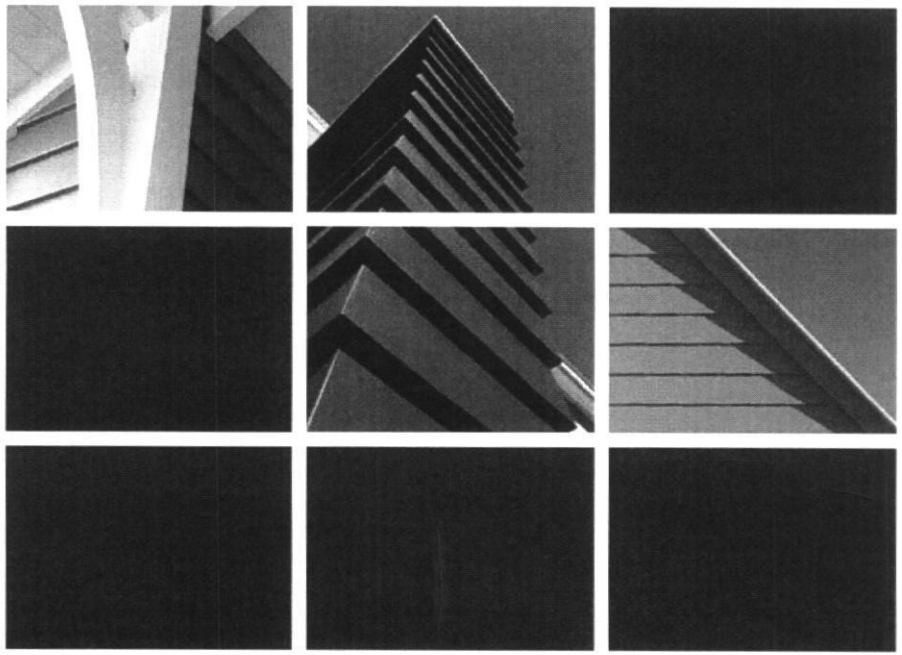
Linea™
WEATHERBOARD

NEW ZEALAND
AUGUST 2007

TECHNICAL SPECIFICATION



James Hardie

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WE VALUE YOUR FEEDBACK

To continue with the development of our products and systems, we value your input. Please send any suggestions, including your name, contact details, and relevant sketches to:

James Hardie
Fax 0800 808 988
literaturefeedback@jameshardie.co.nz

1 APPLICATION AND SCOPE

1.1 APPLICATION

Linea™ Weatherboard is a 16mm thick, pre-primed bevel back fibre cement weatherboard and is classified as lightweight wall cladding suitable for residential and light commercial construction using timber framed external walls. Linea Weatherboard is available in 135mm, 150mm and 180mm widths.

James Hardie also has available

- CLD® Fascia in two widths. CLD Fascia is a 16mm thick, pre-primed fibre cement product designed to accommodate James Hardie soffit linings.
- CLD Trim comes in a variety of widths for use as decorative trims around openings and external corners. CLD Trim is a 16mm thick, pre-primed fibre cement product.

If you are a specifier...

Or other responsible party for a project ensure that the information in this document is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of these specifications.

If you are an installer...

Ensure that you follow the design, moisture management and associated figures and material selection provided by the designer and this James Hardie Technical Specification.

All the details provided in this document must be read in conjunction with the specifiers specification.

Make sure your information is up to date

When specifying or installing James Hardie products, ensure you have the current manual. If you're not sure you do, or, if you need more information, visit www.jameshardie.co.nz or Ask James Hardie™ on 0800 808 868.

1.2 SCOPE

This specification covers the use of Linea Weatherboard for buildings that fall within the scope of limitations of NZBC Acceptable Solution 'E2/AS1', paragraph 1.1.

This specification includes the use of Linea Weatherboard in both direct to stud and cavity construction method and must be read in conjunction with the current BRANZ Appraisal for Linea Weatherboard.

1.3 DETAILS

Various Linea Weatherboard details are provided at the rear of this document. This specification and details in CAD file are also available to download from our website at www.jameshardie.co.nz.

1.4 SPECIFIC DESIGN

For use of Linea Weatherboard outside this published scope, the architect, designer or engineer must undertake specific design. For advice on designs outside the scope of this specification, Ask James Hardie on 0800 808 868.

2 DESIGN

2.1 COMPLIANCE

Linea Weatherboard has been appraised by BRANZ.
Refer to Appraisal Certificate number 446 (2005) and 447 (2005) at www.branz.co.nz or www.jameshardie.co.nz
Note: the scope of the Appraisal Certificate takes precedence over the scope of this specification.

2.2 RESPONSIBILITY

The specifier or other party responsible for the project must ensure that the information and details in this specification are appropriate for the intended application and that additional detailing is performed for specific design or any areas that fall outside the scope of this technical specification. For applications outside the scope of this literature and figures which are not provided herein, the architect, designer or engineer must undertake specific design and it should be ensured that the intent of their design meets the requirements of the NZBC.
All dimensions shown are in millimetres unless noted otherwise.
All New Zealand Standards referenced in this manual are current edition and must be complied with.
James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

2.3 SITE AND FOUNDATION

The site on which the building is situated must comply with the New Zealand Building Code (NZBC) Acceptable Solution E1/AS1 'Surface Water'. Foundation design must comply with the requirements of NZS 3604 'Timber Framed Buildings' or be as per specific engineering design. The grade of adjacent finished ground must slope away from the building to avoid any possibility of water accumulation in accordance with NZBC requirements.

2.4 GROUND CLEARANCES

The floor must have a minimum clearance to paved or unprotected ground as required by NZS 3604.
Linea Weatherboards must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by NZS 3604.
The bottom of claddings must comply with NZBC Acceptable Solution, 'E2/AS1' section 9.1.3.
On the roofs and decks the minimum clearance must be 50mm.
Do not install external cladding such that it may remain in contact with water or ground.

2.5 MOISTURE MANAGEMENT

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design.
Wall construction design must effectively manage moisture, considering 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. Walls shall include those provisions as required by NZBC Acceptable Solution 'E2/AS1' 'External Moisture'. In addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashing for waterproofing. The other materials, components and installation methods used to manage moisture in the walls, must comply with the requirements of relevant standards and the NZBC. For information in relation to designing for weathertightness, refer to the Building Research Association of New Zealand (BRANZ) and the Department of Building & Housing (DBH) updates on the following websites, respectively www.branz.co.nz and www.dbh.govt.nz.

2.6 STRUCTURE

Timber framed buildings must be designed in accordance with NZS 3604 (Timber Framed Buildings). When the framing is provided as per the specific engineering design, the framing stiffness must be equivalent to or more than the stiffness requirements of NZS 3604.

2.7 WIND LOADING

Linea Weatherboard cladding is suitable for use in all New Zealand wind zones up to and including VH as defined in NZS 3604. A specific design is required for all situations when a building falls in a specific engineering design (SED) wind zone.

2.8 STRUCTURAL BRACING

Linea Weatherboard installed as per Linea Weatherboard specific bracing details will provide bracings for buildings designed and constructed in accordance with NZS 3604. The Linea Weatherboard bracing systems have been independently tested and certified by BRANZ using both construction methods i.e. direct fixed and cavity construction. The following range of bracings can be achieved:

- Wind 68 – 120BU'S
- Earthquake 60 – 105 BU'S

Refer to the James Hardie Bracing manual for details.

2.9 FIRE RATED WALLS

Walls clad with Linea Weatherboard using a direct fix or cavity construction method can achieve fire ratings of up to 90/90/90 when constructed in accordance with the James Hardie 'Fire and Acoustic' Technical Specification Manual.
Refer to Fire and Acoustic Technical Specification Manual for further information about fire rated systems.

2.10 ENERGY EFFICIENCY

External walls constructed using Linea Weatherboard, bulk insulation, where the area of glazing is 30% or less of the total wall area and constructed as per this technical specification complies with the requirements for walls in NZBC Acceptable Solution H1/AS1 (NZBC Clause H1 Energy Efficiency – Third Edition), Replacement Table 1. To meet thermal insulation requirements for the construction, the bulk insulation as specified in Table-1 must be used. This insulation may be substituted with insulations having higher R-values. The thermal insulation of a wall gets affected when the depth of the timber framing is increased or decreased. The calculation used in Table below is based on a timber framing size 90 x 45mm and using an internal lining material such as James Hardie Villaboard® Lining or a 10mm plasterboard.

TABLE 1

INSULATION CAPABILITY		
Climate Zone	Construction R-Value Requirement	Minimum R-Value of Insulation Required
1 & 2	*1.5 m^2 °C/W	#R1.8
3	*1.9 m^2 °C/W	#R2.2

* These requirements will increase to 1.9 m^2 °C/W in Zone 1 & 2 and 2.0 m^2 °C/W in Zone-3 as per the new requirements of NZBC Clause 'H1 – Energy Efficiency' (Third Edition).
The insulation requirements will change in a phased manner as noted below;
Zone 1 on 30 September 2008,
Zone 2 on 30 June 2008,
Zone 3 on 31 October 2007.

To achieve higher thermal insulation values of construction the insulation material must be replaced with an insulation material having R2.2 or higher to suit the requirements.
For further guidance on insulation requirement refer to 'House Insulation Guide' published by BRANZ.

3 FRAMING

3.1 GENERAL

This Linea Weatherboard technical specification is only suitable for timber-framed buildings. Other framing materials are outside the scope of this specification.

3.2 DIMENSIONS

A 35mm minimum stud width is required unless noted otherwise in this specification.

3.3 TIMBER GRADE

Minimum timber grade requirements are No.1 framing grade in accordance with NZS 3631 'New Zealand Timber Grading Rules' or equivalent.

3.4 DURABILITY

To comply with NZBC requirements the external framing must be treated to a minimum H1.2 treatment. Refer to NZBC Acceptable Solution 'B2/AS1' Durability for further information about the durability requirements. For timber treatment information refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round and Sawn Timber) for minimum timber treatment selection and treatment requirements. Also refer to framing manufacturer's literature for further guidance on timber selection.
Framing must be protected from moisture at sites in accordance with the recommendations of framing manufacturers.
Note: refer to NZS 3602 for information about the allowable moisture content in timber.

3.5 FRAME CONSTRUCTION

All timber framing sizes and set-out must comply with NZS 3604 and stud, nogs / dwangs centres as required by this specification.

3.5.1 DIRECT FIXED CONSTRUCTION METHOD

The following framing must be provided for direct fixed construction method:

- Studs must be provided at 600mm centres maximum.
- Nogs must be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.5.2 CAVITY CONSTRUCTION METHOD

The following framing must be provided for cavity construction method:

- When studs are at 600mm centres the nogs must be provided at 800mm centres maximum.
- When studs are at 400mm centres the nogs may be provided at 1200mm centres maximum.
- Double studs are required at internal corners.
- Extra packers may be required at external corners.
- Extra studs are required for aluminium internal corner sections.

3.6 TOLERANCES

In order to achieve an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances must comply with the requirements of NZS 3604. All framing must be made flush.

4 PREPARATION

4.1 BUILDING WRAP

Building wrap must be provided as per the requirements of NZBC Acceptable Solution 'E2/AS1' 'External Moisture' and NZS 3604. The building wrap must comply with Table 23 of 'E2/AS1'. The building wrap must be fixed in accordance with 'E2/AS1', NZS 3604 and the wrap manufacturer's recommendations. Walls which are not lined on the inside face e.g. garage walls or gable ends must include a rigid sheathing or an air barrier behind the cladding which complies with the requirements of NZBC Acceptable Solution 'E2/AS1'.

4.2 FLASHING

All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to weatherboard installation. Please refer to moisture management requirements in Clause 2.5. The building wrap must be appropriately incorporated with penetration and junction flashings. Materials must be lapped in such a way that water tracks down to the exterior on the face of building wrap. James Hardie will assume no responsibility for water infiltration within the wall due to poor installation of flashings or building wraps. The selected flashing materials must comply with the durability requirements of Table 20 of Acceptable Solution 'E2/AS1'.

4.3 VENT STRIP

The James Hardie uPVC cavity vent strip must be installed at the bottom of all walls constructed using the drained and ventilated cavity construction method. James Hardie uPVC vent strip has an opening area of 1000mm²/m length. It is important that the openings in the vent strip are kept clear and unobstructed to allow free drainage and ventilation of cavities.

4.4 CAVITY BATTENS

Buildings with a risk score of 13-20 calculated in accordance with NZBC Acceptable Solution 'E2/AS1' Table 2 require Linea Weatherboards to be installed on a cavity.
The cavity battens provide airspace between the frame and cladding and are consicered a "packer" only in this specification.
The timber battens must be minimum H3.1 treated in accordance with NZS 3640 (Chemical preservation of Round and sawn timber) to comply with the durability requirements of 'B2/AS1'.
Cavity battens must comply with 'E2/AS1' and:

- be minimum 18mm thick.
- be minimum as wide as the width of studs.
- be fixed by the cladding fixings to the main framing through the building wrap.
- until claddings are fixed the battens need only to be tacked to framing.

(Batten fixing is required temporarily to keep them straight on the wall during construction.)

The cavity battens are installed as described below:

- Fix cavity battens to studs.
- Battens should be fixed with 40mm x 2.8mm nails at 800mm centres maximum.

4.5 INTERMEDIATE SUPPORT

Where studs are at 600mm centres an intermediate means of restraining the building wrap and insulation from bulging into the cavity shall be installed. An acceptable method to achieve this is using a:

- intermediate cavity batten between the studs.
- 75 mm galvanized mesh.
- polypropylene tape.

No intermediate supports are required:

- where studs are at 400mm centres. Or;
- when rigid sheathings instead of building wraps are used.

4.6 CORNERS

Anticipated joist shrinkage must be allowed for in the design process. Do not run trims or aluminium extrusions continuously across solid floor joists. There are a number of options to select from when detailing external corners:

- 90° corner soaker in aluminium, copper or stainless steel. Refer to Figures 7 and 32.
- Box corners using CLD Trim. Refer to Figures 3, 4 and 29.
- Mitred corners to weatherboards. Refer to Figures 5 and 30.
- Aluminium boxed corners. Refer to Figures 6 and 31.

There are a number of options to select from when detailing internal corners:

- Scribed corner. Refer to Figures 8 and 33.
- 90° or 135° Aluminium W-mould. Refer to Figures 9, 10, 34 and 35.

4.7 JUNCTIONS AND PENETRATIONS

Refer to Clause 2.5 of this specification for moisture management requirements. All windows and doors must be detailed as per the requirements of this specification. James Hardie has developed the window details for Linea Weatherboards which meet the requirements of E2 'External Moisture', an approved document of the NZBC. Refer to Figures 11 to 24 and 36 to 53.

5 FIXING LINEA WEATHERBOARD

5.1 GENERAL

The horizontal lap of Linea Weatherboards must be 30mm. Linea Weatherboards must be kept dry and under cover whilst in storage prior to and during fixing. Cut ends which are exposed or where sealant is applied to the boards must be primed prior to installation. Dust and loose material must be removed before priming.
An H3.* treated timber cant strip must be provided to support the bottom board on the wall. Refer to Figure * and Figure 26.

5.2 FASTENER DURABILITY

Fasteners must meet the minimum durability requirements of the NZBC. NZS 3604 specifies the requirements for fixing's material to be used in relation to the exposure conditions and are summarised in Table 2.

TABLE 2:

EXPOSURE CONDITIONS AND NAIL SELECTION PRESCRIBED BY NZS 3604		
NAIL MATERIAL		
Sea Spray Zones *	Zone * outside sea spray zone and Zones 2 – 4 and Geothermal hot spots	Bracing – All zones
Grade 316 Stainless	Hot-dipped galvanised or 316 stainless	Grade 316 Stainless

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

Also refer to NZBC Acceptable Solution 'E2/AS1' Table 20 and 21 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

5.3 NAIL SIZE AND FIXING METHOD

Linea Weatherboards and CLD Trim must be fixed to timber with the types of nails specified in Tables 3 and 4, in accordance with the following requirements:

- Linea Weatherboard must be fixed into studs. Fixing centres to coincide with stud spacing.
- All concealed nails must be driven flush with the board surface.
- When concealed fixing Linea Weatherboards, nails must be driven behind the lap of the boards, except at all corners and vertical edges of openings where Linea Weatherboards must be face fixed/exposed nailed. Refer to Figure 2 and Figure 28. Or alternatively use 30mm Brad nails at the corners and beside openings to fix Linea Weatherboard together.
- Nails must be fixed 25mm from the end of the board when hand nailing.
- Linea Weatherboards may be face fixed when site conditions create a gap under the lap.

TABLE 3

NAIL REQUIREMENTS FOR LINEA WEATHERBOARDS	
DIRECT TO STUD FIXING	
Concealed Nailing	
40 x 2.8mm HardiFlex® nails	Finish flush with the board surface
Face Nailing	
60 x 3.15mm jolt head nails	Hot-dipped galvanised may be driven through both thicknesses at board lap without pre-drilling
	Stainless steel jolt heads will require pre-drilling*
CAVITY FIXING	
Concealed Nailing	
60 x 3.15mm HardiFlex® nails	Finish flush with the board surface
Face Nailing	
75 x 3.15mm jolt head nails	Hot-dipped galvanised may be driven through both thicknesses at board lap without pre-drilling
	Stainless steel jolt heads will require pre-drilling*

** Use a 3.0mm drill bit*

TABLE 4:

NAIL REQUIREMENTS FOR TRIM	
Single Thickness	60mm jolt head nails. If fixing over Linea Weatherboard use predrilled* 75 x 3.15mm jolt head nails.
Double Thickness	60mm jolt head nails.
Single plus packer	If fixing over Linea Weatherboard use 75 x 3.15mm jolt head nails through a pre-drilled* hole. When fixing to timber support use 60mm jolt head nails.

** Use a 3.0mm drill bit*

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

5.4 GUN NAILING

Linea Weatherboard can also be gun-nailed when concealed fixing method is used.

- Gun-nailing must not be used when Linea Weatherboard is used for bracing.
- Nails must be no closer than 50 mm from the ends of boards when gun nailing is used – double studs will be required.
- Be minimum length and gauge as per Table 3.

6 JOINTING

The ends of Linea Weatherboards are jointed off-stud by means of a tongue and groove joint. Tongue and groove joints may be located centrally between studs but no closer than 100mm from the edge of a stud. The joints must be staggered by 600mm minimum.
Sealant must be provided in the tongue and groove joint.

7 FINISHING

Note: Protective coating of Linea Weatherboard and CLD Trim is required in order to meet the durability requirements of the NZBC.

7.1 PREPARATION AND PRIMING

The Linea Weatherboard and CLD Trim must be dry before painting. Punch and fill all exposed nails a maximum of 2mm below the surface. Fill the hole with an exterior grade builders fill, allow to cure and sand smooth ready for priming. Prime the filled holes in accordance with paint manufacturer's specifications.

7.2 SEALANTS

All sealants must demonstrate the ability to meet the relevant requirements of the NZBC and hold a current BRANZ Appraisal certificate. Application and use of sealants must comply with manufacturer's instructions. Sealants, if coated, must be compatible with the paint system.

7.3 PAINTING

All Linea Weatherboards are pre-primed on their face and bottom edge with a factory applied acrylic base coat.
Linea Weatherboard must be painted within 90 days of installation.
All exposed faces, including the top edges under the sills and bottom edges of Linea Weatherboard, Trim and accessories must be finished with latex exterior paint system complying with any of parts 7, 8, 9, and 10 of AS 3730.
Dark coloured paints can be used on Linea Weatherboard and Trim. Some environments require special coatings.
Paint selection and the preparation required is dependant on paint chosen. Refer to the paint manufacturer for information before starting painting.

8 STORAGE AND HANDLING

Linea Weatherboards and Trim must be laid flat on a smooth level surface. To ensure optimum performance, store weatherboards under cover and keep dry prior to fixing. If the weatherboards should become wet, allow to dry thoroughly before fixing. Do not carry weatherboards on the flat, carry in the vertical position to avoid excessive bending.

9 MAINTENANCE

It is the responsibility of the specifier to determine normal maintenance requirements to comply with NZBC Acceptable Solution 'B2/AS1'. 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*,
- Re-applying exterior protective finishes*,
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants,
- Cleaning out gutters, blocked pipes and overflows as required,
- Pruning back vegetation close to or touching the building,
- The clearances between the bottom edge of Linea Weatherboard and the finished/unfinished ground must always be maintained.

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

10 PRODUCT INFORMATION

10.1 MANUFACTURING AND CLASSIFICATION

James Hardie New Zealand is an ISO 9001(2000) Telarc certified manufacturer. Linea Weatherboard and CLD Trim are manufactured to meet the requirements of AS/NZS 2908.2: 2000 'Cellulose-Cement Products', Linea Weatherboard has a classification of Type A Category 3 in accordance with this Standard. Linea Weatherboard is a reduced density cellulose cement formulation incorporating James Hardie patented CLD® (Ceramic Low Density) technology. Linea Weatherboard has a bevel back and tongue and groove at the ends for jointing. The bottom front edge of Linea Weatherboard is chamfered. The weatherboards are supplied pre-primed on their face and bottom edge with an acrylic primer.
Linea Weatherboards and CLD Trim are identified by the printing at regular intervals of the name LINEA on the back face.

10.2 JAMES HARDIE TRIM

The CLD Trim, used for box corners, around windows and doors as well as special architectural features, is also made with the CLD technology and is supplied pre-primed with an acrylic primer.

10.3 DURABILITY

Linea Weatherboard and Trim, when installed and maintained as per the technical specification, will meet the durability requirements for claddings as required in the NZBC Approved Document B2 'Durability'.

10.3.1 RESISTANCE TO MOISTURE/ROTTING

Linea Weatherboard and CLD Trim have demonstrated resistance to permanent moisture-induced deterioration (rotting) by passing the following tests in accordance with AS/NZS2908.2:

- Water Permeability (Clause 8.2.2)
- Warm Water (Clause 8.2.4)
- Heat Rain (Clause 6.5)
- Soak Dry (Clause 8.2.5).

10.3.2 RESISTANCE TO FIRE

Linea Weatherboard and CLD Trim has the following Early Fire Hazard Indices (tested to AS 1530 Part 3).

10.3.3 ALPINE REGIONS

In regions subject to freeze/thaw conditions, Linea Weatherboard must not be in direct contact with snow or ice build up for extended periods, e.g. external walls in alpine regions subject to snow drifts over winter.

The Linea Weatherboard has been tested in accordance with AS/NZS 2908.2 Clause 8.2.3.

TABLE 5:

EARLY FIRE HAZARD INDICES	
Ignition Index	0
Flame Spread Index	0
Heat Evolved Index	0
Smoke Developed Index	0 - 1

10.4 PRODUCT SIZES AND MASS

Available sizes of Linea Weatherboard and CLD Trim and its weight are given in Table 6.

10.5 SIZE AND WEIGHT

Linea Weatherboard is categorised as a Light Weight Wall Cladding as described in NZS 3604. Physical properties of Linea Weatherboard and CLD Trim are provided in Table 6.

11 SAFE WORKING PRACTICES

WARNING

DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'Score and Snap' knife, fibre cement shears or, where not feasible, use a HardiBlade® Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheets available at www.jameshardie.co.nz. FAILURE TO ADHERE TO OUR WARNINGS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES
CUTTING OUTDOORS
▪ Position cutting station so that wind will blow dust away from user or others in working area. ▪ Use a dust reducing circular saw equipped with HardiBlade® Saw Blade and HEPA vacuum extraction.
DRILLING/OTHER MACHINING
When drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.
IMPORTANT NOTES:
1. NEVER use a power saw indoors 2. NEVER use a circular saw blade that does not carry the HardiBlade® logo 3. NEVER dry sweep – Use wet suppression or HEPA Vacuum 4. NEVER use grinders 5. ALWAYS follow tool manufacturer's safety recommendations
P1 or P2 respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.co.nz to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

WORKING INSTRUCTIONS

Refer to Recommended Safe Working Practices before starting any cutting or machining of product.

HARDIBLADE® SAW BLADE

The HardiBlade® Saw Blade used with a dust-reducing saw connected to a HEPA vacuum is ideal for fast, clean cutting of James Hardie fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.

HOLE-FORMING

For smooth clean cut circular holes:
Mark the centre of the hole on the sheet.
Pre-drill a 'pilot' hole.
Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.
For irregular holes:
Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.

Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported.

STORAGE AND HANDLING

All James Hardie building products should be stored to avoid damage, with edges and corners of the sheets protected from chipping.
James Hardie building products must be installed in a dry state and be protected from rain 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 or moisture, etc.

QUALITY

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

12 PRODUCT SIZES

TABLE 6:

LINEA WEATHERBOARD AND TRIM SIZES

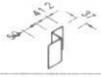
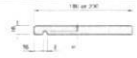
						COVERAGE INFORMATION			
Product	Length (mm)	Width (mm)	Thickness (mm)	End Details	Effective Cover (mm)	No. of planks/ metre height (approx.)	Mass kg/lineal m (approx. at EMC)	Mass kg/m² approx. at EMC)	weight/pack (60 units/ pack)
135 Linea Weatherboard	4200*	135	16	T & G	105	9.5	2.62	24.93	660.00
150 Linea Weatherboard	4200*	150	16	T & G	120	8.3	3.1	25.70	781.00
180 Linea Weatherboard	4200*	180	16	T & G	150	6.7	3.57	23.92	899.00
84mm CLD Trim	2600	84	16	Square	N/A	N/A	1.6	N/A	N/A
100mm CLD Trim	2600	100	16	Square	N/A	N/A	1.9	N/A	N/A
135mm CLDTrim	4200	135	16	T & G	N/A	N/A	2.6	N/A	N/A
180mm CLD Trim	4200	180	16	T & G	N/A	N/A	3.4	N/A	N/A

*Length is 4200mm plus 5mm for the tongue and groove making overall length 4205mm

*The effective thickness of finished Linea Weatherboard on the wall at the lap is approximately 33 to 35mm

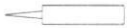
13 ACCESSORIES

ACCESSORIES/TOOLS SUPPLIED BY JAMES HARDIE

	ACCESSORY AND MATERIAL NUMBER		SIZE (MM)	MATERIAL / APPEARANCE
	External corner soaker 90° for 180mm weatherboards • Aluminium • Copper • Stainless Steel	 **301186** **301188** **301197**	200 long	Self colour
	External corner soaker 90° for 150mm weatherboards • Aluminium • Stainless Steel	 **302820** **302821**	170 long	Self colour
	External corner soaker 90° for 135mm weatherboards • Aluminium • Copper • Stainless Steel	 **301185** **301187** **301196**	155 long	Self colour
	External Slimline Box Corner Mould	**301195**	2700 long	Etch Primed Aluminium
	Box Corner 'Z' Flashing	**301203**	2700 long	PVC Grey
	Internal 'W' Mould 90°	**301184**	2700 long	Etch Primed Aluminium
	Internal 'W' Mould 135°	**301183**	2700 long	Etch Primed Aluminium
	Vent Strip	**302490**	3000 long	PVC White
	JH Corner Under Flashing 50 x 50	**303745**	3000 long	PVC White
	Jolt Head Nail 316 Stainless Steel	**301233**	60 x 3.15mm	Self colour
	Jolt Head Nail 316 Stainless Steel	**301234**	75 x 3.15mm	Self colour
	Inseal 3109 Sealing Strip	**302324**	5 x 3 x 25	Black compressible foam
	CLD Trim 16mm	**401943**	84 x 2600 long	Fibre Cement primed
	CLD Trim 16mm	**401930**	100 x 2600 long	Fibre Cement primed
	HardiFlex nail - Jar - 5kg	**302781** **302782**	60 x 3.15mm	316 Stainless Steel
	HardiFlex nail - Jar - 5kg	**302783** **302784**	60 x 3.15mm	Hot Dip Galvanised
	HardiBlade® Saw Blade	**300660**	4 tooth - 184mm	Diamond Tipped
	CLD Fascia - 180mm - 230mm	**401843** **402230**	4200 long	Fibre cement Primed
	Linea and Fascia Screw	**303480**	40mm x 9 gauge	Stainless Steel

ACCESSORIES NOT SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with its Linea Weatherboard and CLD Trim.
James Hardie does not supply these products. There may also be some other accessories required depending upon the application. Please contact component manufacturer for information on their warranties and further information on their products.

