

4231HH JAMES HARDIE HARDIEFLEX™ SHEET CLADDING

Masterspec sections must be customised to suit the project being specified, by removing irrelevant information and adding project-specific information and selections.

1. GENERAL

This section relates to the supply and fixing:

- James Hardie HardieFlex™ Sheet cladding systems
- James Hardie Villaboard® Soffit Lining
- James Hardie selected soffit lining

Modify or extend the above description to suit the project being specified.

Where the cladding manufacturer prepares bracing schedules for their products, these lists should be used in preference to preparing your own bracing schedules. Include them either in the specification or on the drawings. This approach ensures the industry becomes familiar with one set of terminology for bracing elements.

While flush jointing is included here, cross-reference to either painting section/s or to 6731 DECORATIVE COATINGS, when joint finishing is being applied as part of an exterior coating system.

1.1 RELATED WORK

Refer to ~ for ~.

Refer to painting section/s for the protective coating required to meet the NZBC durability requirements.

Include cross references to other sections where these contain related work. These may include; 4231HF JAMES HARDIE FACADE CLADDING for Titan® Facade Panel and ExoTec® Facade Panel rainscreen, 4231HA JAMES HARDIE AXON™ PANEL CLADDING for James Hardie Axon™ Panel cladding, 4231HW JAMES HARDIE WEATHERBOARD CLADDING for Linea™ Weatherboards and James Hardie Weatherboards, 4256HM JAMES HARDIE MONOLITHIC CLADDING for Monotek® Sheet and Hardiebacker™ Substrate. 4171HR JAMES HARDIE RIGID AIR BARRIERS for James Hardie HomeRAB™ PreClad™ Lining and RAB™ Board for pre-cladding

Documents

1.2 DOCUMENTS

Refer to the general section 1233 REFERENCED DOCUMENTS. The following documents are specifically referred to in this section:

NZBC E2/AS1	External moisture
AS/NZS 1170.2	Structural design actions - Wind actions
AS/NZS 2908.2	Cellulose-cement products - Flat sheet
NZS 3602	Timber and wood-based products for use in building
NZS 3604	Timber framed buildings

Delete from the DOCUMENTS clause any document not cited. List any additional cited documents. The following are related documents and if referred to in the work section need to be added to the list of DOCUMENTS.

BRANZ BU 353	Ground clearances
BRANZ BU 449	Keeping water out - Timber-framed walls
BRANZ BU 519	Fasteners selection
BRANZ BU 467	Principles of flashing design
BRANZ publication	Selecting wall claddings

1.3 MANUFACTURER/SUPPLIER DOCUMENTS

James Hardie documents relating to this part of the work:

- HardieFlex™ Sheet technical specification
- Eaves and Soffit Linings installation manual
- James Hardie Fire and Acoustic Design Manual

Manufacturer/supplier contact details

Company: James Hardie New Zealand Limited
Web: www.jameshardie.co.nz
Telephone: Ask James Hardie™ on 0800 808 868.

It is important to ensure that all personnel on site have access to accurate, up to date technical information on the many products, materials and equipment used on a project. In most cases individual products are not used in isolation, but form part of a building process. Also a particular manufacturer's and/or supplier's requirements for handling, storage, preparation, installation,

finishing and protection of their product can vary from what might be considered the norm. Access to technical information can help overcome this potential problem.

Warranties

1.4 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years: For James Hardie™ ~.
(refer to James Hardie™ product warranty)

Insert product selected, this may include; Axon™ Panel cladding, Villaboard® Soffit Lining, ExoTec® Facade Panel, Titan® Facade Panel, HardieFlex™ Sheet cladding, James Hardie™ Weatherboard cladding, Monotek® Sheet, Hardiebacker™ Substrate, Villaboard® Lining, HardieGroove™ Lining. Refer to James Hardie™ product warranty for details.

15 year: For accessories supplied by James Hardie (refer to James Hardie™ product warranty)

From: Date of purchase

- Provide this warranty on the manufacturer's standard form.

Refer to the general section 1237 WARRANTIES for additional requirements.

