

**IN ACCORDANCE WITH NCC VOLUME 2 (SECTION P3.10.1), THIS PRODUCT SATISFIES PERFORMANCE REQUIREMENT P2.1.1 FOR CONSTRUCTION IN A HIGH WIND AREA**

**SPECIFICATION**

This data sheet covers the use of 6mm HardieFlex™, 7.5mm HardieGroove™, 6mm Versilux® and 6mm Villaboard® sheet in residential carport and verandah soffit lining applications over light-gauge steel or timber framing and must be read in conjunction with current James Hardie product literature: "Eaves & Soffits Technical Specification".

Sheets must be coated in accordance with product literature.

**HardieFlex™ Sheet Description:**

Sheet thickness nominally 6mm with square edges; Sheet weight approximately 8.1kg/m<sup>2</sup>.

**HardieGroove™ Sheet Description:**

Sheet thickness nominally 7.5mm with square edges; Sheet weight approximately 10.1kg/m<sup>2</sup>.

**Versilux® Sheet Description:**

Sheet thickness nominally 6mm (9mm also available); Sheet weight for 6mm approximately 8.3kg/m<sup>2</sup>.

**Villaboard® Sheet Description:**

Available in 6mm or 9mm thickness with recessed edges along the two sheet (long) sides for flush jointing. Sheet weight for 6mm approximately 8.3kg/m<sup>2</sup>.

**FRAMING & SHEET INSTALLATION**

Install sheets to steel or timber battens as shown in Figure 1 and in accordance with the batten and fastener spacing given in **Table 1** or **Table 2** depending on the wind load classification or design pressure.

Sheets may be laid parallel to or across the battens.

Framing width at sheet joints must be a minimum of 42mm for timber and 38mm for steel. Where the battens at sheet joints are less than this, provide double 35mm wide battens at sheet joints. Ensure that double battens are fastened together and flush at the outside face.

All intermediate support battens must be a minimum of 64 x 35mm deep for metal framing and 70 x 35mm for timber.

**Framing – Steel**

The steel wall frame (minimum 64 x 35mm studs) must be in accordance with NCC 2019 Clause 3.4.2.0. Studs to be rolled steel sections not exceeding 2mm in thickness.

**Framing – Timber:**

Use of timber framing must be in accordance with AS 1684: 2010 "Residential timber-framed construction" and framing manufacturer's specifications. Use seasoned timber or else unseasoned hardwood minimum F14 grade. LVL timber may be used.

**Support at Fascia & Walls:**

All longitudinal sheet edges (other than cantilever ends of 150mm permitted against walls or non-grooved fascias) and joints must be supported by framing (see Figure 2 for butt jointing). A transverse joint is one that crosses the direction of battens and where sheet edges may be butt jointed.

TABLE 1: Max Batten & Fastener Spacing for Wind Pressure						
AS 4055 Wind Load Class	General Areas Of Building			Within 1200mm of Building Edges		
	ULS Pressure (kPa)	Batten (mm)	Fasten (mm)	ULS Pressure (kPa)	Batten (mm)	Fasten (mm)
C1	-0.98 +1.05	600 or 450	200	-1.95	450	200
C2	-1.45 +1.56	600 or 450	200	-2.90	450	150
C3	-2.14 +2.30	450	200	-4.27	300	150
C4	-2.88 +3.11	300	200	-5.77	300	100

TABLE 2: Test-Proven ULS Design Pressure Capacity		
Batten Spacing (mm)	Fastener Spacing (mm)	ULS Pressure (kPa)
600	200	1.45
450	200	2.44
450	150	3.27
300	200	3.61
300	150	4.26
300	100	6.12

**Jointing:**

HardieFlex, HardieGroove and Versilux sheets are normally jointed with a PVC straight joint mould, although butt joints may also be used. Villaboard sheets may be tape-set and flush jointed (refer to product technical literature). Sheet joints must coincide with the centre line of the ceiling batten or framing member (see Figures 2 and 3).

**FIXING / FASTENERS**

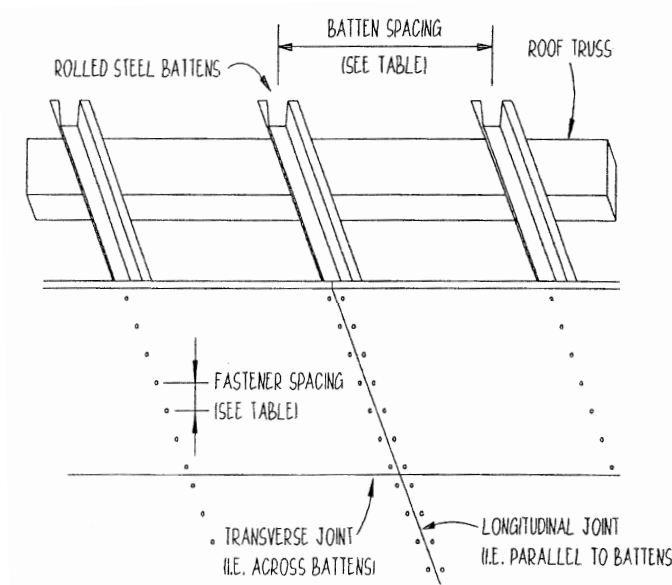
Fixings and fastener may be minimum Class 3 finish if concealed and/or sealed, but must be Class 4 if exposed to the elements. Use the following fasteners or approved equivalent fasteners:

**Fasteners - Steel Framing:**

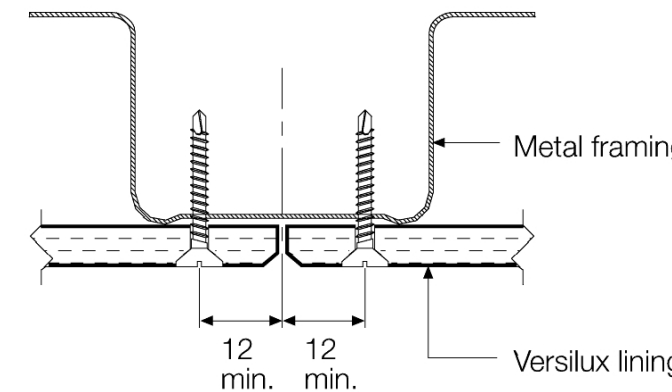
Use 30mm Buildex FibreTeks® screws or 32mm HardieDrive® screws.

**Fasteners - Timber Framing:**

Use a 2.8 x 30mm galvanised fibre cement nail.



**Figure 1: Carport & Verandah Lining Layout**



**Figure 2: Butt Joint Fixing**

**DETAILS & OTHER MATTERS**

More extensive construction details and jointing details are provided in current James Hardie literature for HardieFlex, HardieGroove, Versilux and Villaboard cladding and the "Eaves & Soffits Technical Specification". Refer also to the Warranty in that literature.

For further details on matters such as a thermal break, an appropriate weather barrier, flashing, system accessories and finishing, refer to current James Hardie technical literature for HardieFlex, HardieGroove, Versilux and Villaboard cladding, the NCC or relevant Australian Standards

Product Name:

**CARPOR & VERANDAH SOFFIT LINING WITH HARDIEFLEX™, HARDIEGROOVE™, VERSILUX® & VILLABOARD® SHEET**

Product Description:

**External Cladding for Soffit Linings**

Manufacturer's Name:

**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 cladding sheet must be fastened to the frame in accordance with **Table 1** for the different wind classifications, which are taken from AS 4055:2012 "Wind Loads for Housing". The effective design wind speeds are given in Table 2.1 of AS 4055.

For design to AS/NZS 1170: 2011 Part 2 "Wind Actions", the test proven Ultimate Limit State (ULS) design capacity of the system is given in **Table 2**, noting that an ULS material capacity reduction factor ('phi') is implicitly included and no further factoring of the design capacity is needed.

**Limitations:**

[1] HardieFlex, HardieGroove, Versilux and Villaboard soffit lining sheets are designed as external cladding for residential use only. This cladding has been designed for external pressure and suction loadings only. The designer must ensure that no internal pressure or suction arises from within the enclosed carport or roof spaces otherwise an internal lining is required.

[2] To use Table 1, the design must comply with geometric limits given at Clause 1.2 of AS 4055: 2012 (eg max eaves height = 6m and max building width = 16m), except as varied by the design engineer.

[3] Fastening: All fasteners specified must be driven flush. Do not fix fasteners closer than 12mm from panel edges, or closer than 50mm from sheet corners.

**Accepted for Inclusion**

DTCM ref: M/725

**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 Advice Note dated 31 July 2010 "Addendum to the June 1995 Submission..." and Advice Note dated 10 March 2020 "Re-Assessment of Design Capacity of 6mm JHFC Cladding Products" which references Test Report TS004-20 dated 6 March 2020.
- [2] James Hardie Submission dated 30 June 1995 "Derivation of Proposed Design Tables for Eaves & Soffit Linings & External Cladding Systems for Use in the Darwin Deemed-to-Comply Manual", which includes uniform load testing reports by Karl Danenbergsons dated 13 April 1995 and Clayton Frick dated 30 June 1995.
- [3] James Hardie letters dated 7 August 1996 to the NT Building Advisory Services Branch and Colless & O'Neill Pty Ltd regarding the outcome of testing cyclic versus static loading.
- [4] Cyclone Structural Testing Station Report No. TS 471 dated 23 July 1996 "Static and Cyclic Uniform Loading of Hardiflex Cladding".

**\*Design Engineers Certification**

**Name:** PRAVEEL PRASAD  
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**Date:** 14 October 2020  
**Signature:**

\*registered as a structural engineer in Australia

**\*\*Certifying Engineers Certification**

**Name:** DAVID BENEKE  
**NT Rego Number:** 58478 ES  
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**Signature:**

\*\*registered as a structural engineer in Northern Territory

Chairman's Signature:

Chairman's Name: Paul Nowland

Date of Approval: 18/12/2020  
Expiry Date: 18/12/2025