	ACCESSORY AND MATERIAL NUMBER	SIZE (MM)	MATERIAL / APPEARANCE
	Head Flashing for Direct Fixed without CLD Trim facings	To suit	Etch Primed Aluminium/ Powder Coated
	Head Flashing for Direct Fixed with CLD Trim facings	To suit	Etch Primed Aluminium/ Powder Coated
	HardiFlex nail	40 x 2.8mm	316 Stainless Steel
	HardiFlex nail	40 x 2.8mm	Hot Dip Galvanised
	Flexible Sealant or Expandable foam	Tube	Fosroc, Holdfast
	PEF Rod	Polyethylene foam	Fosroc or similar
	Flashing Tape	Proprietary tape to adhere to building wrap	Tyvek Protecto wrap or similar
	Flashing material as per Table 20, 'E2/AS1'		Flashing Fabricator
	Jolt Head Nail - Hot Dip Galvanised or 316 Stainless Steel	50 x 2.8 St.Steel 50 x 2.8 Galvanised 60 x 3.15 Galvanised 75 x 3.15 Galvanised	Self colour
	Planted Sill	As shown	H3.1 Treated Timber Timber Merchant or cut on site
	Titanium Coated High Speed Drill Bit	3.0mm	
	Timber Scriber	As required	H3.1 Treated Timber Timber Merchant or cut on site
	Fibre Cement Cutting Blade	254mm	Diamond Tipped
	Fibre Cement Cutting Blade	305mm	Diamond Tipped
	Exzza Meter Box		

14 DETAILS

Various details outlined in the following table are available on Pages 12 to 34.

TABLE 7:

DETAILS

DESCRIPTION	DIRECT FIXED		CAVITY CONSTRUCTION	
	FIGURE	PAGE	FIGURE	PAGE
Concrete Slab and Soffit	Figure 1	13	Figure 26	23
Weatherboard Fixing	Figure 2	13	Figure 28	24
Boxed Corners	Figure 3 & 4	14	Figure 29	25
Mitre Corner	Figure 5	15	Figure 30	25
Aluminium Box Corner	Figure 6	15	Figure 31	25
Corner Soaker	Figure 7	16	Figure 32	26
Internal Corner	Figure 8	16	Figure 33	26
Internal 135° Aluminium 'W' Mould Corner	Figure 9	17	Figure 34	27
Internal 90° Aluminium 'W' Mould Corner	Figure 10	17	Figure 35	27
Window Sill with Facings	Figure 11	17	Figure 37	28
Window Head with Facings	Figure 12	18	Figure 38	29
Window Jamb with Facings	Figure 13	18	Figure 39	29
Window Sill without Facings	Figure 14	18	Figure 40	29
Window Head without Facings	Figure 15	19	Figure 41	30
Window Jamb without Facings	Figure 16	19	Figure 42	30
Head Flashing Termination	Figure 17	19	Figure 43	31
One Piece Apron Flashing Joint	Figure 18	20	Figure 44	32
Pipe Penetration	Figure 19	20	Figure 46	33
Meter Box at Head	Figure 20	21	Figure 47	34
Meter Box at Sill	Figure 21	21	Figure 48	34
Meter Box at Jamb	Figure 22	21	Figure 49	34
Cavity Fix Meter Box	Figure 50	35		
Parapet Flashing	Figure 23	22		
Deck Junction	Figure 24	22		
Batten Fixing			Figure 25	23
Soffit Junction			Figure 27	24
Batten Layout at Window Opening			Figure 36	28
One Piece Gutter/Wall Junction			Figure 45	33
Drainage Joint			Figure 51	36
Enclosed Deck Balustrade to Wall			Figure 52	37
Enclosed Balustrade to Wall			Figure 53	37
Enclosed Deck	Figure 54		Figure 54	38

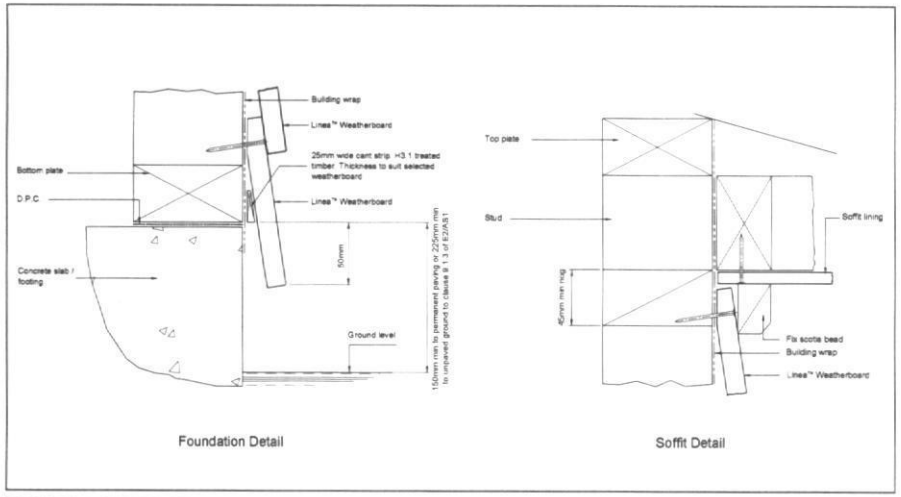


FIGURE 1: DIRECT FIX CONCRETE SLAB AND SOFFIT

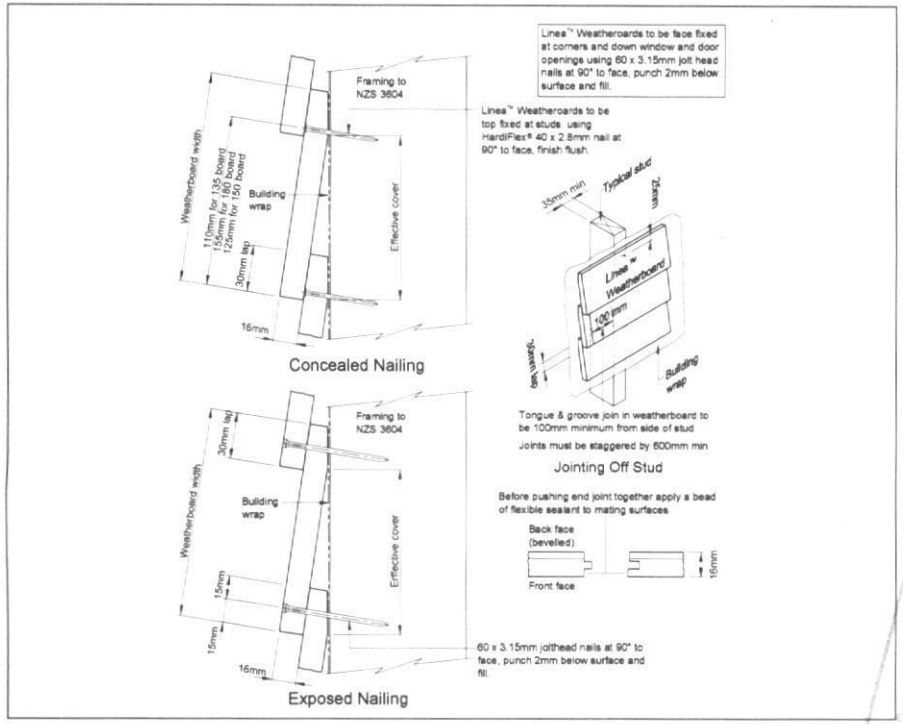


FIGURE 2: DIRECT FIX WEATHERBOARD FIXING

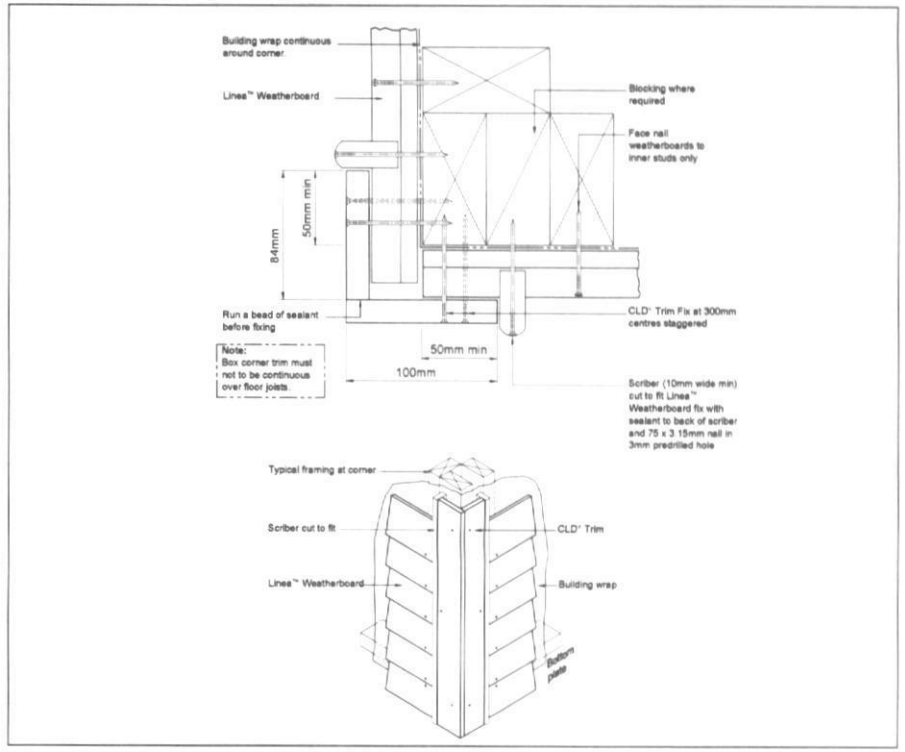


FIGURE 3: DIRECT FIX BOXED CORNER

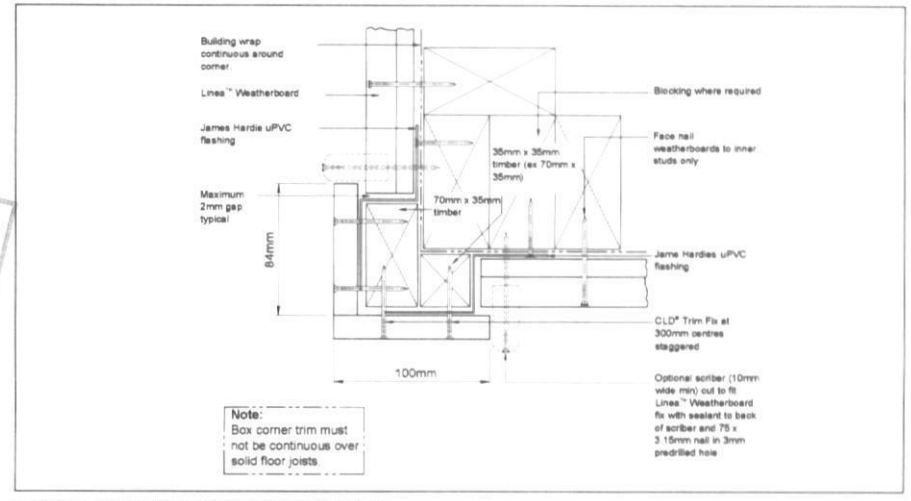


FIGURE 4: DIRECT FIX BOXED CORNERS

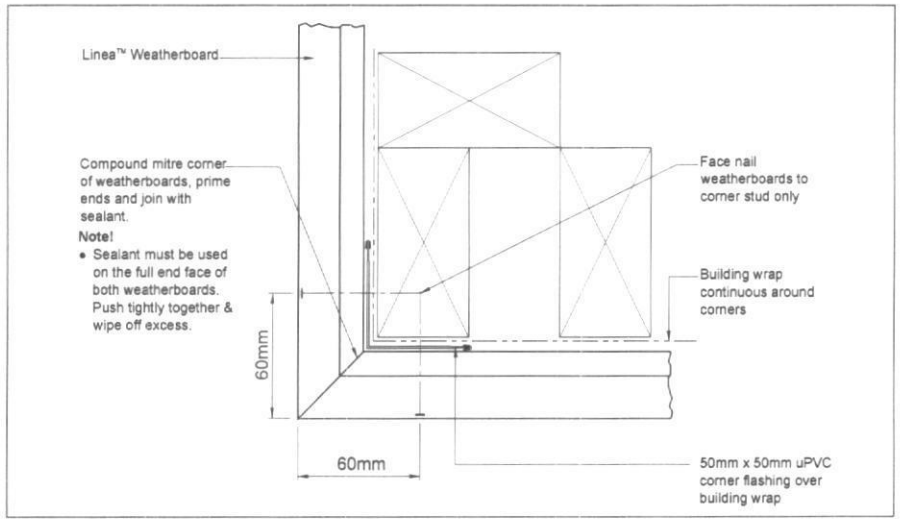


FIGURE 5: DIRECT FIX MITRE CORNER

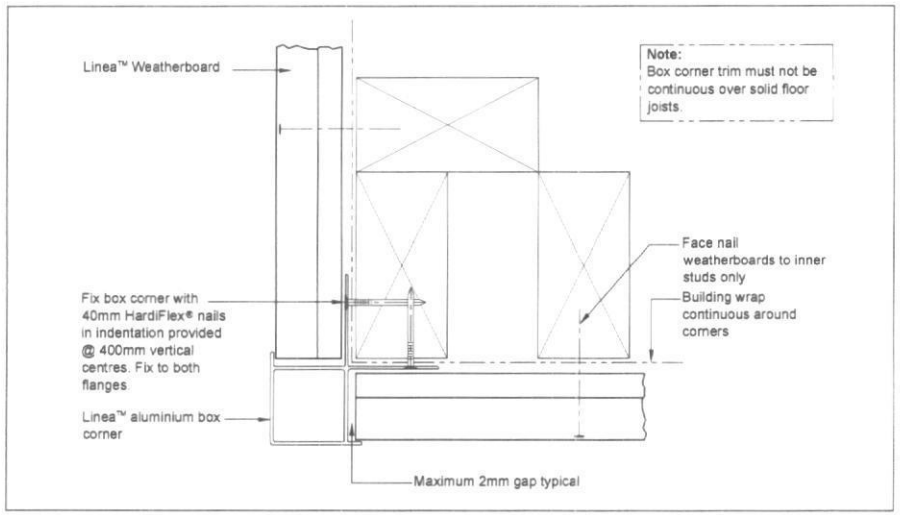
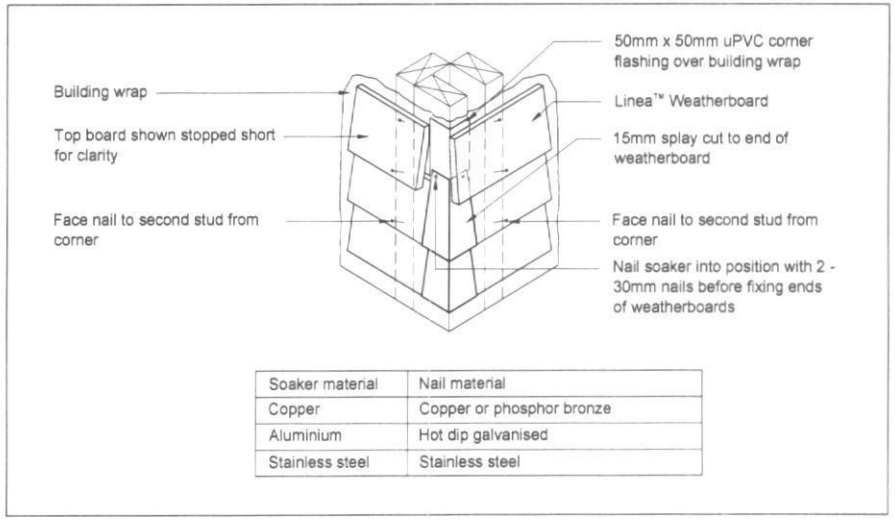


FIGURE 6: DIRECT FIX ALUMINIUM BOX CORNER



Soaker material	Nail material
Copper	Copper or phosphor bronze
Aluminium	Hot dip galvanised
Stainless steel	Stainless steel

