Make sure your information is up to date.
When specifying or installing James Hardie™ products, ensure that you have the current technical information and guides. If in doubt, or you need more information, visit www.jameshardie.com.au or Ask James Hardie™ on 13 11 03.
### Installation Guide

**SCYON™ AXON™ CLADDING SHEET SIZES (mm)**

<table>
<thead>
<tr>
<th>Scyon™ Axon™ cladding 133 Smooth</th>
<th>LENGTH</th>
<th>WIDTH</th>
<th>THICKNESS</th>
<th>MASS (kg)</th>
<th>SHEETS PER PACK</th>
<th>PRODUCT CODE</th>
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<td>52</td>
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<th>WIDTH</th>
<th>THICKNESS</th>
<th>MASS (kg)</th>
<th>SHEETS PER PACK</th>
<th>PRODUCT CODE</th>
</tr>
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<table>
<thead>
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<th>WIDTH</th>
<th>THICKNESS</th>
<th>MASS (kg)</th>
<th>SHEETS PER PACK</th>
<th>PRODUCT CODE</th>
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<tbody>
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<td>9</td>
<td>52</td>
<td>30</td>
<td>40</td>
<td>403419</td>
</tr>
</tbody>
</table>

*All dimensions and masses are approximate and subject to manufacture tolerances.

**ACCESSORIES / TOOLS SUPPLIED BY JAMES HARDIE™**

<table>
<thead>
<tr>
<th>ACCESSORIES</th>
<th>DESCRIPTION</th>
<th>ACCESSORIES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HardiDrive™ Screw 4.1mm Long</td>
<td>A class 3 self-drilling winged screw for fastening to 0.5mm to 1.6mm BMT light gauge steel frames. Part No. 305988 1000 per box</td>
<td></td>
<td></td>
</tr>
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<td>A class 3 self-drilling winged screw for fastening to 0.5mm to 1.6mm BMT light gauge steel frames. Suitable for use in most auto feed screw guns. Part No. 305982 1000 per box</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**JAMES HARDIE™ RECOMMENDED SAFE WORKING PROCEDURE**

### Cutting Outdoors

1. **Position cutting station so wind will blow dust away from the user or others in working area.**
2. **Use one of the following methods based on the required cutting rate:**
   - **Best** • Score and snap • Hand guillotine • Fibre shears
   - **Better** • Position the cutting station in a well-ventilated area. Use a dust reducing circular saw equipped with HardieBlade™ Saw Blade or comparable fibre cement blades and all maintained and appropriate for capturing fine (respirable) dust.
   - **Good** • Dust-reducing circular saw with HEPA filter appropriate for capturing fine (respirable) dust.
   - **Poor** • Dry sweep - Use wet suppression or appropriate vacuum and filter.
3. **Never use grinders.**

### Cutting Indoors

1. **Cut only using score and snap, hand guillotine or fibre shears (manual, electric or pneumatic).**
2. **Position cutting station in a well-ventilated area.**

**DUST MASKS AND RESPIRATORS**

1. For maximum protection (lowest respirable dust production) James Hardie recommends always using best practice cutting methods where feasible.
2. **NEVER** use a power saw indoors.
3. **ALWAYS** use a circular saw blade that carries the HardieBlade™ logo or is of at least comparable performance.
4. **NEVER** dry sweep - Use wet suppression or appropriate vacuum and filter.
5. **NEVER** use grinders.
6. **ALWAYS** follow tool manufacturers’ safety recommendations.

**SCYON™ AXON™ CLADDING INSTALLATION GUIDE PAGE 1 OF 6**
STORAGE AND HANDLING
To avoid damage, all James Hardie™ building products should be stored with edges and corners of the product protected from chipping. James Hardie™ building products must be installed in a dry state and protected from weather during transport and storage. The product must be laid flat under cover on a smooth level surface clear of the ground to avoid exposure to water, moisture, etc.

