SPECIFICATION

This data sheet covers the use of Scyon™ Linea™ weatherboard in residential façade applications over a light-gauge steel frame or a timber wall frame and must be read in conjunction with the current James Hardie product literature "Scyon™ Linea™ Weatherboard Installation Instructions".

Scyon™ LINEA™ Cladding Description:
Sheet thickness nominally 16mm; pre-primed surface finish;

Available in 150mm and 180mm width: effective cover is approximately 120mm and 150mm respectively.

Stock length 4200mm; Cladding weighs approx 23kg/m².

Scyon™ LINEA™ Trim Description:
Trim thickness nominally 16mm; used as a decorative external trim around openings and corners; Pre-primed surface finish; Available in 84mm and 100mm widths; Stock length 2600mm.

FRAMING & SHEET INSTALLATION

Install boards to steel or timber stud frames as shown in product literature with stud spacing taken from **Table 1**:

TABLE 2: Test-Proven ULS Design Capacity

Stud Spacing (mm)	Capacity (kPa)
600	2.6
450	4.3
300	5.5

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

Framing – Steel
The steel frame must be in accordance with AS 3623: 1993 "Domestic Metal Framing". Studs shall be rolled steel sections not exceeding 2.0mm 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.

FIXING / FASTENERS

All fixings and fastener to be minimum Class 3 finish. Use the following fasteners or approved equivalent fasteners:

Concealed-fixing (see **Figure 1**) may be used whereby the board is fastened 25mm below the top edge and the fixing then concealed under the nominal 30mm lap by the board placed over the top. For this method of fixing, use 40mm HardieDrive™ self-embedding head screw or 30mm Buildex 'Fibre Zip' (or 'Batten Zip') screw or TRI-FIXX 10-16 x 50mm wing-tip screw, the required length depending on the need for a thermal break strip.

TABLE 1: Maximum Stud Spacing (mm) for Wind Load

AS 4055 Wind Load Class	General Areas Of Building		Within 1200mm of Building Edges	
	ULS Pressure (kPa)	Stud Spacing (mm)	ULS Pressure (kPa)	Stud Spacing (mm)
C1	-0.98 +1.05	600	-1.95	600
C2	-1.45 +1.56	600	-2.90	450
C3	-2.14 +2.30	600	-4.27	450
C4	-2.88 +3.11	450	-5.77	300

Face fixing (see **Figure 2**) through the lap of two boards is required in bracing applications and whenever site conditions create undue gaps between boards at laps. In this case use Buildex 10-55mm or 10-75mm metal wing-TEKS screws or TRI-FIXX 10-16 x 60mm CSK ribbed-head wing-tip screw (required length depending on thermal break).

Timber-Framed Construction:
The same stud spacing designs may be applied equally using 40mm long ∅ 2.8mm fibre-cement (FC) nails for concealed fixing and 60 x 3.15mm bullet head nails for face fixing (or longer depending on thermal break).

Jointing:
The ends of Linea weatherboards are jointed off-stud by means of the tongue-and-groove feature (see figure on page 4 of product literature).

STRUCTURAL BRACING

Regardless of the Linea weatherboard width, for a stud spacing of 600mm or less, and for wall heights of both 2400mm and 2700mm, the ULS racking capacity for welded steel frames and timber fames with M12 anchor rods is 5.6kN/m. If there is a James Hardie fibre-cement (JHFC) internal lining of at least 6mm thick, it increases to 6.8kN/m. Spacing of the M12 rods to be determined from AS 1684.3: 2010, but never more than 2.4m apart.

To claim this capacity, the face-fixing method must be used (i.e. the fastener must pass through both boards at the overlap as shown in **Figure 2**). The boards must be fastened to the top and bottom plates at 75mm centres as shown in the product literature.

The JHFC internal lining sheet must be fixed at 150mm centres along sheet edges and at 150mm in the field of the board if the 6.8kN/m bracing capacity is to be claimed.

