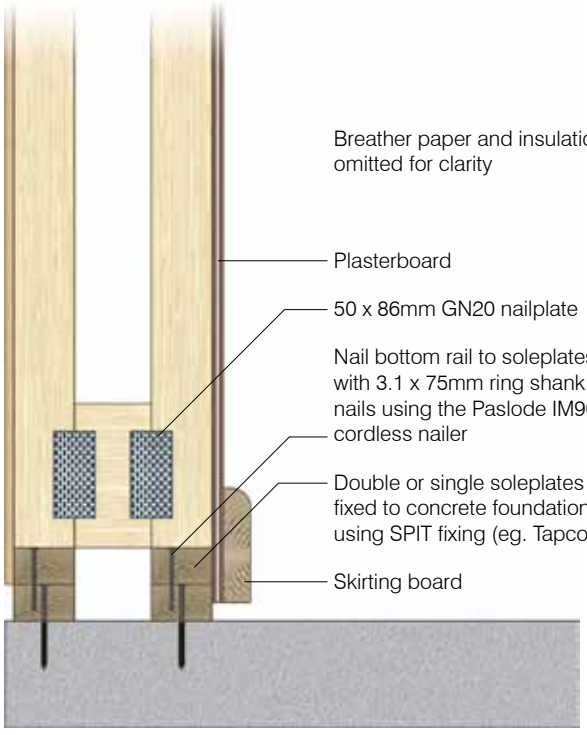
50 x 86mm GN20 nailplate

Nail bottom rail to soleplates with 3.1 x 75mm ring shank nails using the Paslode IM90i cordless nailer

Soleplate fixed to concrete foundation using SPIT fixing (eg. Tapcon)

Skirting board

Twin soleplate detail



Breather paper and insulation omitted for clarity

Plasterboard

50 x 86mm GN20 nailplate

Nail bottom rail to soleplates with 3.1 x 75mm ring shank nails using the Paslode IM90i cordless nailer

Double or single soleplates fixed to concrete foundation using SPIT fixing (eg. Tapcon)

Skirting board

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