

This product has been determined to satisfy NCC Performance Requirement H1P1 for structural resistance of materials and forms of construction in high wind areas

SPECIFICATION

This data sheet covers the use of various fibre-cement cladding products in applications to provide structural bracing capacity, also known as racking shear capacity, against lateral forces in medium gauge steel-framed and timber-framed structures.

The external cladding products covered by this sheet include 6mm Hardie™Flex sheet, 6mm Versilux® sheet, 7.5mm Hardie™Tex sheet, 8.5mm EasyLap™ Panel, 8.5mm Hardie™ Fine Texture Cladding, 8.5mm Hardie™ Brushed Concrete Cladding, 7.5mm Hardie™Plank cladding or 9mm Primeline™ weatherboards and the internal lining products 6mm Villaboard or Versilux sheet. Refer to our website for further details:

<https://www.jameshardie.com.au/categories/cladding>

Note [1]: 6mm JHFC in Tables 1 and 2 denotes any James Hardie fibre-cement cladding sheet of 6mm thickness or greater. A 9mm thick sheet may be considered as being at least equivalent.

This data sheet must be read in conjunction with current James Hardie “Structural Bracing Application Guide” (see link below) as well as the installation literature and other design data sheets in this same DTC series for the individual applications and products.

www.jameshardie.com.au/ContentfulCMS/Technical-Resource/Structural_Bracing_Application_guide.pdf

FRAMING & SHEET INSTALLATION

First determine the required stud spacing for the design wind load from the other design data sheets in this same DTC series. Install sheets vertically or horizontally to steel or timber stud-frames as per the product literature and in accordance with fastener spacings given in **Table 1** and **Table 2**. All sheet edges must be fully supported. Set joints where required to attain the design capacity.

Framing – Steel

The steel wall frame (minimum 64 x 35mm studs) must be in accordance with NCC 2022 Clause H1D6 Item (3). Studs to be rolled steel sections not exceeding 2mm in thickness.

Provide M12 minimum hold-down bolts along with 75 x 70 x 6mm distribution washers at 900mm centres and within 70mm of the face of steel studs.

Framing – Timber:

Use of timber framing to be in accordance with AS 1684: 2021 “Residential timber-framed construction” and framing manufacturer’s specifications. Use seasoned timber or else unseasoned hardwood minimum F14 grade. LVL timber may be used.

Provide anchor rods and tie-down bolts to timber frame in accordance with AS 1684.3: 2021; anchors rods not to be more than 2.4m apart.

FIXING / FASTENERS

Select fastener type from the other James Hardie DTC sheets, but it is to be minimum Class 3 finish if concealed and/or sealed, else Class 4 if exposed to the elements. Typically, for fixing to steel framing, 25mm or 41mm HardieDrive® screws are used.

Tables 1 and 2 outline the maximum sheet fastener spacing but verify this against the other design data sheets in this same DTC series so as to comply with the wind load design requirements for external cladding. The lesser spacing must be applied.

TABLE 1: ULS Design Bracing Capacity of Fibre-Cement Cladding on Medium Gauge Steel Framing

Material	Fixing Details	Screw Spacing A/B/C (mm) see Note [2]	Stud Spacing (mm)	Design Capacity (kN/m)
External Wall Systems with JHFC Cladding on One Side		1.6mm Gauge Steel		
Any 6mm JHFC sheet or thicker	Vertical joints (if any) not set	100/100/150	450	8.5
			300	8.8
7.5mm HardieTex base sheet	Vertical joints (if any) not set	200/200/200	450	5.1
6mm HardieFlex sheet (or 6mm JHFC, see Note [1])	Vertical joints (if any) not set	200/200/200	450	6.0
			300	7.5
7.5mm HardiePlank cladding or 9mm Primeline weatherboards	Vertical joints (if any) not set	Limitation [2]: Screw must pass through both planks	450	2.4
			300	3.6
External Wall Systems with JHFC Cladding on Both Sides		1.6mm Gauge Steel		
6mm HardieFlex sheet or 7.5mm HardieTex base sheet (or 6mm JHFC)	Internal lining with 6mm Villaboard with vertical joints (if any) not set	200/200/200	450	7.8
			300	11.0
7.5mm HardiePlank cladding or 9mm Primeline weatherboards	Internal lining with 6mm Villaboard with vertical joints (if any) not set	Limitation [2]: Screw must pass through both planks. Internal lining as above.	450	6.7
Internal Wall Systems		1.2mm Gauge Steel		
6mm Villaboard or Versilux sheet (or any 6mm JHFC)	Single-sided, vertical joints (if any) not set	200/200/200	450	5.8
	Double-sided, vertical joints (if any) not set	200/200/200	450	6.0