SCOPE
General
This guide covers the use of the Scyon™ Axon™ cladding in a residential facade application over a seasoned timber wall frame or a light-gauge steel frame.

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

Responsibility
The specifier or other party responsible for the project must ensure that the details in this specification are appropriate for the intended application and that any additional detailing is performed for specific design or any areas that fall outside the scope of this specification.

Slab and footings
The slab and footings on which the building is situated must comply with AS 2870 ‘Residential slabs and footings – Construction’ and the requirements of the National Construction Code (NCC).

Ground clearances
Install James Hardie external cladding with a minimum 150mm clearance to the earth on the exterior of the building or in accordance with local building codes if greater than 150mm is required. Maintain a minimum 50mm clearance between James Hardie external cladding and roofs, decks, paths, steps and driveways.

Adjacent finished grade must slope away from the building in accordance with local building codes, typically a minimum slope of 50mm minimum over the first metre.

Do not install external cladding such that it may remain in contact with standing water.

NOTE: Greater clearance may be required in order to comply with termite protection provisions, see below for more information.

Termite Protection
The National Construction Code (NCC) specifies the requirements for termite barriers. Where the exposed slab edge is used as part of the termite barrier system, a minimum of 75mm of the exposed slab edge must be visible to permit ready detection of termite entry.

Structural bracing
Scyon™ Axon™ cladding can be installed to provide wall bracing against lateral forces due to wind. For further information, ask James Hardie™ on 13 11 03.

Fire rated walls
Scyon™ Axon™ cladding can achieve fire ratings of 60/60/60 and 90/90/90 when constructed with additional fire-rated linings as specified in the James Hardie’s Fire and Acoustically Rated Walls Design Guide and Construction of Fire and Acoustically Rated Walls Technical Specification.

MOISTURE MANAGEMENT
General
It is the responsibility of designer or specifier to identify moisture related risks associated with any particular building design. Wall construction design must effectively manage moisture, accounting for both the interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled.

In addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashing and waterproofing. Materials, components and their installation that are used to manage moisture in framed wall construction must, at a minimum, comply with the requirements of relevant standards and the NCC.

Weather Barrier
A suitable water control membrane must be installed under James Hardie™ cladding in accordance with the AS/NZS 4200.2 ‘Pliable building membranes and underlays – Installation’ and NCC requirements.

James Hardie has tested and certified the use of HardieWrap™ weather barrier for climate zones 2-8 within Australia. HardieWrap™ weather barrier is a Class 4 vapour permeable membrane that delivers a triple-shield of protection to help against external weather penetration, internal condensation management and external heat penetration through its safe-glare reflective layer.

If using an alternate product in lieu of HardieWrap™ weather barrier or the project is located in a hot humid area (Climate Zone 1), the designer must ensure that the product is fit for purpose and it has the following classification in accordance with AS/NZS 4200.1:2017 ‘Pliable building membranes and underlays – Materials’.

WEATHER BARRIER CLASSIFICATION

<table>
<thead>
<tr>
<th>CLIMATE ZONES</th>
<th>WATER BARRIER</th>
<th>VAPOUR PERMEANCE</th>
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</thead>
<tbody>
<tr>
<td>2-8</td>
<td>High</td>
<td>Vapour permeable (Class 3 or 4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vapour Barrier (Class 1 or 2)</td>
</tr>
</tbody>
</table>

Soft compressible insulation installed between the front of the wall studs and directly behind the external cladding can cause installation issues and is thus not recommended.

Flashing
All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to cladding installation.

Accessories
Some Scyon™ Axon™ cladding accessories may require installation prior to fixing of the boards. Refer to the relevant details in this document.

FRAMING
General
The Scyon™ Axon™ cladding is installed vertically to both timber and metal studs.

Framing width at sheet joints must be a minimum of 45mm. Where the studs at sheet joints are less than 45mm wide provide double 25mm wide studs at sheet joints. Ensure double studs are well nailed together and flush at the outside face.