FIGURE 7: DIRECT FIX CORNER SOAKER

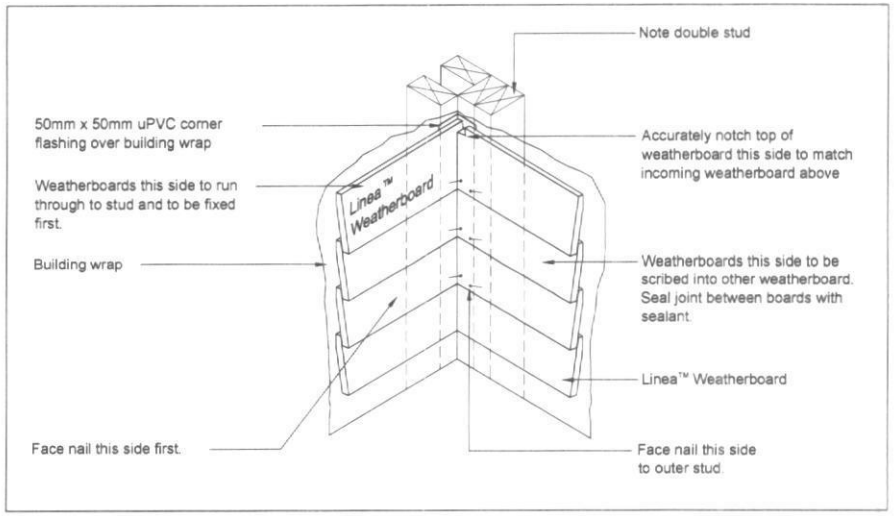


FIGURE 8: DIRECT FIX INTERNAL CORNER

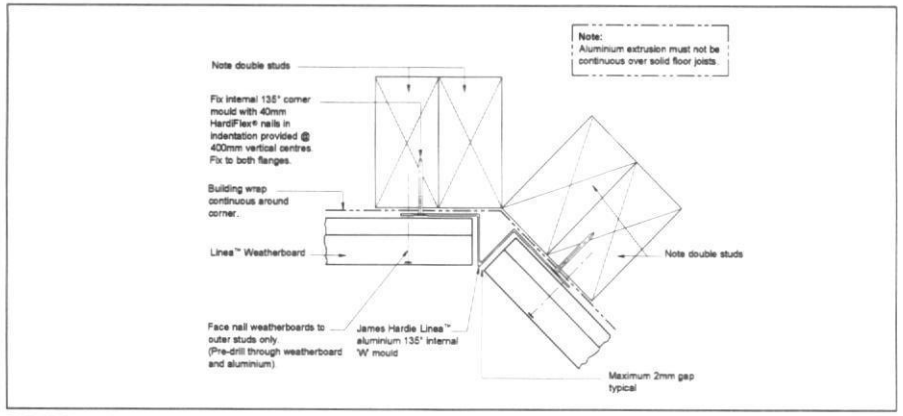


FIGURE 9: DIRECT FIX INTERNAL 135° ALUMINIUM 'W' MOULD CORNER

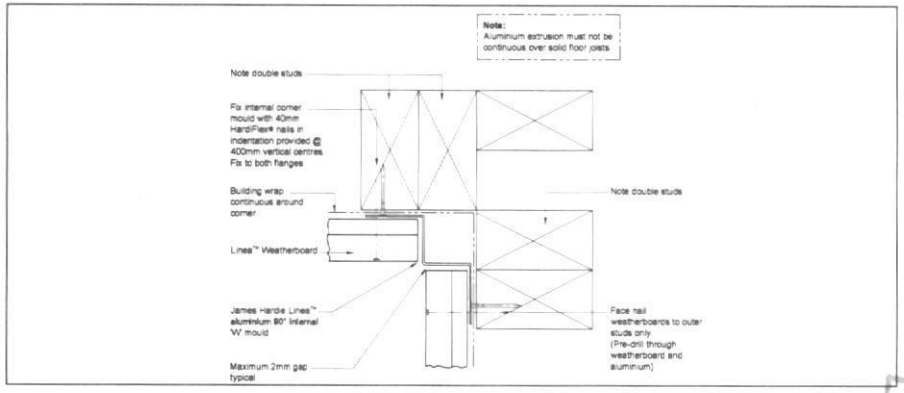


FIGURE 10: DIRECT FIX INTERNAL 90° ALUMINIUM 'W' MOULD CORNER

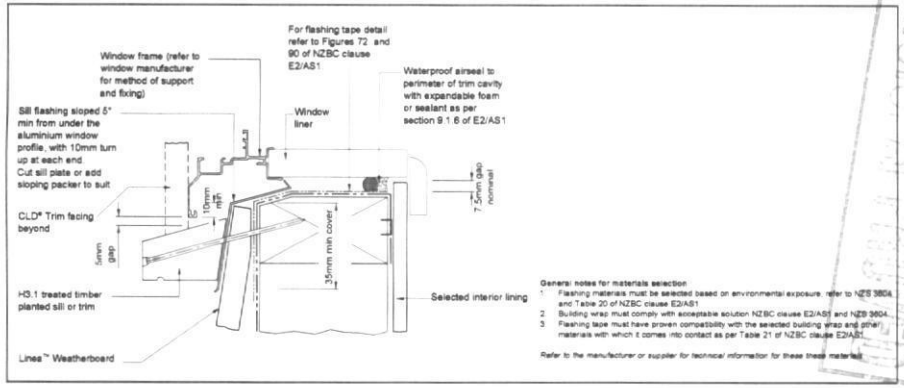


FIGURE 11: DIRECT FIX WINDOW SILL WITH FACINGS

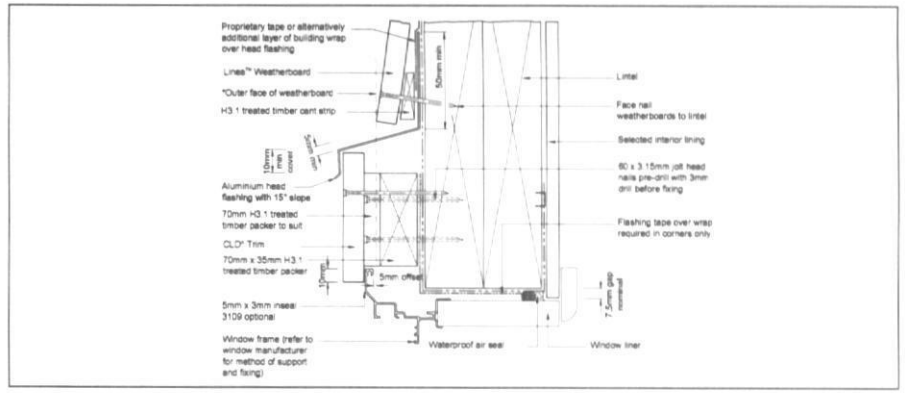


FIGURE 12: DIRECT FIX WINDOW HEAD WITH FACINGS

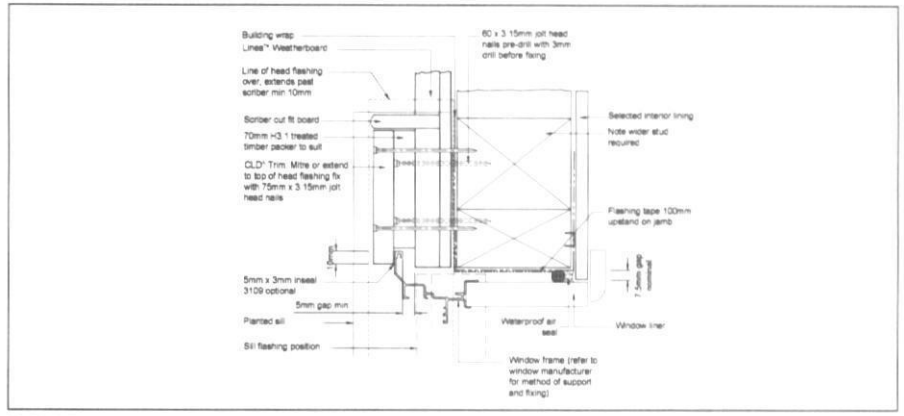


FIGURE 13: DIRECT FIX WINDOW JAMB WITH FACINGS

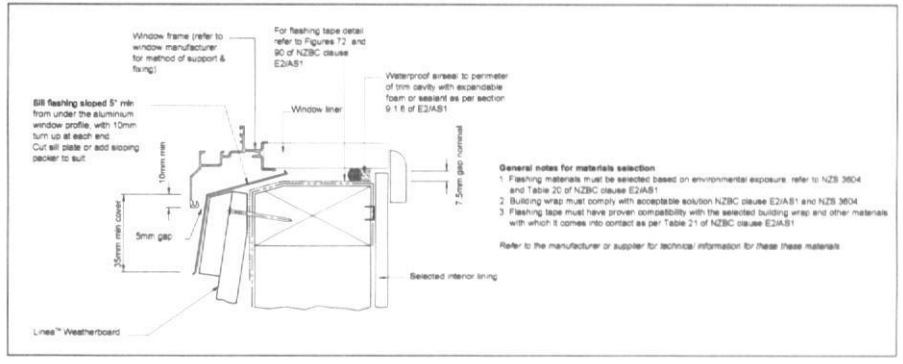


FIGURE 14: DIRECT FIX WINDOW SILL WITHOUT FACINGS

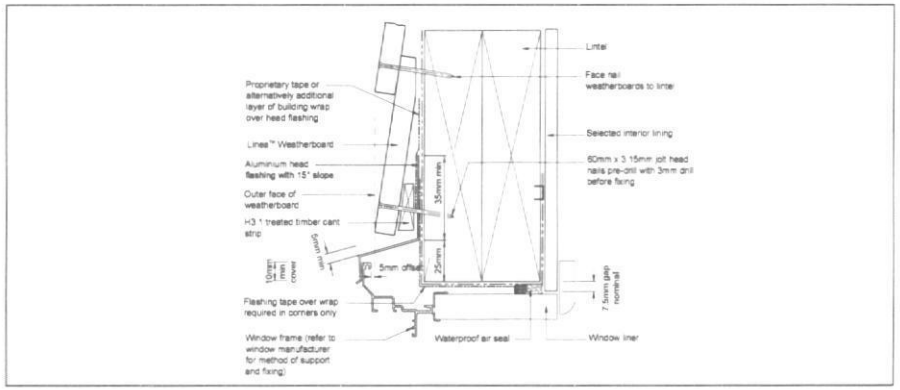


FIGURE 15: DIRECT FIX WINDOW HEAD WITHOUT FACINGS

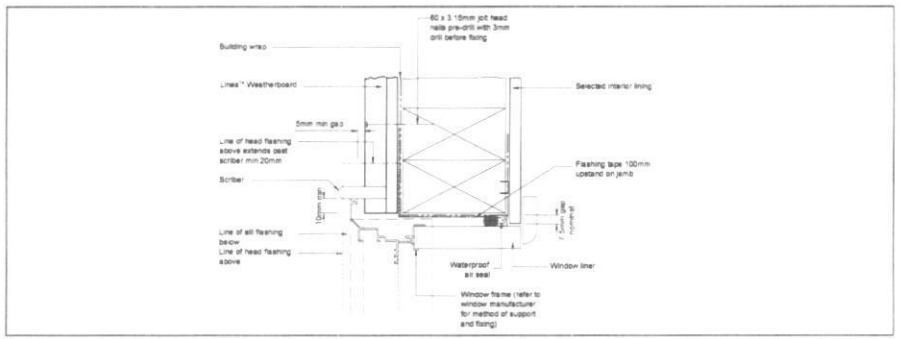


FIGURE 16: DIRECT FIX WINDOW WINDOW JAMB WITHOUT FACINGS

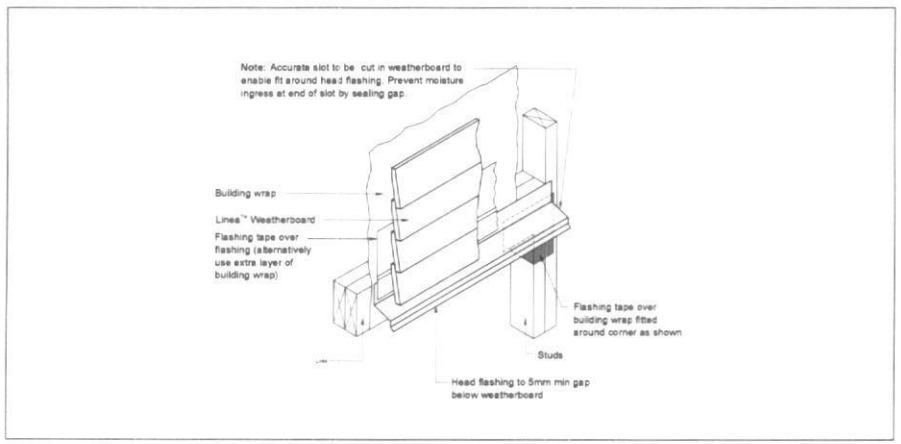


FIGURE 17: DIRECT FIX HEAD FLASHING TERMINATION

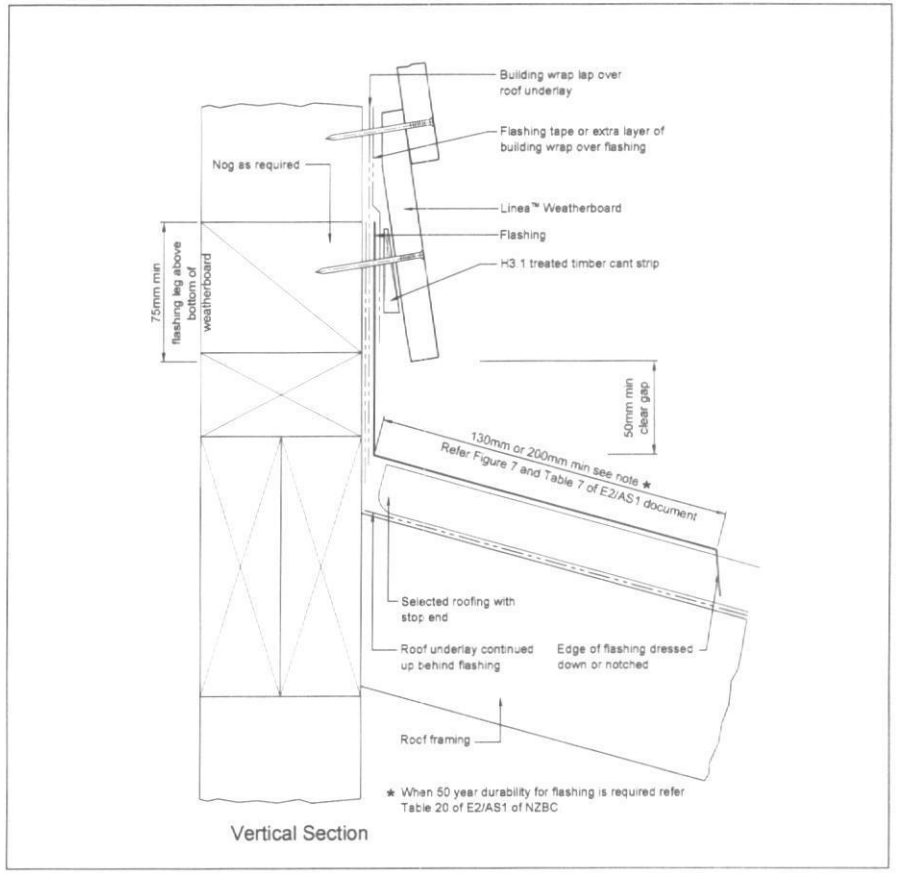


FIGURE 18: DIRECT FIX ONE PIECE APRON FLASHING JOINT

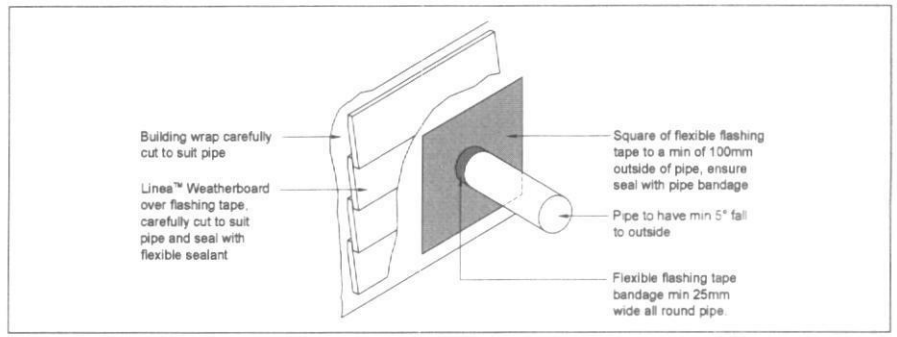


FIGURE 19: DIRECT FIX PIPE PENETRATION

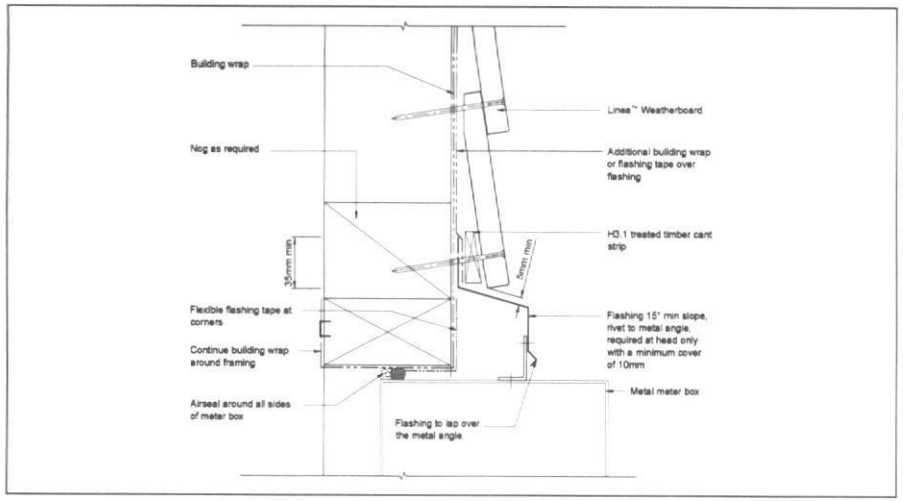


FIGURE 20: DIRECT FIX METER BOX AT HEAD

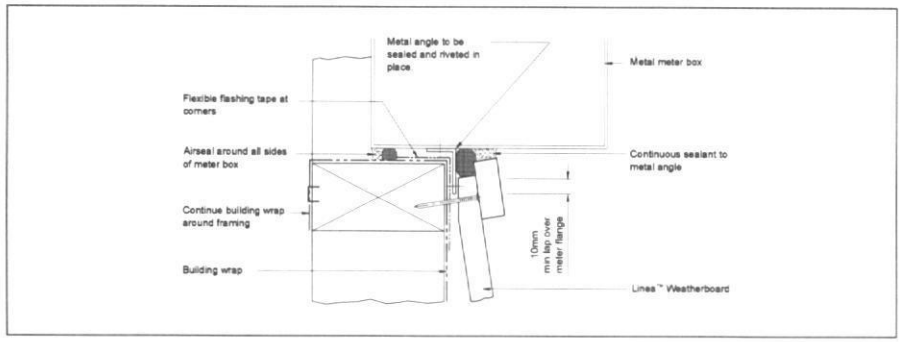


FIGURE 21: DIRECT FIX METER BOX AT SILL

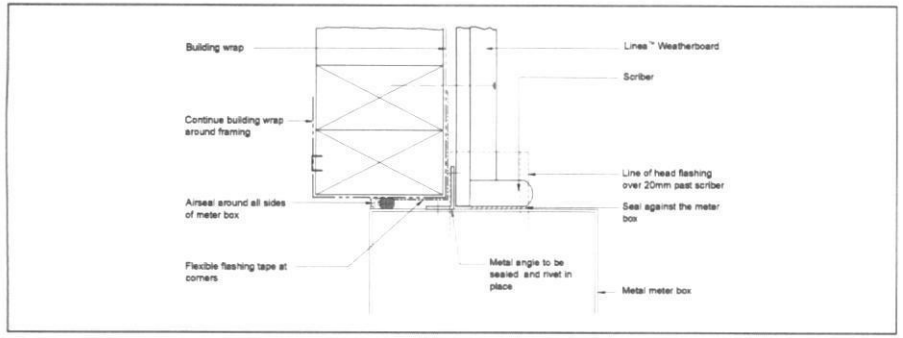


FIGURE 22: DIRECT FIX METER BOX AT JAMB

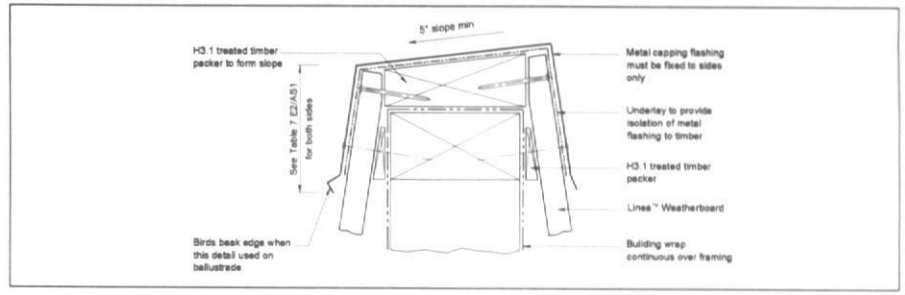


FIGURE 23: DIRECT FIX PARAPET FLASHING

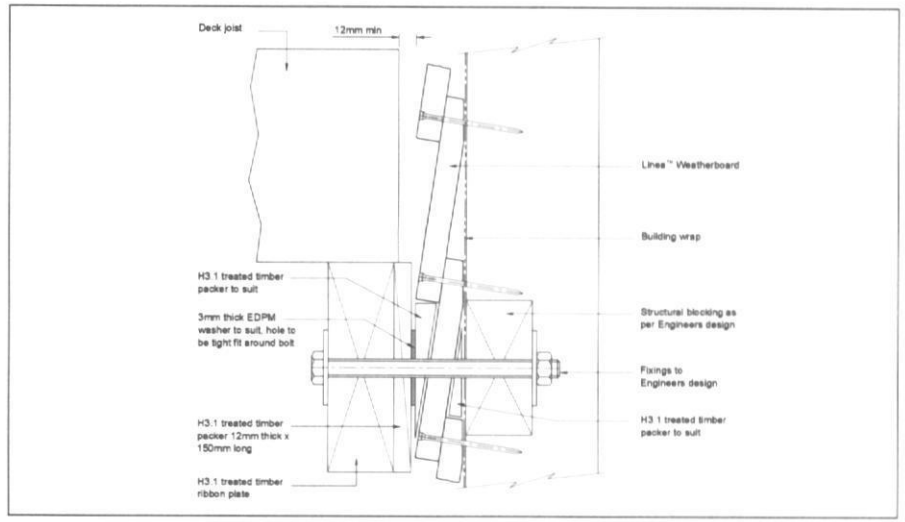


FIGURE 24: DIRECT FIX DECK JUNCTION

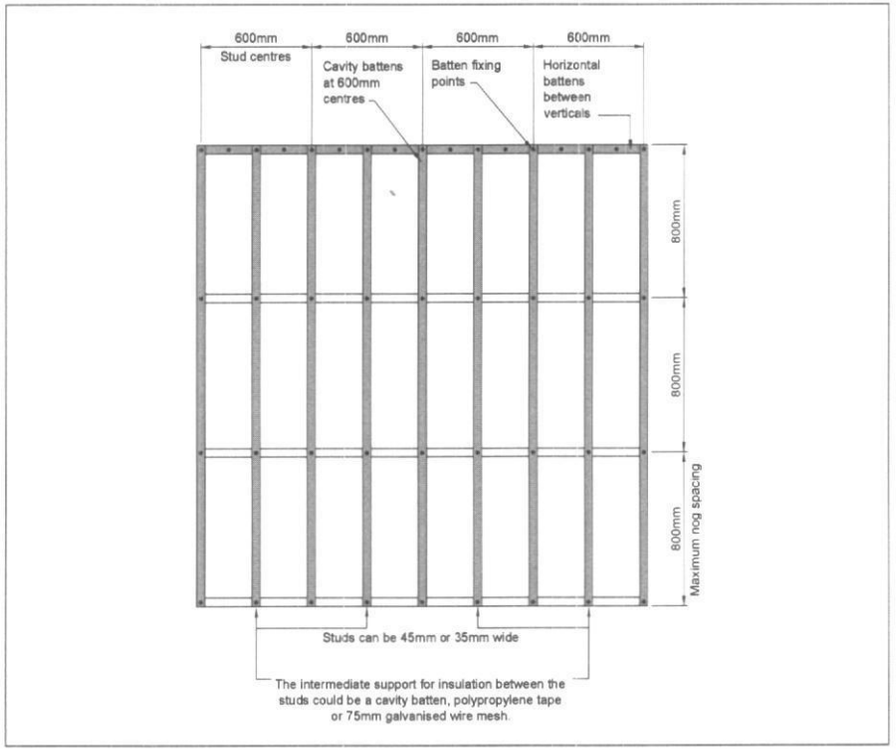


FIGURE 25: CAVITY BATTEN FIXING

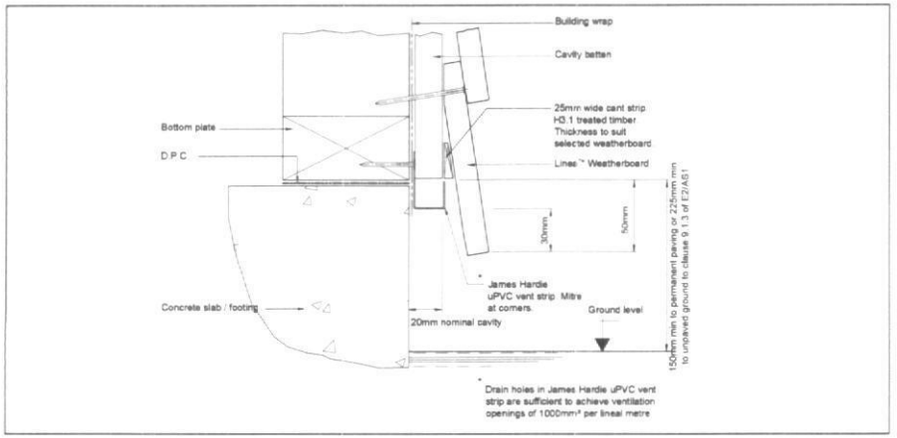


FIGURE 26: CAVITY FOUNDATION

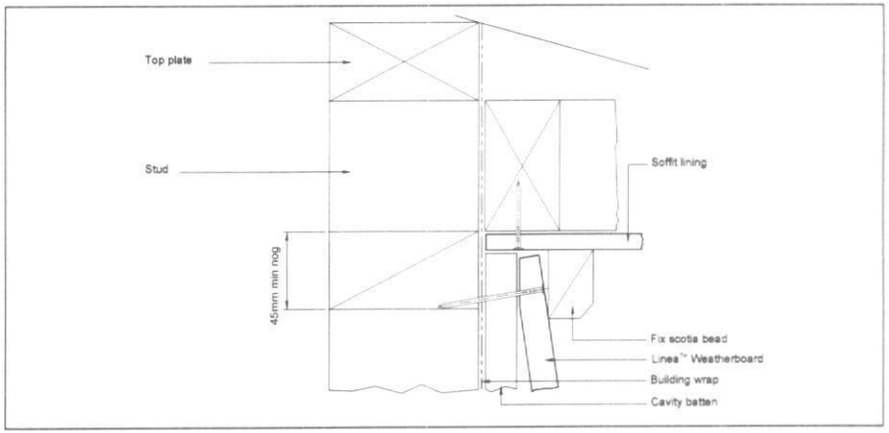


FIGURE 27: CAVITY SOFFIT JUNCTION

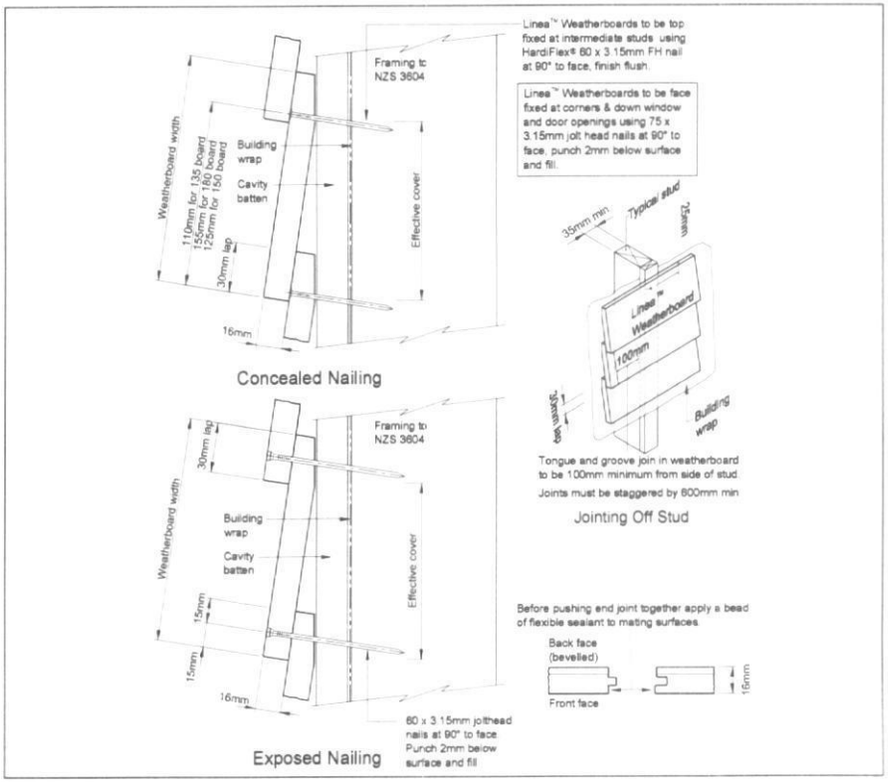


FIGURE 28: CAVITY WEATHERBOARD FIXING

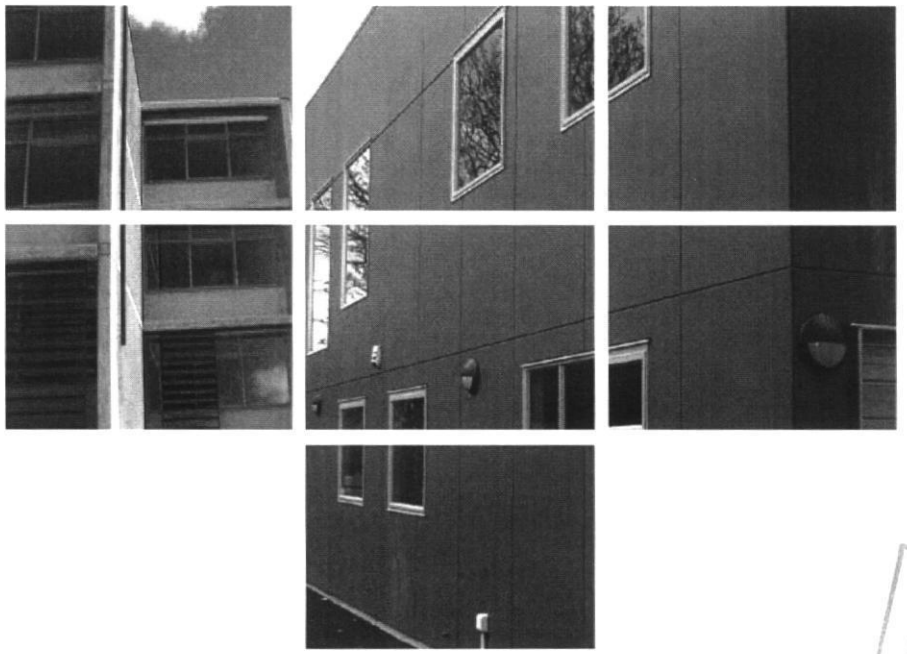
NEW ZEALAND
MARCH 2007

Titan® CLD®

FACADE PANEL

STRUCTURAL CAVITY BATTEN

TECHNICAL SPECIFICATION



James Hardie

CONTENTS

WE VALUE YOUR FEEDBACK

To continue with the development of our products and systems, we value your input. Please send any suggestions, including your name, contact details, and relevant sketches to:

James Hardie

Fax 0800 808 988

literaturefeedback@jameshardie.co.nz

1 APPLICATION AND SCOPE

1.1 APPLICATION

The Titan® Facade Panel installed as per this specification provides a durable, expressed joint panel appearance for residential / commercial building facades. Titan Facade Panel cladding can be fixed over either timber frame or lightweight construction steel-framed wall. A wide range of colours can be used over Titan Facade Panels.

If you are a specifier

or other responsible party for a project ensure that the information in this document is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of these specifications.

If you are an installer

Ensure that you follow the design, moisture management and associated details and material selection provided by the designer. All the details provided in this document must be read in conjunction with the specifier's specification.

Make sure your information is up to date

When specifying or installing James Hardie products, ensure you have the current manual. If you're not sure you do, or you need more information, visit www.jameshardie.co.nz or Ask James Hardie™ on 0800 808 868.

1.2 SCOPE

This specification covers the use of Titan Facade Panel on buildings, where the maximum wind pressure exerted on the building facade is up to 2.5kPa (ULS).

This specification is intended for use by architects or designers / specifier and installers who may be involved with the specification of Titan Facade Panel, CLD® Structural Cavity Battens and their installation. The specification must be read in conjunction with the figures provided at the rear of this document and project specific drawing / specifications.

1.3 DETAILS

Various typical Titan Facade Panel construction details are provided at the rear of this document. All dimensions shown are in millimetres unless noted otherwise. These details are also available in CAD file format and can be downloaded from our website at www.jameshardie.co.nz.

2 DESIGN

2.1 SPECIFIC DESIGN

For the use of Titan Facade Panel and CLD Structural Cavity battens outside the scope of this specification, the designer, architect or engineer must ensure that the relevant clauses of the New Zealand Building Code (NZBC) have been considered and the intent of their design meets the requirements of the NZBC. Project specific details are required to be developed if they are not covered in this literature.

2.2 COMPLIANCE

Titan Facade Panel and CLD Structural Cavity Battens installed as per this technical specification have been tested in a NATA accredited testing laboratory and complies with the requirements of Structure-B1, Durability-B2 and External Moisture-E2 Clauses of NZBC.

2.3 RESPONSIBILITY

The specifier or the other party responsible for the project is responsible for ensuring that the information and details included in this technical specification are suitable for the intended application.

The specifier shall accommodate the appropriate provisions required by the NZBC. Careful detailing of all penetrations through the building wrap/rigid air barrier is required and must be appropriately flashed and weatherproofed. The other materials and components that are used to manage moisture must be installed as per their manufacturers' instructions and comply with the requirements of the relevant standards and the NZBC.

The designer / specifier must ensure that all the reference documents and standards referred to in this document or during the design and construction process are current editions and are complied with. The designer must identify the moisture related risks associated with the particular building design. The design and construction must effectively manage the external moisture.

For the latest information in relation to designing for weathertightness refer to www.branz.co.nz and www.dbh.govt.nz websites.

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

2.4 SITE AND FOUNDATION

The site on which the building is situated must comply with E1 - 'Surface Water' Clause of NZBC. The grade of adjacent finished grade must slope away from the building to avoid any possibility of water accumulation in accordance to NZBC requirements.

For SED 'Specific Engineering Design' projects the foundation must be designed and certified by a qualified structural engineer and comply with all relevant codes, regulations and standards.

2.5 CLEARANCES

The bottom edge of claddings must comply with section 9.1.3 of 'E2 /AS1'. The floor must have a minimum clearance to paved or unpaved ground as required by NZS 3604. Titan Facade Panels must overhang the bottom plate on a concrete slab by a minimum of 50mm as required by NZS 3604.

Titan Facade Panel must always maintain a clearance of 100mm from paved grounds and 175mm from unpaved grounds. On roofs and decks etc. a minimum clearance of 50mm must be maintained.

Do not install Titan Facade Panels such that it may remain in contact with standing water.

2.6 MOISTURE MANAGEMENT

It is the responsibility of the specifier to identify moisture related risks associated with any particular building design. Wall construction design must effectively manage moisture, considering both the interior and exterior environment of buildings, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled. Walls shall include those provisions as required by the NZBC Acceptable Solution 'E2/AS1 - External Moisture'. In addition, all wall openings, penetrations, junctions, connections, windowsills, heads and jambs must incorporate appropriate flashings for waterproofing. The other materials, components and installation methods used to manage moisture in external walls, must comply with requirements of NZBC and any other regulations or standards applicable. For further guidance on designing for weathertightness refer to BRANZ Ltd. and the Department of Building and Housing (DBH) updates on the following websites respectively, www.branz.co.nz and www.dbh.govt.nz.

In addition, the following points must be considered:

- Flexible sealant in vertical panel joints must be applied as detailed in this technical specification.
- For projects within the scope of E2/AS1 where the walls are higher than two storeys, it is necessary to provide a horizontal flashing joint at the second floor level to drain the cavity.
- The installation of smoke chimneys, pipe penetrations and other fixtures etc. must not restrict the free flow of moisture to the exterior.

2.7 STRUCTURE

2.7.1 TIMBER FRAMING

For residential buildings the timber-framing must be provided in accordance with NZS 3604 (Timber Framed Buildings). When the framing is provided as per the specific engineering design, the framing stiffness must be equivalent to or more than the minimum stiffness requirements of NZS 3604.

For specific engineering design, refer to NZS 3603 and AS/NZS 1170 or NZS 4203 for framing design.

2.7.2 STEEL FRAMING

Steel-framed buildings must comply either with AS/NZS 3404 'Steel Structures Standard' or specific engineering design requirements. Refer to NZSH 3405 a standard developed by 'National Association of Steel Housing' for further information and guidance about steel framing.

2.7.3 WIND LOADING

Titan Facade Panel cladding installed as per this technical specification is suitable for use up to maximum wind pressures of 2.5kPa (ULS).

2.8 STRUCTURAL BRACING

Titan Facade Panels installed as per this specification are not suitable to achieve structural bracing. However, bracing can be achieved by using RAB Board fixed direct to the framing or by using internal linings such as Villaboard® Lining or plasterboard.

2.9 FIRE RATED WALLS

A fire rating of up to 30 minutes can be achieved when using a RAB Board in lieu of a building wrap and installing Titan Facade Panels as per this specification. Ask James Hardie on 0800 808 868 for further information.

