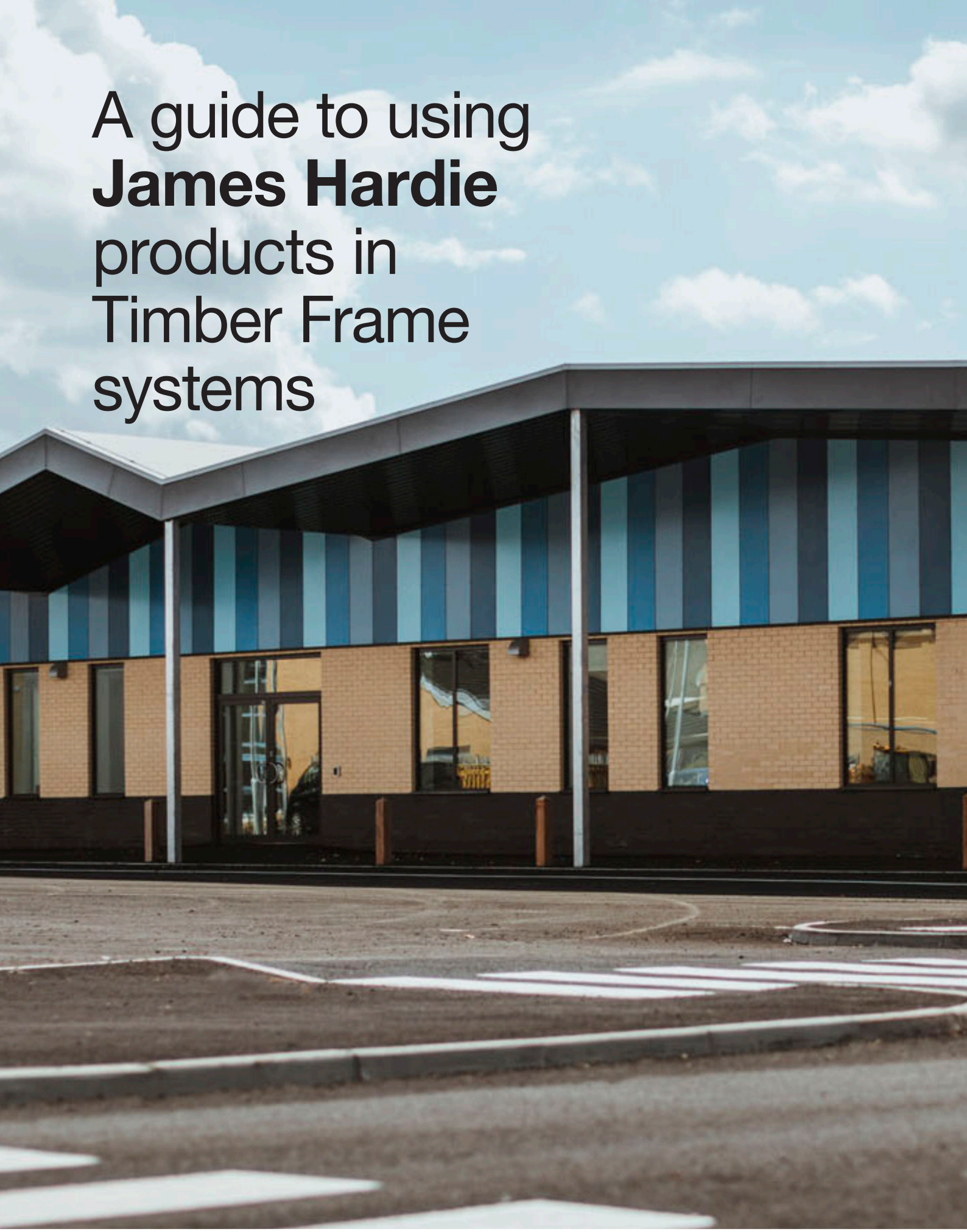
A guide to using **James Hardie** products in Timber Frame systems



Timber frame

Installation guide

fermacell®

JamesHardie™

IT'S POSSIBLE

Contents

IT'S POSSIBLE™

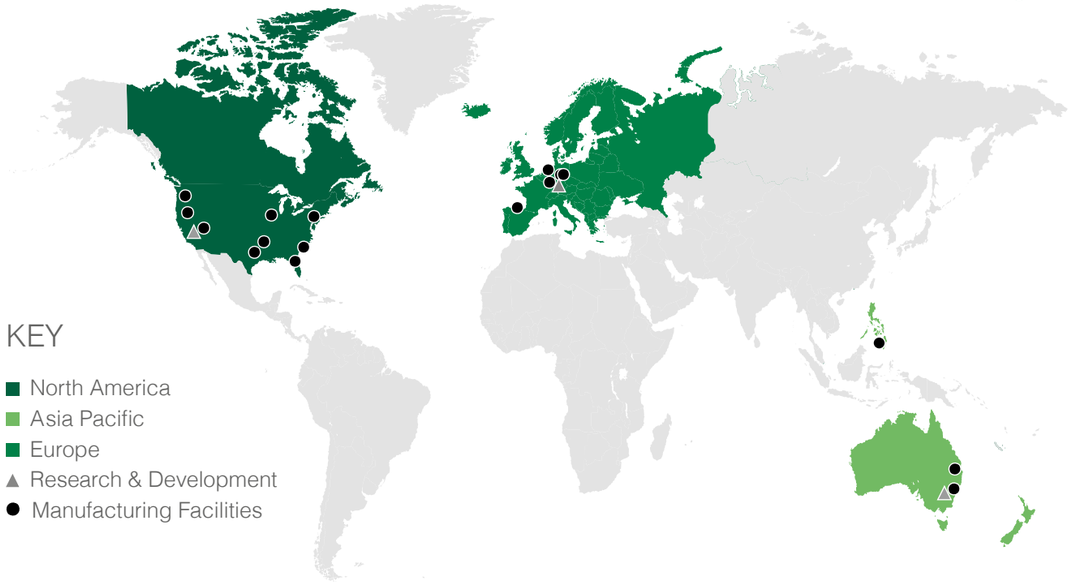
James Hardie

James Hardie, leading the manufacture of high-performance fibre cement and fibre gypsum building solutions. As a trusted innovator and industry leader, we empower homeowners and building professionals alike to achieve their dreams with premium quality solutions.

Our products enable endless possibilities for designing forever homes and exceptional buildings, whilst also delivering trusted protection and long-lasting beauty.

We are a fast-paced company dedicated to our customers. We strive to deliver market driven innovation, an inclusive and empowering culture, and an unwavering commitment to our Zero Harm safety initiative. Whilst operating with a global mindset, we put great care into how our business can support the local communities in which we operate, live and work in.

Our cladding products not only create a stylish stand-alone solution, but also look great with other building materials such as stone, wood and brick, making design potential endless. We will provide sustainable solutions for your project, giving you affordable, individual designs, energy efficiency and everything you need to ensure your project looks stunning for years to come.



Build your projects with a global organisation that's been pursuing excellence since 1888.

OUR PRODUCT RANGE

Complete, through the wall solutions

1 **Hardie® Plank Family** page 8

Hardie® Plank product family consists of two profiles - Hardie® Plank lap weatherboard and Hardie® VL Plank inter-lock. Both cladding solutions offer the ultimate design flexibility, with both horizontal and vertical installation.

2 **Hardie® Architectural Panel cladding** page 42

Hardie® Architectural Panel cladding is a large element cladding sheet that brings real flexibility and freshness to your facade designs - at an affordable price. Its crisp, clean lines make it a smart choice for strong, contemporary designs.

3 **fermacell® fibre gypsum for walls** page 12

fermacell® fibre gypsum is a multi-purpose dry lining board that combines design flexibility with the optimum fire, acoustic and impact performance.

4 **fermacell® fibre gypsum for floors**

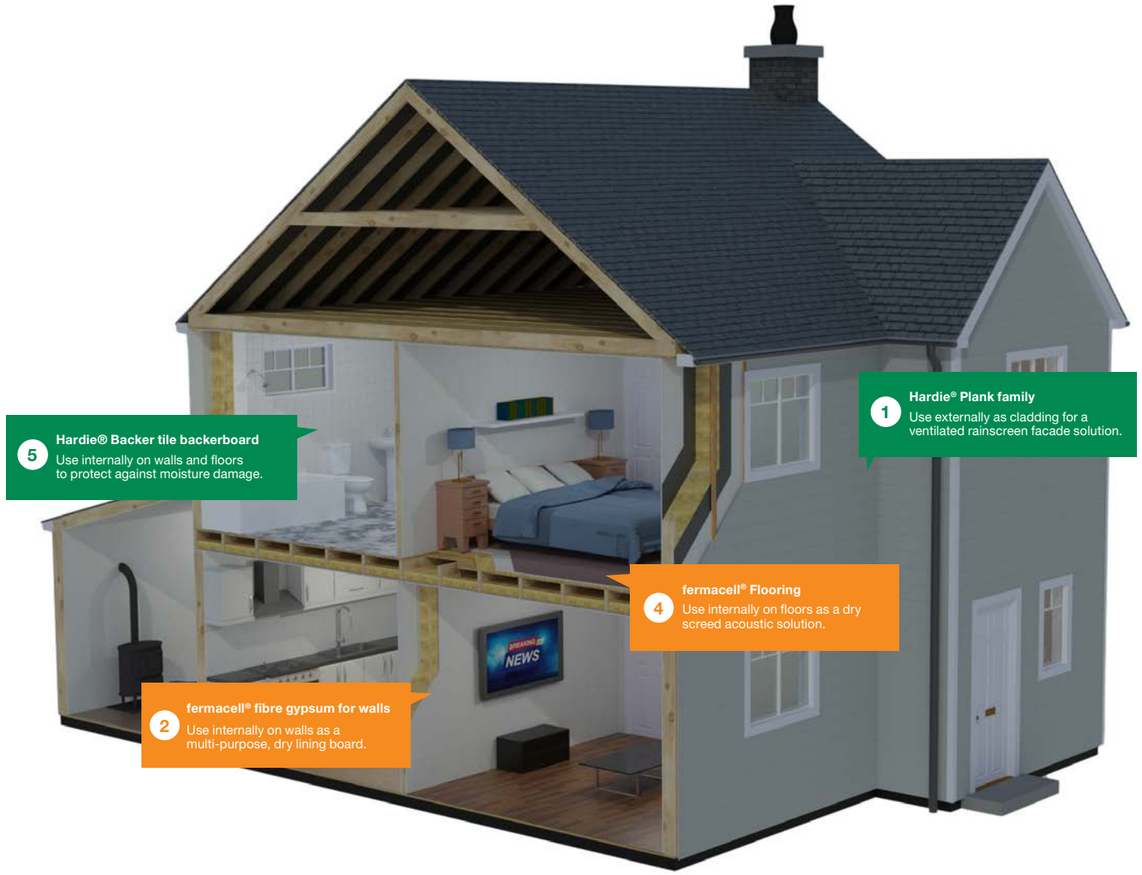
fermacell® flooring is a dry screed solution that optimises thermal conductivity and is quick to install. Available with an optional wood fibre layer for advanced acoustic performance.