Modify or expand the clause to suit project requirements, options include:

1.5 WARRANTY - MANUFACTURER/SUPPLIER

Provide a material manufacturer/supplier warranty:

15 years: For **Silkline® Soffit Lining / Eclipsa® Eaves Lining** base sheet (refer to James Hardie™ product warranty)

10 years: For coating on **Silkline® Soffit Lining / Eclipsa® Eaves Lining** (refer to James Hardie™ product warranty)

15 year: For accessories supplied by James Hardie (refer to James Hardie™ product warranty)

From: Date of purchase

- Provide this warranty on the manufacturer's standard form.

Refer to the general section 1237 WARRANTIES for additional requirements.

Modify, delete or expand the clause to suit project requirements, options include:

Requirements

1.6 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

1.7 MAINTENANCE REQUIREMENTS

Provide relevant James Hardie maintenance requirements at completion of the work.

Refer to James Hardie Technical Specification for maintenance guidance:

Performance

The next two mutually exclusive clauses, set the wind design parameters which have been used, which in turn affect the use of James Hardie standard details. Delete the clause which does not apply.

1.8 PERFORMANCE, WIND

The design wind pressures are to **NZS 3604**, up to and including Very High Wind Zone. James Hardie Technical Specifications are suitable for these conditions.

Do not use this clause for greater than Very High Wind Zones or specific design tall buildings. Delete this clause if using the SPECIFIC DESIGN, WIND clause below.

1.9 SPECIFIC DESIGN, WIND

The design wind pressures are to **AS/NZS 1170.2**, for specific design wind zone (beyond Very High Wind Zone). Only specifically designed or approved details included in the Contract Documents can be used.

Do not use this clause when the building is below or within Very High Wind Zone or very high wind areas of tall buildings.

James Hardie HardieFlex™ Sheet technical specification does not go beyond Very High Wind Zones. Ensure all specific design details related to James Hardie HardieFlex™ Sheet are checked by James Hardie during the design stage. Modify this section to reflect their requirements. Delete this clause if using the PERFORMANCE, WIND clause above.

2. PRODUCTS

Materials

2.1 RIGID AIR BARRIERS

Refer to section 4171HR JAMES HARDIE RIGID AIR BARRIERS.

Delete this clause if not required. HomeRAB™ PreClad™ Lining and RAB™ Board are used in instead of wraps, for among other things, earlier enclosure, bracing, for high wind pressures where some building wraps are not suitable and to meet the requirements of NZBC E2/AS1. 9.1.4 b.

2.2 BUILDING WRAP

Refer to section 4161 WRAPS, UNDERLAYS AND DPC.

Delete this clause if not required. Some building wraps are only suitable to withstand low wind pressures. Check the design wind pressures for the project and make the appropriate selection.

2.3 EXTERIOR CAVITY BATTENS

Radiata pine battens, minimum 45mm wide x 18mm thick, H3.1 treated, height to match timber framing studs. To NZS 3602, Table 1, reference 1D.10, Requirements for wood-based building components to achieve a 50-year durability performance.

Delete if specified elsewhere. Refer to James Hardie technical specifications for further details.

2.4 EXTERIOR CAVITY CLOSER/VERMIN-PROOFING

Perforated uPVC, with upstands.

Vermin-proofing to NZBC E2/AS1: clause 9.1.8.3 and figure 66.

2.5 HARDIEFLEX™ SHEET

James Hardie HardieFlex™ Sheet, medium density autoclaved sheet, 7.5mm and 6mm thick manufactured from treated cellulose fibre, Portland cement, sand and water. Cured by high pressure autoclaving and manufactured to AS/NZS 2908.2.

Standard product for uPVC, silicone joint and timber batten application.

2.6 FLUSH JOINTED SOFFIT LINING

James Hardie Villaboard® Lining 6mm and 9mm thick manufactured from treated cellulose fibre, Portland cement, sand and water, cured by high pressure autoclaving and manufactured to AS/NZS 2908.2.

Refer to Eaves and Soffit Linings installation manual for further details.

2.7 SOFFIT LINING

James Hardie 4.5mm Hardiesoffit™ Lining, HardieFlex™ Eaves Lining, Silkline® Soffit Lining Eclipsa™ Eaves Lining, HardieGroove™ Lining and 6mm HardieFlex™ Lining soffit manufactured from treated cellulose fibre, Portland cement, sand and water and cured by high pressure autoclaving manufactured to AS/NZS 2908.2.