2.10 ENERGY EFFICIENCY

The R-Value of Titan Facade Panel walls constructed in accordance with this manual using bulk insulation, will comply with the Section 3.1-'Schedule Method' of NZS 4218 (Energy Efficiency — Small Building Envelope) required under Table 1. To meet these insulation requirements, bulk insulation as mentioned in Table 1 of this specification must be used. This calculation is based on a timber frame of 90 x 45mm and internal linings of James Hardie Villaboard Lining or plasterboard.

TABLE 1:

INSULATION CAPACITY		
Climate Zone*	R-Value Requirement*	Insulation Infill Requirement
1 & 2	1.5 m^2 ° C/W	R1.8 Fibreglass batts
3	1.9 m^2 ° C/W	R2.2 Fibreglass batts

*as defined in NZS 4218.

3 FRAMING

3.1 GENERAL

Titan Facade Panels can be installed to timber-framed or steel-framed structures. Fixing to any other framing material is subject to a specific engineering design.

- Stud spacing must not exceed 600mm c/c.
- Nog / dwang spacing must not exceed 800mm c/c when studs are at 600mm c/c.

Note: Titan Facade Panel fastener spacings are provided in Section 6.

3.2 TIMBER FRAMING

3.2.1 DIMENSIONS

A minimum 45mm stud width is required.

3.2.2 STRUCTURAL GRADE

Minimum No.1 Framing Grade or MSG6 grade timber is required for framing. The grading of timber must comply with NZS 3631 or AS/NZS 1748 standard requirements.

3.2.3 DURABILITY

The external framing must be treated to minimum H1.2 treatment. Higher treatment levels may be used but check for the compatibility of treatment chemicals with other materials. Refer to NZBC Acceptable Solution B2/AS1 'Durability' for further information about the durability requirements.

For timber treatment and allowable moisture content information refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round Sawn Timber) for minimum timber treatment selection and treatment requirements. Also refer to framing manufacturer's literature for further guidance on timber selection. Framing must be protected from moisture at site in accordance with the recommendations of the framing manufacturers.

Note: Refer to NZS 3602 for information about the allowable moisture content in timber framing.

3.2.4 FRAME CONSTRUCTION

The framing must be rigid and not rely on the cladding panel for stability.

All timber framing sizes and set-out must comply with NZS 3604 or specific engineering design requirements and as specified in this specification.

Note: It is recommended that the CLD Structural Cavity Battens be installed prior to plumbing, electrical and other services within the frame. This will prevent these services from being damaged by fasteners used to install the battens.

3.3 STEEL FRAMING

3.3.1 DIMENSIONS AND GAUGE

A 38mm minimum stud width is required. Framing members must be 0.55mm minimum to 1.6mm maximum BMT (Base Metal Thickness).

3.3.2 DURABILITY

The steel framing must have the appropriate level of coating to prevent corrosion and to comply with the durability requirements of NZBC.

3.3.3 FRAME CONSTRUCTION

Steel framing must comply either with NZS 3404 or with the specific engineering design for the project. Stud and batten spacing must not be more than what has been specified in this specification. Refer to framing manufacturer's specifications and also to NASH 3405 (a standard developed by NASH-National Association of Steel Framed Housing Inc.) for further guidance on steel frame.

3.4 SPECIAL FRAMING REQUIREMENTS

The following are special framing requirements for both timber and steel framing:

- Double studs are required at internal corners, refer to Figure 12.

3.5 TOLERANCES

In order to achieve the required performance and an acceptable wall finish, it is imperative that framing is straight and true. Framing tolerances must comply with the relevant codes, manufacturer's specifications and design requirements. All framing shall be made flush.

4 PREPARATION

4.1 BUILDING WRAP

Building wrap must be provided as per the requirements of NZBC Acceptable Solution E2/AS1 'External Moisture' and NZS 3604. The building wrap must comply with Table 23 of E2/AS1 and AS/NZS 4200.1. The building wrap must be fixed in accordance with E2/AS1, NZS 3604 and AS/NZS 4200.2 'Pliable Building Membranes and Underlay – Installation' standard and the wrap manufacturer's recommendations.

Walls which are not lined on the inside face e.g. garage walls or gable ends must include an air barrier behind the cladding which complies with the requirements of NZBC Acceptable Solution E2/AS1 Table 23. RAB Board meets these requirements.

4.2 RIGID AIR BARRIER

For specific design projects where the wind pressures are nigher than 1.5kPa (uls), RAB Board must be used instead of building wraps. Refer to RAB Board installation manual for information regarding its installation.

4.3 VENT STRIP

The James Hardie uPVC cavity vent strip must be installed at the bottom of all walls constructed using the drained and ventilated cavity construction method. It is important that the openings in the vent strip are kept clear of obstructions to allow free drainage and ventilation of cavities. James Hardie uPVC vent strip has an opening area of 1000mm²/m length. Refer to Figure 4.

4.4 FLASHING

All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be flashed prior to panel installation. Please refer to moisture management requirements in Clause 2.6. The building wrap or RAB Board must be appropriately taped around the penetrations and lapped/taped to flashings. Materials must be lapped in such a way that water tracks down to the exterior of a building. James Hardie will assume no responsibility for water infiltration within the wall due to poor installation of flashings or building wraps. The selected flashing materials must comply with the durability requirements of NZBC. For information refer to Table 20 of clause E2 of NZBC.

When using RAB Board the entire framing around window opening must be sealed with a flashing tape. The tape must be finished over the face of RAB Board. The flashing tapes like Protecto® tape by Protecto wrap or Aluband® by Thermakraft are recommended for use with RAB Board. Refer to tape manufacturer's literature for further information regarding their installation.

5 BATTEN INSTALLATION

5.1 CLD STRUCTURAL CAVITY BATTEN

The CLD Structural Cavity Batten is suitable to have Titan Facade Panel fixed into them. The battens are 2450mm long, 70mm wide and 19mm thick. The battens are fully sealed on all faces. Refer to the details for information about installation.

5.2 BATTEN LAYOUT

5.2.1 GENERAL

CLD Structural Cavity Battens must be fixed to the wall framing over building wrap or RAB Board. The smoother face of batten should face towards the cladding.

CLD Structural Cavity Battens are suitable to withstand wind pressures up to 2.5kPa (uls). For batten fixing, refer to section 5.4. Ensure the battens are straight and provide a flat surface to fix Titan Facade Panel to. Site cut ends of battens must be sealed on site with Dulux® Acraprime 501/1 sealer.

The battens are run continuously over the studs but they must not be run continuously over the floor joists. There must be a 15mm gap between the battens at floor joist level to allow for structural shrinkages and deflections. Refer to Figure 20.

CLD Structural Cavity Battens can be butt jointed over the studs within the floor height. The batten ends must be cut between 20° to 45° and be installed in a way that the butt joint deflects the moisture to the exterior. The ends must be sealed and jointed with the adhesive sealant before butting them together. Refer to Figure 14.

The designer must ensure that the CLD Structural Cavity Battens are not used in situations where design wind pressures are above 2.5kPa (uls).

5.3 INTERMEDIATE SUPPORT

A nylon strap or galvanised wire must be used between the studs to restrain the insulation from bulging into the cavity, where the studs are spaced at 600mm c/c. When RAB Board is used or the studs are spaced at 400mm c/c, no intermediate support is required.

5.4 BATTEN FASTENERS

The CLD Structural Cavity Batten must be fixed to the framing as specified in Table 2. The fasteners must be driven at a minimum distance of 50mm from the batten ends.

TABLE 2

BATTEN FIXING				
Fixing Type	Framing	Wind Pressure kPa	Batten centres max. (mm)	Fixings centres max. (mm)
65mm x 2.8mm RounDrive ring shank nail hot dip galv./ s.steel	Timber	Up to 1.5	600	300
		Up to 2.5	400	200
40mm x 9-10g Countersunk head steel screw class 3/4	Steel 0.55 to 1.6mm BMT	Up to 1.5	600	300
		Up to 2.5	400	200

For fastener durability information, refer to Clause 6.3 of this document.

6 PANEL INSTALLATION

6.1 GENERAL

Titan Facade Panel and CLD Structural Cavity Battens must be kept under cover whilst in storage or at sites and they must be dry at the time of their installation. All site cut panel edges must be sealed with Dulux Acraprime 501/1 or similar sealer compaticle with the finish coat before installation. It is recommended to fix from the centre of the panel and work outwards. The straightness of timber framing is essential to achieve the flatness on panel surface. Ensure that panels are hard against the battens to avoid drumminess.

Apply a continuous 6mm thick bead of Bostik 'Seal N Flex -1' adhesive sealant to the face of CLD Structural Cavity Batten to adhere the Titan Facade Panel to it.

6.2 TITAN FACADE PANEL INSTALLATION

The Titan Facade Panels are fixed to CLD Structural Cavity Battens using one of the following fixings specified in Table 3:

TABLE 3

TITAN FACADE PANEL FIXING		
Types of fixings to be used with adhesive sealants	Suitable up to Wind Pressure kPa (uls)	Fixing to CLD Structural Cavity Battens c/c (mm)
C-25 'T'- Head stainless steel brad nail	1.5	150
25 x 2.5mm annular threaded fibre cement nail	2.5	200
25mm x 8-15g OR Pan / Wafer head exposed screw class 3/4	2.5	200
25mm x 10g counter sunk screw class 3/4 or stainless steel	2.5	200

6.2.1 T-HEAD BRAD NAILS

A combination of stainless steel T-head brad nail and Bostik 'Seal N Flex -1' adhesive sealant provides a fast and efficient method of panel installation. It also minimises the preparation required before painting the panels. T-head brad nails are fired using the brad nail guns. The brad nails must be driven flush with the panel surface.

This fixing method is only suitable for projects within the scope of NZS 3604.

Note. Do not use this fixing method in specific engineering design (SED) wind zones.

Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' adhesive sealant to the face of CLD Structural Cavity Batten first then fix the panel with T-head brad nails securing the panel in place while the adhesive cures. Use Paslode C-25 304 stainless steel brad nails.

The edge distance required for fixing T-head brad nails is 10mm. Refer to Figure 5.

6.2.2 FIBRE CEMENT NAILS

Titan Facade Panel can be installed using a 25mm x 2.5mm annular threaded fibre cement nail. These nails must be driven flush with the panel surface. Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' adhesive sealant over the CLD Structural Cavity Batten before fixing Titan Facade Panels. Refer to section 6.3 for the durability requirements.

The edge distance required for fixing fibre cement nails is 12mm. Refer to Figure 7.

6.2.3 COUNTERSUNK SCREWS

Titan Facade Panels must be pre-drilled on the ground before installation using a JH counter sunk drill bit. A 25mm x 10g countersunk screw is suitable for this installation method. The screw head must be countersunk to a depth of 2mm maximum below the Titan Facade Panel surface. Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' adhesive sealant over the CLD Structural Cavity Batten before fixing the Titan Facade Panels.

The typical edge distance required for screw fixing is 18mm. Refer to Figure 9.

The counter sunk screw holes are flush finished with two part epoxy filler. Allow epoxy to cure then prime over. Ensure the epoxy manufacturer's recommendations are followed. Sand the epoxy to a smooth finish with 100-120 grit sandpaper.

6.2.4 EXPOSED HEAD SCREWS

Exposed head screws, e.g. pan, wafer and hex head fasteners may be colour coated to match the panel finish. Use a 25mm x 8-15g screw.

Titan Facade Panels must be pre-drilled with a masonry drill bit. Apply a 6mm thick continuous bead of Bostik 'Seal N Flex-1' flexible sealant over the CLD Structural Cavity Batten before fixing the Titan Facade Panel over it.

The edge distance required for fixing screws is 18mm.

A nylon washer must be used under the exposed screw heads for sealing against the Titan Facade Panel surface. Refer to Figure 11.

6.3 FASTENER DURABILITY

Fasteners must comply with the minimum durability requirements of the NZBC. The NZS 3604 specifies the requirements for fixing materials to be used in relation to exposure zones and are summarised in Table 4.

Fasteners must be fully compatible with other materials they are to be in contact with, to ensure the durability of complete assembly.

For steel framing ensure that the fasteners used are compatible with steel framing.

Contact fastener manufacturers for more information.

TABLE 4

EXPOSURE CONDITIONS & NAIL SELECTION PRESCRIBED BY NZS 3604		
Nail Material		
Sea Spray Zones*	Zone 1 outside sea spray zone and Zones 2–4 & Geothermal hot spots	Bracing — All Zones
Grade 316 Stainless	Hot-dipped galvanised or 316 stainless	Grade 316 Stainless

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

Also refer to the NZBC Acceptable Solution 'E2/AS1' Table 20 and 22 for information regarding the selection of suitable fixing materials and their compatibility with other materials.

6.4 ADHESIVE SEALANT

A polyurethane adhesive sealant 'Seal 'N' Flex 1' manufactured by Bostik has been tested and must be used as per this specification. Apply a 6mm continuous bead of this adhesive sealant over the face of CLD Structural Cavity Batten before fixing Titan Facade Panel.

7 JOINTS

Titan Facade Panels are fixed keeping a 10mm nominal gap between panels at vertical and horizontal joints.

7.1 VERTICAL JOINT

CLD Structural Cavity Batten is fixed over the studs and a vertical joint is formed over the batten. A 10mm gap is required between the panels to form a vertical expressed joint. After the installation of panels to CLD Structural Cavity Battens, the joints must be sealed with a flexible sealant. Refer to Figure 5, 7, 9 & 11.

7.2 HORIZONTAL JOINT

Aluminium 'T' socket or a Z flashing is used to form a horizontal joint between the panels.

When using a 'T' socket, it is cut to suit the exact width of each panel. Two 6mm thick continuous beads of adhesive sealant are run over the bottom (short) portion of 'T' socket. Refer to Figure 19. The socket is glued to the upper rear face of panel. The 'T' lip sits over the top edge of lower Titan Facade Panel.

When a horizontal joint using a 'T' socket is formed at the floor joist level, a cavity batten flashing is required at the CLD Structural Cavity Batten joint. Refer to Figure 20.

At internal and external corner a CLD Structural Cavity Batten corner flashing is used. Refer to Figure 21.

7.3 EXTERNAL AND INTERNAL CORNERS

Two CLD Structural Cavity Battens are fixed in the corners to facilitate the fixing of Titan Facade Panel to battens on each side. Refer to Figure 12 & 13.

A 10mm gap is required between the Titan Facade Panels to form a vertical expressed joint at corners. Ensure the correct batten panel orientation for panel installation and a continuous bead of adhesive sealant is applied between CLD Structural Cavity Battens. Refer to Figure 12 & 13.

8 FINISHES

8.1 PAINTING

Painting of Titan Facade Panel is mandatory to meet the durability requirements of NZBC and 15 year James Hardie product warranties. Titan Facade Panels must be dry and free of any dust or grime before painting. The panels must be painted within 90 days of their installation.

Titan Facade Panels are pre-primed and are suitable for site applied acrylic paints. Pre-finished panels can also be installed using exposed head fasteners.

For site-applied finishes, James Hardie recommends a minimum of two coats of acrylic paint. Follow the paint manufacturer's recommendations to prepare the surface and to adequately cover the sanded smooth fillers applied over the concealed fixings, see Clause 8.3.

In order to seal cut edges or sanded patches, Dulux AcraPrime 501/1 acrylic primer or a similar product should be applied. The primer should be compatible with the paint to be used.

8.2 FLEXIBLE SEALANT

Sealant used must comply with the relevant requirements of NZBC. Application and use of sealants must comply with the manufacturer's instructions. Check with the sealant manufacturer prior to coating over sealant. Some sealant manufacturers do not recommend coating over their product.

8.3 EPOXY FILLERS

All countersunk screw holes must be filled with a two part epoxy e.g. Nuplex Fairing Cream or a similar epoxy filler. The screw holes must be clean and dry before they are filled with epoxy. Always refer to the epoxy manufacturer recommendation before use.

9 STORAGE AND HANDLING

Titan Facade Panel, CLD Structural Cavity Batten and RAB Board must be laid flat on a smooth level surface. Edges and corners must be protected from chipping. To ensure optimum performance, store panels under cover and keep dry prior to fixing. If the sheets become wet, allow them to dry thoroughly before fixing. Do not carry sheets or CLD Structural Cavity Battens on the flat, carry in the vertical position to avoid excessive bending.

10 MAINTENANCE

It is the responsibility of the specifier to determine normal maintenance requirements to maintain the effectiveness of the cladding. The extent and nature of maintenance required will depend on the geographical location and exposure of the building. As a guide, it is recommended that the basic normal maintenance tasks shall include, but not be limited to:

- Washing down exterior surfaces every 6-12 months*
- Re-coating exterior protective finishes*
- Regular inspection and repair if necessary of the facade panels, sealants, Butyl and Inseal® strips etc.
- Cleaning out gutters, down pipes and overflow pipes as required
- Pruning back vegetation which is close to or touching the building as well as ensuring the NZBC ground clearance requirements are maintained especially where gardens are concerned.
- The clearance between the bottom edge of the Titan Facade Panel cladding and the finished/unfinished ground must always be maintained.
- Refilling the countersunk holes where the cracks start appearing in the paint film around epoxy fillers or where fastener read through becomes significant.

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

11 PRODUCT INFORMATION

11.1 MATERIAL

Titan Facade Panel and RAB Board are high quality autoclaved medium density fibre cement products manufactured by James Hardie. The basic composition is Portland cement, ground sand, cellulose fibre and water. The products are easily identified by the name Titan or RAB written on the rear face. Titan Facade Panel is sealed and primed on the face and RAB Board is face sealed.

CLD Structural Cavity Battens are manufactured using a low density fibre cement formulation. The basic composition is Portland cement, ground sand, cellulose fibre, water and proprietary additives. The battens are factory sealed on all sides.

Titan Facade Panels, RAB Board and CLD Structural Cavity Battens are manufactured to AS/NZS 2908.2 'Cellulose-Cement Products' Part 2 (ISO 8336 'Fibre-Cement Flat Sheet'). James Hardie New Zealand is an ISO 9001 'Telarc' certified manufacturer. Titan Facade Panel and RAB Board and CLD Structural Cavity Battens are classified Type A, Category 3 in accordance with AS/NZS 2908.2 'Cellulose-Cement Products' standard.

The approximate mass of 9mm Titan Facade Panel is 13kg/m². For panel sizes see Table 8.

11.2 DIMENSIONAL PROPERTIES

Titan Facade Panel sizes and tolerances have been outlined in the following table.

TABLE 5

TITAN FACADE PANEL PROPERTIES	
Properties	Equilibrium Condition
Thickness	9mm
Approx. Moisture Content	3% - 5%
Width Tolerance	+/- 1mm
Length Tolerance	-4mm
Thickness Tolerance	-0.2/+0.4mm
Diagonal Difference	+/- 3mm
Approx. Mass	13kg/m²
Width	1190mm
Length	2400mm, 2700mm or 3000mm

RAB Board sizes are given in Table 8.

11.3 DURABILITY

Titan Facade Panel, RAB Board and CLD Structural Cavity Batten installed and maintained as per this technical specification will meet the durability requirement for claddings as per 'B2 – Durability' clause of NZBC.

11.3.1 RESISTANCE TO MOISTURE/ROTTING

Titan Facade Panel, RAB Board and CLD Structural Cavity Batten 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)

11.3.2 FIRE INDICES

Titan Facade Panel is suitable where non-combustible materials are required. The Titan Facade Panel has been tested by CSIRO and has the following Early Fire Hazard Indices (tested to AS 1530 Part 3).

TABLE 7

EARLY FIRE HAZARD INDICES	
Ignition Index	0
Flame Spread Index	0
Heat Evolved Index	0
Smoke Developed Index	0-1

Note: Zero is the best possible result.

11.3.3 ALPINE REGIONS

In regions subject to freeze/thaw conditions, Titan Facade Panel, RAB Board and CLD Structural Cavity Battens must not be in direct contact with snow and/or ice build up for extended periods, e.g. external walls in alpine regions be cleared from snowdrifts over winter. These products have been tested for resistance to frost in accordance with AS/NZS 2908.2 Clause 8.2.3.

12 SAFE WORKING PRACTICE

WARNING

DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain sand, a source of respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting by using either 'Score and Snap' knife, fibre cement shears or, where not feasible, use a HardiBlade® Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods — never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheets available at www.jameshardie.co.nz FAILURE TO ADHERE TO OUR WARNINGS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.

JAMES HARDIE RECOMMENDED SAFE WORKING PRACTICES
CUTTING OUTDOORS
1. Position cutting station so that wind will blow dust away from user or others in working area. 2. Use a dust reducing circular saw equipped with HardiBlade® Saw Blade and HEPA vacuum extraction
SANDING/DRILLING/OTHER MACHINING
When sanding, drilling or machining you should always wear a P1 or P2 dust mask and warn others in the immediate area.
IMPORTANT NOTES:
1. NEVER use a power saw indoors 2. NEVER use a circular saw blade that does not carry the HardiBlade® logo 3. NEVER dry sweep – Use wet suppression or HEPA Vacuum 4. NEVER use grinders 5. ALWAYS follow tool manufacturer's safety recommendations
P1 or P2 respirators can be used in conjunction with above cutting practices to further reduce dust exposures. Additional exposure information is available at www.jameshardie.co.nz to help you determine the most appropriate cutting method for your job requirements. If concern still exists about exposure levels or you do not comply with the above practices, you should always consult a qualified industrial hygienist or contact James Hardie for further information.

WORKING INSTRUCTIONS

Refer to Recommended Safe Working Practices before starting any cutting or machining of product.

HARDIBLADE® SAW BLADE

The HardiBlade® Saw Blade used with a dust-reducing saw fitted with HEPA vacuum filter is ideal for fast, clean cutting of James Hardie fibre cement products. A dust-reducing saw uses a dust deflector or a dust collector connected to a vacuum system. When sawing, clamp a straight-edge to the sheet as a guide and run the saw base plate along the straight edge when making the cut.

HOLE-FORMING

For smooth clean cut circular holes:

- Mark the centre of the hole on the sheet.
- Pre-drill a 'pilot' hole.
- Using the pilot hole as a guide, cut the hole to the appropriate diameter with a hole saw fitted to a heavy duty electric drill.

For irregular holes:

- Small rectangular or circular holes can be cut by drilling a series of small holes around the perimeter of the hole then tapping out the waste piece from the sheet face.
- Tap carefully to avoid damage to sheets, ensuring that the sheet edges are properly supported.

HANDLING AND STORAGE

All materials should be stored to avoid damage, with edges and corners of the panels protected from chipping.

Panels must be protected from rain during transport and storage. Panels must be laid flat undercover on a smooth level surface clear of the ground to avoid exposure to water or moisture etc. Titan Facade Panel, RAB Board and CLD Structural Cavity Batten are resistant to permanent water damage when installed as directed, and must only be installed in a dry state.

When handling Titan Facade Panels, carry panels on the edge taking care not to chip edges and corners.

Refer to the current installation manual for recommended Safe Working Practices.

QUALITY

James Hardie conducts stringent quality checks to ensure that any product manufactured falls within our quality spectrum. It is the responsibility of the builder to ensure that the product meets aesthetic requirements before installation. James Hardie will not be responsible for rectifying obvious aesthetic surface variations following installation.

13 PRODUCT AND ACCESSORIES

TABLE 8:

TITAN FACADE PANEL INFORMATION

PRODUCT	DESCRIPTION	SIZE			
	Titan Facade Panel A square edge panel for expressed jointed building facades. Titan Facade Panel is primed with a distinctive primer, which accepts a wide range of paint finishes. The panel must be installed with the primed side facing outwards.	Thickness (mm) 9 9 9	Width (mm) 1190 1190 1190	Length (mm) 2400 2700 3000	Product Code **403023** **403022** **403021**
	RAB Board RAB Board is used as a rigid air barrier. It has green colour sealer applied over one face. Installed with green side facing out.	Thickness (mm) 5.5 5.5	Width (mm) 1200 1200	Length (mm) 2400 3000	Product Code **402980** **402981**

TABLE 9:

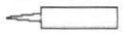
ACCESSORIES/TOOLS SUPPLIED BY JAMES HARDIE

	DESCRIPTION	QUANTITY/SIZE (APPROX)	PRODUCT CODE
	CLD Structural Cavity Batten 19mm thick fibre cement cavity batten installed over RAB Board or a building wrap. Titan Facade Panels are fixed to the battens.	19 x 70mm, 2450mm long Pack of 48 battens	**403870**
	Aluminium 'T' socket T socket is used to form a horizontal negative joint.	2400mm and 3000mm	**304103** **304105**
	HardiBlade® Saw Blade Diamond tip 185mm diameter fibre cement circular saw blade. Spacers not included.	Each	**300660**
	James Hardie Countersunk Tungsten Carbide drill bit 9mm Countersinking bit.	Each	**300567**
	Annular Threaded nail 25 x 2.5mm nail.	500gm	**300390**
	Nylon washer Neoprene washer is used to between the panel and screw head for weathertightness.	1,000 per pack	**302761**
	CLD Batten Flashing Aluminium Used to flash the battens normally at floor joist levels.	Pack of 20	**304651**
	CLD Batten Corner Flashing Aluminium Used to flash the battens around corners at floor joist levels.	Pack of 20	**304652**
	Inseal 3259 Tape For sealing the vertical joints of RAB Board.	50mm x 50m Roll 80mm x 50m Roll	**300767** **300769**
	uPVC Vent Strip 32.5mm x 18mm wide x 3000mm	25 per pack	**302490**

TABLE 10:

ACCESSORIES/TOOLS NOT SUPPLIED BY JAMES HARDIE

James Hardie recommends the following products for use in conjunction with Titan Facade Panel, RAB Board and CLD Structural Cavity Batten. James Hardie does not supply these products and does not provide a warranty for their use. Please contact component manufacturer for information on their warranties and further information on their products.

PRODUCT	DESCRIPTION
	Building wrap Must comply with Table 23 of E2/AS1
	Flexible Window Opening Flashing Tape A flexible self-adhesive tape used in preparation of a window. Refer to the window installation section in this manual for more information. e.g. Protecto or Aluband® by Thermakraft Protecto: 0800 776 9727 Thermakraft: 0800 806 595
	RAB Board Joint Sealing tape The tape to be used to seal RAB Board vertical joints. Protecto or Aluband® by Thermakraft. Protecto: 0800 776 9727 Thermakraft: 0800 806 595
	Titanium Drill Bit Used to pre-drill clearance holes for exposed head screws.
	Epoxy Flush Sealing (2 Part) Countersunk head screws are flush sealed using Nuplex Fairing cream or similar epoxy.
	Joint Adhesive Sealant 'Seal N Flex-1' Polyurethane adhesive sealant manufactured by BOSTIK for applying between the panels and battens. Refer to section 7 for more information. BOSTIK: AKL: (09) 579 6253, WGTN: (04) 567 5119, CHCH: (03) 366 2583.
	Flexible Sealant Required to seal the vertical joints. Fosroc MS or similar.
FASTENERS	
	Countersunk Screw 25mm x 10g countersunk screws (Class 3/4 or stainless steel) for fixing of Titan Facade Panels to CLD Structural Cavity Battens.
	Pan Head Fasteners 25mm x 8-15g pan head screws (Class 3/4) for fixing of Titan Facade Panels to CLD Structural Cavity Battens.
	Wafer Head Fasteners 25mm x 8-15g wafer head screws (Class 3/ 4). For fixing of Titan Facade Panels to CLD Structural Cavity Battens.
	C-25 Stainless Steel Brad Nails 304SS brad nails used to install Titan Facade Panels to the CLD Structural Cavity Battens with adhesive polyurethane sealant. Paslode: (09) 477 3000
	Countersunk Screw 40mm x 9-10g Class 3/4 for fixing CLD Structural Cavity Batten to steel framing.
	65 x 2.87mm RounDrive Ring Shank Nail For fixing CLD Structural Cavity Battens to the framing. Paslode: (09) 477 3000

PROTECTO WRAP , ALUBAND®, DULUX ACRAPRIME ,TYVEK® FLEXWRAP™ ARE TRADEMARKS REGISTERED TO THEIR MANUFACTURES.