All intermediate support studs must be a minimum of 70 x 35mm for timber and 64 x 35mm deep for metal framing. Maximum stud spacings for Scyon™ Axon™ cladding for wind load classifications of AS 4055 ‘Wind Loads for Housing’ are given in Table 1.

NOTE: Brad nailing option is not suitable in high wind areas, see Tables 1 and 2.

MAXIMUM STUD SPACING – AS 4055

<table>
<thead>
<tr>
<th>WIND CLASSIFICATION</th>
<th>STUD SPACING (mm)</th>
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</thead>
<tbody>
<tr>
<td>1200mm of building edges</td>
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</tr>
<tr>
<td>Non-Cycotone</td>
<td>Cycotone</td>
</tr>
<tr>
<td>N1, N2, N3</td>
<td>C1</td>
</tr>
<tr>
<td>N4</td>
<td>C2</td>
</tr>
<tr>
<td>N5, N6</td>
<td>C2/C4</td>
</tr>
</tbody>
</table>

BRAD NAILS ONLY

| N1, N2, N3 | C1 | 600 | 600 |
| N4 | C2 | N/A | N/A |
| N5, N6 | C3, C4 | N/A | N/A |

Timber
Use of timber framing must be in accordance with AS 1684 ‘Residential timber-framed construction’ and the framing manufacturer’s specifications.

Use only seasoned timber. Unseasoned timber must not be used because it is prone to shrinkage and can cause sheets and frames to move.

‘Timber used for house construction must have the level of durability appropriate for the relevant climate and expected service life and conditions including exposure to insect attacks or to moisture, which could cause decay.’ Reference AS 1684.2 ‘Residential timber-framed construction’.

Steel
Use of steel framing must be in accordance with NASH standard for Residential and Low-Rise Steel Framing Part 1: Design Criteria and the framing manufactures specifications. Framing members must have a base metal thickness (BMT) between 0.55 to 1.6mm. The steel framing must have the appropriate level of durability required to prevent corrosion.

Thermal Break
For steel frames, it’s a building code requirement to install a thermal break behind direct fixed cladding. For information relating to the suitability of James Hardie’s HardieBreak™ thermal strip, refer to the HardieBreak™ Installation Guide at www.jameshardie.com.au

Tolerances
Ensure frame is square and work from a central datum line. Frames must be straight and true to provide a flush face to receive the sheeting. A suggested maximum tolerance of between 3mm and 4mm in any 3000mm length of frame will give best results. Scyon™ Axon™ cladding will not straighten excessively warped or distorted frames and any warping may still be visible after the cladding is applied.

FIGURE 1 FRAME STRAIGHTNESS

| STEP 1 Construct frame and fitting of windows. |
| STEP 2 Install HardieWrap™ weather barrier |
| STEP 3 Run a string line that will act as a guide for the bottom edge of the Scyon™ Axon™ sheet. |

FIGURE 2 PREPARATION

NOTES
Generally, external and internal corners have additional framing requirements. Refer to the external and internal corner details for more information.
FASTENERS

General
All fasteners specified should be driven flush as shown in Figure 3.

Fastener Durability
Fasteners must have the appropriate level of durability required for the intended project. This is of particular importance in coastal areas, areas subject to salt spray and other corrosive environments. Fasteners must be fully compatible with all other materials that they are in contact with to ensure the durability and integrity of the assembly. Contact fastener manufacturers for more information.

Timber frames
For timber frames, use a N0 50mm 14 gauge 304 stainless steel brad nail. See Table 2 for suitability. Alternatively, a 2.8 x 40mm galvanised fibre cement nail.

NOTE: When using brad nails:
- Do not over drive the fasteners into the sheet.
- Ensure that brad nails are not used in high wind building edges.
- Where twisting/warping of the top or bottom timber plates may occur, consideration should be given to either using fibre cement nails or closing up brad nail spacings at the plates.