Refer to Eaves and Soffit Linings installation manual for further details.

Components

2.8 FASTENER TYPE

Fasteners to minimum durability requirements of the NZBC. Refer to NZS 3604, section 4 Durability, for requirements for fixing's material to be used in relation to the exposure conditions.

Exposure conditions & nail selection prescribed by NZS 3604, section 4, table 4.3 Steel items such as nails and screws used for framing and cladding.

Zone	Fixings Material
Sea Spray Zones*	Grade 316 Stainless
Zone 1 (outside sea spray zone), Zones 2 - 4 & Geothermal hot spots	Hot-dipped galvanized or 316 stainless
Bracing - All zones	Grade 316 Stainless

* Zone 1 areas where local knowledge dictates that increased durability is required, appropriate selection shall be made

Refer to [NZBC E2/AS1](#), Table 20, Material selection, and Table 21, Compatibility of materials in contact, for selection of suitable fixing materials and their compatibility with other materials.

- 2.9 **GALVANIZED NAILS**
Hot-dip galvanized HardieFlex™ nails for HardieFlex™ Sheet.
60mm x 3.15mm diameter or 40mm x 2.8mm diameter.
Select galvanized or stainless steel depending on exposure conditions.
- 2.10 **STAINLESS STEEL NAILS**
316 Stainless steel HardieFlex™ nails for HardieFlex™ Sheet fixing.
60mm x 3.15mm diameter or 40mm x 2.8mm diameter.
Select galvanized or stainless steel depending on exposure conditions.
- 2.11 **SOFFIT JOINTERS AND CAPPING MOULDS**
Extruded uPVC jointer, 2 way jointer, capping and scotia mould.
- Accessories**
- 2.12 **FLASHING TAPES**
Inseal® 3259, 1.5mm thick x 50mm wide black compressible medium density closed cell foam tape.
- 2.13 **SEALANT**
Fosroc MS sealant or similar. Refer to the sheet manufacturer's technical literature for selection and use requirements.
- 3. EXECUTION**
- Conditions**
- 3.1 **STORAGE**
Take delivery of products dry and undamaged on pallets, and keep on pallet. Protect edges and corners from damage and covered to keep dry until fixed.
- 3.2 **HANDLING**
Avoid distortion and contact with potentially damaging surfaces. Do not drag sheets across each other, or across other materials. Protect edges, corner and surface finish from damage.
- 3.3 **SUBSTRATE**
Do not commence work until the substrate is of the standard required for the specified finish; plumb, level and in true alignment. Moisture content of timber framing must not exceed the requirements specified by [NZS 3602](#) to minimise shrinkage and movement after sheets are fixed.
- 3.4 **SEAL EDGES**
Seal site cut sheet edges prior to installation. Seal sheet edges around window and door openings, meter boxes and at other penetrations.
- Application - particular installations**
- 3.5 **FIRE RESISTANCE RATING, FIBRE CEMENT**
Install mineral fibre insulation or glass fibre insulation fitted tightly in the timber framing cavity. Apply fire retardant building paper to the exterior face of the framing and fix fibre cement cladding and lining sheets, direct or on cavity. Refer to project drawings for FRR system construction details and James Hardie Fire and Acoustic Design Manuals for further information.

- 3.6 BRACING SYSTEM
Fix sheets in accordance with James Hardie Bracing Design Manual.
Refer to James Hardie technical specification for further information and guidance. Refer also to any bracing schedules or drawings.

Application - generally

- 3.7 RIGID AIR BARRIER
Refer to 4171HR JAMES HARDIE RIGID AIR BARRIERS.
Delete this clause if not required.

- 3.8 FIX BUILDING WRAP
Refer to 4161 WRAPS, UNDERLAYS AND DPC.
Delete this clause if not required.

- 3.9 INSTALL CAVITY BATTENS
Install 18mm minimum thick cavity battens to NZBC E2/AS1: 9.0 Wall claddings, where required. Fix vertical cavity battens to wall framing studs. The battens are fixed by the cladding fixings which will penetrate the wall framing studs over the building wrap. Seal the top of the cavity and install cavity closer/vermin-proofing at base. Do not use continuous horizontal cavity battens at nogs or at bottom plate. Use cavity spacers where fixing is required between cavity battens.
Note that it is important that the openings in the cavity closer/vermin proofing are kept clean and unobstructed in order to maintain drainage and venting of the cavity.