14 DETAILS

Various details outlined in the following table are available on Pages 15 to 30

DETAILS

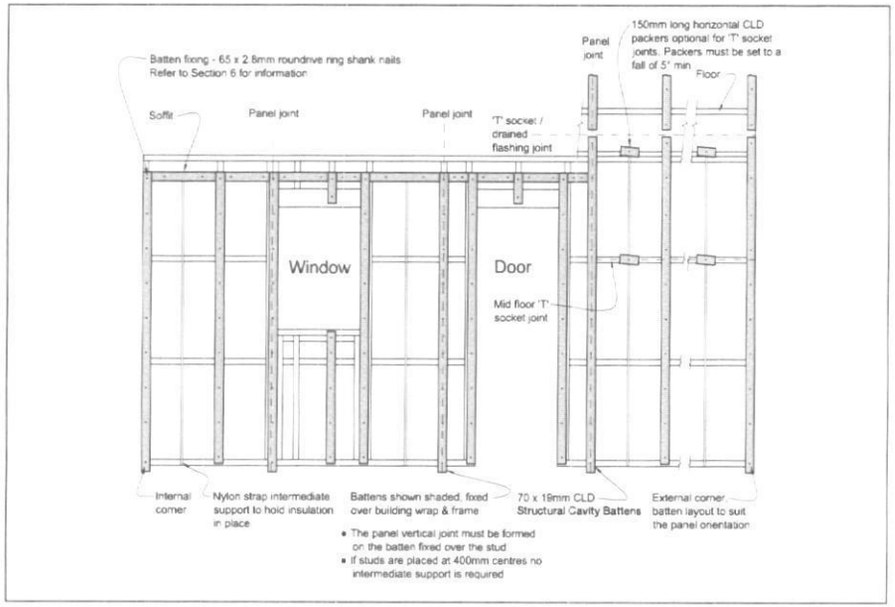


FIGURE 1: FRAMING SETOUT

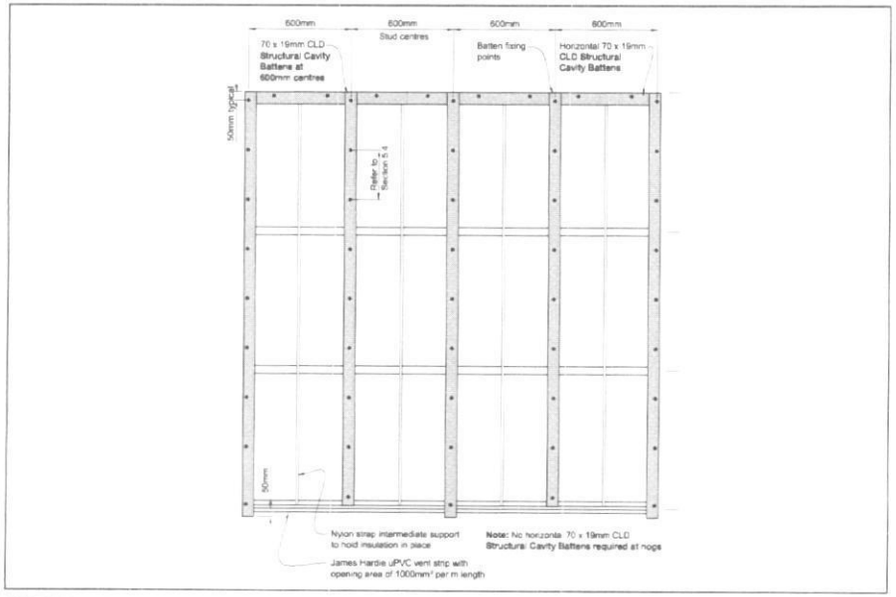


FIGURE 2: BATTEN FIXING SETOUT

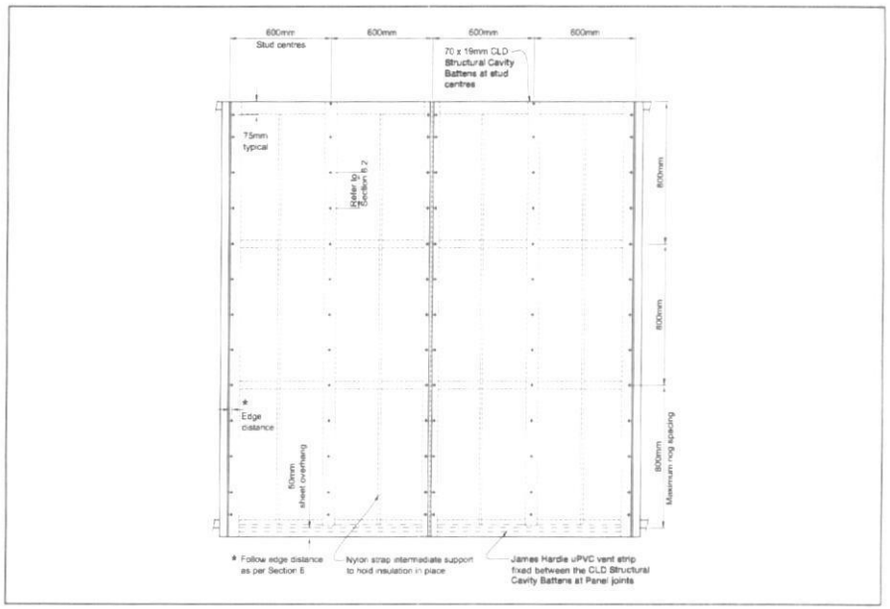


FIGURE 3: SHEET FIXING SETOUT

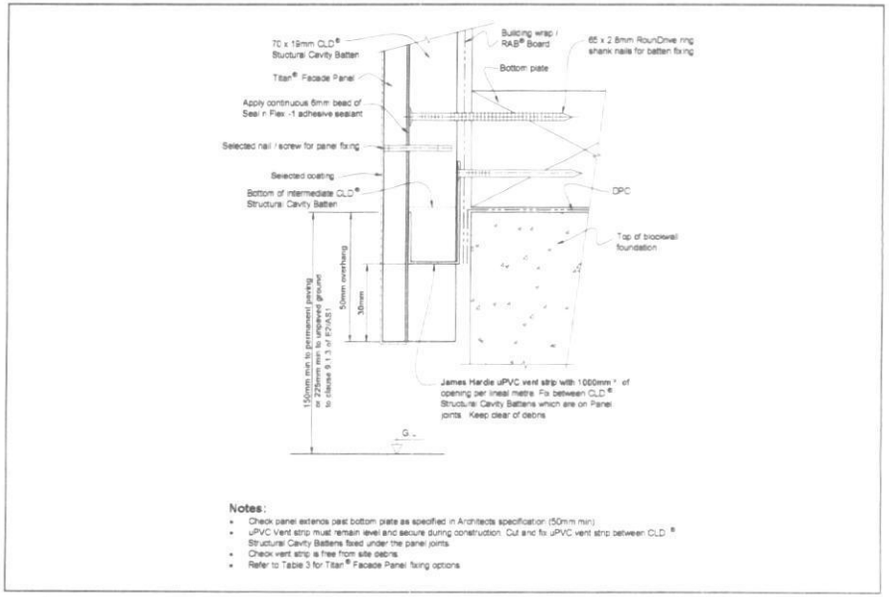


FIGURE 4: FOUNDATION DETAIL

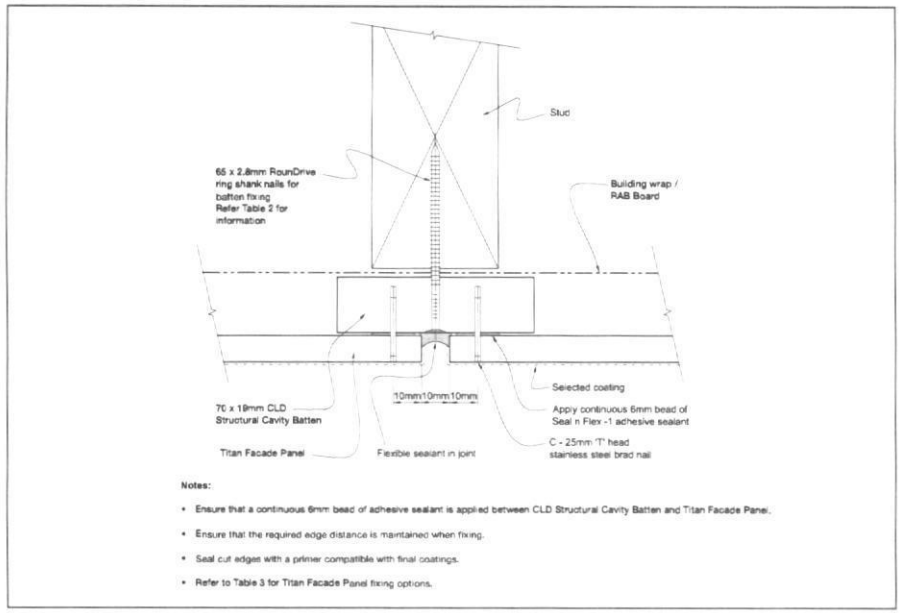


FIGURE 5: VERTICAL EXPRESSED JOINT USING 'T' HEAD BRAD NAILS

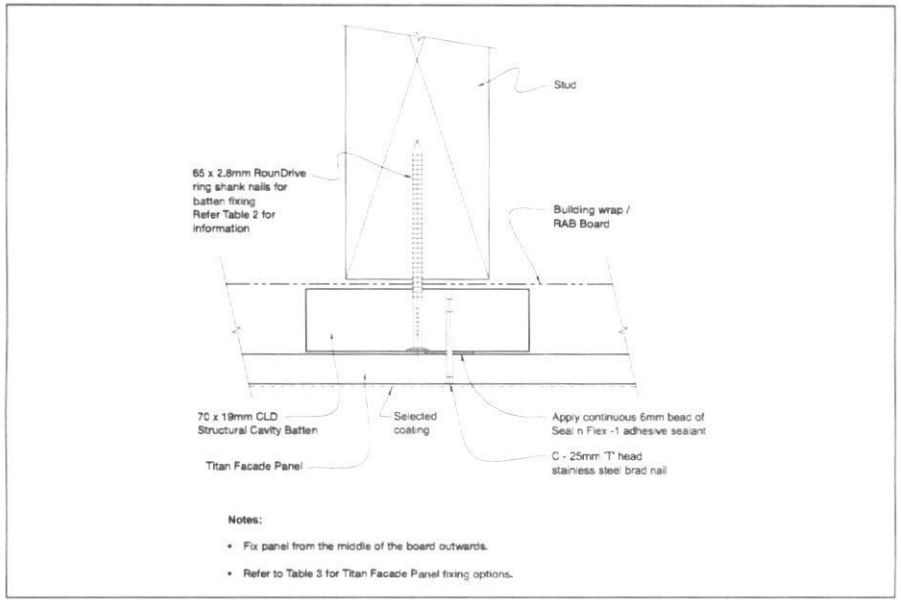


FIGURE 6: INTERMEDIATE STUD FIXING USING 'T' HEAD BRAD NAILS

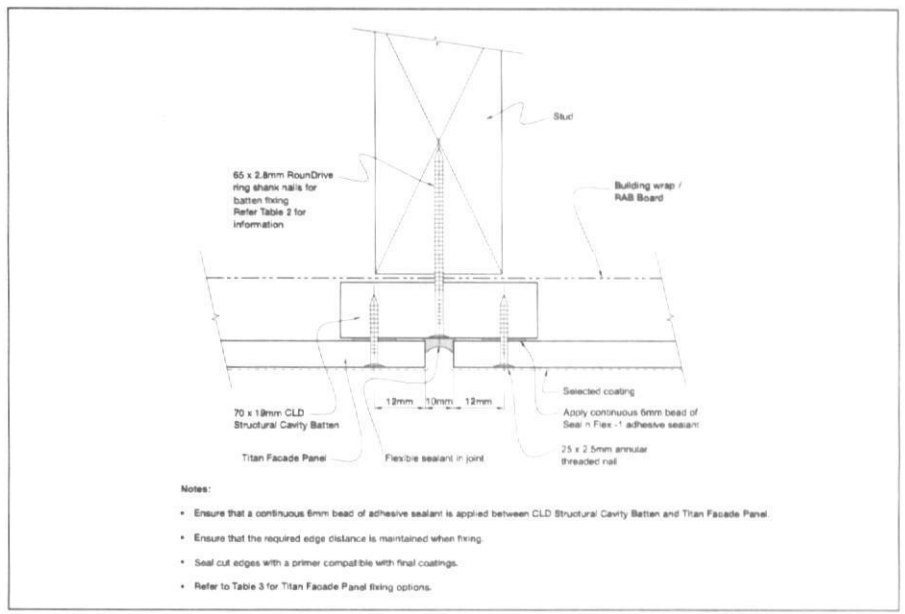


FIGURE 7: ALTERNATE VERTICAL EXPRESSED JOINT USING ANNULAR THREADED NAILS

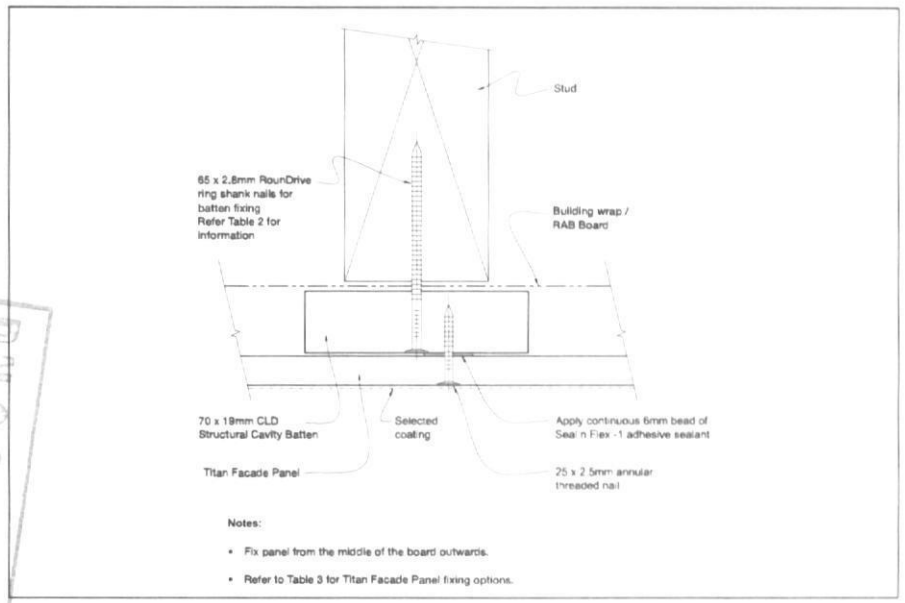


FIGURE 8: ALTERNATE INTERMEDIATE STUD FIXING USING ANNULAR THREADED NAILS

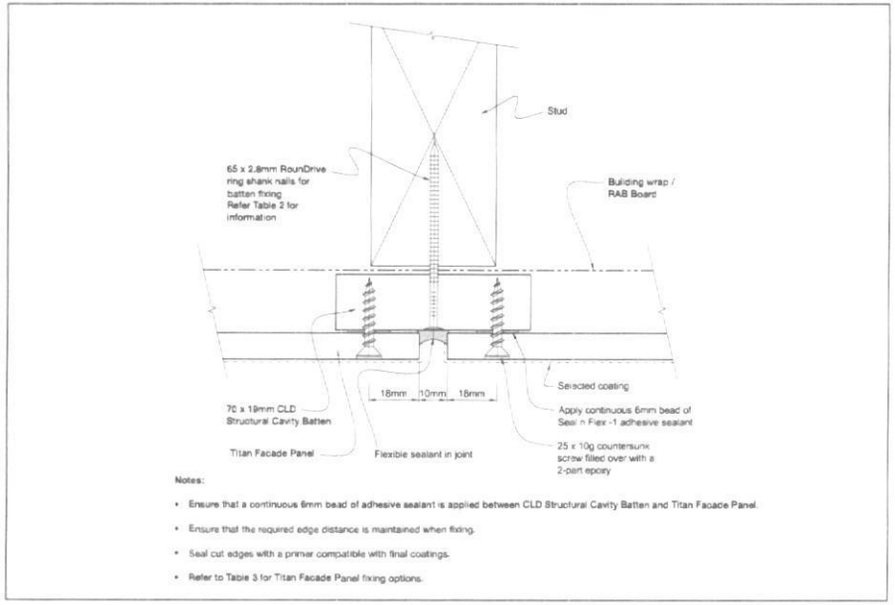


FIGURE 9: ALTERNATE VERTICAL EXPRESSED JOINT USING COUNTERSUNK SCREWS

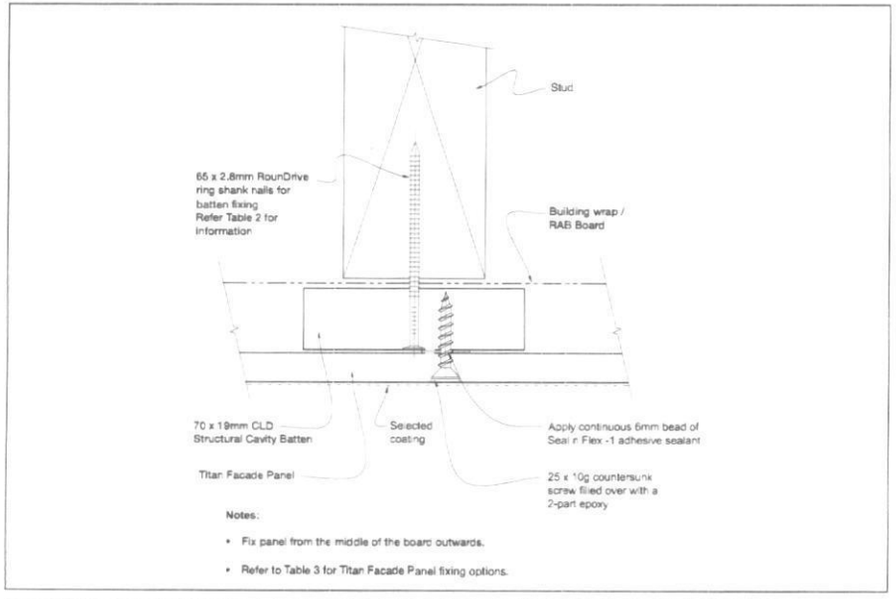


FIGURE 10: ALTERNATE INTERMEDIATE STUD FIXING USING COUNTERSUNK SCREWS

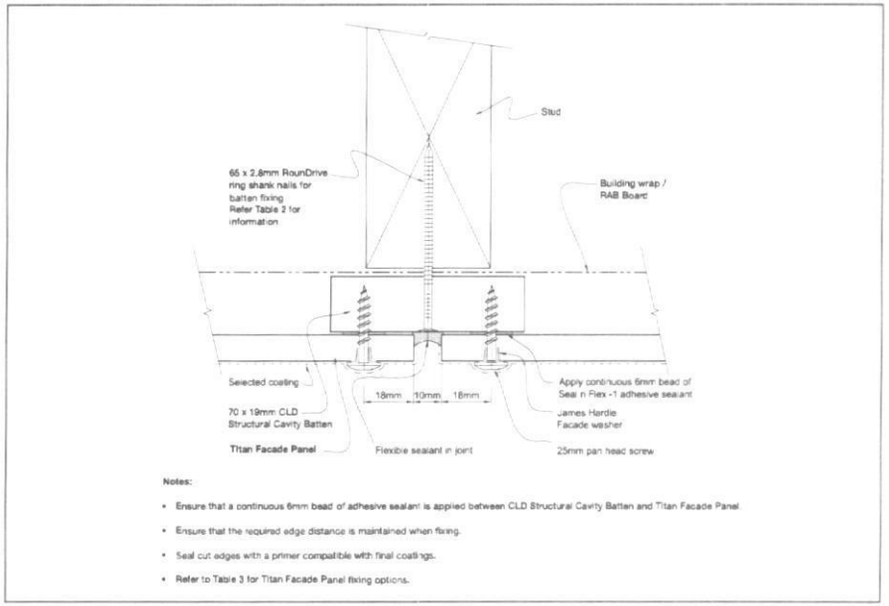


FIGURE 11: ALTERNATE VERTICAL EXPRESSED JOINT USING EXPOSED SCREWS

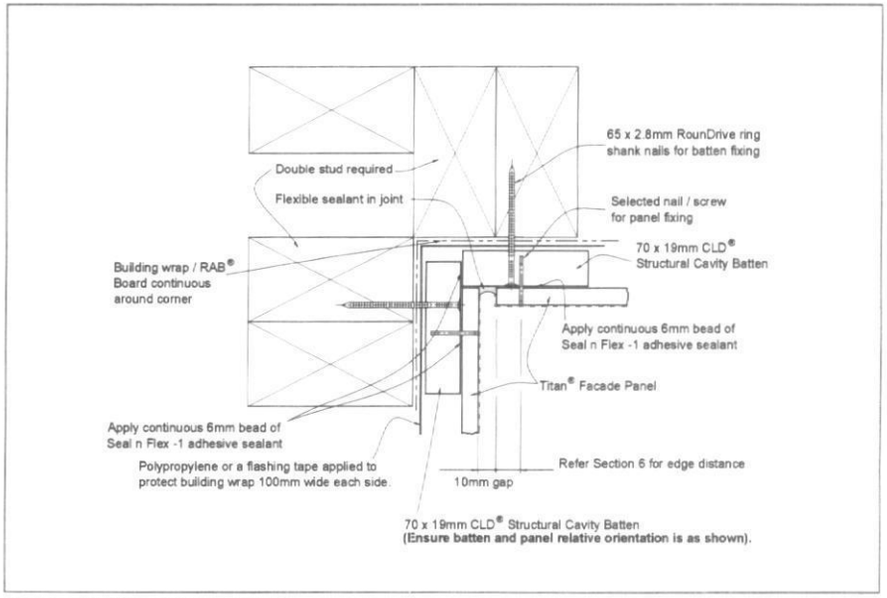


FIGURE 12: INTERNAL CORNER

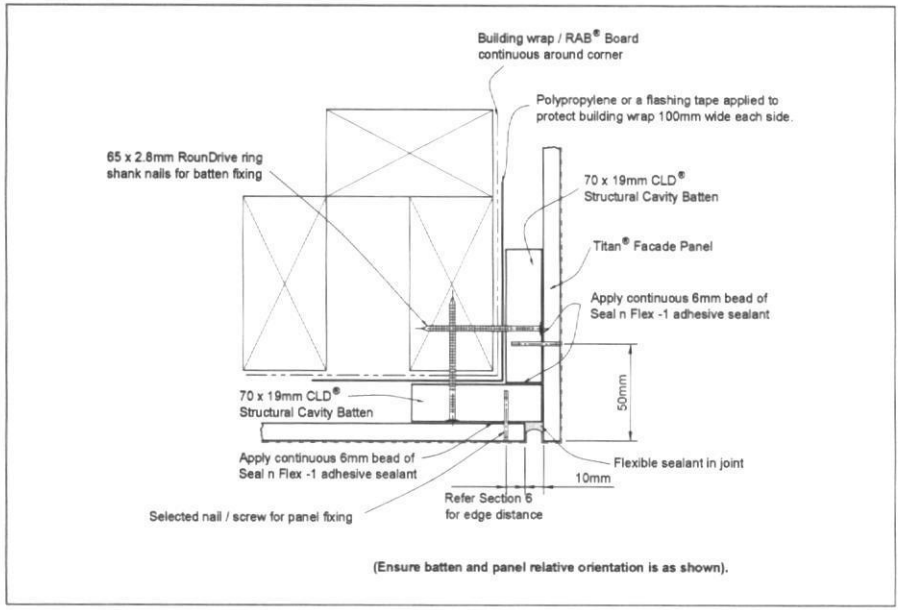


FIGURE 13: EXTERNAL CORNER

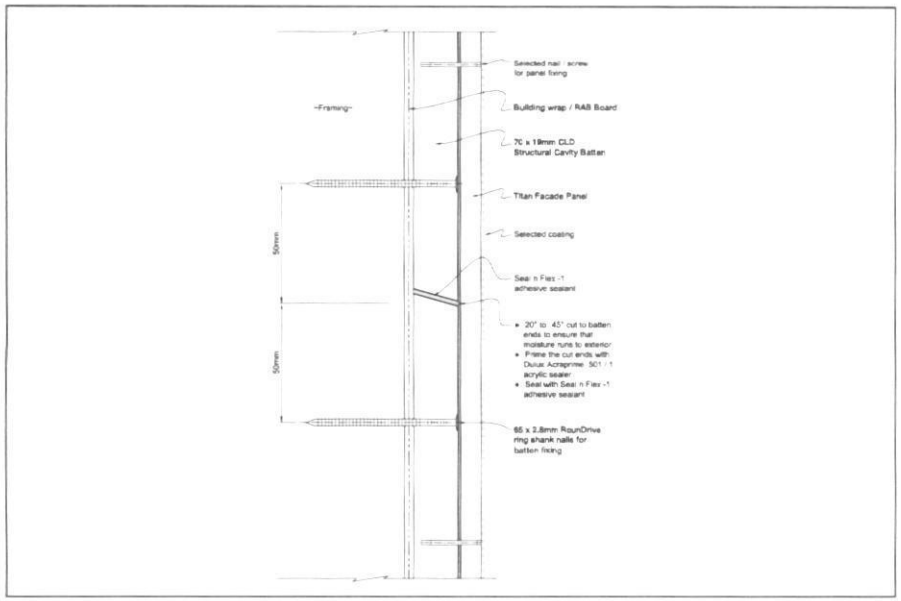


FIGURE 14: JOINTING OF CLD STRUCTURAL CAVITY BATTEN

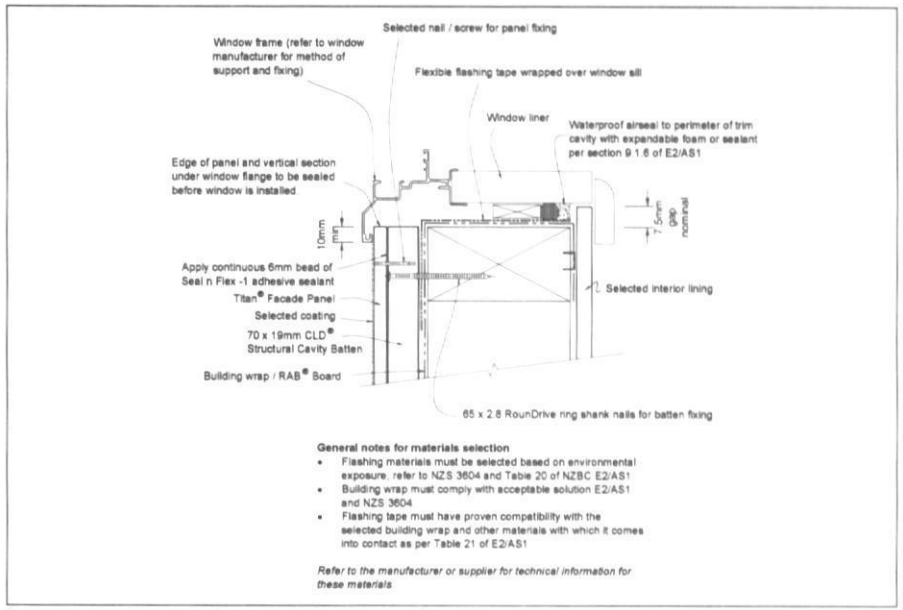


FIGURE 15: WINDOW SILL

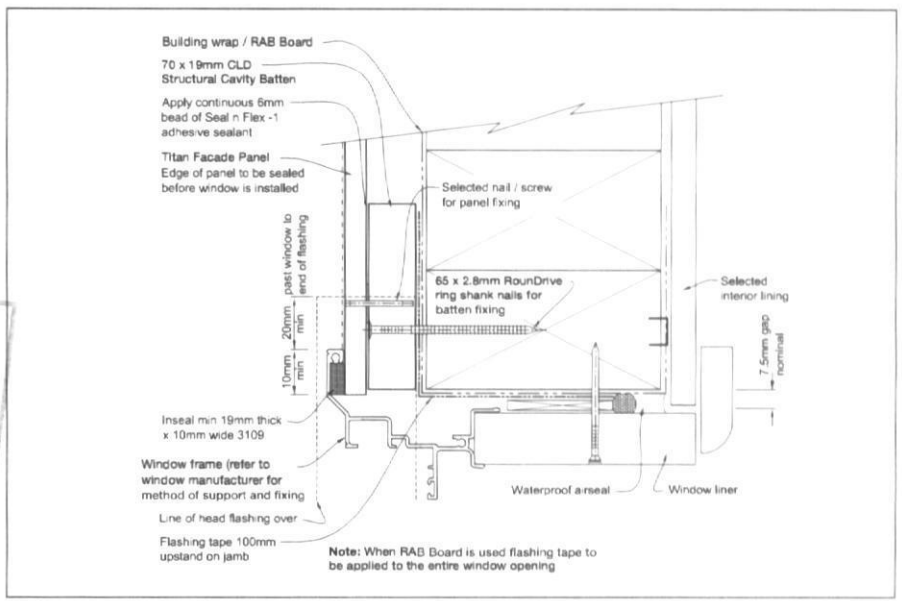


FIGURE 16: WINDOW JAMB

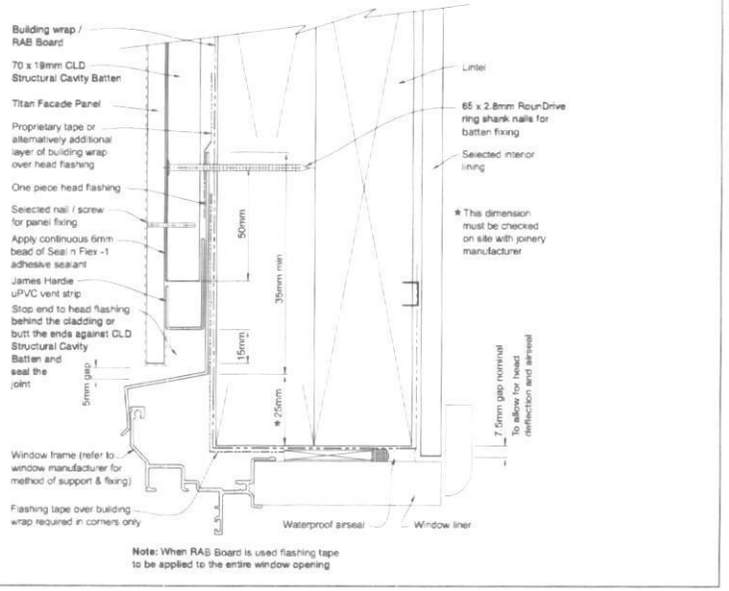


FIGURE 17: WINDOW HEAD

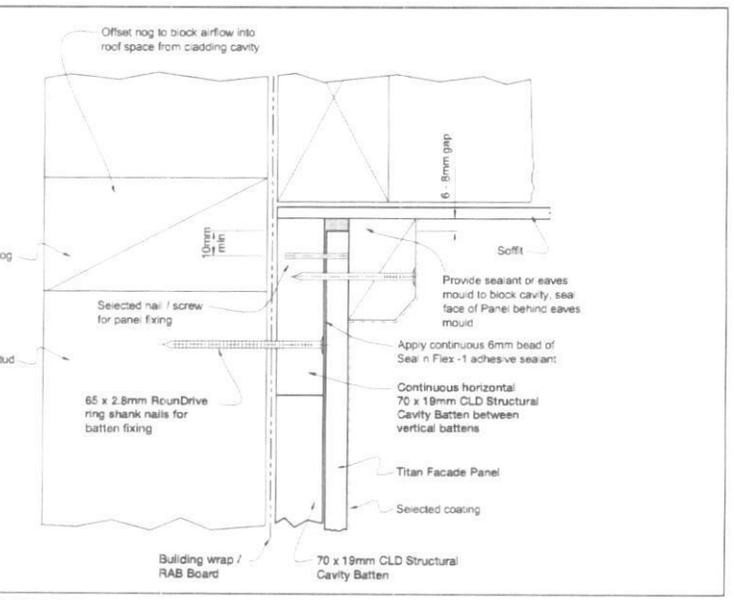
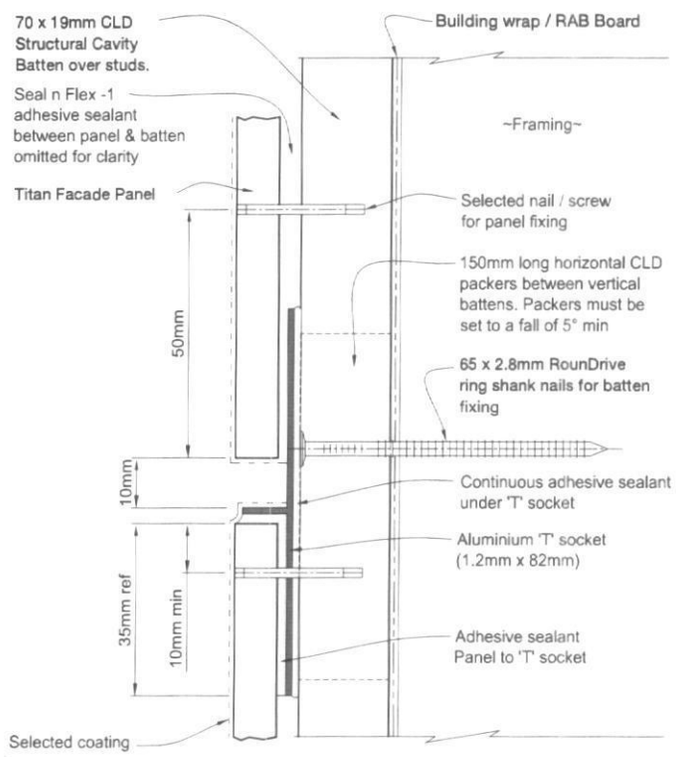


FIGURE 18: SOFFIT DETAIL



Step 1

- Ensure that building wrap / RAB Board is in place.

Step 2

- 70 x 19mm CLD Structural Cavity Battens to be installed over the studs.
- Nylon strapping intermediate support to be provided to hold insulation in place between studs.

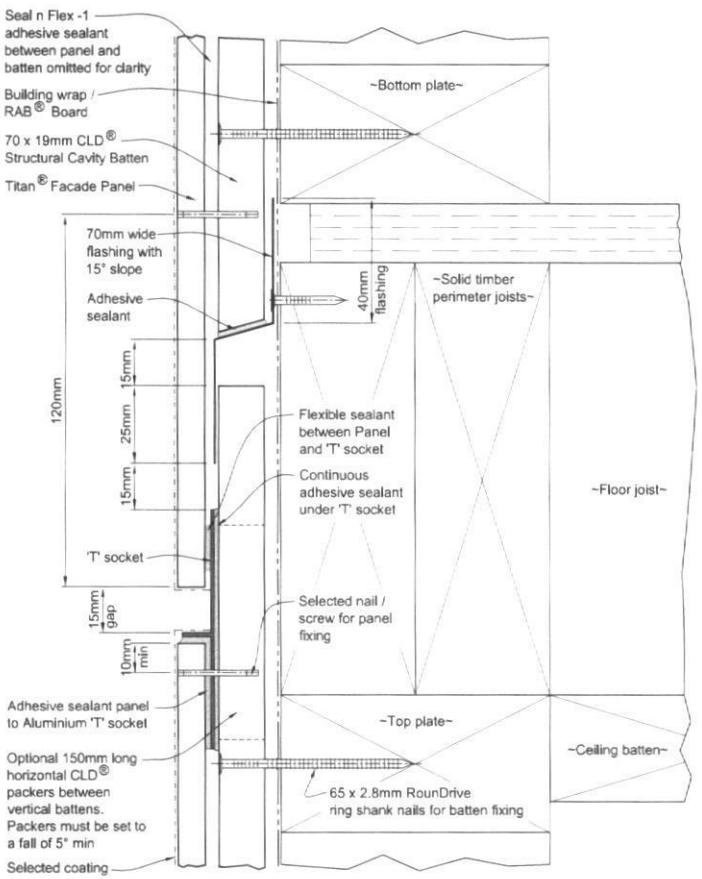
Step 3

- Install the lower panel complete with aluminium 'T' socket
