

NORTHERN TERRITORY DEEMED TO COMPLY MANUAL – National Construction Code Volume 2 (Section 3.0.4 Structural resistance of materials in high wind areas)

This product has been determined to satisfy NCC Performance Requirement P2.1.1 for structural stability and resistance

SPECIFICATION: SCYON™ STRIA™ CLADDING

This data sheet covers the use of Scyon™ Stria™ cladding in residential façade applications over a seasoned timber wall frame and must be read in conjunction with current James Hardie literature for the product, namely "Scyon Stria Cladding: Installation Instructions" (currently dated June 2020).

- Stock width 255mm to give 230mm effective coverage;
- Stock width 325mm to give 300mm effective coverage;
- Stock width 405mm to give 380mm effective coverage;

FRAMING

Install boards to timber stud framing as shown in **Figure 1** with maximum stud spacing taken from **Tables 1 & 2** or 3.

TABLE 1: CONCEALED FIXING OPTIONS
(Fastened as per Figure 2 through underlap only)

AS 4055 Wind Classification	General Areas of Walls (mm)		Within 1200mm of Building Edges (mm)	
	Max Design Pressure (kPa)	Max Stud Spacing (mm)	Max Design Pressure (kPa)	Max Stud Spacing (mm)
C1	-0.98	600	-1.95	600

Note: Bottom and top boards must be fixed with either ND 50 SS Brad nails at 150mm centres or 50mm FC nails @ 300mm centres.

TABLE 2: FACE FIXING OPTIONS
(Fastened as per Figure 3)

AS 4055 Wind Classification	General Areas of Walls (mm)		Within 1200mm of Building Edges (mm)	
	Max Design Pressure (kPa)	Max Stud Spacing (mm)	Max Design Pressure (kPa)	Max Stud Spacing (mm)
C1	-0.98	600	-1.95	600
C2	-1.45	600	-2.90	450
C3 & C4	-2.88	450	-5.77	300**

**For C3 & C4 two or three fixings are required per board for 255 / 325mm and 405mm widths respectively.

Note: Top board to be fixed at 300mm centres for C1 and C2 and at 150mm for C3 and C4.

Framing – Timber

Use of timber framing (minimum 70 x 35mm studs) must be in accordance with AS 1684.3: 2021 "Residential timber-framed construction – Cyclonic areas" and framing manufacturer's specifications. Use seasoned timber or else unseasoned hardwood minimum F14 grade. LVL timber may be used.

Installation of Vertical Flashing Strip:

At vertical joints where the flashing strip is used, provide either double 45mm studs (see **Figure 1**), or double 35mm studs separated by 15mm packers or triple 35mm studs. Elsewhere, minimum stud width 35mm.

FIXING / FASTENERS

Scyon Stria cladding can be fixed by either concealed-fixing or face-fixing methods depending on the fastener type and wind classification of the building. **Off-stud fixing** with cavity battens is possible – contact James Hardie for details.

Fixings and fastener may be minimum Class 3 finish if concealed and/or sealed, but must be Class 4 if exposed to the elements.

Fasteners - Timber Framing – Hand Nailing:

For concealed nailing, use 40mm fibre cement nails on the underlap in accordance with **Table 1** and **Figure 2**.

For face fixing, use 50mm fibre cement nails in accordance with **Table 2** and **Figure 3**.

Fasteners - Timber Framing – Gun Nailing:

Gun-nailing is only suitable for face fixing and not for concealed fixing. Use a minimum 50mm long coil nail or a 50mm Dekfast Type D head 2.5mm diameter nail for face fixing only.

If using nail guns, the nail must be placed into the face of the board 50mm up from the bottom edge – see **Figure 3**.

TABLE 3: Test-Proven ULS Design Pressure Capacity

ULS Design Pressure (kPa)	Stud Spacing (mm)
Up to 2.4	600
2.5 – 2.9	450
3.0 – 6.8	300 (two fixings per 255 & 325mm wide board) (three fixings per 405mm wide board)