DETAILS & OTHER MATTERS

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

For further details on matters such as an appropriate weather barrier (eg vapour permeable sarking), thermal break, flashing, system accessories and finishing, refer to current James Hardie technical literature for Scyon Linea cladding, the BCA or relevant Australian Standards.
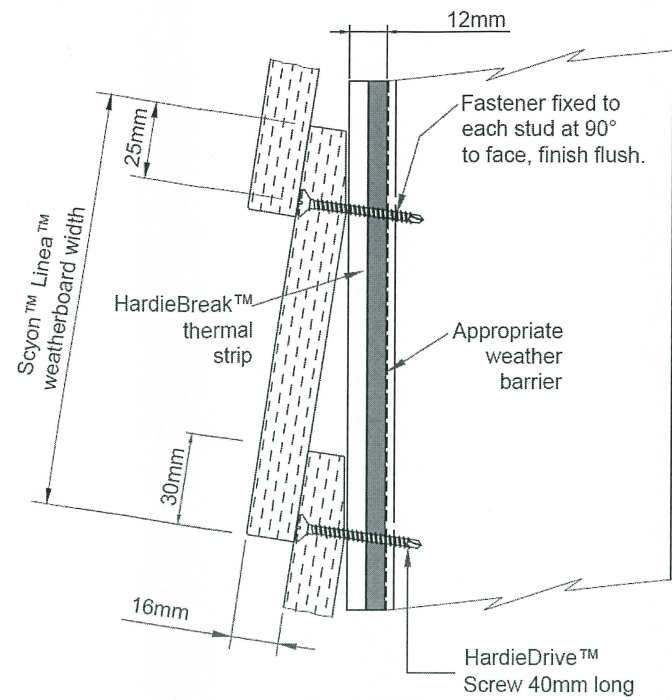

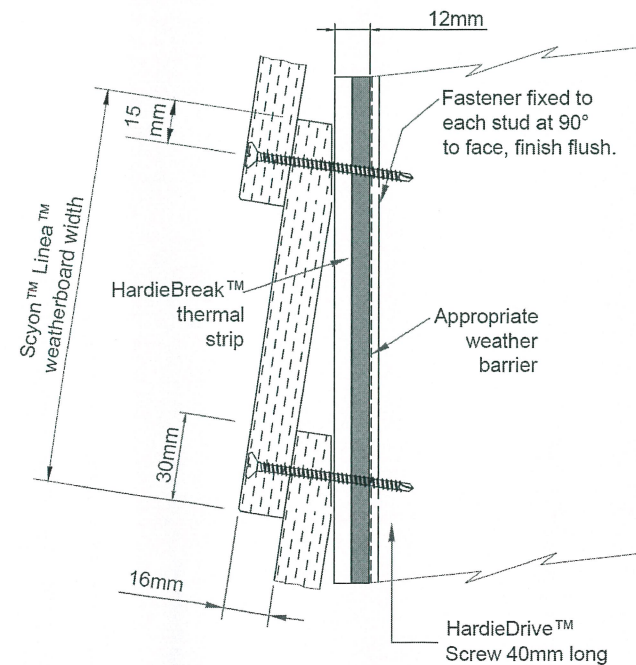**Figure 1: Concealed Fixing Detail**
(use when bracing capacity not required)

Figure 2: Face Fixing Detail
(use when bracing capacity is required)

Product Name:
SCYON™ LINEA™ WEATHERBOARD

Product Description:
16mm Pre-Primed External Wall Cladding

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 Building Code of Australia (BCA) and other applicable regulations and standards.

[2] Wind Loading
The weatherboards must be fastened to the timber or steel frame in accordance with **Table 1** for the different wind classifications, which are taken from AS 4055: 2006 "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 for steel or timber framing 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] Scyon LINEA weatherboard 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 (ie **an internal lining is required**).

[2] To use Table 1, the design must comply with the geometric limits given in Clause 1.2 of AS 4055: 2006 (eg max eaves height = 6m and maximum building width = 16m), except as varied by the design engineer.

[3] Fasteners: Locate fasteners as shown in the product literature, but never less than 15mm from top / bottom edges of weatherboard. The minimum edge distance at the ends of the boards is 25mm, except for gun nailing, when it is 50mm.

[4] Gun nailing must not be used for LINEA bracing systems.

Accepted for Inclusion

DTCM ref: M/277/01

Chairman's Signature:

Chairman's Name: STEVEN J EHRLICH

Date of Approval:	Expiry Date:
30/07/2015	30/07/2020

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 "Structural Design Properties of Linea Weatherboard Cladding in Australia" dated 28 July 2003.

[2] James Hardie Test Report "Fastener Holding Capacity Testing of Linea® Weatherboard Screw-Fixed to Steel Frames" dated 24 September 2003.

[3] James Hardie Test Report TS017-03 "Fastener Pull-Through Testing – Various Fastener Performance in Linea® Weatherboard" dated 25 June 2003.

[4] BRANZ Report ST0483 dated 20 February 2001 "Face Load Testing of Low Density Thick Weatherboard".

[5] BRANZ Report ST0506 dated 29 January 2002 "P21 Racking Tests on Timber Framed Walls with Linea Weatherboards and Lined with Standard GIB Plasterboard".

*Design Engineers Certification

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Rego Number: IEAUST 406617

Date: 16 June 2015

Signature:

*registered as a structural engineer in Australia

**Certifying Engineers Certification

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