- Install the upper panel keeping a 10mm gap

Notes:

- The Aluminium 'T' socket can be glued onto the back of the sheet on the ground. Apply two 6mm thick lines of adhesive sealant on the bottom portion of the 'T' socket to seal. Take care to ensure continuous seal is formed between panel and 'T' socket.
- The sealant must continue between socket flange and top panel edge.
- The 'T' socket must be sealed using adhesive sealant to the CLD Structural Cavity Batten.
- For edge distance of fixings refer to Section 6.

FIGURE 19: MID FLOOR ALUMINIUM SOCKET JOINT



Step 1

- Check Architects specification to confirm the type of horizontal joint required.

Step 2

- Check fixing centres and edge distances.
- Cut edges need to be primed on site.

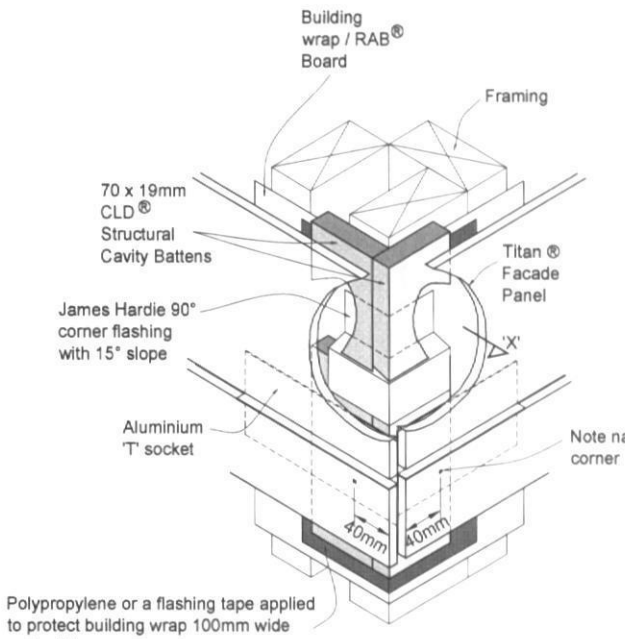
Step 3

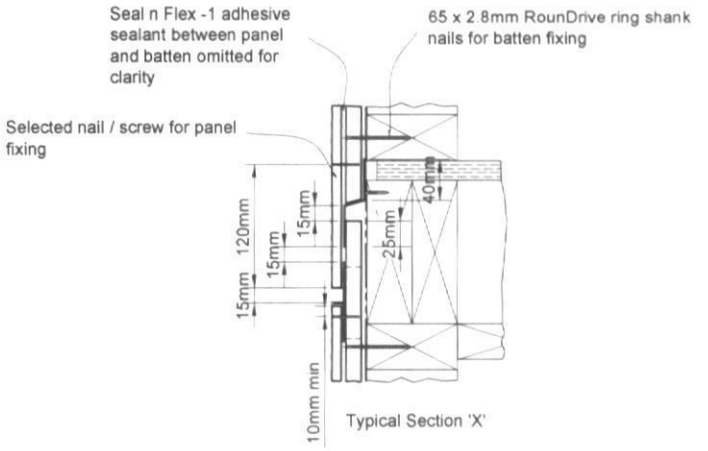
- Flash the horizontal gap between battens with batten flashing and seal as shown.
- Aluminium 'T' socket to be cut flush to the vertical edges of panels and should start below the batten flashing.

Step 4

- Do not fix panels or battens into floor joists.
- For edge distance of fixings refer to Section 6.

FIGURE 20: 'T' SOCKET JOINT AT FLOOR JOIST





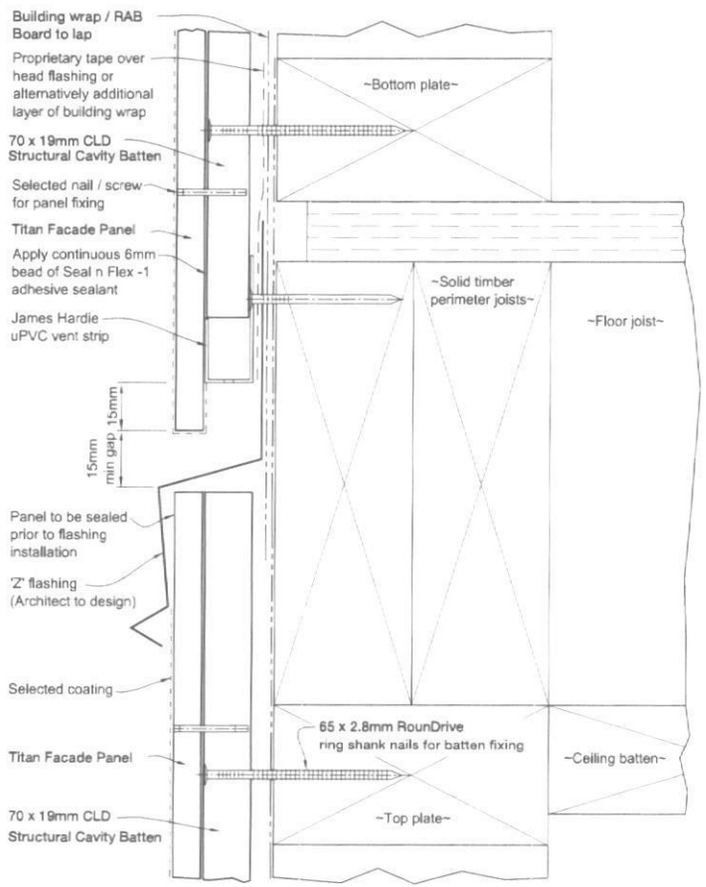
Note:

Socket joint at floor joist for internal corner may be formed using the same James Hardie 90° corner flashing.

Refer to Figure 14 for fixing of Aluminium 'T' socket.

For edge distance of fixings refer to Section 6.

FIGURE 21: 'T' SOCKET JOINT AT FLOOR JOIST CORNER



Step 1

- Check Architects plans for the type of flashing to be used.

Step 2

- Check fixing centres and edge distances.
- If top fixings are to be hidden by the Z flashing they will need to be fixed and sealed before the Z flashing is installed.
- Cut edges need to be primed with Acraprime sealer or similar.

Step 3

- When 50 year durability is required refer Table 20 E2/AS1.

Step 4

- The flashing to be placed in the centre of the floor joists. Do not fix CLD Structural Cavity Battens or panels into floor joists.