5 **Hardie® Backer tile backerboard**

Protect your tiles with Hardie® Backer tile backerboard, the UK's number 1 engineered tile backerboard for walls and floors. With its unique cement formulation, Hardie® Backer tile backerboard has no loose aggregates or fillers, making it the strongest, most uniform composition.

6 **fermacell® Powerpanel H_20 board**

fermacell® Powerpanel H_20 board is a water resistant construction material ideal for walls, floors and ceilings. It's specifically designed for use in rooms where there are wet conditions.



WHY FERMACELL®?

The ideal board for timber frame!

Environmentally Verified

Carbon storing, made from recycled materials.

Fire Resistant

Fully certified fire resistant systems.

Impact Resistant

Reduces double layering or use of sheathing ply.

Moisture Resistant

Suitable for humid areas Up to 80% constant RH.

Acoustic

Greater acoustic performance than plasterboard.

Load-Carrying

Up to 50kg per cavity fixing and 30kg per screw. Can eliminate noggings.

Large Format Boards

A full range of boards up to 6000 x 2540 mm.

Exposure to Weather

Resistance to unexpected weather exposure.

Environmental Excellence

- fermacell® is the perfect choice for sustainable construction - it's made from recycled papers and gypsum board waste can be recycled too.
- Our third-party verification as carbon storing reaffirms our commitment to sustainability, making us the ideal partner for eco-conscious timber construction in the UK.

Your trusted partner for fire-safe solutions in timber frame

- fermacell® is a trusted supplier to timber frame manufacturers throughout Europe, building a strong reputation in the industry with extensive testing and data.
- With a strong focus on the UK market, we have completed a successful RE160 4m loaded fire test, achieving REI60 & spandrel options tested to EN standards as well as non-loaded EN tested EI60 spandrel panel solutions.

Takes the heat out of fire

- fermacell® minimises the inherent risk of fire with timber frame construction.
- The Structural Timber Association has worked with the HSE and Chief Fire Officers Association to draw up a Code of Conduct during construction, and recommends options for replacing OSB as the sheathing board with a Euroclass A1 or A2 fire-resistant material – such as fermacell®.
- With up to 60 minutes' fire resistance from single layered partitions, fermacell® boards carry Euroclass 'A2-s1, d0' certification and have been approved under ETA 03/0050.

A tough act to follow

- Compared with other materials, fermacell® gives impressive impact resistance. In fact, a 12.5mm fermacell® board on steel studs tested to BS 5234-2:1992, gives a severe duty rating.
- That means there's less risk of damage during manufacture, in transit and throughout installation – reducing wasted time and costly repairs.

A load off your mind

- With a load-carrying capacity of up to 50kg per cavity fixing and 30kg per screw, fermacell® gives greater flexibility as many items can be fixed directly to the boards rather than the sub-structure.
- fermacell® boards have fire rated solutions for load-bearing and non-load-bearing constructions, as well as K2 encapsulation fire ratings and assessments for additional applications. Contact fermacell® technical department for the correct fixing method for the fire rating required.

Hear the difference

- fermacell® offers greater acoustic performance with fewer layers than, for instance, plasterboard constructions – enabling slimmer partitions and simple Party Wall construction.

Make moisture less of a problem

- It is suitable for use in constant relative humidity of up to 80% and can be installed before the building envelope is complete.
- It's also been independently tested as a rainscreen-backer board for Vented and EWI systems, so the same board can be used inside and as part of the external wall system in a service class II application.

The biggest advantage of all

Its unique LFB (large format boards) – a full 6000mm x 2540mm. This means panels can be cut to the perfect size, eliminating joints and making them more airtight and thermally efficient – particularly important with closed panel systems. It also means less wastage as well as less time and labour in the factory, leading to reduced production costs.

Benchmarking compared to brick and traditional building methods

- Reduced Carbon
- Improved hanging capabilities
- System supported by test data
- Enhanced durability

Certifications

- BBA certificate No 90/2439
- EPD (Environmental Product Declaration)
- DIN EN ISO : 14001
- ISO9001: Issue: 21/08/2023 Valid until: 20/08/2026
- Recycled content to ISO 14021
- ETA – 03/0050
- EWC – European Waste Catalogue Ref listing REF – NO 1708 02
- Environmental certification: Rosenheim Institute Ecology Certificate
- eco INSTITUT – Quality Assurance
- GreenGuide - England - Wales - Scotland

FERMACELL®

Product specifications

fermacell® fibre gypsum board

Homogeneous dry lining board made from recycled gypsum, recycled cellulose fibres from post consumer waste paper and recycled water.

High performance building board that when installed offers the speed of drywall with the robustness of blockwork- saving in space, time and money.

Material Characteristics	
Gross density ρ_k	1 150 ± 50 kg/m³
Water vapour diffusion resistance coefficient μ	13
Thermal conductivity λ	0.32 W/mK
Specific heat capacity c	1.1 kJ/kgK
Brinell hardness	30 N/mm²
Thickness swelling after 24 hours of water storage	< 2 %
Thermal expansion coefficient	0.001 %/K
Extension/shrinkage at 30 % change in relative humidity (20 °C)	0.25 mm/m
Moisture content equilibrium at 65 % relative humidity and 20 °C air temperature	1.3 %
pH value	7–8
Usage class according to EN 1995-1-1 (Service Class areas of use)	Type 1 and 2

Board thickness and weight				
Thickness	10 mm	12.5 mm	15 mm	18 mm
Approx. weight per m²	11.5 kg	14.5 kg	17.5 kg	21 kg

Dimensional tolerances for standard board sizes at constant humidity	
Length, width	+0 / -2 mm
Diagonal difference	≤ 2 mm
Thickness mm: 10/12.5/15/18	± 0.2 mm

Sizes in mm				
2400 × 1200	l	l	l	l
Special cut size boards are available upon request				

Approvals/Identification	
European Technical Assessment	ETA-03/0050
BBA reference	Cert No : 90/2439
General Design Certification	Z-9.1-434
Manufacturing & Identification according to EN 15283-2	GF-I-W2-C1
Building material class according to EN 13501-1	non-combustible. A2, s1-d0
Component classifications	national / international

RACKING

Structural performance

fermacell® boards have excellent racking performance. Independent testing at Lucideon proves that 12.5mm fermacell® board meets Category 1 racking performance. This then eliminates the need for typical double layer systems such as OSB and plasterboard. So fermacell® boards give any construction – and particularly timber frame units – enormous structural strength.

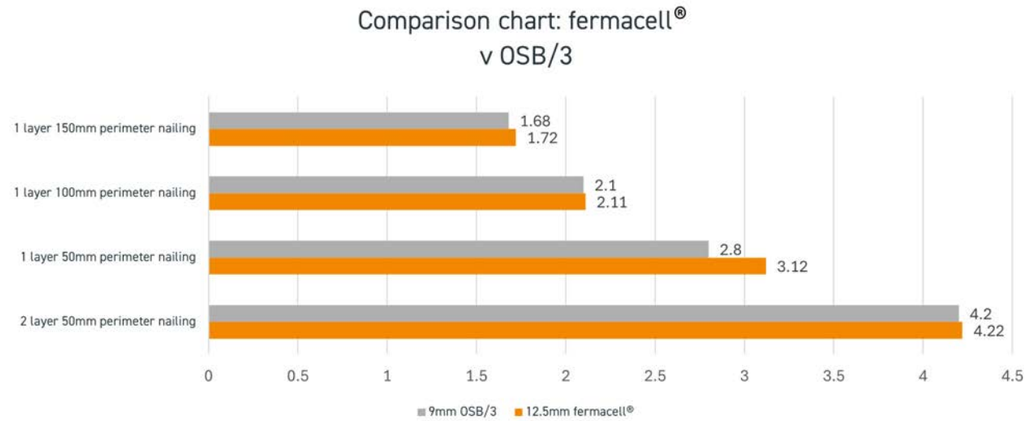
		12.5mm single boards			12.5mm double boards		
	Design Code	150mm	100mm	50mm	150mm	100mm	50mm
Racking resistance (unloaded)	BS5268-6.1 (Rb) (9mm OSB/3)	1.72kN/m (1.68kN/m)	2.11kN/m 2.10kN/m)	3.12kN/m (2.80kNm)	1.98kN/m (2.52kN/m)	2.47kN/m (3.15kN/m)	4.22kN/m (4.20kNm)
	EN1995-1-1 (FvRk)*	2.58kN/m	2.09kN/m	4.85kN/m	2.97kN/m	-	5.64kN/m

* FvRk values derived as 5% fractile value from the racking tests, using procedure given in EN-14358-Timber Structures

Eurocode 5 Calculation Figures

Building components manufactured with fermacell® gypsum fibre boards can be installed in accordance with the information in the annexes of ETA 03-0050 in conjunction with EN 1995-1-1[1], EN 1995-1-2[2] and EN 1993-1-1[1]

Eurocode	Description
EN 1995-1-1:2004+A1:2008+A2:2014	Eurocode 5: Design of timber structures; Part 1-1: General - Common rules and rules for buildings
EN 1995-1-2:2005+AC:2009	Eurocode 5: Design of timber structures; Part 1-2: General - Structural fire design
EN 1993-1-1:2005 + A1:2014	Eurocode 3: Design of steel structures; Part 1-1: General rules and rules for buildings



Modification factors applicable to BS5268-6.1 design:

K_{101} (nail diameter) - NOT applicable - Tested with 2.9mm x 50mm long nails

K_{102} (variation in nail spacing) - NOT applicable - Linear interpolation may be used between the tested values

K_{103} (board thickness) - NOT applicable - Tested with 12.5mm board thickness

K_{104} (height) - applicable

K_{105} (length) - applicable

K_{106} (openings) - applicable

K_{107} (vertical load) - applicable - proven via load testing on fermacell clad panels

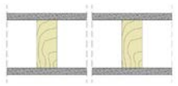
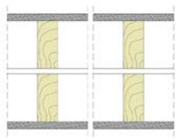
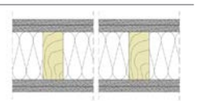
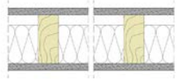
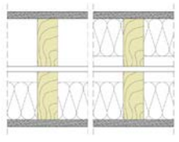
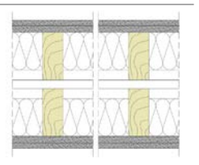
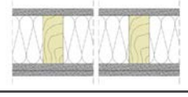
K_{108} (interaction) - applicable

Timber Construction

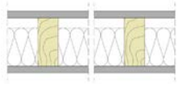
Walls

Timber stud walls – non-load-bearing

fermacell® fibre gypsum board with/without insulation

System reference	System drawing	Wall thickness	Substructure Timber stud (max. 600 mm centres)	Head & Base plates	Boarding per side	Mineral wool [1] Minimum thickness / density	Maximun wall height [mm] [23]	Mass per unit area	Airborne sound insulation index R_w	Flanking sound insulation $D_{n,f,w}$ [12]	Fire protection (minutes)	Fire test, classification and assessment reports
		[mm]	[mm]	[mm]	[mm]	[mm]/[kg/m³]		[kg/m²]	[dB]	[dB]	EN	
1 H 13		114	89 × 38	89 × 38	12.5	none	4 000	36	41	55	EI30	WR 174181 WF 506005
		100	70 × 44 (Horizontal joints must be nogged)	70 × 44	15		4 000	42	41	55	EI60	TR20230913-001107A TR20230913-001507A TR20240130-002514A
1 H 17		213	2 × 89 × 38 ≥ 10 mm air gap	2 × 89 × 38	12.5	none	4 000	41	49	55	EI30	WF 14777A & B WF 506005
		275	2 × 70 × 44 ≥ 10 mm air gap	2 × 70 × 44	12.5		4 000	47	49	55	EI30	
1 H 21		≥ 139	89 × 38	89 × 38	2 × 12.5	90/10	4 000	68	51	63	EI60	WF 174182 WF 506005 WF 14777A&B
1 H 22		114	89 × 38	89 × 38	12.5	70/35	4 000	38	44	59	EI60	WF 14777A & B WF 506005
1 H 24		≥ 213	2 × 89 × 38 ≥ 10 mm air gap	2 × 89 × 38	12.5	70/35 Twin layer insualtion may be used	4 000	43	57	63	EI60	WF 14777A & B WF 506005
		≥ 175	2 × 70 × 44 ≥ 10 mm air gap	2 × 70 × 44	12.5		4 000	43	57	63	EI60	
1 H 26		≥ 200	2 × 70 × 44 ≥ 10 mm air gap	2 × 70 × 44	12.5 + 10 or 2 × 12.5	90/10	4 000	64	64	63	EI60	WF 14777A & B WF 174182 WF 506005
		≥ 238	2 × 89 × 38 ≥ 10 mm air gap	2 × 89 × 38	2 × 12.5	90/10	4 000	64	64	63	EI60	
1 H 29		127	89 × 38	89 × 38	12.5 + 2 × 12.5	70/35	4 000	53	46	59	EI60	WF 1477A & B WF 506005

fermacell® Powerpanel H_2O

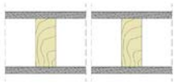
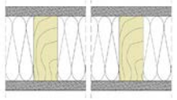
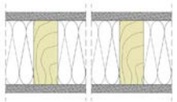
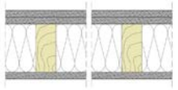
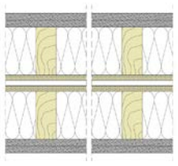
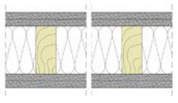
System reference	System drawing	Wall thickness	Substructure Timber stud (max. 600 mm centres)	Head & Base plates	Boarding per side	Mineral wool [1] Minimum thickness / density	Maximun wall height [mm] [23]	Mass per unit area	Airborne sound insulation index R_w	Flanking sound insulation $D_{n,f,w}$ [12]	Fire protection (minutes)	Fire test & classification reports
		[mm]	[mm]	[mm]	[mm]	[mm]/[kg/m³]		[kg/m²]	[dB]	[dB]	EN	
1 H 21 H_2O		85	60 × 40	60 × 40	12.5 Powerpanel H_2O	60/25	4 000	33	42	59	EI60	3455/1485 K-3421.4086 ENG Classification Report
		95	70 × 44	70 × 44	12.5 Powerpanel H_2O	60/25	4 000	35	42	59	EI60	

Timber Construction

Walls

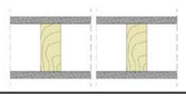
Timber stud walls – load-bearing

fermacell® fibre gypsum board

System reference	System drawing	Substructure: Wall thickness	Timber stud	Head & base plate	Boarding per side	Mineral wool (1) Minimum thickness / density	Partition load	Maximum Wall Height	Mass per unit area	Airborne sound insulation RW (3)	Flanking sound insulation Dn.f.W (12)	Fire protection (minutes)	Board Fixing Method	Fire test & classification reports
		[mm]	[mm]	[mm]	[mm]	[mm]/[kg/m3]		[mm]	[kg/m²]	[dB]	[dB]	EN		
1 HT 14		114	89×38	89×38	12.5	none	5.56 kN/Stud	2 600	35	41	55	REI30	staple	WF 174181 PR 06-2.043
1 HT 21		170	140×38 C24 Timber	140×38	15	140/30	10.62 kN/stud	4 000	48	≥46	59	REI60	staple	23-003009-PR01 (PB-F15-01-en-01)
1 HT 22		170	140×38	140×38	15	140/30	10.75 kN/stud	2 700	48	≥46	59	REI60	staple	RF11175 + CR11175
		150	120×45	120×45	15	120/30	10.8 kN/stud	3 000	48	≥46	59	REI60	staple	PG 10936
1 HT 23		127	89×38	89×38	2×12.5 mm (REI 60 fire side) & 12.5 mm (REI30 fire side)	90/10	5.56 kN/stud	2 600	57	≥46	≥59	REI60-30 60 mins from double layer side, 30 mins from single layer side)	staple/nail	WF 174182 WF 370292
1 HT 23 – Twin Wall		≥ 258	2×89×38 ≥ 10 mm air gap	2×89×38	2×12.5 mm Inner cavity single layer may be timber based product.	90/10	5.56 kN/stud	2 600	112	≥66	63	REI60	staple/nail	WF 174182 WF 175387
1 HT 24		139	89×38	89×38	2×12.5 mm	90/10	5.56 kN/stud	2 600	66	≥51	≥59	REI60	staple/nail	WF 174182 WF 370292

For full build up details please refer to the classification report

fermacell® Crowd Loading Performance

System reference	System drawing	Description	System description	Crowd Load (kN/lm)	Crowd load rating
					[mm]
3H01		IWL - Independent Wall Lining	12.5mm fermacell to one side of 89mm x 38mm Timber Studs, set at max 600mm centres	1.5	HD (Heavy Duty)
1H13		Partition	12.5mm fermacell to both sides of 89mm x 38mm Timber Studs, set at max 600mm centres	3	SD (Sevre Duty)

FIRE & ACOUSTIC SOLUTIONS

fermacell™ solutions for CLT & timber frame

fermacell® is the market leader solution for Cross-Laminated Timber due to our fire test evidence and extensive acoustic knowledge. We can provide simple solutions that meet STA and Building Control guidance and requirements.

Fire

fermacell® has two types of tested solution for CLT.

- REI through wall loaded solutions. Solutions are shown in our Specification Guide.
- Encapsulation K_2-30 & K_2-60 solutions.
- These also meet the STA guidance temperature of maximum 200°C behind the board linings.
- K_2 lining solutions can be used on walls, ceilings and floors.

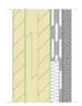
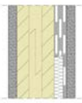
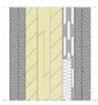
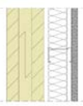
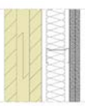
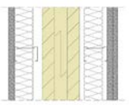
We also have extensive experience in working with UK and European Fire Engineers who can provide support for K_2-90 requirements, as well as solutions for bespoke details required on most projects.

In all cases the solutions must be reviewed by the project fire engineer to ensure compliance.

Acoustic Performance

fermacell® has extensive knowledge of sound performance with CLT and can offer direct fix and battened solutions.

These options are great solutions for the lower performance criteria. For high acoustic performance requirements we offer independent lining solutions to give a decoupled solution.