- 3.10 PENETRATIONS AND FLASHINGS
Confirm that exterior wall openings have been prepared ready for the installation of all window and door frames and other penetrations through the cladding. Required preparatory work includes the following:
- Building wrap appropriately incorporated with penetration and junction flashings.
 - Materials lapped in a way that water tracks down to the exterior face of the building wrap.
 - Wall cladding underlay/building wrap to openings finished and dressed off ready for the installation of window and door frames and other penetrations
 - Claddings neatly finished off to all sides of openings
 - Installation of flashings (those required to be installed prior to installation of penetrating elements).
- Refer to James Hardie technical specification for information on window details. Also refer to the Windows Association of New Zealand website (www.wanz.org.nz) for information on the WANZ WIS Window Installation System. This covers the WANZ recommendations on the preparation of window/door openings, minimum clearances between rough openings and the window/door frame, dressing of the wall wrap into the prepared opening, application of flexible flashing tape to the sill and top corners of the opening, installation of window/door frames and flashings, sealing of the window/door frame into the opening to create a pressure equalisation cavity, installation of flashings and the maintenance of appropriate clearances between the frame and the surrounding construction.*

Install HardieFlex™ Sheets

- 3.11 SHEET LAYOUT
All sheet edges must be supported by the framing. Fix HardieFlex™ Sheet vertically.

- 3.12 VERTICAL JOINT
Joint HardieFlex™ Sheets to James Hardie technical specification.

- 3.13 HORIZONTAL JOINT
Provide a horizontal joint at floor joist levels to accommodate the movement resulting from timber joist shrinkage and settlement.

For HardieFlex™ Sheet use a James Hardie uPVC 'h' mould complete with 'h' mould jointer, or a purpose made 'z' flashing to form a horizontal joint.

- 3.14 INTERNAL CORNER JOINT
Internal corner mould

Install James Hardie two piece internal corner mould for 7.5mm thick sheet or one piece mould for 6mm thick HardieFlex™ Sheet. Fix sheets and mould to corner framing 12mm minimum from edge of HardieFlex™ Sheet with HardieFlex™ nails. Seal HardieFlex™ Sheet edges before fixing. Refer to HardieFlex™ Sheet technical specification.

Tape/Underflashing

Use 80mm wide Inseal tape or James Hardie uPVC corner underflashing to form a sealant filled internal corner. Refer to HardieFlex™ Sheet technical specification.

Timber battens

Timber weather groove battens refer to HardieFlex™ Sheet technical specification.

3.15 EXTERNAL CORNER JOINT

External corner mould

Install James Hardie two piece external corner mould for 7.5mm thick sheet or one piece mould for 6mm thick HardieFlex™ Sheet. Fix sheets to corner framing 35mm minimum from corner in one direction and 40mm minimum from corner in the other direction with HardieFlex™ nails. Seal HardieFlex™ Sheet edges before fixing. Refer to HardieFlex™ Sheet technical specification.

Tape/Underflashing

Use 80mm wide Inseal tape or James Hardie uPVC corner underflashing to form a sealant filled internal corner. Refer to HardieFlex™ Sheet technical specification.

Timber battens

Timber weather groove battens refer to HardieFlex™ Sheet technical specification.

3.16 HORIZONTAL CONTROL JOINT

Install horizontal uPVC 'h' mould control joint flashing to HardieFlex™ Sheet technical specification details.

3.17 FASTENER - SIZE AND LAYOUT

Fix HardieFlex™ Sheet to framing using the fixings specified in James Hardie HardieFlex™ Sheet technical specification, Table 3 Sheet fixing, and in accordance with the following requirements:

- Nails must have a minimum clearance of 12mm from sheet edges and a minimum of 75mm vertically and 150mm horizontally from sheet corners.
- Nails must finish flush with sheet surface.