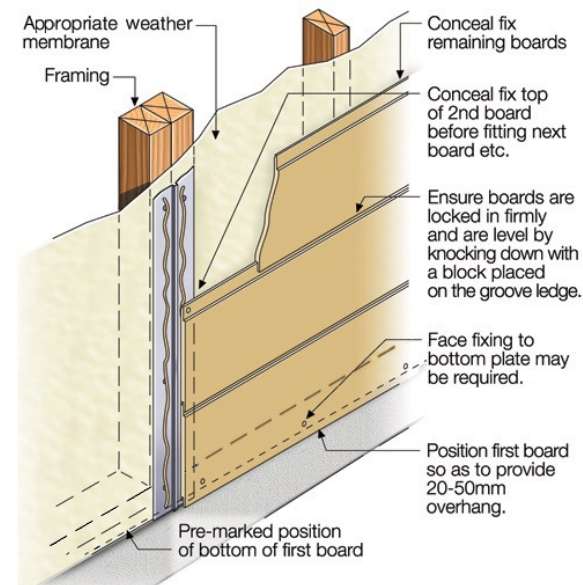
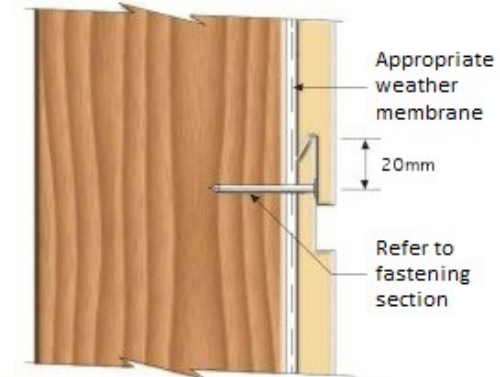
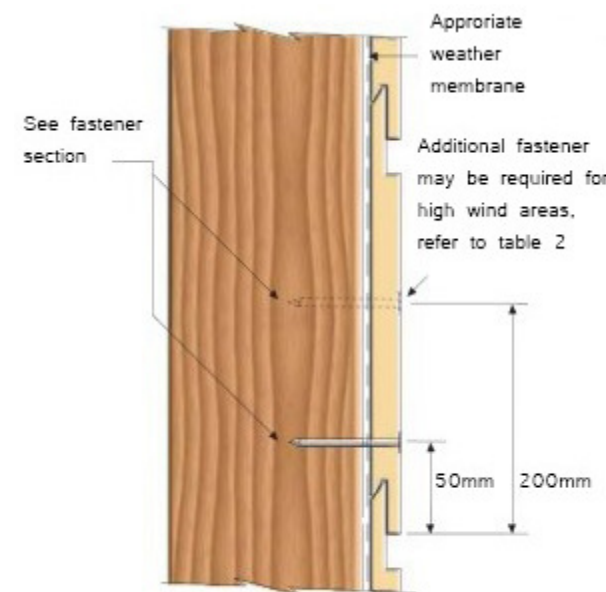


Figure 1: Board Installation
(internal lining omitted for clarity)



Note: Internal lining omitted for clarity

Figure 2: Concealed Fixing Detail



Note: Internal lining omitted for clarity

Figure 3: Face Fixing Detail

DETAILS & OTHER MATTERS

More extensive construction details and jointing details are provided in current James Hardie installation literature for Scyon Stria cladding. Refer also to the Warranty for the system in that literature.

Special Framing Requirements:

Additional framing is generally required at internal corners and sides of openings (refer to details in literature).

Jointing:

Scyon Stria cladding can be butt-jointed on and off stud without the use of the vertical flashing strip (refer to literature).

For further details on matters such as an appropriate weather membrane (eg "sarking"), a thermal break, flashing, system accessories and finishing, refer to current James Hardie technical literature for Scyon Stria, the NCC or relevant Australian Standards.

Product Name

SCYON™ STRIA™ CLADDING

Product Description

14mm External Horizontal Groove Profile Cladding for Walls
TIMBER FRAMING

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 cladding sheet must be fastened to the frame in accordance with **Tables 1 and 2** for the wind classifications, which are derived from AS 4055: 2021 "Wind Loads for Housing". The effective design wind speeds are given in Table 2.1 of AS 4055: 2021.

For design to AS/NZS 1170: 2021 Part 2 "Wind Actions", the test-proven ULS design capacity of the face-fixed system is given in **Table 3** noting that an ULS material capacity reduction factor ('phi') is implicitly included and no further factoring of the design capacity is needed:

Limitations

[1] Scyon STRIA sheet is an external wall cladding for residential use only. This cladding has been designed for external pressure and suction loadings only. The designer must ensure that the framing is capable of resisting simultaneously the internal and external design pressures. An internal lining is required.

[2] To use **Tables 1 and 2**, the design must comply with the geometric limits given in Clause 1.2 of AS 4055: 2021 (eg max eaves height = 6m and max building width = 16m), except as varied by the design engineer.

[3] All fasteners specified must be driven flush.

Accepted for Inclusion in Deemed to Comply Manual

DTCM drawing number:

M/342/01

Chairperson's Signature:

Chairperson's Name:

Paul Nowland

Date of Approval:

03/02/2022

Expiry Date:

03/02/2027

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 Test Report TS062A-07 "Uniformly Distributed Load Testing of Horizontal Groove Panel (Scyon™ Stria™) in Accordance with ASTM E72-98" dated 26 October 2007 supplemented by Test Report TS031-10 dated 20 August 2010, Test Report TS028-11 dated 3 June 2011 and Test Report TS026-17 dated 16 October 2017.
- [2] James Hardie Advice Note "Design of Horizontal Groove Profile Cladding System to Cater for AS 4055 Wind Pressure Classifications" dated 19 November 2007.
- [3] James Hardie Advice Note "Scyon Stria Cladding System: Revised Design for AS 4055 Wind Classifications" dated 23 June 2011.
- [4] James Hardie Advice Note "Verifying Design Pressure Capacity for Scyon Splayed Shiplap Cladding" dated 23 October 2017.
- [5] Cardno Letter of Certification dated 20 November 2017.

Checking Engineer

Name: PRAVEEL PRASAD
Cardno (NSW/ACT) Pty Ltd
Registration Number: IEAUST 923657
Date: 25 October 2021
Signature:
Must be an Australian-registered structural engineer

Certifying Engineer

Name: DAVID BENEKE
NT Registration Number: 58478 ES
Date: 27 October 2021
Signature:
Must be a registered structural engineer in the Northern Territory