System drawing	Description	Rw1)
	80 mm cross-laminated timber	33 dB C100-^{3150} = -1 dB Ctr.100-^{3150} = -3 dB C50-^{3150} = -1 dB Ctr.50-^{3150} = -4 dB Tr No.: 04-00486
	80 mm cross-laminated timber 27 mm Top Hat profile 20 mm mineral fibre 18 mm fermacell® fibre gypsum board	49 dB C100-^{3150} = -2 dB Ctr.100-^{3150} = -9 dB C50-^{3150} = -3 dB Ctr.50-^{3150} = -10 dB Tr No.: 04-00495
	18 mm fermacell® fibre gypsum board 80 mm cross-laminated timber 27 mm Top Hat profile 20 mm mineral fibre 18 mm fermacell® fibre gypsum board	55 dB C100-^{3150} = -4 dB Ctr.100-^{3150} = -11 dB C50-^{3150} = -5 dB Ctr.50-^{3150} = -13 dB Tr No.: 04-00496
	18 + 15 mm fermacell® fibre gypsum board 80 mm cross-laminated timber 27 mm Top Hat profile 20 mm mineral fibre 18 + 15 mm fermacell® fibre gypsum board	62 dB C100-^{3150} = -3 dB Ctr.100-^{3150} = -10 dB C50-^{3150} = -5 dB Ctr.50-^{3150} = -15 dB Tr No.: 04-00497
	80 mm cross-laminated timber 10 mm spacing 50 mm CW fermacell® steel stud 40 mm mineral fibre 12.5 mm fermacell® fibre gypsum board	56 dB C100-^{3150} = -3 dB Ctr.100-^{3150} = -9 dB C50-^{3150} = -5 dB Ctr.50-^{3150} = -15 dB Tr No.: 04-00489
	80 mm cross-laminated timber 10 mm spacing 50 mm CW fermacell® steel stud 40mm mineral fibre 12.5 + 10 mm fermacell® fibre gypsum board	61 dB C100-^{3150} = -2 dB Ctr.100-^{3150} = -9 dB C50-^{3150} = -6 dB Ctr.50-^{3150} = -18 dB Tr No.: 04-00490
	12.5 mm fermacell® fibre gypsum board 50 mm CW fermacell® steel stud 40 mm mineral fibre 80 mm cross-laminated timber 10 mm spacing 50 mm CW fermacell® steel stud 40 mm mineral fibre 12.5 + 10 mm fermacell® fibre gypsum board	71 dB C100-^{3150} = -8 dB Ctr.100-^{3150} = -16 dB C50-^{3150} = -13 dB Ctr.50-^{3150} = -26 dB Tr No.: 04-00492

1) R_w: Calculated value of the weighted sound reduction index without sound transmission via flanking components in accordance with DIN 4109

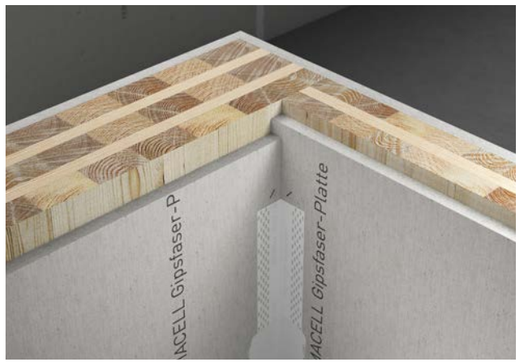
Fixing & Jointing

There are a number of solutions that can be used to meet the project requirements for fixing and jointing on CLT. Examples shown below.

Board joint tightly butted

No requirements regarding surface design.
Joint area not visible in the application.

Board joint tightly butted with joint tape



Joint tape filled in (e.g. composite tapes).

fermacell® filler joint

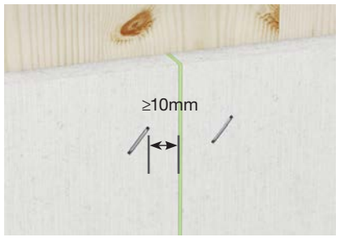
Filler joint on separating tape.

fermacell® adhesive joint

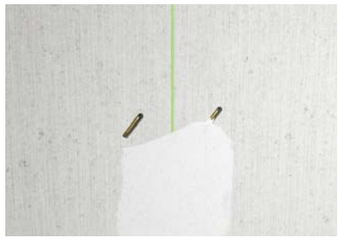
Joint with <1mm. For exposed surfaces.

Glue joint example

Tight butt glue joint with fermacell® Jointstick. Joint width ≤1mm.



Spacing of staples to edge - ≥10mm.



Countersunk staples 1-2mm.

Fixing board in board.

Prefab and Offsite Solutions

With its inherent durability, fermacell® offers a simple solution for prefabricated units which can be delivered direct to site to speed up installation time.

CLT element joint - step joint connection

Encasement

Encasement requirements need to be reviewed on a project by project basis to ensure robust solutions are in place.

fermacell® can provide encapsulation performance to aid encasement, but this methodology must be accepted by the fire engineer and building control.

We also have separate steel encasement solutions using the Firepanel A1 board, and this data can be found in the Encasement datasheet.

SPANDREL PANEL

The advantage of fermacell® boards

fermacell® fibre gypsum boards are inherently stronger than plasterboard. One 15mm sheet of fermacell® fibre gypsum replaces two sheets of plasterboard to achieve the fire and acoustic requirements of a spandrel panel, thus giving all the performance you need with half the time and labour.

- **Significantly reducing any chance of damage during installation**
- **Reducing the need for working at height, a major health and safety benefit**
- **Unlike plasterboard it does not need to be wrapped in plastic either, reducing time and waste on-site.**

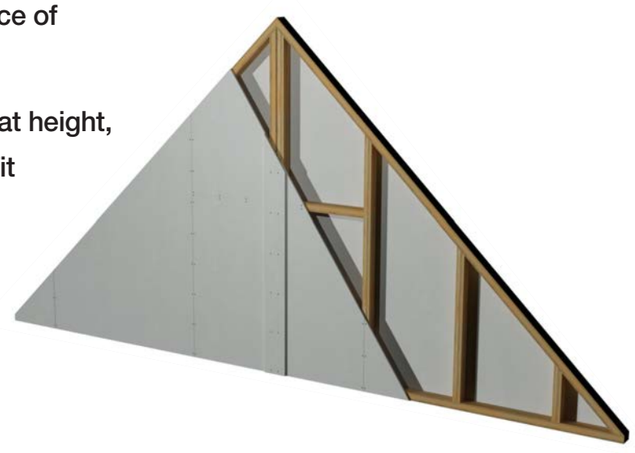


Table Guide for Maximum Exposure to Weather

	Urban area, city or town location	Exposed rural location	Coastal location
fermacell® Gypsum Fibreboard	8 Weeks	6 Weeks	4 Weeks

Maximum exposure times for fermacell® Gypsum Fibreboard panels sored vertically without protection.
DO NOT store horizontally. This can be increased with the inclusion of a breather membrane.

Spandrel Panels are a flanking detail above party walls. The real benefit of fermacell® is its excellent impact and moisture resistance, thus:

Fire performance

- 60 min to EN 1364-1

Acoustic performance

Spandrel panel solutions using fermacell® fibre gypsum boards are suitable for use with Robust Details walls in relation to PART E sound insulation performance requirements (refer to Appendix A1 of the Robust Details Handbook.)

Board Weight - 15 mm board = 18 kg/m2

Jointing

- Standard Joints = Tight Butt Joint ≥1mm
- Any gaps may require additional detailing such as fire mastic or a 150 mm cover strip of 15 mm fermacell® fibre gypsum boards
- Joints between two separate Spandrel Panel = 150mm x 15mm fermacell® cover strip detail as per drawings i.e. for fitting two panels together on site.

N.B. All joints must be supported, including horizontal joints which should have a noggin or dwang of the same timber dimensions as the studs.

Orientation

Timber frame must be orientated so that the board is fixed to the small face of the timber.

Additional build details

The ancillary items and applications shown below are covered by third party fire assessment No 543333 from Warrington Fire. Ensure that the details are referenced directly from the fire assessment report.

- Use of stated screws, nails or staples to fix the 15mm fermacell® to the spandrel panel
- Fixing of an outer layer of OSB or plywood over the fermacell® board; timber board thickness from 9 to 18mm
- Fixing of an inner layer of OSB or plywood between the fermacell® board and the spandrel frame; timber board thickness from 9 to 18mm.

N.B. The fixing lengths of the fermacell® **boards** and timber sheet products must be adjusted to accommodate the increased thickness of boards.

- Increase in height to maximum 4m
- Spandrel may be constructed in a triangular shape
- Use in a double / twin frame application
- The double / twin frame may include a 9mm OSB or plywood or 10mm fermacell® boards to either or both sides of the internal face of the timber studs
- Use of screws or nail plates for end fixings the timbers (see details below)
- The spandrel may include a partial fill of insulation up to 600mm high at the base of the construction
- The spandrel may include a ‘stepped detail’ where the upper part is a single frame and the lower part is a double / twin frame
- The TR26 72mm x 47mm timbers may be changed to an 89mm x 38mm timber size. Boards must be fixed to the smaller face of the timber studs.

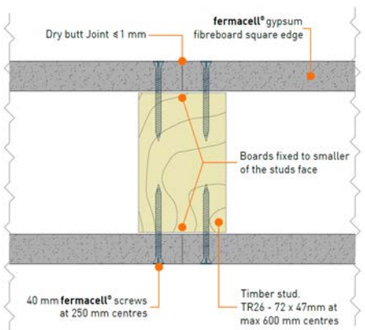
SPANDREL PANEL

Jointing details

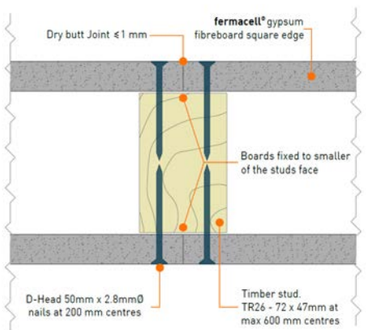
Environmental excellence

fermacell® fibre gypsum boards are the perfect choice for sustainable construction - it's made from recycled papers and gypsum, board waste can be recycled too.