Steel frames
For steel framing thickness of 0.5mm – 1.6mm BMT – use 41mm HardieDrive™ screws. Refer to thermal break section of this guide. Table 2 below outlines the maximum sheet fastening spacings:

### TABLE 2

<table>
<thead>
<tr>
<th>WIND CLASSIFICATION</th>
<th>MAXIMUM SHEET FASTENING SPACINGS-AS 4055</th>
</tr>
</thead>
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<tr>
<td><strong>Non-Cyconic</strong></td>
<td><strong>Cyconic</strong></td>
</tr>
<tr>
<td>N1, N2, N3</td>
<td>C1</td>
</tr>
<tr>
<td>N4</td>
<td>C2</td>
</tr>
<tr>
<td>N5, N6</td>
<td>C3/C4</td>
</tr>
</tbody>
</table>

**ALL SPECIFIED FASTENERS EXCEPT BRAD NAILS**

| **N1, N2, N3** | C1 | 150 |
| **N4**        | N/A | N/A |
| **N5, N6**    | C3, C4 | N/A |

**BRAD NAILS ONLY**

| **N1, N2, N3** | C1 | 150 |
| **N4**        | N/A | N/A |
| **N5, N6**    | C3, C4 | N/A |

**SHEET INSTALLATION**

Note: You must ensure the product is of acceptable quality prior to installation, see Important Note 3.

Scyon™ Axon™ cladding must be installed vertically with all sheet edges fully supported. Sheet joints must coincide with the centre line of the framing member. At every vertical sheet join, a 50mm foam back sealing tape is applied under the shiplap joint and in front of the HardieWrap™ Weather Barrier, see Figure 6. Unless its a steel frame and Figure 12 is followed.

**FASTENER OPTIONS**

*Cover screw hole with epoxy (e.g. megapoxy P1). Once cured, apply James Hardie™ Base Coat using the base coat applicator and sand smooth when cured with 100-120 grit sand paper.

**SCYON™ AXON™ CLADDING INSTALLATION GUIDE PAGE 3 OF 6**
**FIGURE 14 WINDOW HEAD AND SILL - TRIM**

- **HardieWrap™** weather barrier
- **Soyon™ Axon™** cladding
- **Soyon™ Axon™** trim
- Continuous bead of James Hardie joint sealant
- **Bond breaker tape**
- **75mm** gap

**FIGURE 15 WINDOW JAMB - TRIM**

- **Internal lining**
- **HardieWrap™** weather barrier
- **Soyon™ Axon™** cladding
- **Soyon™ Axon™** trim fastened to frame
- Suitable corrosion resistant flashing
- **Concrete slab footing**

**FIGURE 16 SEALANT FILL OPTION**

- **Continuous bead of James Hardie joint sealant**
- **Soyon™ Axon™** cladding
- **38 x 45/89mm**

**FIGURE 17 SNAP ON CORNER OPTION**

- **Soyon™ Axon™** cladding
- **3mm gap**
- **Bond breaker tape**

**FIGURE 17B ALUMINIUM EXTERNAL CORNER**

- **JH aluminium snap on corner**
- **3mm gap**
- **Bond breaker tape**

**FIGURE 18 TRIM CORNER OPTION**

- **Soyon™ Axon™** cladding
- **38 x 45/89mm**

**FIGURE 18B ALUMINIUM INTERNAL CORNER**

- **Soyon™ Axon™** cladding
- **38 x 45/89mm**
- **Bond breaker tape**

**EXTENSION CORNER DETAILS**

- **James Hardie** 75 x 75mm corner flashing
- **Soyon™ Axon™** cladding
- **Continuous bead of James Hardie joint sealant**
- **Bond breaker tape**

**INTERNAL CORNER DETAILS**

- **Continuous bead of James Hardie™ sealant**
- **Bond breaker tape**
- **JH aluminium corner**
- **Soyon™ Axon™** cladding