3.18 FIXING - DIRECT FIXED TO FRAME

Fix with 40mm x 2.8mm HardieFlex™ nails. Fix sheet at 200mm centres at all sheet edges as well as all intermediate framing

Special fixing arrangements are required for bracing and fire-resistance rated wall systems. For more information - Ask James Hardie™ on 0800 808 868

3.19 FIXING - CAVITY CONSTRUCTION

Fix with 60mm x 3.15mm HardieFlex™ nails. Fix sheet at 200mm centres at all studs and at 150mm centres at top plate and bottom plate.

Special fixing arrangements are required for bracing and fire-resistance rated wall systems. For more information - Ask James Hardie™ on 0800 808 868.

3.20 GUN NAILING

HardieFlex™ Sheet can be fixed using nail guns. The gun nails used must have a full round head to provide the required holding power. The length and gauge of nails must at a minimum be as specified in the James Hardie HardieFlex™ Sheet technical specification.

Check with nail gun manufacturer for more information. Note: Do not use D Head nails. Do not use gun nailing for bracing applications.

3.21 SEALANTS

Apply and use of sealants to manufacturer's instructions. Check with sealant manufacturer prior to coating over sealants.

Some sealant manufacturers do not recommend coating over their product.

3.22 PAINTING

Refer to painting section/s for protective coating system.

Painting of HardieFlex™ Sheets is required in order to meet the durability requirements of the NZBC and product warranties. HardieFlex™ Sheets must be dry and free from dirt before painting. Coating must be completed within 90 days of sheet erection.

When using uPVC flashings, the light reflective value of the colour used must be more than 40% as required under 'E2/AS1'.

Soffits

3.23 INSTALL SOFFIT SHEETS

Cut sheets dry and ensure all edges and joints are fully supported. Nail and insert uPVC fasteners to James Hardie requirements. Fit complete with jointers and capping moulds. Refer to Eaves and Soffit Linings installation manual.

For narrow soffit edge support refer installation manual.

3.24 INSTALL FLUSH JOINTED SOFFIT SHEETS

Cut sheets dry and ensure all edges and joints are fully supported. Fit expansion joints to limit finished areas to 9 metre x 6 metres for large soffits or 7.2 metres for narrow soffits.

Flush joints with James Hardie Base Coat, paper reinforcing tape and James Hardie Top Coat to flush width of 180mm. Refer to Eaves and Soffit Linings installation manual.

Control joints for skillion roofs need more consideration. Refer to Eaves and Soffit Linings installation manual.

Completion

3.25 REPLACE

Replace all damaged or marked elements.

3.26 LEAVE

Leave work to the standard required for following procedures.

3.27 REMOVE

Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 CAVITY BATTENS

Timber species: Radiata pine

Treatment: H3.1

4.2 SHEET CLADDING PANELS

Brand/type: James Hardie HardieFlex™ Sheet

Thickness: ~mm

Fastener type: ~

Fastener finish: ~

Vertical jointer: ~

Horizontal jointer: ~

Thickness options: 6mm, 7.5mm

Fastener type: To timber cavity batten

60mm x 3.15mm HardieFlex™ nail

To timber, direct fix

40mm x 2.8mm HardieFlex™ nail

Fastener finish: Hot-dipped galvanised

316 Stainless Steel

Vertical jointer: uPVC, Sealant, timber batten

Horizontal jointer: uPVC, Metal flashing

4.3 FLUSH JOINTED SOFFIT SHEETS

Brand/type: James Hardie Villaboard® Lining soffit system

Thickness: ~mm

Nails: 40 x 2.8mm HardieFlex™ Nails

Thickness options: 6mm, 9mm.

4.4 SOFFIT SHEETS

Brand/type: James Hardie ~

Thickness: ~mm

Jointer: ~

Nails: ~

Type options: *Hardiesoffit™ Lining*
HardieFlex™ Eaves Lining
Silkline™ Soffit Lining (prepainted)
Villaboard® Lining
Eclipsa® Eaves Lining (prepainted)
HardieGroove™ Lining
Also available in 6mm HardieFlex™ Sheet.

Nail options: *40 x 2.8mm HardieFlex™ Nails*
38 x 12mm Fastfix nylon fasteners

Finishing

4.5 PAINTING

Refer to painting section/s for details.

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