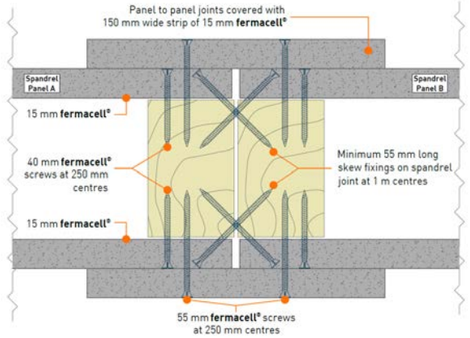
Standard Joint Square Edge Board
Screw Fixed Single 15mm



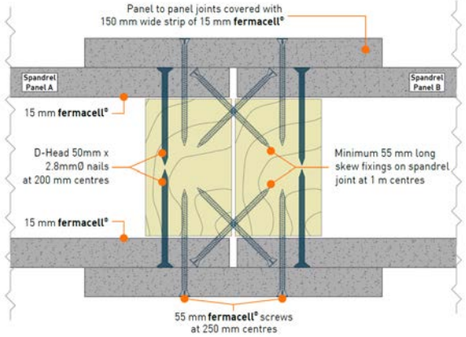
Standard Joint Square Edge Board
Nail Fixed Single 15mm



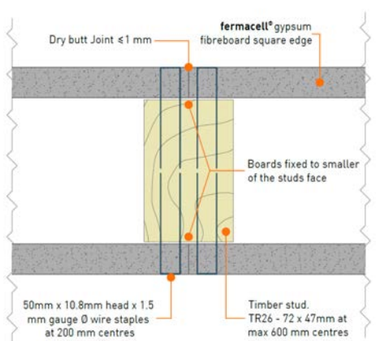
Spandrel Panel Joint Details - Screw Fixed Single 15mm + single layer cover strip



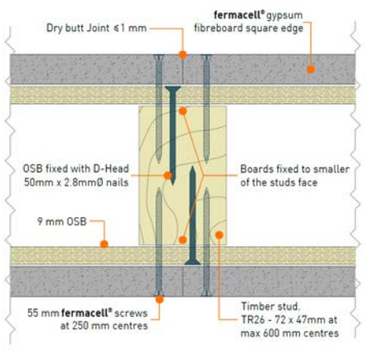
Spandrel Panel Joint Details - Nail Fixed Single 15mm + single layer cover strip



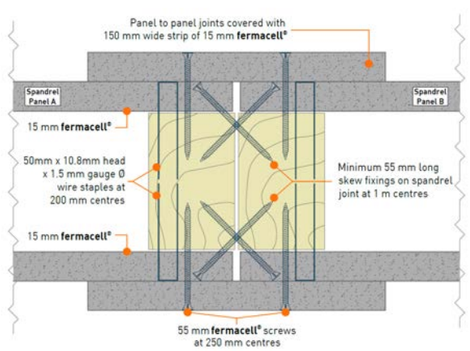
Standard Joint Square Edge Board
Staple Fixed - Single 15mm



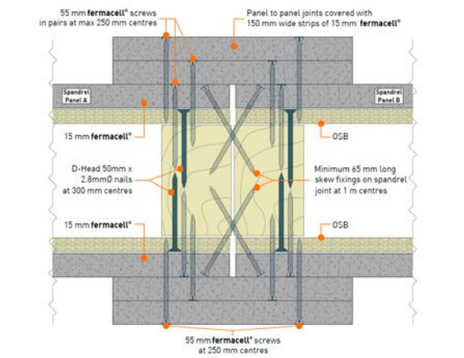
Standard Joint Square Edge Board
Screw Fixed Single 15mm + Nail fixed OSB



Spandrel Panel Joint Details - Staple Fixed Single 15mm + single layer cover strip



Spandrel Panel Joint Details - Screw Fixed Single 15mm + Nail fixed OSB + double layer cover strip



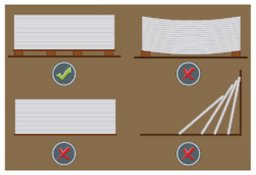
Storage

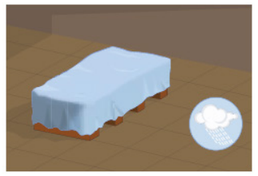
Safe working habits and conditions also cover lifting of heavy materials (which should be undertaken in the correct manner using mechanical handling equipment where appropriate); cutting and handling of metal components (the wearing of gloves to avoid cuts and abrasions is recommended); and the avoidance of contact between the eyes and liquid products.

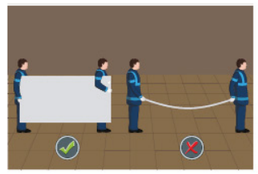
Please see the diagrams below for handling and storage guidance.

Where possible, fermacell® boards should be stored on a flat level base. They should be protected from moisture; wet boards should be allowed to dry out completely on a level surface before use. The stacking of boards on their edges can lead to deformation of the boards and damage to the edges. Boards should generally be carried upright and the use of board lifters is advised when fitting boards to ceilings.

Occupational Exposure Standards (OES) are reviewed annually by the Health and Safety Executive in the light of any new medical evidence.







Safety Data Sheets for all relevant fermacell™ products including accessories are available, you can find these on our website

www.fermacell.co.uk

STORAGE FOR LARGE FORMAT BOARDS

- fermacell® boards should be stored on bearers or stored flat. The bearer entres should be set at 35 x board thickness
- Where fermacell® is to be stored for long periods of time, then the boards should be stored flat to avoid cracking or sagging and should be kept dry
- When boards are to be stored in multiples of 10 (up to a maximum of 150mm), the bearers must be set at support centres of 35 x board thickness; with no more than 100 sheets in a stack. 450mm max. for storage
- The bearer support face should be a minimum of 60mm
- Ensure that the bearers are laid on a flat even surface, and that the bearers are all the same depth
- Typical weight per pack of boards = 2400kg (i.e. 10 x 15mm fermacell or 15 x 10mm fermacell®)
- Lifting: Specialist vacuum tools and lifting appliances should be used with large format fermacell® boards. Specialist extension forks on forklift trucks should also be used. In all cases check the lifting method is suitable for the weight and size of the pallet
- Bearers must be kept in alignment vertically where ‘sets’ or ‘packs’ of fermacell are stored one on top of each other. This avoids point loads between boards in unsupported areas
- Damp boards should not be used until they have dried out.

Installation, handling & fixing

Handling

All boards must be fully supported when being lifted and handled.

- Boards should be carried on edge
- Care should be taken when lifting
- Large sized boards should be mechanically lifted. In all cases refer to the relevant manual handling regulations
- For ceiling use, we recommend the use of mechanical board lifters
- For full size boards we recommend the use of board lifting clamps
- For panel sections an ‘A’ frame trolley can be used. It is recommended that there is some resilience in the wheel or support mechanism to reduce the risk of ‘jarring’ or ‘bumping’ during transport.

Board preparation

- The boards must be stored in the factory / site environment for a minimum of 24hrs prior to use to acclimatise them to the site conditions
- fermacell® boards come pre-sealed with a starch derivative.

Cutting

- Hand or electric saw (see next page)
- Boards can be cut using a saw (blades should be tempered or Tungsten Carbide steel)
- When using electrical cutting tools, we recommend using a vacuum attachment to collect dust and appropriate PPE must be worn
- We recommend saw blades which have fewer teeth and a slower saw speed. The Hardie™ Blade is recommend for cutting fermacell® boards.

Installation

- fermacell® fibre gypsum boards are the perfect choice for sustainable construction - it's made from recycled papers and gypsum, board waste can be recycled too. may be installed in a number of different ways. For Timber Frame, it may be nailed, stapled or screwed.
- Specific fixing details are available from our website; as each fixing method will require individual detailing and specification, especially in relation to fire performance.
- When fixing boards, it is imperative that the fixings are installed in a sequential manner so as NOT to induce additional stresses into the boards. These should be fixed from one side to the other, top to bottom, or from the middle outwards.

Fixing overview

- Keep fixings at a minimum of 10mm from the edge of the board, and 50mm from corners
- Boards can be fixed to timber sub frames using pneumatically fired staples or nails, or screwed using fermacell™ screws
- When double boarding, the second layer can be screwed or stapled to the first layer. However, refer to the specification and drawings to ensure the correct fixing method for each layer to meet the tested fire requirement
- Square edges boards are mounted in sequence and if using the glue method each board is jointed as it is installed

Only the outer facing layer of multi layered systems requires jointing

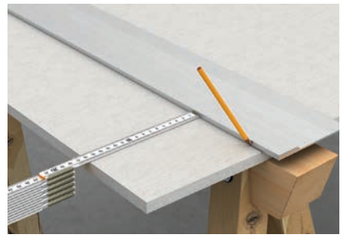
N.B. All inner layers must be tight butted, with board joints of ≤1mm.

- When fixing boards in either single or double height partitions, cross joints must be avoided by installing boards as show in the adjacent diagrams A-C
- When fixing boards, work the fixings from one side of the board to the other or from the centre outwards. Don’t fix the four corners first as this can over stress the board
- Ensure that there is a gap at junctions with adjoining substrate (normally 3-5mm). This is filled later with a suitable flexible sealant , fire rated as required
- All joints should be staggered by at least 200mm, both horizontally and vertically
- This applies to both layers of a double layer partition system.

Fire stopping

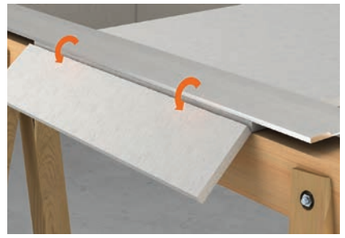
- Service penetrations should be framed and lined to match the boarding of the partition system
- Size and location of fire stopping should be determined by EN 1366-4 in line with the fire stopping manufacturer's recommendations.

Cutting

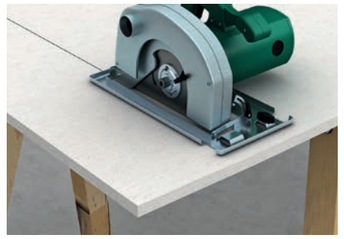


Measurement

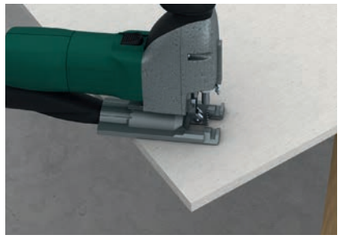
Scoring



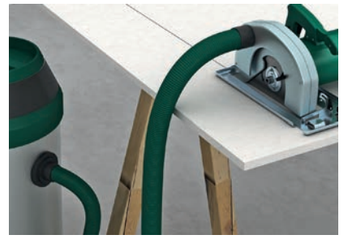
Breaking off of the sections to be trimmed and removed



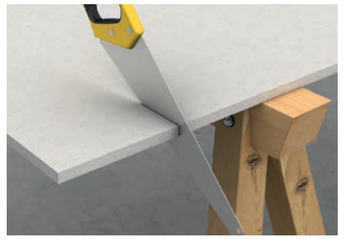
Sawing with hand-held circular saw (adjustable speed)



Sawing with electric jigsaw



Hand-held circular saw with suction device



Manual sawing

Milling out socket holes

When installing fermacell® board products, we recommend wearing a respiratory protection mask with FFP1 filter where dust is created.