**FIGURE 19 SEALANT FILL OPTION**

- **Soyon™ Axon™** cladding
- **3mm gap**
- **Bond breaker tape**

**FIGURE 20 SNAP ON CORNER OPTION**

- **Soyon™ Axon™** cladding
- **3mm gap**
- **Bond breaker tape**

**FIGURE 20B ALUMINIUM INTERNAL CORNER**

- **Soyon™ Axon™** cladding
- **38 x 45/89mm**
- **Bond breaker tape**

**FIGURE 20C SEALANT FILL OPTION**

- **Bond breaker tape**
- **Easy tear cover**
- **25mm**
- **5mm gap**

---

*Refer to ground clearance section*

**Alternative Detail:**

For more information on HardieEdge™ please refer to the HardieEdge™ installation guide available at www.jameshardie.com.au

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*HardieWrap™*

**EXTERNAL CORNER DETAILS**

- **James Hardie** 75 x 75mm corner flashing
- **Soyon™ Axon™** cladding
- **38 x 45/89mm**

---

**WINDOW DETAILS**

- **Continuous bead of James Hardie joint sealant**
- **Soyon™ Axon™** trim
- **Open joint to allow moisture to escape**
- **Corrosion resistant flashing**
- **Suitable flexible sub-sill flashing**
- **Soyon™ Axon™** trim fixed to frame

---

**FIGURE 13 SLAB/EAVE JUNCTION DETAIL**

- **Damp proof course**
- **Where required**
- **HardieFlex™** eaves lining
- **3mm gap**
- **20mm to 50mm overhang**
- **Concrete slab/footing**
- ***Refer to ground clearance section***

**FIGURE 21 ALUMINIUM EXTERNAL CORNER**

- **JH aluminium snap on corner**
- **3mm gap**
- **Bond breaker tape**

---

**FIGURE 22 SNAP ON CORNER OPTION**

- **Soyon™ Axon™** cladding
- **3mm gap**
- **Bond breaker tape**

---

**FIGURE 22B ALUMINIUM INTERNAL CORNER**

- **Soyon™ Axon™** cladding
- **38 x 45/89mm**
- **Bond breaker tape**

---

**NOTE**

Joint is filled up with James Hardie™ sealant 5mm thick by 5mm high.
FIGURE 21 TRIM CORNER OPTION

JUNCTION DETAILS

- Timber framing
- Trim ship lap to achieve squared edge.
- Continuous bead of James Hardie joint sealant
- Scyon™ Axon™ 38 x 46mm
corner flashing
- James Hardie 75 x 75mm

FIGURE 22 VERTICAL BUTT JOINT

NOTE: Join the James Hardie 9mm Aluminium Horizontal h flashing on intermediate studs and not off stud or behind sheet joins.

FIGURE 23 LOWER FLOOR JUNCTION

The Scyon™ Axon™ cladding must not continue over a floor junction or where excessive movement or creep will occur, see Figure 24.

FIGURE 24 UPPER FLOOR JUNCTION/HORIZONTAL JOINT

FIGURE 25 HORIZONTAL JUNCTION 1

FIGURE 26 HORIZONTAL JUNCTION 2

FINISHING

Sealant
Application and use of sealants must comply with manufacturer's instructions. Sealants, if coated, must be compatible with the paint system. James Hardie recommends the use of James Hardie™ joint sealant, which is a paintable polyurethane sealant.

Painting
Scyon™ Axon™ cladding is primed and ready for painting. All sheets must be dry before painting.

Refer to the project specification for paint requirements. Scyon™ Axon™ cladding must be painted within 3 months of being fixed. In areas within 1km of a coastal area or corrosive environment, the Scyon™ Axon™ cladding must be painted immediately after fixing sheets to minimise contamination build up on the heads of the fasteners, as it may lead to fastener corrosion.