FIGURE 22: DRAINED FLASHING JOINT AT FLOOR JOIST

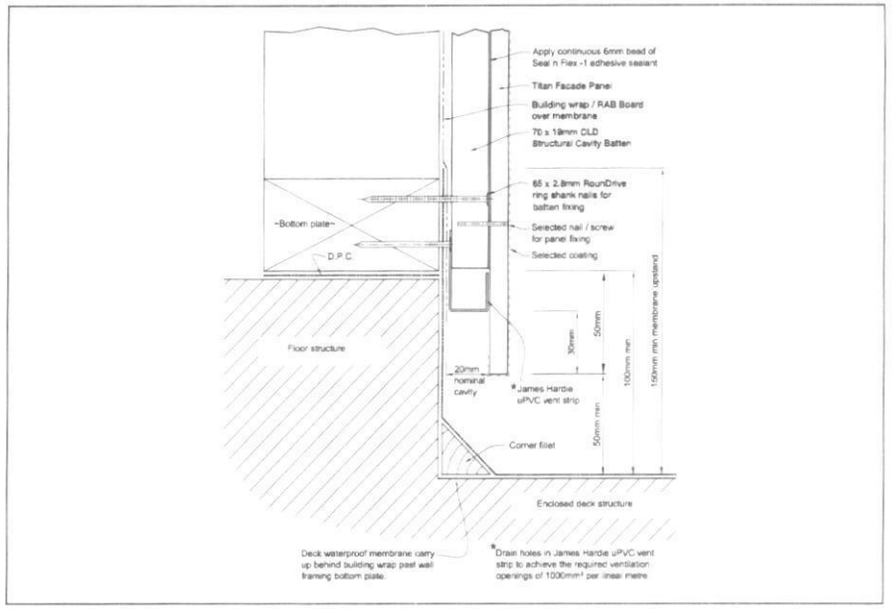


FIGURE 23: ENCLOSED DECK

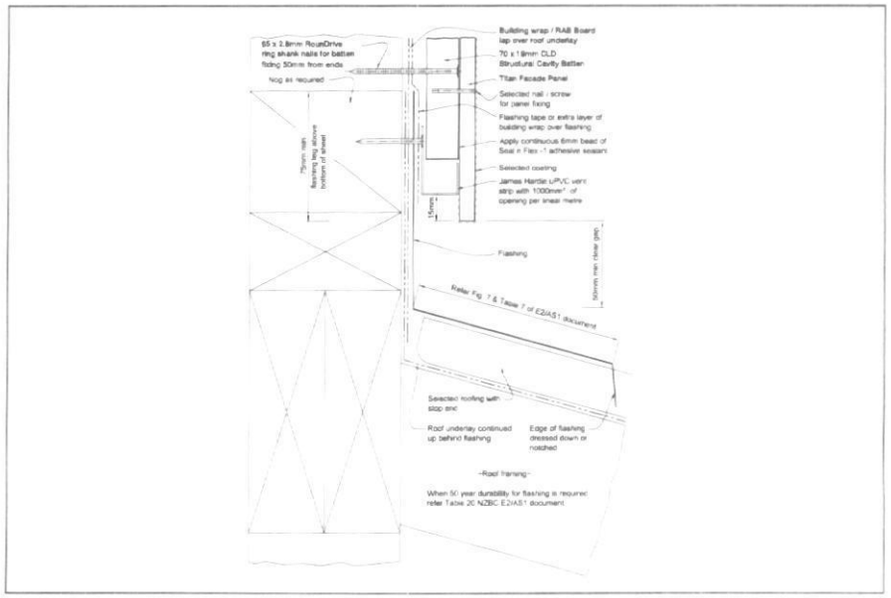


FIGURE 24: ONE PIECE APRON FLASHING JOINT

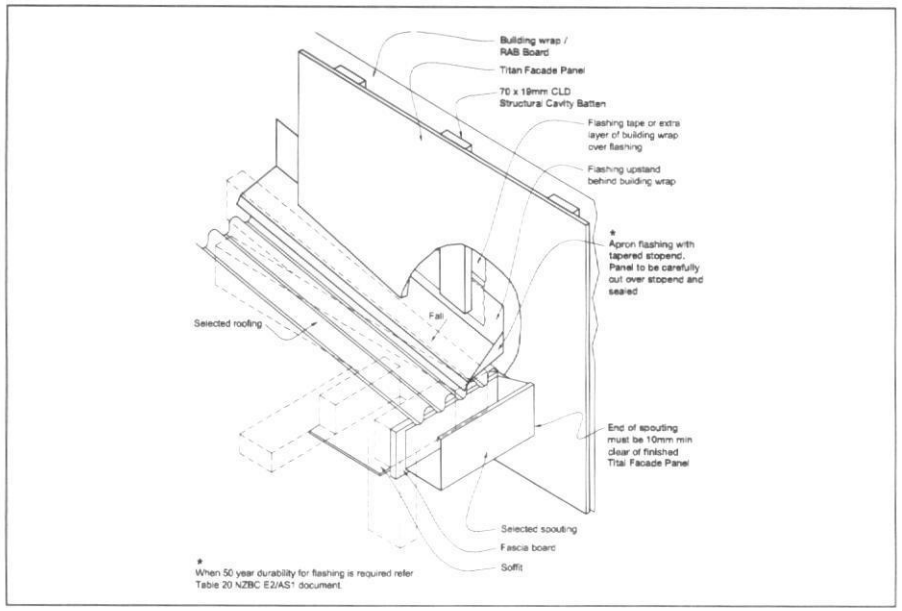


FIGURE 25: ROOF TO WALL JUNCTION DETAIL

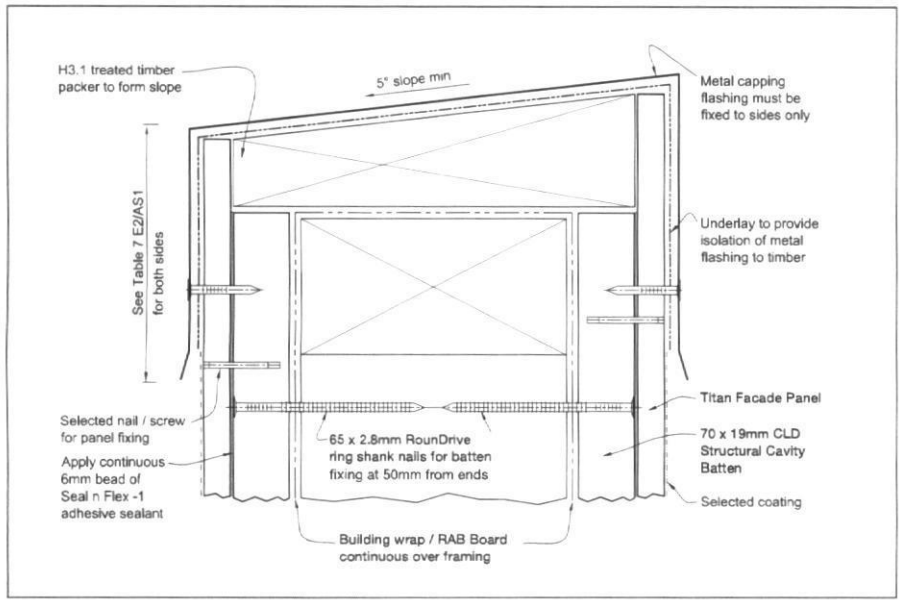


FIGURE 26: PARAPET FLASHING

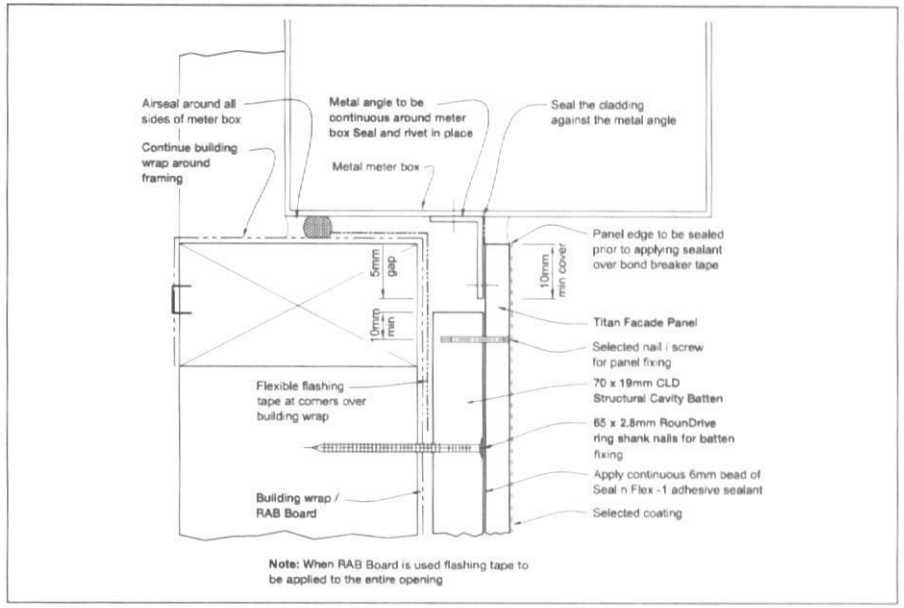


FIGURE 27: METER BOX AT SILL

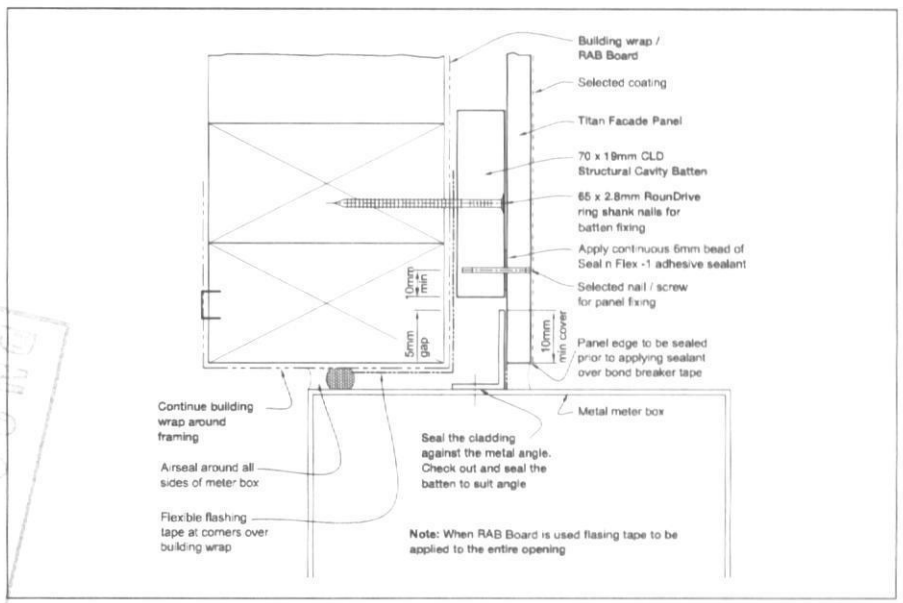


FIGURE 28: METER BOX AT JAMB

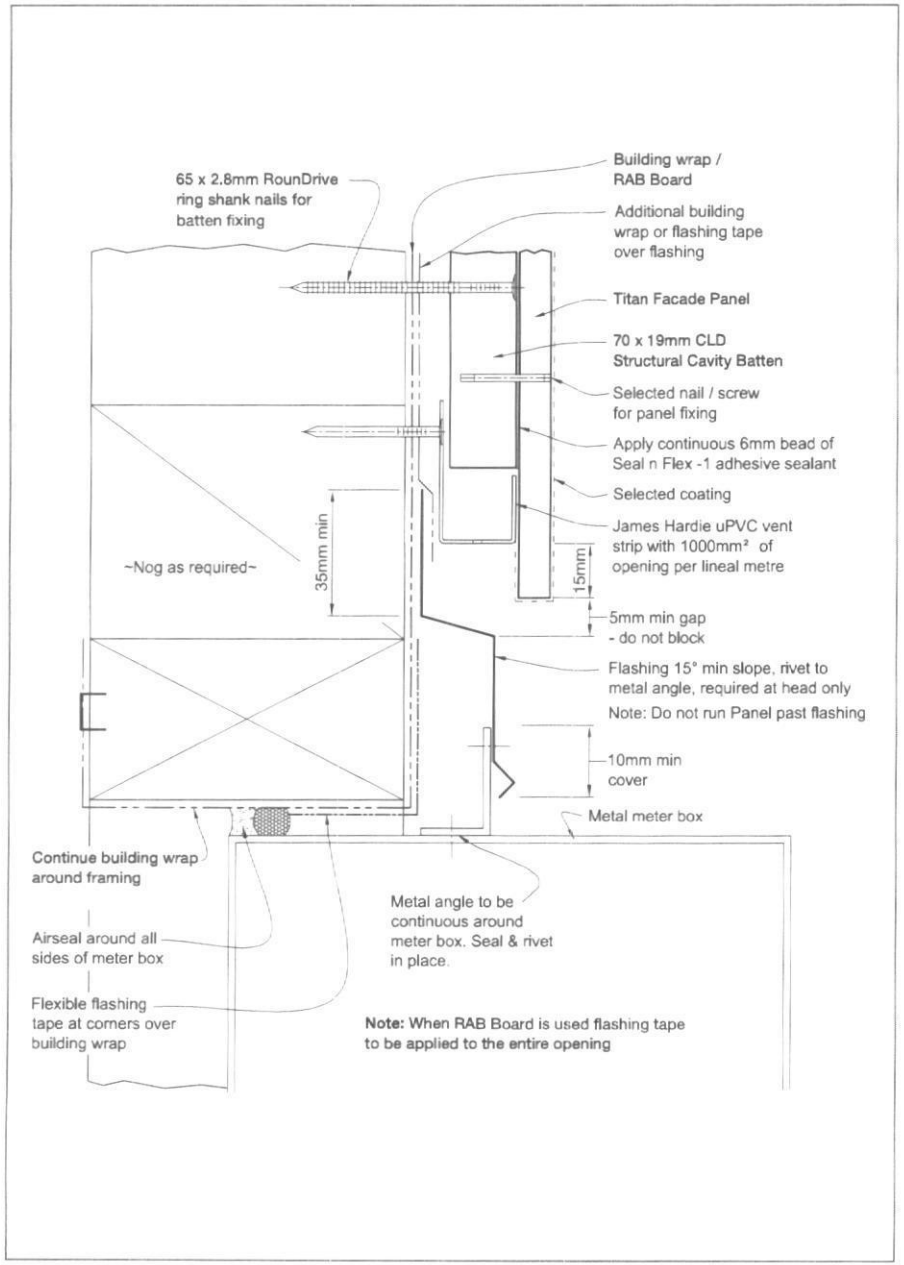


FIGURE 29: METER BOX AT HEAD

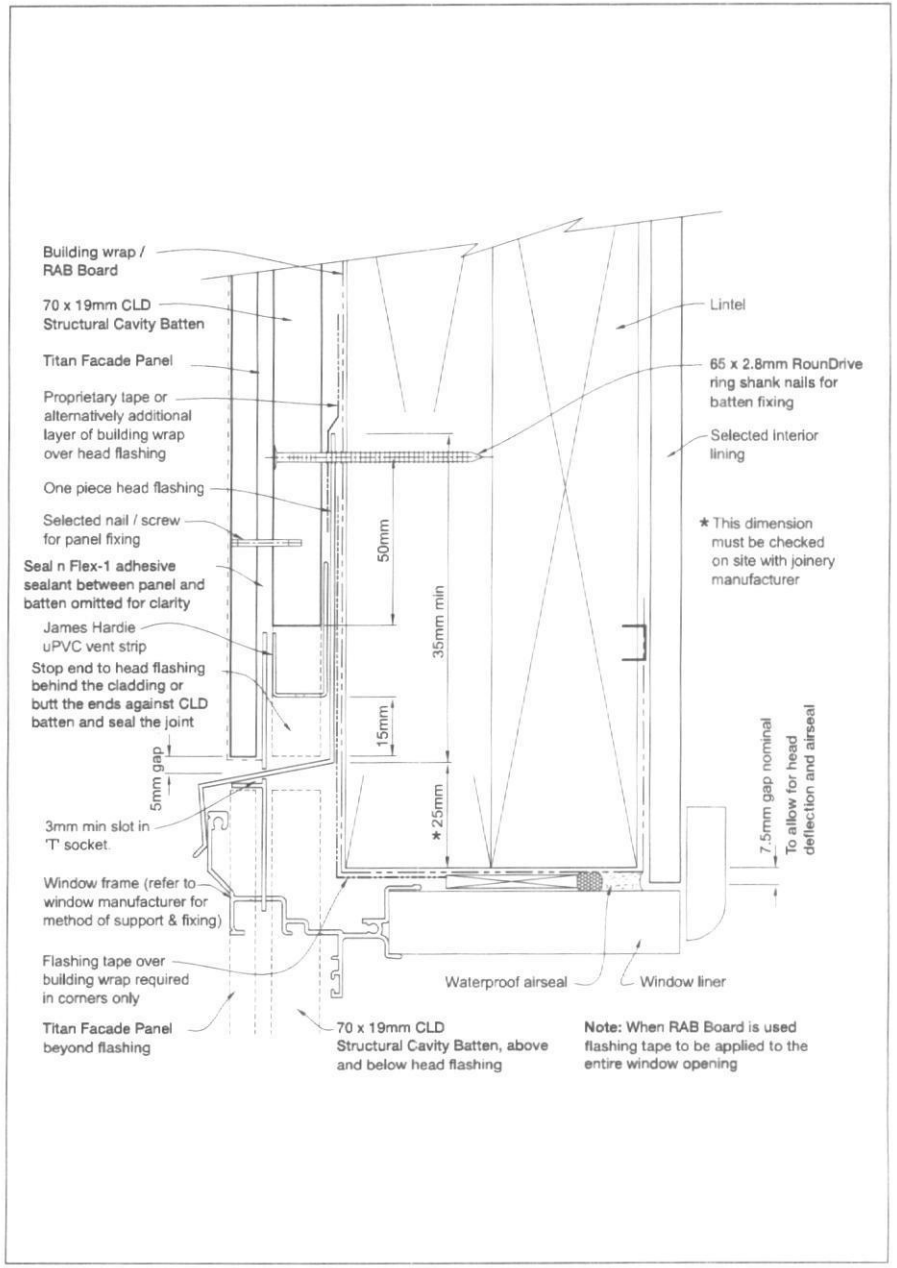


FIGURE 30: SOCKET JOINT DETAIL AT WINDOW HEAD

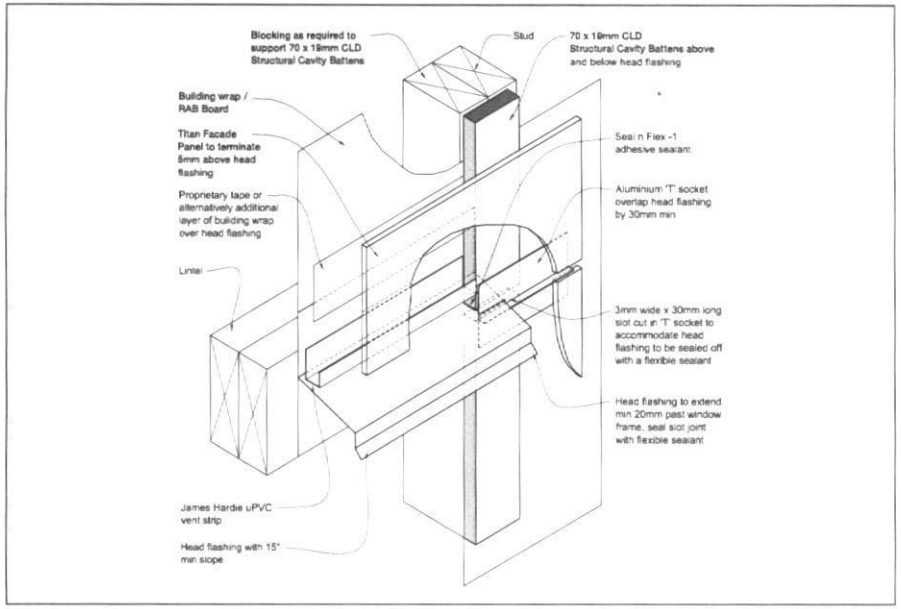


FIGURE 31: 'T' SOCKET JOINT AT WINDOW HEAD

NOTES

15 WARRANTY

Titan® FACADE PANEL CLD® STRUCTURAL CAVITY BATTEN RAB® BOARD

PRODUCT WARRANTY

MARCH 2007

WARRANTY: James Hardie New Zealand Limited ("James Hardie") warrants for a period of 15 years from the date of purchase that the Titan® Facade Panel, RAB® Board and CLD® Structural Cavity Batten (the "Product"), will be free from defects due to defective factory workmanship or materials and, subject to compliance with the conditions below, will be resistant to cracking, rotting, fire and damage from termite attacks to the extent set out in James Hardie's relevant published literature current at the time of installation. James Hardie warrants for a period of 15 years from the date of purchase that the accessories supplied by James Hardie will be free from defects due to defective factory workmanship or materials.

Nothing in this document shall exclude or modify any legal rights a customer may have under the Trade Practices Act or otherwise which cannot be excluded or modified at law.

CONDITIONS OF WARRANTY: The warranty is strictly subject to the following conditions:

(a) James Hardie will not be liable for breach of warranty unless the claimant provides proof of purchase and makes a written claim either within 30 days after the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation;

(b) this warranty is not transferable;

(c) the Product must be installed and maintained strictly in accordance with the relevant James Hardie literature current at the time of installation and must be installed in conjunction with the components or products specified in the literature. Further, all other products, including coating and jointing systems, applied to or used in conjunction with the Product must be applied or installed and maintained strictly in accordance with the relevant manufacturer's instructions and good trade practice;

(d) the project must be designed and constructed in strict compliance with all relevant provisions of the current New Zealand Building Code ("NZBC"), regulations and standards;

(e) the claimant's sole remedy for breach of warranty is (at James Hardie's option) that James Hardie will either supply replacement product, rectify the affected product or pay for the cost of the replacement or rectification of the affected product;

(f) James Hardie will not be liable for any losses or damages (whether direct or indirect) including property damage or personal injury, consequential loss, economic loss or loss of profits, arising in contract or negligence or howsoever arising. Without limiting the foregoing James Hardie will not be liable for any claims, damages or defects arising from or in any way attributable to poor workmanship, poor design or detailing, settlement or structural movement and/or movement of materials to which the Product is attached, incorrect design of the structure, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, efflorescence or performance of paint/coatings applied to the Product, normal wear and tear, growth of mould, mildew, fungi, bacteria, or any organism on any Product surface or Product (whether on the exposed or unexposed surfaces);

(g) all warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extent allowed by law;

(h) If meeting a claim under this warranty involves re-coating of Products, there may be slight colour differences between the original and replacement Products due to the effects of weathering and variations in materials over time.

DISCLAIMER: The recommendations in James Hardie's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to conditions (c), (d), (f) and (g) above. James Hardie has tested the performance of the Titan® Facade Panel, RAB® Board and CLD® Structural Cavity Batten when installed in accordance with the Titan® Facade Panel and CLD® Cavity Batten technical specification, in accordance with the standards and verification methods required by the NZBC and those test results demonstrate the product complies with the performance criteria established by the NZBC. However, as the successful performance of the relevant system depends on numerous factors outside the control of James Hardie (e.g. quality of workmanship and design) James Hardie shall not be liable for the recommendations made in its literature and the performance of the relevant system, including its suitability for any purpose or ability to satisfy the relevant provisions of the NZBC, regulations and standards as it is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant James Hardie installation manual are suitable for the intended project and that specific design is conducted where appropriate.

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03/07-85521

GIB Bracing System Specification – GS1 (10 or 13) APRIL 2009

Specification Number	Length (m) minimum	Lining requirements
GS1	0.4	10 or 13mm GIB® Standard Plasterboard one side

WALL FRAMING
Wall framing to comply with,
- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS3604)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS3602)

Framing dimensions and height as determined by NZS3604 stud and top plate tables for load-bearing and non load-bearing walls. The use of kiln dried machine stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor
Pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres.

Concrete floor
Internal bracing lines
In accordance with the requirements of NZS3604 for internal wall plate fixing or alternatively 75 x 3.8mm shot fired fasteners fitted with 16mm disks, spaced at 150mm and 300mm from the end studs and thereafter at 600mm centres.
External wall bracing lines
In accordance with the requirements of NZS 3604:1999 for external plate fixing.

WALL LINING
One layer of 10 or 13mm GIB® Standard Plasterboard. Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full length sheets where possible.

PERMITTED SUBSTITUTION
The Bracing Unit ratings for system GS1(10) apply to 10mm GIB® Standard Plasterboard and any other GIB® Plasterboard. The ratings for GS1(13) apply to 13mm GIB® Standard Plasterboard and any other 13mm GIB® Plasterboard.

FASTENING THE LINING

Fasteners
32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® nails.

Fastener Centres
50, 100 and 150mm from each corner and 150mm thereafter around the perimeter of the bracing element. For vertical fixing place fasteners at 300mm centres at sheet joints in the tapered sheet edge. For horizontal fixing place single fasteners in the tapered edge where sheets cross studs. Use daubs of GIBFix® Adhesive at 300mm centres to intermediate studs. Place fasteners 12mm from tapered paper bound sheet edges and 18mm from sheet end or cut sheet edges.

JOINTING
All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide".

Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, 100 and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machine edge of the sheet and no closer than 18mm to a sheet end or cut edge.

GIB® EzyBrace™ SYSTEMS

GIB Bracing System Specification – BL1 (10 or 13) APRIL 2009

Specification Number	Length (m) minimum	Lining requirements	Other requirements
BL1	0.4	10 or 13mm GIB Braceline® one side	Hold-downs

WALL FRAMING
Wall framing to comply with,
- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS3604)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS3602)

Framing dimensions and height as determined by NZS3604 stud and top plate tables for load-bearing and non load-bearing walls. The use of kiln dried machine stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor
Use panel hold-down connections at each end of the bracing element. The GIB® Handibrac™ is recommended. Details are specified separately. In addition use pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres along the length of the bracing element.

Concrete floor
Use panel hold-down connections at each end of the bracing element. The GIB® Handibrac™ is recommended. Details are specified separately. Within the length of the bracing element bottom plates are fixed in accordance with the requirements of NZS 3604:1999.

WALL LINING
One layer of 10 or 13mm GIB Braceline®. Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full length sheets where possible.

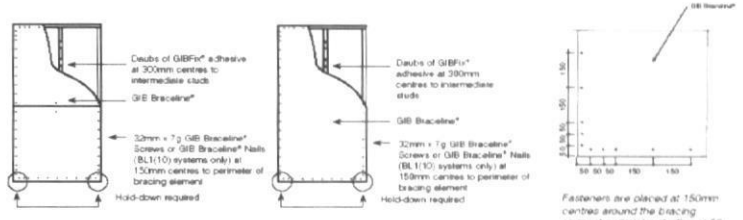
PERMITTED SUBSTITUTION
The Bracing Unit ratings for system BL1 apply to 10mm GIB Braceline® (fixed with GIB Braceline® Screws or GIB Braceline® Nails) or 13mm GIB Braceline® (fixed with GIB Braceline® Screws only). For other permitted GIB® Plasterboard substitutions refer to page 23 in GIB® EzyBrace™ Systems, 2009.

FASTENING THE LINING

Fasteners
32mm x 7g GIB Braceline® Screws or 35mm GIB Braceline® Nails (BL1(10) systems only)

Fastener Centres
50, 100 and 150mm from each corner and 150mm thereafter around the perimeter of the bracing element. For vertical fixing place fasteners at 300mm centres at sheet joints in the tapered sheet edge. For horizontal fixing place single fasteners in the tapered edge where sheets cross studs. Use daubs of GIBFix® Adhesive at 300mm centres to intermediate studs. Place fasteners 12mm from tapered paper bound sheet edges and 18mm from sheet end or cut sheet edges.

JOINTING
All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide".



For hold-down fixings refer to pages 20 and 21 in GIB® EzyBrace™ Systems, 2009.

Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, 100, and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machine edge of the sheet and no closer than 18mm to a sheet end or cut edge.

GIB® EzyBrace™ SYSTEMS

GIB Bracing System Specification – GS2 (10 or 13)

APRIL 2009

Specification Number	Length (m) minimum	Lining requirements
GS2	0.6	10 or 13mm GIB® Standard Plasterboard each side

WALL FRAMING
Wall framing to comply with,
- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS3604)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS3602)

Framing dimensions and height as determined by NZS3604 stud and top plate tables for load-bearing and non load-bearing walls. The use of kiln dried machine stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor
Pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres.

Concrete floor
Internal bracing lines
In accordance with the requirements of NZS3604 for internal wall plate fixing or alternatively 75 x 3.8mm shot fired fasteners fitted with 16mm disks, spaced at 150mm and 300mm from the end studs and thereafter at 600mm centres.

WALL LINING
One layer of 10 or 13mm GIB® Standard Plasterboard. Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full length sheets where possible.

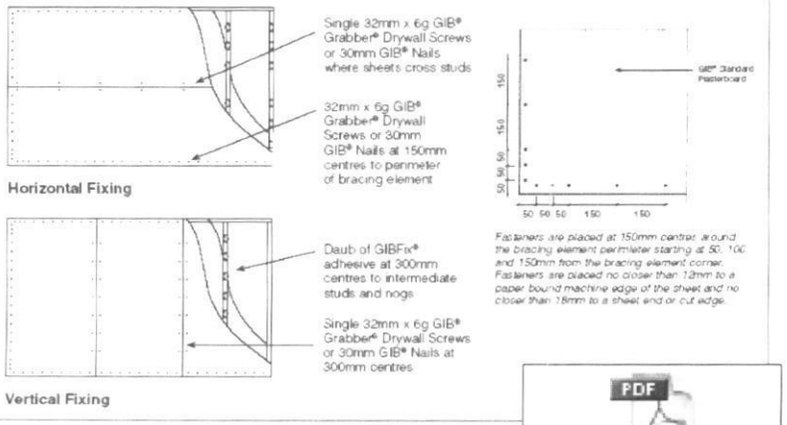
PERMITTED SUBSTITUTION
The Bracing Unit ratings for system GS2 apply to 10mm GIB® Standard Plasterboard and any other GIB® Plasterboard. The ratings for GS2(13) apply to 13mm GIB® Plasterboard and any other 13mm GIB® Plasterboard.

FASTENING THE LINING

Fasteners
32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® nails.

Fastener Centres
50, 100 and 150mm from each corner and 150mm thereafter around the perimeter of the bracing element. For vertical fixing place fasteners at 300mm centres at sheet joints in the tapered sheet edge. For horizontal fixing place single fasteners in the tapered edge where sheets cross studs. Use daubs of GIBFix® Adhesive at 300mm centres to intermediate studs. Place fasteners 12mm from tapered paper bound sheet edges and 18mm from sheet end or cut sheet edges.

JOINTING
All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide".



Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, 100, and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machine edge of the sheet and no closer than 18mm to a sheet end or cut edge.

PDF
Adobe
GS2 (10 or 13) Specification.pdf

GIB® EzyBrace™ SYSTEMS

GIB Bracing System Specification – BLG

APRIL 2009

Specification Number	Length (m) minimum	Lining requirements	Other requirements
BLG	0.6	10mm GIB Braceline® one side 10mm GIB® Standard Plasterboard other side	Hold-downs

WALL FRAMING
Wall framing to comply with,
- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS3604)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS3602)

Framing dimensions and height as determined by NZS3604 stud and top plate tables for load-bearing and non load-bearing walls. The use of kiln dried machine stress graded timber is recommended.

BOTTOM PLATE FIXING

Timber floor
Use panel hold-down connections at each end of the bracing element. The GIB® Handibrac™ is recommended. Details are specified separately. In addition use pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres along the length of the bracing element.

Concrete floor
Use panel hold-down connections at each end of the bracing element. The GIB® Handibrac™ is recommended. Details are specified separately. Within the length of the bracing element bottom plates are fixed in accordance with the requirements of NZS 3604:1999.

WALL LINING
One layer of 10mm GIB Braceline® one side of the frame and one layer of 10mm GIB® Standard Plasterboard the other. Vertical or horizontal fixing permitted. Sheet joints shall be touch fitted. Use full length sheets where possible.

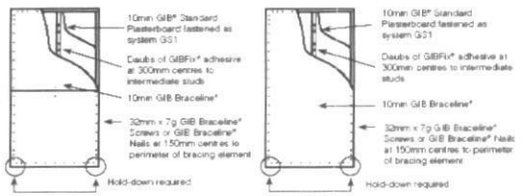
PERMITTED SUBSTITUTION
GIB Braceline®
13mm GIB Braceline® (fixed with GIB Braceline® Screws). For other permitted GIB® Plasterboard substitions refer to page 23 in GIB® EzyBrace™ Systems, 2009.
GIB® Standard Plasterboard
Any 10 or 13mm GIB® Plasterboard.

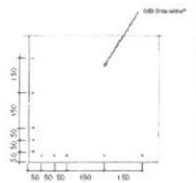
FASTENING THE LINING

Fasteners
GIB Braceline®
32mm x 7g GIB Braceline® Screws or
35mm GIB Braceline® Nails.
GIB® Standard Plasterboard
32mm x 6g GIB® Grabber® Drywall Screws or 30mm GIB® Nails.

Fastener Centres
50, 100 and 150mm from each corner and 150mm thereafter around the perimeter of the bracing element. For vertical fixing place fasteners at 300mm centres at sheet joints in the tapered sheet edge. For horizontal fixing place single fasteners in the tapered edge where sheets cross studs. Use daubs of GIBFix® Adhesive at 300mm centres to intermediate studs. Place fasteners 12mm from tapered paper bound sheet edges and 18mm from sheet end or cut sheet edges.

JOINTING
All fastener heads stopped and all sheet joints paper-tape reinforced and stopped in accordance with the "GIB® Site Guide".





Fasteners are placed at 150mm centres around the bracing element perimeter starting at 50, 100, and 150mm from the bracing element corner. Fasteners are placed no closer than 12mm to a paper bound machine edge of the sheet and no closer than 18mm to

For hold-down fixings refer to pages 20 and 21 in GIB® EzyBrace™ Systems, 2009.

PDF
Adobe
BLG Specification.pdf

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet A — single storey — V01/09

Job Details

Name	JAPAC DEVELOPMENTS LTD
Street and Number	7 GALEA GROVE
Lot and DP Number	LOT 7
City/Town/District	PALMERSTON NORTH
Designer	JAPAC DEVELOPMENTS LTD
Company Name	JAPAC DEVELOPMENTS LTD
Date	JUNE 2009

BRANZ Appraised
Appraisal No.294 [2009]

Select GIB® Lining Option: 10 mm GIB® Plasterboard

Building Specification

		Complete Single Floor Column only
Number of storeys	single	
Floor Loading	2kPa	
Foundation Type	slab	
	Single Floor	
Cladding Weight	medium	
Roof Weight	light	
Room in Roof Space	no	
Roof Pitch (degrees)	8	
Roof height above eaves (m)	1.2	
Building height to apex (m)	4.0	
Ground to lower floor level (m)	0.3	
Stud Height (m)	2.4	
Building Length (m)	24.9	
Building Width (m)	14.5	
Building Plan Area (m2)	223	

P.N.C.C. APPROVED

Building Location

Wind Zone	***Medium***	**Earthquake Zone**
Region	Preference selected	A
Terrain	Preference selected	
Exposure	Preference selected	*Consult GIB® EzyBrace™ Systems, 2009*
Topography	Preference selected	*for Wind Zone definitions*
Select by Building Consent Authority Map or Preference	Medium	

Bracing Units required for Wind

Demand W (BU)		Walls single
along	slab	535
across	slab	766

Bracing Units required for Earthquake

Demand along / across E (BU)		Walls single
	slab	889

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Along

V01/09

Along

Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
A	99	1	1.8		2.4	GS1(10)	GIB®	124	99
	OK	2	1.8		2.4	GS1(10)	GIB®	124	99
line totals		3							
W	248	4							
EQ	198	5							
B	172	1	2		2.4	GS1(10)	GIB®	138	110
	OK	2	1.2		2.4	BL1(10)	GIB®	159	128
line totals		3							
W	297	4							
EQ	238	5							
C	249	1	2.8		2.4	GS1(10)	GIB®	193	154
	OK	2	2.5		2.4	GS1(10)	GIB®	173	138
line totals		3	2.8		2.4	GS1(10)	GIB®	193	154
W	869	4	2.3		2.4	GS1(10)	GIB®	159	127
EQ	693	5	2.2		2.4	GS1(10)	GIB®	152	121
D	249	1	4.9		2.4	GS1(10)	GIB®	338	270
	OK	2	2		2.4	GS1(10)	GIB®	138	110
line totals		3	4.6		2.4	STR9	Strandb'd	345	299
W	821	4							
EQ	679	5							
E	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
F	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	418%	EQ	203%	2235	1807
Concrete Slab						*OK*	*OK*
Totals Required (from Demand)						535	889

Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Along

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1(10)	0.4	Bracing Units per metre vary with length of wall	
GIB®	GS2(10)	0.6		
GIB®	BL1(10)	0.4		
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Strandb'd	STR9	1.8	65	55
Strandb'd	STR9	2.4	75	65
Plywood	SP1	0.9	100	100
Plywood	SP2	0.6	85	85
Plywood	SP2G	0.6	95	95
Plywood	SP4	0.45	70	85
Plywood	SP5D	1.2	130	135
Customw'd	Type A	0.6	110	105
Customw'd	Type B	1.2	128	121
Customw'd	Type C	2.4	97	87

BRANZ A
Appraisal No

Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	167	BU

GIB® EzyBrace™ FP for GIB® EzyBrace™ Systems, 2009

GIB® Wall Bracing Calculation Sheet B — Single or Upper Walls Across

V01/09

Across

Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	6	5	7	8	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Available Wall Length L (m)	Angle to Bracing line (degrees)	Element Height H (m)	Bracing Type	Supplier	BUs Achieved	BUs Achieved
M	126	1	1.2		2.4	BL1(10)	GIB®	159	128
	OK	2	0.9		2.4	BL1(10)	GIB®	116	99
line totals		3	1.2		2.4	BL1(10)	GIB®	159	128
W	433	4							
EQ	354	5							
N	92	1	2.2		2.4	GS1(10)	GIB®	152	121
	OK	2	3.5		2.4	GS1(10)	GIB®	242	193
line totals		3							
W	393	4							
EQ	314	5							
O	110	1	2.1		2.4	GS1(10)	GIB®	145	116
	OK	2	3.3		2.4	GS1(10)	GIB®	228	182
line totals		3	3.8		2.4	GS1(10)	GIB®	262	209
W	856	4	3.2		2.4	GS1(10)	GIB®	221	176
EQ	682	5							
P	96	1	3.2		2.4	GS1(10)	GIB®	221	176
	OK	2	2.2		2.4	GS1(10)	GIB®	152	121
line totals		3							
W	373	4							
EQ	297	5							
Q	62	1	0.6		2.4	SP2	Plywood	51	51
	OK	2	0.6		2.4	SP2	Plywood	51	51
line totals		3							
W	102	4							
EQ	102	5							
R	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
S	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

						Wind	Earthq.
Totals Achieved	Achieved/Demand	W	282%	EQ	197%	2156	1749
						OK	*OK*

Concrete Slab

Wall Bracing Systems
For full construction details see technical literature

Single or Upper Walls Across

Supplier	System	Minimum Length (m)	BUs W/m	BUs
	none			
GIB®	GS1(10)	0.4	Braci	
GIB®	GS2(10)	0.6	metr	
GIB®	BL1(10)	0.4	len	
GIB®	BLP	0.4		
GIB®	BLG	0.6		
Strandb'd	STR9	1.8	65	55
Strandb'd	STR9	2.4	75	65
Plywood	SP1	0.9	100	100
Plywood	SP2	0.6	85	85
Plywood	SP2G	0.6	95	95
Plywood	SP4	0.45	70	85
Plywood	SP5D	1.2	130	135
Customw'd	Type A	0.6	110	105
Customw'd	Type B	1.2	128	121
Customw'd	Type C	2.4	97	87

BRANZ Appraised
Appraisal No 294 [2009]

Concrete Slab

A limit of 150 BU/m applies to solid concrete slabs

Ensure not to enter custom elements with ratings higher than 150 BU/m

Distribution (NZS3604:1999 minimum values)		
Internal wall bracing lines	70	BU
External wall bracing lines	10 x L(m)	BU
Lines supporting diaphragms	100	BU
Recommended distribution check (75% x D/n)		
No bracing line less than	133	BU

Job: J90617 Client: Japac Developments Ltd. Site: Japac Developments Ltd.
Phone: (Lot 53) 7 Galea Grove
Palmerston North
Description:
Building Consent No.: Phone:

PRODUCER STATEMENT for MiTek 20/20™ TRUSS DESIGN

The MiTek 20/20™ truss design program has been developed by MiTek New Zealand Ltd for the design of GANG-NAIL® timber roof, floor and attic trusses in New Zealand. The truss designs computed by MiTek 20/20™ are prepared using sound and widely accepted engineering principles, and in accordance with compliance documents of the New Zealand Building Code and Verification Method B1/VM1; and internationally accepted standard ANSI/TPI 1 - 2002 as an alternative solution to satisfy the requirements of Clause B1 of the Building Code.