Fixing diagrams A-C

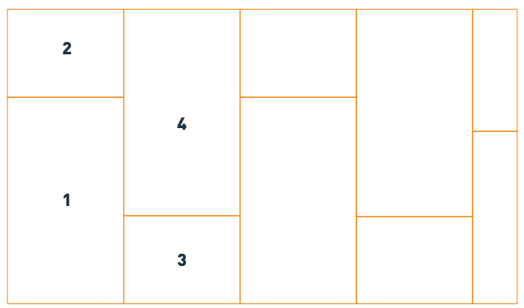


Diagram A:

Recommended fixing sequence for fire rated and double board height partitions

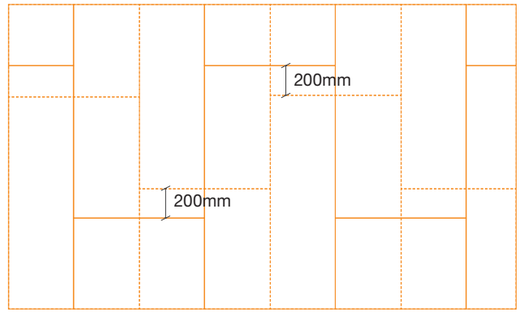


Diagram B:

Recommended fixing sequence in a double layer partition

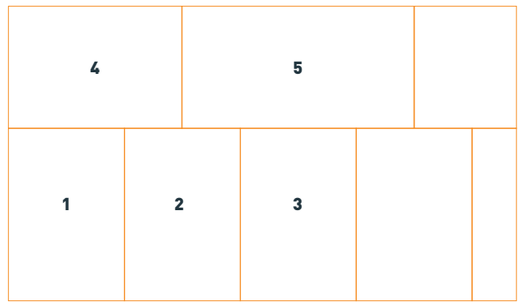


Diagram C:

Alternative fixing sequence, for non rated solutions.

NOTES:

- No cross jointing allowed. Ensure T-joints only at board junctions
- Offset all board joints by minimum 200mm on both lower and subsequent layers.

Screwing to timber substructure

Stapling to timber substructure

Stapling fermacell® fibre gypsum board to fermacell® fibre gypsum board

Jointing & finishing

fermacell® boards can be jointed and finished in either of these 2 ways to suit your construction.

1 Joining square edge wall boards (for glued butt joints with fermacell™ Jointstik)

- fermacell® fibre gypsum boards must be dry when installed
- Only fermacell™ Jointstik can be used for glue jointing. Max joint width ≤1mm)
- Ensure board edges are clean and dust free
- Only use factory cut edges or board cut with a plunge saw and a guide for glue joints
- Once the first board is fixed the Jointstik is applied to the edge of the first board in a 3mm bead. Ensure the glue is not applied or spread onto the stud behind the board
- Offer up the next board at least 10mm away from the glue joint, then push the boards together to a tight butt joint of <1mm
- The Jointstik will cure in approximately 24 hours. Once cured the bead of glue can be scrapped off with a glue scraper or a paint scraper
- Any high spots over the joints can be surformed or sanded back
- At the same time remove any burrs of board from fixing locations
- Joints and fixing heads are then filled with fermacell™ Jointfiller.

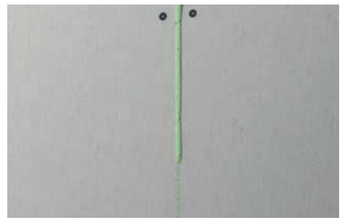
Use of fermacell™ Jointstik adhesive or greenline Jointstik adhesive

Board size	1 cartridge with 310 ml content
2 400 × 1 200 mm	22 m²

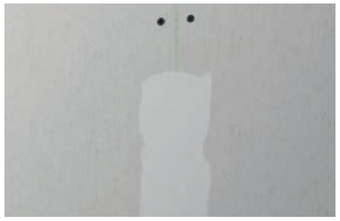
(Assumed: wall height 2.5 m for 10 and 12.5 mm boards)

(For 15mm & 18mm thick boards the nozzle must be trimmed back.)

Use the nozzle to apply a 3mm bead along the centre of the edge of the board.

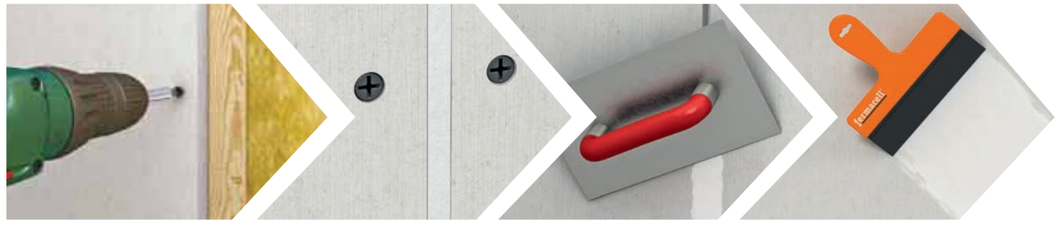


Partially removed joint adhesive



Feather filling over scraped glue joint

2 Square edge & off-cut jointing (leave a 5-7mm gap and then fill using fermacell™ jointfiller)



Fix | Leave 5-7mm gap | Fill | Finish

Filled joints or off-cuts

- For hand sawn, jigsawn or scored and snapped boards the glue joint method cannot be used
- Leave a min 5-7mm gap between boards, or use the following table as a guide dependent on board thickness
- Fully fill joints with fermacell™ jointfiller. N.B. It is essential that joints are fully filled to ensure a good bond between boards.

Mixing fermacell jointfiller

- Ensure tools and mixing buckets are clean
- Add clean water to the bucket, then add the jointfiller and allow this to settle for about 2 minutes. Then mix by hand with a suitable hand trowel. N.B. do NOT mechanically mix
- Working time once mixed = approximately 30 minutes, so only mix the amount required
- Fill flush, do not overfill
- Once dried the jointfiller can be sanded as required. A second feather fill may be required due to shrinkage during drying.

Board thickness mm	Joint width mm
10	5 – 8
12.5	6 – 9
15	7 – 10
18	7 – 10

Mixing

Step 1
Clean containers, clean tools clean water

Step 2
Add fermacell™ joint filler to water and mix

Step 3
Fill joints and fixing heads

BEFORE YOU START

Health & Safety

At James Hardie Building Products Ltd, we take our responsibilities for the health of people seriously, which is why we strive to ensure that where possible all of our products are safe from an environmental and health viewpoint.

Safe working habits and conditions also cover lifting of heavy materials (which should be undertaken in the correct manner using mechanical handling equipment where appropriate); cutting and handling of metal components (the wearing of gloves to avoid cuts and abrasions is recommended); and the avoidance of contact between the eyes and liquid products.

Please see the diagrams on previous pages for handling and storage guidance.

Where possible, fermacell® boards should be stored on a flat level base. They should be protected from moisture; wet boards should be allowed to dry out completely on a level surface before use. The stacking of boards on their edges can lead to deformation of the boards and damage to the edges. Boards should generally be carried upright and the use of board lifters is advised when fitting boards to ceilings.

Occupational Exposure Standards (OES) are reviewed annually by the Health and Safety Executive in the light of any new medical evidence.

Fix & finish

fermacell™ Jointstik

Skin contact: Wipe off uncured product with a paper towel or cotton pad. Wash skin thoroughly with soapy water. Cured product should not be removed. Please note: should skin irritation persist seek medical assistance.

fermacell™ Jointstik

Internal finish

fermacell™ Fine Surface Treatment and Joint Filler

General information: Wash soiled clothing before reuse.

Inhalation: Inhalation of dust when mixing or sanding may cause short term irritation. Use a dust mask that meets EN 149 specifications.

Skin contact: Flush and wash with water and soap.

Eye Contact: Rinse eyes immediately with clean water.

Ingestion: Follow H&S and medical guidelines.

fermacell™ Joint Filler

fermacell™ Fine Surface Treatment

Load carrying capability

Light and medium weight dead loads in kg*

Dead loads fastened with toggle bolt or screws (18)		Permissible load per fixing in kg for different fermacell® fibre gypsum board thicknesses *** (100 kg = 1 kN)							
		10 mm	12.5 mm	15 mm	18 mm	2 × 10 mm	12.5 + 10 mm	12.5 mm H_2O	2 × 12.5 mm H_2O
Toggle Bolt **		40	50	55	60	50	60	50	60
Screw - fully threaded. min ø 5 mm		20	30	30	35	30	35	-	-

* Permissible loads shown with a safety factor: 2 (static load with relative humidity up to 85%).
** Follow installation instructions of toggle bolt manufacturer.
*** Maximum stud/support centres = ≤ 50 × board thickness.

The stated load values can be added up, if the fixing centres are ≥ 500 mm apart. For smaller fixing centres, 50 % of the relevant permissible load per fixing should be used. The total single loads for walls should not exceed 150 kg/m and for free-standing Dry Lining and double studwalls not physically connected to one another, 40 kg/m. The stability of the wall or lining should be verifed as described above according to BS 5234.

Lightweight wall-mounted loads in kg

Picture hook with nail fixing *	Permissible load per fixing in kg for different fermacell® fibre gypsum board thicknesses ** (100 kg = 1 kN)				
	10 mm	12.5 mm	15 mm	18 mm	10 + 12,5 mm
	15	17	18	20	20
	25	27	28	30	30

* Failure load of hooks depends on make.
** Safety factor: 2 (static load at relative humidity up to 85 %). kg

Fixing to ceilings in kg*

Loads fixed to ceilings with tilting or spring-loaded toggles		Permissible load per single suspension in kg for different fermacell® fibre gypsum board thicknesses *** (100 kg = 1 kN)					
		10 mm	12.5 mm	15 mm	10 mm + 10 mm	12.5 mm + 12.5 mm	12.5 mm H_2O
Spring-loaded toggle **		20	22	23	24	25	22
Tilting anchor **		20	22	23	24	25	22

* Permissible loads shown with a safety factor. 2 (static load with relative humidity up to 85%).
** Follow installation instructions of toggle manufacturer.
*** Maximum support centres = ≤ 35 × board thickness.

Eusure any additional loads have been taken into account with the substructure.
Ensure fixings do not interfere with any fire protection requirements.

Maximum tile weights

	in m2 Maximum recommended tiles weight
	m^2
fermacell® Gypsum Fibreboards	35
fermacell® Powerpanel H_2O	50

* Reduce stud centres as required, dependant on tile substrate requirements.