James Hardie recommends the application of two coats minimum of a quality acrylic paint over the pre-primed boards in accordance with the paint manufacturer's specifications. If the screw countersunk option is used, its recommended that any sanded patches are primed before applying the two finial coats. Some environments require special coatings including coastal areas. Painting selection and specifications are dependant on the paint chosen. Refer to the paint manufacturer for further information and details of their warranty.

Staining
Some paint manufacturer's such as Cabot's and Wattyl offer stain systems that they have tested with James Hardie™ fibre cement products. For a stained look, contact the James Hardie™ Engineering Solutions team on 13 11 03.

MAINTENANCE

The extent and nature of maintenance will depend on the geographical location and exposure of the building. As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:

- Washing down exterior surfaces every 6-12 months*
- Periodic inspections should be made to ensure fasteners are adequately securing the sheets to framing.
- Re-applying of exterior protective finishes*
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants that may provide a means of moisture entry beyond the exterior cladding.
- Cleaning out gutters, blocked pipes and overflows as required.
- Pruning back vegetation that is close to or touching the building.

*Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.

NOTE:
Join the James Hardie 9mm Aluminium Horizontal h flashing on intermediate studs and not off stud or behind sheet joins.

NOTE
Do not fix the upper EasyCap™ Panel to the bottom plate.

Seal edges of sheet before fixing
Fasten at centre of clip
Scyon™ Axon™ cladding

2mm gap
Apply continuous bead of James Hardie joint sealant vertically between h flashing and h panel 10mm away from clip

20mm to 50mm overhang
Damp proof course where required

FINISHING

Sealant
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- Cleaning out gutters, blocked pipes and overflows as required.
- Pruning back vegetation that is close to or touching the building.

*Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.
PRODUCT INFORMATION

Material
The basic composition of James Hardie™ building products is Portland cement, ground sand, cellulose fibre, water and proprietary additives.

James Hardie™ building products are manufactured AS/NZS 2908.2 ‘Cellulose-Cement Products-Flat Sheet’. These are also compliant with equivalent standard ISO 8336 ‘Fibre-cement flat sheets - Product specification and test methods’. For product classification refer to the relevant Physical Properties Data Sheet.

Durability

Resistance to moisture/rotting
Scyon™ Axon™ cladding has demonstrated resistance to permanent moisture induced deterioration (rotting) by passing the following tests in accordance with AS/NZS 2908.2:

- Water permeability (Clause 8.2.2)
- Warm water (Clause 8.2.4)
- Heat rain (Clause 6.5)
- Soak dry (Clause 8.2.5)

Resistance to termite attack
Based on testing completed by CSIRO Division of Forest Products and Ensis Australia James Hardie building products have demonstrated resistance to termite attack.

Resistance to fire
The Scyon™ Axon™ cladding is suitable where non-combustible materials are required in accordance with C1.9 of the Building Code of Australia. James Hardie™ building products have been tested by CSIRO in accordance with AS/NZS 3837 and are classified as conforming to Group 1 material (highest and best result possible), with an average specific extinction area far lower than the permissible 250m²/kg, as referenced in Specification C1.10a of the National Construction Code (NCC).¹

Alpine regions
In regions subject to freeze/thaw conditions, all James Hardie™ fibre cement external cladding must be installed and painted in the warmer months of the year where the temperature does not create freeze and thaw conditions or paint issues. The cladding must be painted immediately after installation. In addition, fibre cement cladding must not be in direct contact with snow and/or ice build up for extended periods, e.g. external walls in alpine regions subject to snow drifts over winter.

Furthermore, a reputable paint manufacturer must be consulted in regards to a suitable product, specifications and warranty. The paint application must not be carried out if the air temperature or the substrate temperature is outside the paint manufacturer’s recommendation including the specified drying temperature range.

James Hardie™ external cladding products are tested for resistance to frost in accordance with AS/NZS 2908.2 Clause 8.2.3.