TABLE 2: ULS Design Bracing Capacity of Fibre-Cement Cladding on Timber Framing with Cyclone Anchor Rods

Material	Fixing Details	Nail Spacing A/B/C (mm) see Note [2]	Stud Spacing (mm)	Design Capacity (kN/m)
Any 6mm JHFC sheet	One side of frame only	100/100/150	450 or 600	6.6
Any 6mm JHFC sheet	One side of frame only with internal lining of 6mm JHFC vertical (joints not set) or horizontal with joints set	100/100/150 ext 150/150/150 int	450 or 600	10.0
6mm JHFC (see Note [1])	As above	150/150/150	450 or 600	5.3
Any 6mm JHFC	Double-sided vertical (joints not set) or horizontal with set joints	150/150/150	450 or 600	7.3
7.5mm HardiePlank cladding or 9mm Primeline weatherboards	One side of frame only	Limitation [2]: Screw must pass through both planks	450 or 600	2.4
	With internal lining of 6mm JHFC vertical (joints not set) or horizontal with joints set	Limitation [2]: Screw must pass through both planks. Internal lining as above.	450 or 600	6.6

Note [2]: Fastener configuration A/B/C (mm) in Tables 1 and 2 denotes spacing along A top and bottom plates, B vertical edges of sheet and C intermediate studs (ie body of sheet).

For any other Hardie cladding product not listed in these tables (eg Linea™ weatherboards and 9mm Axon™ cladding, refer to the individual DTC data sheet for that product.

Product Name
STRUCTURAL BRACING CAPACITY OF FIBRE-CEMENT CLADDING

Product Description
Various External & Internal Claddings

Manufacturer's Details
James Hardie Australia Pty Ltd
10 Colquhoun Street, Rosehill NSW 2142



Design Criteria
[1] General
All design and construction must comply with the appropriate requirements of the current National Construction Code (NCC) and other applicable regulations and standards.

[2] Wind Loading
The wind forces to be resisted by the cladding configurations given in **Table 1** for steel framing and **Table 2** for timber framing with steel cyclone rods must be derived from AS 4055: 2021 “Wind Loads for Housing” or AS/NZS 1170: 2021 Part 2 “Wind Actions”.

[3] Design Capacity
The Ultimate Limit State (ULS) design capacity of the various systems given in Table 1 and 2 implicitly include an ULS material capacity reduction factor (‘phi’) and no further factoring of the design capacity is needed.
For riveted frames of equivalent gauge, racking capacities given in Table 1 must be multiplied by a factor of 0.8.

Limitations
[1] The tabulated bracing capacity may NOT be claimed when there are cavity battens between the framing and the FC board. The tabulated bracing values apply only when the FC boards are fixed directly to the wall framing.
[2] The minimum length of a bracing panel shall be 900mm for which the racking capacity is therefore 0.9 times the tabulated values. The maximum wall length to which these capacities apply is 3.6m for which the racking capacity is therefore 3.6 times the tabulated values.
[3] Bracing capacity can be claimed for plank and weatherboard cladding only if fasteners pass through both planks or there are two fasteners per plank.
[4] Fasteners: All fasteners must be driven flush. Do not fix fasteners closer than 12mm from panel edges, or closer to 50mm from sheet corners.

Accepted for inclusion in Deemed to Comply Manual

DTCM drawing number: M/447/01

Chairperson Signature:

Chairperson Name: Elisha Harris

Date of Approval: 30/04/2026 Expiry Date: 30/04/2031

Notes covering basis of DTC (Relevant test reports etc)

The nominated structural capacity of the system is based on the following documentation:

- [1] James Hardie “Technical Submission for Certification of James Hardie Structural Bracing Systems in the Northern Territory Deemed-to-Comply Manual”, First Edition dated 15 September 2025, referencing various test reports.
- [2] David Beneke Consulting letter of certification 2015-50-LO-31 Revision 1 dated 10 July 2024.
- [3] James Hardie Test Report “Bracing Shear Testing of Fibre-Cement-Clad Timber-Frame Wall Sections”, 1989.
- [4] Cyclone Structural Testing Station Report No.TS 457 dated 20 October 1995 “Racking Strength of James Hardie Cladding Materials on Steel Wall Frames”.

Checking Engineer

Name: DAVID BENEKE
Registration Number: IEAUST 62658
Date: 30 June 2025

Signature:
Must be an Australian registered structural engineer

Certifying Engineer

Name: NAVID NIKJOO
NT Registration Number: 341218 ES
Date: 3 December 2025

Signature:
Must be a registered structural engineer in the Northern Territory