Tools you'll need

fermacell® fibre gypsum boards can be worked and installed easily. Special tools are not required. Standard dry lining tools can be used.

fermacell™ Scoring Knife

For scoring and snapping the boards

Drywall Gun

Standard drywall guns are suitable

Plastering trowel or tapping knife

Plastering trowel or taping knife for applying fermacell™ Jointfiller to the joint. Can also be used for applying fermacell™ Fine Surface Treatment (FST).

A plunge or Jig Saw

A Plunge or Jig Saw may also be used to cut fermacell® boards. If using hand held electric saw, mechanical dust extraction and PPE are advised.

Pneumatic Gun / Gas fired Nail or Staple Gun

If using staples or nails to fix fermacell® boards to timber, a pneumatic gun and compressor operating at 7 bar will be needed. Ensure correct PPE is worn.

fermacell™ Spatula

fermacell™ Spatula for applying fermacell™ Fine Surface Treatment (FST).

Spirit Level

A long spirit level or plumb line.

Cartridge Gun

Cartridge gun for the application of Jointstik glue.

Decorators Scraper

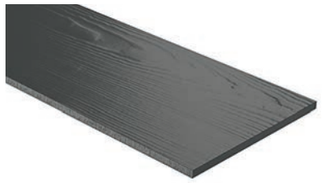
Decorator's Scraper or similar for removing excess fermacell™ Jointstik (after curing)

INTRODUCING

Hardie® Plank products

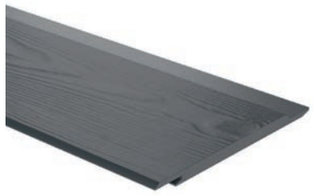
Hardie® Plank products include two profiles, made from advanced material fibre cement. With an A2-s1,d0 fire rating, our boards are non-combustible and offer the best fire protection possible for any coloured facade board.

Hardie® Plank fibre cement cladding

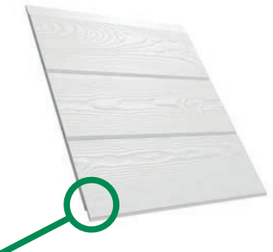


Dimensions: 3600 x 180 x 8mm
Weight per piece: 7.4kg
Pieces per m²: 1.85
Visible surface: 150 - 180mm
Colours: 21
Textures: Cedar and Smooth

Hardie® VL Plank fibre cement cladding



Dimensions: 3600 x 214 x 11mm
Weight per piece: 10.5kg
Pieces per m²: 1.52
Visible surface: 182mm
Colours: 8
Textures: Cedar



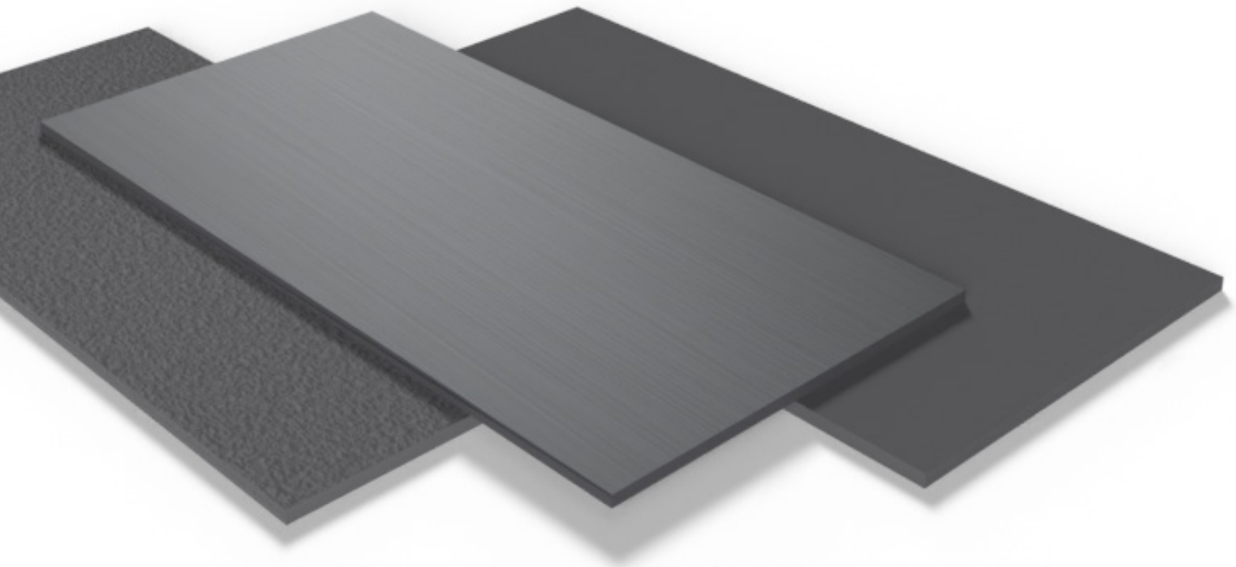
BBA Certified
Hardie® cladding has been assessed by the British Board of Agrément and has been awarded BBA certificate number 04/4147.

Innovative interlocking system
Hardie® VL Plank profiles offer hidden fixing, thanks to our innovative tongue and groove system that does not require any additional accessories for fixing and can easily be nailed.

INTRODUCING

The Hardie® Panel range

Purposely designed as external cladding for commercial buildings in both new build and renovation. Hardie® Panel and Hardie® Architectural Panel cladding can be used in a ventilated construction fixed to either a timber, aluminium or steel sub-frame using corrosion resistant screws or rivets. Our cladding can be installed with or without insulation. With Hardie™ Blade saw blade, Hardie® Panel sheets can be easily cut to size on site.



Hardie® Architectural
Panel Smooth Sand

Hardie® Architectural
Panel Brushed Concrete

Hardie® Panel
Smooth

Application types

Available in 3048mm x 1220mm, we offer two different thicknesses depending on your requirments.

8mm

For all building types

11mm

Achieves European Assessment Document 090062-00-0404 Category I for impact. For the first 1.5 m height of the wall in high footfall areas.

WE ALL HAVE A DREAM FOR OUR HOME

With James Hardie it’s possible™

If you’re looking for a versatile, low maintenance with a natural and beautiful texture, look no further than Hardie® fibre cement cladding. It’s the facade of choice for builders, architects and homeowners alike, protecting and beautifying millions of homes worldwide.

- Most natural look with premium colour range
- Low maintenance thanks to unique ColourPlus™ Technology finishes
- At least 20 % faster installation

A2 fire-rated

15 Year Warranty

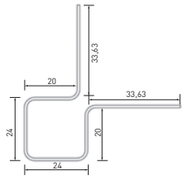
FINISHING TOUCHES

Trims, Accessories & Tools

METAL TRIMS

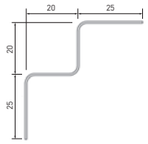
Ext. Corner

Metal corner profiles provide an alternative design option and are manufactured from a 2 layer polyester precoat paint system. They come with a removeable film for protection during installation. Also suitable for use with Hardie® VL Plank.



Length
3000mm
Available in 21 colours

Int. Corner



Length
3000mm
Available in 21 colours

Hardie® NT3® Trim — Item No

Hardie® NT3® Trim is a complementary fibre cement trim available in two sizes, three colours and has a smooth finish.

Dimensions:
90×3655×25mm

Arctic White	5671402
Sailcloth	5691402
Midnight Black	5951402

Dimensions:
90×3655×25mm

Arctic White	5671422
Sailcloth	5691422
Midnight Black	5951422

Key Values:
Weight per piece: 9.4kg (90mm) and 14.9kg (140mm)
Raw density: 900kg/m³

Hardie™ Panel Standing Seam Trim

Façade design option
Length: 3000mm

Available in the entire colour range from James Hardie.

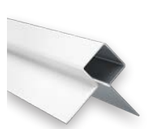
Hardie™ Panel Standing Seam End Trim

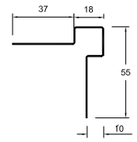
Façade design option
Length: 3000mm

Available in the entire colour range from James Hardie.

Hardie™ Panel MetalTrim™ External Corner Profile

Metal corner profiles provide an alternative design option and are manufactured from a 2 layer polyester precoat paint system. They come with a removeable film for protection during installation.

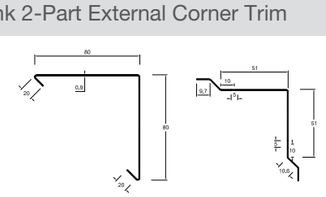




Length
3000mm
Available in core colours

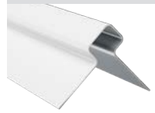
The following trims are specific for Hardie® VL Plank weatherboard installation

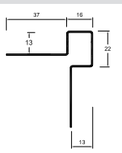
Hardie™ VL Plank 2-Part External Corner Trim



Length 3000mm
Available in 8 colours

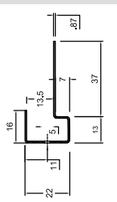
Hardie™ VL Plank Window Reveal Trim





Length
3000mm
Available in 8 colours

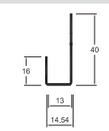
Hardie™ VL Plank Window Head & Vertical Starter Trim



Length
3000mm
Available in 8 colours

Slots 50mm in from each end

Hardie™ VL Plank J Profile



Length
3000mm
Available in 8 colours

ACCESSORIES

Hardie™ Plank starter ventilation profile — Item No

Provides sufficient kickout for horizontal overlap only

Length 3000mm

25mm	5300182
38mm	5300183
50mm	5300184

Hardie™ Seal Edge Coating — Item No

To seal all cut edges and cover small areas of damage, such as chips and scratches. For edge sealing/touch up – approx. 100m²/litre. For re-painting approx. 10m²/litre

Available in 21 colours

Size: 1 Litre

Hardie™ Plank Ventilation profiles — Item No

For other types of application

Length 3000mm

25mm	5300185
38mm	5300186
50mm	5300187

Hardie™ Plank screw — Item No

Hardie™ Plank screw for timber. T15 Torx, A2 stainless steel, 4.2×40mm, with 10mm low profile head. Primarily for installing Hardie® VL Plank weatherboards but can also be used for the installation of Hardie® Plank weatherboards in horizontal overlap option.

5300309

Hardie™ VL Plank starter profile — Item No

Provides lower edge support for horizontal applications

Length 3000mm 5300190

Please note: The starter profile must be installed level and flat.

Hardie™ Plank coloured screws — Item No

Hardie™ Plank coloured screw for timber. T20 Torx coated head, A2 stainless steel, 4.8×38mm with 12mm domed head diameter. Primarily used for when a visible fixing is required.

Available in 21 colours

Size: 1 Litre

Hardie™ EPDM Tape — Item No

To protect the timber batten wherever there is a vertical joint in the cladding. 1 roll per 40m² wall.

Length: 20m
Thickness: 0.7mm
Width:

60mm	5300153
80mm	5300154
100mm	5300151
120mm	5300152

Hardie™ Clip reinforcement clip — Item No

Reinforcing clip which gives extra strength and stability for areas subject to higher wind loads. Only use with the overlap weatherboard solution.

50000??

Tenmat™ FF102/50 Ventilated Fire Barrier — Item No

A rigid, high expansion intumescent strip encased in aluminium foil. 6 mm × 75 mm × 1000 mm For use in up to 50 mm cavities. Up to 120 minutes Fire Rated. 5300530

For more details on this product visit the technical literature section on www.jameshardie.co.uk

TOOLS

Gecko Gauge — Item No

Gauges to support weatherboard for a one person installation. For Hardie® Plank overlap weatherboard only. 5000015

Hardie™ Guillotine cutting tool — Item No

For all square edge cuts, eliminating dust. The preferred method of cutting Hardie® Plank boards. 5300157

SUPPLIED BY JAMES HARDIE

Metal corner for Hardie® Panel cladding

With this high-quality, colour-matched aluminium profile, the outer corners can be designed in a modern way. The profile is easy to cut with a hacksaw or mitre saw. Available in the entire colour range from James Hardie.

Hardie™ Blade Saw Blade

160, 190, 254 or 305 mm diamond tipped saw blade to reduce dust production and decrease wear.

Standing seam trim for Hardie® Panel cladding

Façade design option. Available in the entire colour range from James Hardie.

Hardie™ Seal Edge Coating

Use Edge Coating for touching up small scratches or chips, and also for sealing cut ends to ensure long lasting performance of the facade.

Standing seam end trim for Hardie® Panel cladding

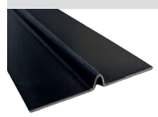
Façade design option. Available in the entire colour range from James Hardie.

Hardie™ Panel screw for timber

A2 stainless steel screws for attaching the Hardie® Panel cladding to wooden substructures.

SUPPLIED BY OTHERS

Universal joint profile



To be used on horizontal express joints.

Length 3000mm.

Ventilation Profiles - Perforated

Used to allow air into the cavity while preventing the entry of pests. This profile is custom sized, depending of the depth of the cavity.

Rivet for 8 mm panels

5.0 x 18 x 14 mm head rivet
Grip range of 8.0 - 14 mm
AlMg5 aluminium body – Stainless Mandrel.

Waterproof Membrane

The installation of a breather membrane acting as a vapour permeable water-barrier will be necessary for timber frame buildings or block walls where the wall is not considered waterproof. This barrier must meet the requirements of BS EN 13859:2005.

Rivet for 11 mm panels

5.0 x 25 x 16 mm head rivet
Grip range of 11.5 - 18 mm
AlMg5 aluminium body – Stainless Mandrel.

Centralising Tool

5.0 x 25 x 16 mm head rivet
Grip range of 11.5 - 18 mm
AlMg5 aluminium body – Stainless Mandrel.

Rivet Spacer Noisepiece

Used to set the rivet off the panel face by 0.3mm.

5.1mm & 9.0 mm Carbide Drill Bits

For drilling panel fixed point holes on site.
5.1mm & 9.0 mm diameter.

CT-HDRLG-5.1 Replacement drill bit

For the centralising tool above.

Aluminium & Steel Sub Frames

Proprietary systems readily available. Please see manufacturers' details for specification and installation information.

Rivet Gun

For use with rivet installation for installing rivets.
Please note rivets must not be installed with mechanical tongs.

Jigsaw

For cut outs. T1 41 Bosch® blade or equivalent recommended.

Saw Equipped with Hardie™ Blade Saw Blade with HEPA Extraction

Proprietary systems readily available. Please see manufacturers' details for specification and installation information.

EXPLANATION OF FOOTNOTES

Important general notice:
All load-bearing parts of the structures specified in this overview (e.g. vertical wall members for load-bearing walls, ceiling girders, upper sheathing of timber beam ceilings, etc.) must be structurally verified. Approvals Z-9.1-434 and ETA 03/0050 are available for the static use of fermacell® gypsum fibre boards. For all components (walls and roofs) used as outer building envelopes, the absence of condensation must be verified.

Walls and wall claddings
1. Mineral wool with length-related flow resistance according to DIN EN 29053 ≥5 kPa•s/m may also be used for sound insulation only.
4. Rw Evaluated sound reduction index based on a measurement in a test without flank transmission.
6. The specified values apply to two identical walls fixed at a distance of approx. 30 mm appart.
9. Wall thicknesses, height specifications and physical characteristic properties apply to steel twin stud walls whose CW/UW sections are installed parallel to each other and acoustically decoupled with isolation strips (e.g. self-adhesive felt strips).
10. Wall thicknesses, height specifications and physical characteristic properties apply to steel twin stud walls whose CW/UW sections are installed separately and parallel to each other, i.e. have no connection with each other.
11. Wall thicknesses, heights and physical characteristic properties apply to twin stud walls whose CW/UW sections are arranged parallel to each other and whose CW stud sections are braced at ≤ 1/3 wall height through suitable brackets or plate strips.
12. The evaluated standard flank sound level difference Dn,f,W in dB characterizes the sound transmission of this lightweight wall as a flanking component. The specified values apply to continuous sheathing. If the sheathing is interrupted, improvement in the longitudinal sound insulation level of approx. 4 dB can be achieved with single-layer sheathing and approx. 3 dB with double-layer sheathing. If two values are given, the larger value applies if the separating component is arranged on the side with the most sheathing layers.
16. The listed airborne sound improvement figures
Δ Rw of the individual constructions apply to independent wall linings and are singular figures for showing the airborne sound improvement of rigid solid walls.
17. The mineral wool is installed with the board to one side or the room side of the free-standing steel substructure. Otherwise, design according to the test certificate or assessment report. The values were calculated on the basis of DIN EN ISO 10140 - Part 1 and Part 5 in front of a "solid wall" (density 350 +- 50 kg/m²) kg/m².
18. Support of console /dead loads in kN with cavity/rear engaging anchors or screws at any point (neutral under construction) directly on the sheathing. N.B. Live loads require additional pattressing/support.
19. Independent linings, shaft walls and free-standing constructions that have an F-classification from both sides, act independently in terms of fire protection and can serve to improve the airborne sound insulation of the existing sub-structure. They are fixed from the room side. If the substructure is tied back to the main structure (e.g. direct bracing by brackets or angles), greater build heights can be achieved depending on the type and design. However, changes in sound and fire protection properties must be taken into account.
20. The specified thermal resistance (m²K/W) applies exclusively to the wall linings. The structure to be clad is not taken into account for this value.
21. The heights of the wall linings are not limited. This requires the lining support frame to be fixed back with suitable fasteners that meet the structural loading requirements of the component to be clad. A guidance limitation of the maximum installation of height 8 000 mm is used to coincide with the expansion guidance of 8 linear meters.
23. Unless otherwise indicated, the specified heights apply to a substructure with a stud spacing of max 600 mm, with all board layers fixed directly into the substructure. Greater heights with reduced stud centres are possible upon request.

Roof constructions and suspended ceilings
41. Insulating layers are not permitted for ceiling/roof constructions that must be installed without mineral wool in regard to fire protection. For ceiling/roof constructions which can be installed without or with at least a B 2 insulating materials, insulating layers to improve sound and heat insulation without impairing the fire protection properties (F 30-F 120) are allowed.
44. The information on the respective construction height of the suspended ceiling or ceiling cladding applies to the sheathing layers incl. substructure of base and supporting sections (without suspension) as well as to the insulation layers - with the exception of the wooden beam ceilings (Section 9.5, 9.6) and roof constructions (Section 9.7). The height indicated from/to lower edge of beams or rafters applies here.
46. The maximum allowable span of the sheathing applies to the centre spacing of the supporting sections or supporting lathing/battens to which the sheathing is mechanically fixed.
48. Fire protection requirements can be achieved from above by means of fermacell dry flooring layers - refer to fermacell Flooring® Guide.
49. Values apply to lower ceiling/roof cladding incl. supporting sections and required insulation layer.

Floors
61. The increase in the allowable single point load is achieved by gluing and fixing an additional "3rd layer" of 10 mm thick fermacell® gypsum fibre boards over the flooring elements. Details can be found in the corresponding fermacell installation instructions.
62. For fire protection requirements, mineral wool edge isolation strips with a melting point of ≥ 1 000 °C must be installed.
63. The fermacell® flooring elements floor constructions listed are classified in the corresponding fire resistance class in accordance with DIN 4102 and offer this for 5 different floor types. This needs to be considered with a subfloor installed in accordance with fermacell® flooring elements installation instructions.
64. If the basic fermacell® flooring elements are installed directly to load-bearing subfloors, the permissible single point load increases to 3.0 kN for 2 E 11 and to 4.0 kN for 2 E 22. Accordingly, the scope of application is extended to area 3 for 2 E 11 and area 4 for 2 E 22.
65. If the thickness of the insulating layer needs to be increased due to higher thermal insulation requirements, this can be achieved with appropriate insulating materials according to the fermacell® flooring elements installation instructions.
68. Single loads (with a surface bearing area ≥ 20 cm²) may be set out at intervals of at least 500 mm. The distance from corners must be ≥ 250 mm or the load area must be increased to 100 cm². The sum of the single loads must not exceed the maximum allowable surface load capacity.

Note:
The respective verifications must be observed for all system. If anything is unclear, please check with our Technical Department for clarification.

Abbreviations
ABP: General constructional test certificate
ABZ: General constructional authorisation
PB: Test report
KB/CR: Classification report
GA: Expert report
ETA: European Technical Assessment
European Technical Approval

You can find the latest version of this digital brochure on our website. Subject to technical modifications.
As of 02/2025

For further support, please contact the UK specification team or our technical specialists via the contact form on our website.

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www.jameshardie.co.uk

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