This producer statement covers the MiTek 20/20™ truss design and the structural performance of the GANG-NAIL plate.

On behalf of MiTek New Zealand Ltd, and subject to:

i) All proprietary products meeting their performance specification requirements
ii) The provision of adequate roof bracing and overall building stability
iii) Correct selection and placement of fixings
iv) Correct input of Truss Design Data below
v) The design being undertaken by suitably trained personnel
vi) The truss design being carried out in accordance with MiTek 20/20 User Terms and Conditions,

I believe on reasonable ground that the trusses, if constructed in accordance with the MiTek 20/20™ truss design and shop drawings, will comply with the relevant provisions of the Building Code.

MiTek New Zealand Ltd holds a current policy of Professional Indemnity Insurance no less than $500,000.

On behalf of MiTek New Zealand Ltd,

In Ling Ng, BE (Hons), CPEng, IntPE, MIPENZ (ID: 146585)
TECHNICAL SERVICES MANAGER, MiTek New Zealand Ltd

P.M.S.C. APPROVED

MiTek 20/20™ TRUSS DESIGN DATA

The MiTek 20/20™ computer design for this job is based on the following design parameters entered into the program. The GANG-NAIL Fabricator shall ensure that these job [illegible]s are current and relevant to the project for the design of the trusses.

Job Details

Roof Truss

Timber Group:	~MSGx45 Panel	Pitch:	5.000 deg	Std Overhang:	600 mm
Roof		**Ceiling**		**Wind**	
Material:	Light	Material:	Standard	Area:	Medium (37.0 m/s)
Dead Load:	0.250 kPa	Dead Load:	0.200 kPa	Pressure Coeff:	Cpe = varies; Cpi = -0.30, 0.20
Restraints:	900 mm centres	Restraints:	600 mm centres		
Live Load:	Qur = 0.250 kPa Qc = 1.100 kN	Live Load:	Qc = 1.400 kN		

Importance Level : 2

Design Working Life : 50 years

The timber for these trusses shall be standard gauged and treated to the requirements of NZS 3602:2003. Unless otherwise noted, this design assumes that the steel fixings and timber connectors proposed are located in a **"closed environment",** as defined by NZS3604:1999 Section 4.

Truss List

Legend: * = detail only, ? = input only, ~~Txx~~ = failed design, Ø = non certified, Unmarked trusses = designed successfully, LB = lateral bracing required

Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)	Truss	Qty	Span (mm)	Pitch (deg)	Spacing (mm)
?ET02	1	3400	5.000	883	T01	1	8900	5.000	809	T09	1	4200	5.000	800
?ET03	1	4700	5.000	900	T02A	1	12600	5.000	809	T10	2	8900	5.000	800
?ET04	1	3700	5.000	600	T03	1	13150	5.000	809	T11	6	6890	5.000	879
?ET05	1	1600	5.000	600	T04	1	11000	5.000	809	*R01	1	5100	5.000	900
?ET06	1	2900	5.000	600	T05	1	11000	5.000	833	*R02	1	4000	5.000	900
?ET07	1	6890	5.000	879	T05A	2	11000	5.000	833	*R03	1	3700	5.000	600
?ET07A	1	6890	5.000	879	T05B	1	11000	5.000	833	*R04	1	1600	5.000	600
T02	1	12600	5.000	809	T05C	1	11000	5.000	833	*R05	1	2900	5.000	600
T03	1	13150	5.000	809	T06	1	8055	5.000	833	*R06	1	5000	5.000	900
T03B	1	13150	5.000	809	T07	2	8055	5.000	883	*R07	4	1800	5.000	615
ET01	1D	4200	5.000	900	T08	2	8100	5.000	883	*R08	1	1800	5.000	900
PTG01	1	1980	0.000	900	T08A	1	8100	5.000	883	*R09	2	8090	5.000	900

Total quantity : 49

Risk Matrix

JAPAC DEVELOPMENTS LIMITED, 7 GALEA GROVE (LOT 53), P.N.

North or NE face

Risk factor	Low		Score	Medium		Score	High	Score	Very high		Score	Subtotal	
Wind Zone	0		0	0	1	0	1	0	2		0	0	1 *
Number of stories	0	1	0	1		0	2	0	4		0	0	1 *
Roof/wall intersection desigr	0	1	0	1		0	3	0	5		0	0	1 *
Eaves width	0		0	1		0	2	0	5	1	5	5	1 *
Envelope complexity	0		0	1	1	1	3	0	6		0	1	1 *
Deck design	0	1	0	2		0	4	0	6		0	0	1 *
Total risk score												6	

West or NW face

Risk factor	Low		Score	Medium		Score	High	Score	Very high		Score	Subtotal	
Wind Zone	0		0	0	1	0	1	0	2		0	0	1 *
Number of stories	0	1	0	1		0	2	0	4		0	0	1 *
Roof/wall intersection desigr	0	1	0	1		0	3	0	5		0	0	1 *
Eaves width	0	1	0	1		0	2	0	5		0	0	1 *
Envelope complexity	0		0	1	1	1	3	0	6		0	1	1 *
Deck design	0	1	0	2		0	4	0	6		0	0	1 *
Total risk score												1	

South or SW face

Risk factor	Low		Score	Medium		Score	High	Score	Very high		Score	Subtotal	
Wind Zone	0		0	0	1	0	1	0	2		0	0	1 *
Number of stories	0	1	0	1		0	2	0	4		0	0	1 *
Roof/wall intersection desigr	0	1	0	1		0	3	0	5		0	0	1 *
Eaves width	0		0	1		0	2	0	5	1	5	5	1 *
Envelope complexity	0		0	1	1	1	3	0	6		0	1	1 *
Deck design	0	1	0	2		0	4	0	6		0	0	1 *
Total risk score												6	

East or SE face

Risk factor	Low		Score	Medium		Score	High	Score	Very high		Score	Subtotal	
Wind Zone	0		0	0	1	0	1	0	2		0	0	1 *
Number of stories	0	1	0	1		0	2	0	4		0	0	1 *
Roof/wall intersection desigr	0	1	0	1		0	3	0	5		0	0	1 *
Eaves width	0	1	0	1		0	2	0	5		0	0	1 *
Envelope complexity	0		0	1	1	1	3	0	6		0	1	1 *
Deck design	0	1	0	2		0	4	0	6		0	0	1 *
Total risk score												1	


23.06.2009


23.06.2009


23.06.2009


23.06.2009


23.06.2009

Project File Sign Off Checklist

BCA T-33a
Ver: 4.0
Date: 29/07/2009

Address: 7 Calea Building Consent No.: 18059

Item to be checked for completion:	Yes	N/A	No	Comments:
Plumbing & Drainage Officer				
'As laid' Drainage plans received	✓			
P&D conditions / endorsements signed off?	✓			
Number of pans				Number:
Plumbing & Drainage items signed off	Officer: Warner Signed:			Date: 01/12/2009
Building Officer				
All conditions/endorsement of the consent signed off?	✓			
All mandatory inspections completed and SIN/NTF complied with	✓			
CS and CSS required?			✓	
Amendment to existing Compliance Schedule required?			✓	
Section 72, 75 or Memo of Encumbrance Certificates registered?		✓		
Property Issues forms been completed and registered?		✓		
Roads Assets Officer advised if new vehicle crossing is applicable and copy of project file sign off checklist forwarded?		✓		
WHRS claim applicable to BC and copy of forwarded to Claims Officer?		✓		
Planning Officer advised if work is a relocate and copy of project file sign off checklist forwarded		✓		
Swimming pool administration officer been advised and copy of inspection checklist forwarded?		✓		
All relevant information placed on the project file:				
☐ Building Consent Application	✓			
☐ PIM / CT / Consent Notices	✓			
☐ Processing Checklist	✓			
☐ Plans & Specifications	✓			
☐ Engineer Design / Calculations		✓		
☐ Geotechnical Report		✓		
☐ Effluent System Design		✓		
☐ Truss Layout / Design Certificate		✓		
☐ Fire Design / Analysis		✓		
☐ NZFSDRU Summary		✓		
☐ Producer Statements (PS1/PS2)		✓		
☐ Further Information Requests / Correspondence		✓		
☐ Building Consent / Amended BC's	✓			
☐ Development Services Project sheet		✓		
☐ Section 77 Certificate		✓		
☐ Amendments (application/checklist)		✓		
☐ Inspection checklists as per BC	✓			
☐ NTF / SIN		✓		
☐ Energy Certificates	✓			
☐ As Laid Drainage Plans	✓			
☐ Manufacturers Certificates		✓		
☐ Producer Statements (PS3/PS4)		✓		
☐ CPU application/checklist/certificate		✓		
☐ Application for CCC	✓			
☐ Certification of specified systems from approved certifiers		✓		
☐ OTHER / Notes:		✓		
Building Officer – CCC application approved for issue?	(YES) NO		Officer: Warner Signed	Date: 01/12/2009

Project File Sign Off Checklist

BCA T-33a
Ver: 4.0
Date: 29/07/2009

Administration Officer				
Any changes to the street address? (check on City View)			✓	
File been amended if street address has changed?		✓		
All inspections billed?	✓			
All bonds refunded?	✓			asset Bond
Development Contribution paid?		✓		
All fees paid?	✓			
Compliance Schedule (CS)& Compliance Schedule Statement (CSS) prepared?		✓		
CCC issued? Copy of signed CCC, CS & CSS (if applicable) and project file sign off checklist placed in project file.	✓			
Administration items signed off?	Officer: Signed:			Date: **01/12/2009**

Jon Dudder

11 @ $150.00

11 carried out

Inspection Checklist –Final - Plumbing

Address: 7 Galea Grove Building Consent No.: 18059

Tradesperson: Brokenshires Tradesperson: Dave

Reg.No.: _____ Contact Details: _____ Reg. No.: _____ Contact Details: _____

Date: 30/11/2009 Time: 1530

Staged/Partial Inspection: _____ ___ of ___

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13 & AS/NZS 3500.2.2:2003	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments **must** be made for: 1. **Non-complying** Items 2. Items/work **deviates** from approved documents 3. Detail alternative solution & how compliance achieved
Application for Code Compliance Certificate received?	(Yes) / No			
Conditions of consent/site instructions read?				(Yes) / No
Conditions of consent actioned	X			
All required inspection sheets passed	X			
Approved plans & specifications sighted?[2]				(Yes) / No
Electrical Certificate of Compliance provided?	(Yes) / No / N/a			
Gas Certificate of Compliance provided?	Yes (No) / N/a			
Smoke Alarms installed?	(Yes) / No / N/a			
Work completed as per approved plans	X			
Waste water system inspected?[3]		X		
No. of WC Pans				No: 2
Drainage[4]				
Asbuilt drainage plan received?	(Yes) / No			
Finished height of gully dish[5]	X			Unpaved 100mm Paved 25mm
Terminal vent installed[6] & flashed	X			Size[7]: mm
Vent cowl fitted	X			
Discharge pipes to gullies[8]				
Sealed against gully dish	X			
Sealed through foundation	X			
Lids fitted to gully dish[9]	X			
Pipes discharge under gully grating	X			
Stormwater				
Guttering fitted	X			
Downpipes fitted and fixed to walls	X			
Diffusers/spreaders (downpipes to roofs)		X		
Overflows to internal gutters		X		
Butynol correctly laid & glued		X		
Surface drains/sumps (yards & drives)	X			
Site water run off (sloping sites)	X			
Watertank overflow piped away		X		
HWC[10]				Type: open vented / valve vented / (instantaneous)
Valves[11]				
Open Vented Cylinder				
Isolating (3 in 1) valve[12]		X		
Pressure reducing valve[13]		X		
Drain valve[14]		X		
Tempering valve[15]		X		Temperature: °C
Cylinder restraints[16]		X		
HW Cylinder o/flow identified		X		Low Pressure systems / wet backs
Valve Vented Cylinder				
Isolating (3 in 1) valve[17]		X		
Cold water expansion valve[18]		X		
Pressure limiting valve[19]		X		
Drain valve[20]		X		
Temperature & pressure relief valve[21]		X		
Air gap to drain[22]		X		
Tempering valve[23]		X		Temperature: °C

Inspection Checklist –Final - Plumbing

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13 & AS/NZS 3500.2.2:2003	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Cylinder restraints[24]		X		
Instantaneous Water Heating				Type: RINNAI INFINITY
Water temperature[25]	X			Temperature:54 °C
Isolating valve[26]	X			
Solar Water Heaters				
Installed as per manufacturer's specifications		X		
Water temperature[27]		X		Temperature: °C
Wetbacks[28]				
Connected only to open vented cylinder		X		
Connections only with copper pipework		X		
Sanitary Fixtures[29]				
Sink working	X			
Sink trap free of leaks	X			
Dishwasher trap above flood level of dishwasher	X			
Bath working	X			
Bath trap water seal visible	X			N/a – details[30]:
Vanity working	X			
Vanity trap free of leaks	X			
Shower working	X			
Shower trap	X			Type (easi-clean) / standard trap
Shower trap – standard trap water seal visible[31]	X			
Shower cubicle watertight			X	
Laundry tub working		X		
Laundry trap free of leaks		X		
WC working		X		
WC trap water seal		X		
Swimming/Spa Pools				Refer to Final - Building & Pool Inspection Checksheets

Notes[32]:

Inspection Checklist –Final - Plumbing

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13 & AS/NZS 3500.2.2:2003	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved

Amended plans required?	Yes (No)	Officer:	JAMES PITT
Amended specifications required?	Yes (No)		
Reinspection required?	Yes (No)	Signed:	
Site instruction issued?	(Yes) / No		
Plumbing final inspection passed?	Yes (No)	Date:	30/11/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation.
[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail
[3] If no, issue site instruction
[4] G13 AS2 Section 3.3.1
[5] AS/NZS 3500.2.2:2003Section 4.6.6.7
[6] AS/NZS 3500.2.2:2003 Section 3.9.3.1
[7] AS/NZS 3500.2.2:2003 Section 3.9.3.2 & Table 3.5
[8] G13 AS 2 Section 3.3.1 & Fig. 3
[9] G13 AS2 Section 3.3.1
[10] G12 AS1 Section 6.0
[11] G12 AS 1Table 5
[12] G12 AS 1 Fig. 7
[13] G12 AS 1 Fig. 7
[14] G12 AS 1 Fig. 7
[15] G12 AS 1 Fig. 16 1m minimum copper pipe between storage water heater & tempering valve
[16] G12 AS 1 Section 6.11.4 & Fig. 14
[17] G12 AS 1 Fig. 8

[18] G12 AS 1 Fig. 8
[19] G12 AS 1 Fig. 8
[20] G12 AS 1 Fig. 8
[21] G12 AS 1 Fig. 8
[22] G12 AS 1 Fig. 8
[23] G12 AS 1 Fig. 16 1m minimum copper pipe between storage water heater & tempering valve
[24] G12 AS 1 Section 6.11.4 & Fig. 14
[25] G12 AS 1 Section 6.14
[26] G12 AS 1 Section 6.0
[27] G12 AS 1 Section 6.14
[28] G12 AS 1 Section 6.13
[29] Trapping – G13 AS 1 Section 3.0
[30] If no water seal & if fixture is < 1.2m to a floor waste trap, then trap complies
If no floor waste trap, investigation required
[31] If no water seal & if fixture is < 1.2m to a floor waste trap, then trap complies
If no floor waste trap, investigation required
[32] Note any additional information, such as: cast in fixings, timber, etc.

Inspection Checklist –Final - Building

Address: 7 Galea Building Consent No.: 18059

Tradesperson: Japac Tradesperson:

Reg.No.: Contact Details: Reg. No.: Contact Details:

Date: 30/11/2009 Time: 2.30

Staged/Partial Inspection: ___ ___ of ___

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents Complies with approved plans & specifications	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments **must** be made for: 1. **Non-complying** Items 2. Items/work **deviates** from approved documents 3. Detail alternative solution & how compliance achieved
Stamped approved plans and specification on site?				(Yes) / No
Advice of Completion received?				(Yes) / No
Conditions of consent/site instructions read?				(Yes) / No
Conditions of consent actioned[2]				
Plumbing final inspection passed				
All required inspections passed				
Electrical certificate of compliance provided				
Gas certificate of compliance provided				
Producer Statements as specified on building consent conditions provided				
Exterior				
Photos taken (all sides of the building, e.g. where ground levels are questionable or may be built up when landscaping is done)				Yes / (No) Comments:
Landscaping				not started / started / completed
Floor heights (in relation to ground levels)				
Chimney/flue height in relation to surrounding ridges & roof				
Vents in chimney (Jetmaster fires)				
Wall cladding				
Cladding painted & sealed				
Gaps & cracks properly filled & sealed				
Facings & scribers fitted & sealed				
Warranty & guarantee certificates provided				
Weep holes in brick clear				
Vent gaps at top of brickwork				
Lintel bars fitted				
Venting				
Bathroom venting ducts exiting envelope				
Ensuite venting ducts exiting envelope				
Laundry venting ducts exiting envelope				
Kitchen venting ducts exiting envelope				
Subfloor				
Base boards & vent grills subfloor area				
Access subfloor area (with door)				
Subfloor ground levels (subfloor ground level **must not be lower** than exterior ground levels & spoil in the subfloor must be raked out evenly)				
Subfloor insulation				Type:
Ground vapour barrier laid in subfloor area[3]				
Verandahs/Pergolas/Upper Level Decks				
Post / beam fixings as per plans				
Rafter / floor joist fixings as per plans				
Rafter / joist / ribbon board connections to building envelope as per plans				
Decks				
Exterior stairs (open stair gaps < 100mm)				

Inspection Checklist –Final - Building

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents Complies with approved plans & specifications	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Handrails to all stairs				
Barriers (min 1m high, gaps < 100mm)				
Overflows to enclosed decks				
Glass barriers				(Branded / thickness mm)
Barrier stability				
Slip resistant surface (main entry decks)				
Overhead Glazing				
Branded safety glazing identified				
Retaining Walls/Excavations				
Retaining walls site works completed				
Barriers to retaining walls/site works				
Retaining wall drains cleanout access (house)				
Interior				
Paint & sealing of interior complete				Yes / No
Safety glazing window seats, hinged doors, low level glass				
Windows (general glazing checked)				
Fire – Solid fuel heater / open fireplace				
Inspection checklist BCA T-30ac completed				Yes / No
Window Opening Restrictors (windows lower than 760mm from floor)				
Ground floor windows				
Upper level windows				
Kitchen				
Painting & sealing of kitchen complete				
Seal around bench complete				
Splash protection around sink complete				
Range hood vents to the exterior of the building				
Smoke Alarms				
Operational				
Hush facility				
Manufactured to an approved standard				
Located as per plans				
Stairs				
Handrail fitted				
Balustrade barrier				
Head room (2m min.)				
Branded safety glazing identified				
Min. tread, max. rise				
Interior Balconies				
Barriers (min. 900mm high, gaps < 100mm)				
Barrier stability				
Bathroom				
Wall paint & sealing complete				
Impervious floor seal complete				
Flexible seal to floor wall junctions (tiles)				
Branded safety glazing identified				
Seal around vanity, bath & shower				
Splash protection complete				
Ventilation				
Toilet				
Wall paint & sealing complete				
Impervious floor seal complete				
Flexible seal to floor wall junctions (tiles)				
Pan secured to floor				
Seal around toilet				

Inspection Checklist –Final - Building

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents Complies with approved plans & specifications	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Seal around handbasin complete	✓			
Splash protection complete	✓			
Ventilation	✓			
Ensuite				
Wall paint & sealing complete	✓			
Impervious floor seal complete	✓			
Flexible seal to floor wall junctions (tiles)	✓			
Branded safety glazing identified	✓			
Pan secured to floor	✓			
Seal around vanity, bath, shower & toilet	✓			
Splash protection complete	✓			
Ventilation	✓			
Ceiling Space				
Access to space provided min. 600 x 500mm	✓			
Insulation installed as per manufacturer's specifications	✓			
Insulation away from downlights & flues	✓			
Fan vent ducts connected	✓			
Laundry				
Wall paint & sealing complete	✓			
Impervious floor seal complete	✓			
Flexible seal to floor wall junctions (tiles)	✓			
Seal around tub	✓			
Splash protection complete	✓			
Ventilation	✓			
Vehicle Crossing				
Crossing completed	✓			
Swimming Pool/Spa Pool				
Pool inspection completed		✓		

Notes[4]:

Product warnings & bans	Yes / (No)	Officer: warren Cummerfield
Amended plans required?	Yes / (No)	
Amended specifications required?	Yes / (No)	
Reinspection required?	Yes / (No)	Signed:
Site instruction/NTF issued?	Yes / (No)	
Building final inspection passed?	(Yes) / No	Date: 30/11/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation.
[2] Verification required e.g. Engineer Certificates, Producer Statements, compaction reports, warranties, surveyor's certificates etc.
[3] NZS 3604:1999 Section 6.14.3
[4] Note any additional information, such as: cast in fixings, timber, etc.

Inspection Checklist – Postline

Address: 7 Galea Building Consent No.: 18059

Tradesperson: Japac Tradesperson: _____

Reg.No.: _____ Contact Details: _____ Reg. No.: _____ Contact Details: _____

Date: 29/09/2009 Time: 1.00

Staged/Partial Inspection: _____ ___ of ___

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents B1, B2, C3, C4, E1, E2, F5, G4, G6 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Conditions of consent/site instructions read?				(Yes) / No
Approved plans & specifications sighted? [2]				(Yes) / No
Approved plans include specific design detail?				Yes / (No)
Preline inspection passed?	X			
Amended plans provided?				Yes / (No)
Bracing				
Bracing sheet material (type & thickness)	X			
Size & location of elements as per plans	X			
Fixing of sheets	X			
Double sided bracing (e.g. GIB 2a&b, GIB 3, BR 6, BR7, BR8)	X			
Ceiling Diaphragm				
Size & location		X		
Fixing of sheets		X		
Fire Walls				
Sheet material (type & thickness)		X		
Fixing of sheets		X		
Size & location of elements as per plans[3]		X		
Seal of penetrations		X		
Other Linings				
Walls (type & thickness) i.e villa board, ply, etc.	X			
Ceilings (type & thickness)	X			
Air Noise				
Wall linings (type & thickness/double layered)		X		
Ceilings (type & thickness/double layered)		X		
Exterior joinery & glazing		X		
Safety				
Glazing	X			
Window restrictors[4]		X		

Notes[5]:

Amended plans required?	Yes (No)	**Officer:**	Warren Cummerfield
Amended specifications required?	Yes (No)		
Reinspection required?	Yes (No)	**Signed:**	
Site instruction issued?	Yes (No)		
Post Line inspection passed?	(Yes) / No	**Date:**	29/09/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation

[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail

[3] Check for approved fire seals i.e. intumescent sealer, flush boxes, fire collars, insulation & note types of protection.

[4] F4 AS1 Section 4

[5] Note any additional information, such as: cast in fixings, timber, etc.

Inspection Checklist – Drainage

Address: 7 Galea Grove Building Consent No.: 18059

Tradesperson: Brokenshires Tradesperson: Josh/Scott

Reg.No.: Contact Details: Reg. No.: Contact Details:

Date: 30/09/2009 Time: 1030

Staged/Partial Inspection: ___ of ___

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13, G14 & AS/NZS 3500.2.2:2003, AS/NZS 1546.1:1998	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Conditions of consent/site instructions read?				(Yes) / No
Proposed plans sighted?				(Yes) / No
Identify type of systems				AS/NZ 3500.2.2:2003 / G13
Pipe sizes[2]				
Main drain	X			100 mm
Branch sizes	X			mm 100 mm mm mm
Branch drains over 10m vented		X		
Gradient for 100mm pipe[3]	X			Gradient: 1.60
Gradient for 65mm pipe[4]		X		Gradient:
Branches enter at grade[5]	X			
Inspection points/openings[6]	X			
Level inverts installed correctly[7]		X		
Provision for vent(s) identified	X			
Joints primed and cemented	X			
As laid plans recorded		X		TO COME
Drains bedded in granular fill	X			
Drain under water test observed[8]	X			
Discharge pipes sealed through foundation				(Yes) / No
ORG/Gully traps[9]				
Gully trap installed?				(Yes) / No
Gully trap charged[10]	X			(Discharge pipe) / Hose tap / HWC relief drain
Stormwater[11]				
Pipe size[12]	X			90 mm 100 mm
Discharge to	X			main (kerb) / lift sump (450mm)
Rodding points/ access points[14]	X			
Y junctions @ 45°[15]	X			
Soak pit as per plans[16]		X		
Liner perforated		X		
Septic Tank[17]				
Sited as per plan		X		
Fresh air inlet		X		
Risers above finished ground level		X		
Effluent Disposal				
Design matches as laid plans		X		
Siting				
Minimum 3m from boundaries		X		
Minimum 20m from watercourse		X		
Minimum 3m from house		X		
Stormwater cut off drain		X		
Water Tanks				
Siting as per plans		X		
Overflow piped to approved water course		X		
Paved areas and sumps discharge to approved outfall		X		

Inspection Checklist – Drainage

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13, G14 & AS/NZS 3500.2.2:2003, AS/NZS 1546.1:1998	Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Notes[18]:				

Amended plans required?	(Yes) / No	Officer:	JAMES PITT
Amended specifications required?	Yes / (No)		
Reinspection required?	Yes / (No)	Signed:	
Site instruction issued?	Yes / (No)		
Drainage inspection passed?	(Yes) / No	Date:	30/09/2009

[1] Pass = Compliance with approved plans & documentation, N/A = not applicable to this project, Fail = Non-compliance with approved plans & documentation
[2] AS/NZS 3500.2.2:2003 3.3 Size of drains Table 3.2 / G13 3.5 Table 2
[3] 100mm (1:100 = 10mm/m, 1:80 = 12mm/m, 1:60 = 16mm/m)
[4] 65mm : 25mm/metre
[5] AS/NZS 3500.2.2:2003 4.9.1 Branches shall enter at the top of main drains
[6] AS/NZS 3500.2.2:2003 Section xxxx
[7] AS/NZS 3500.2.2:2003 Figs. 3.1, 3.3.5
[8] water test held sound
[9] AS/NZS 3500.2.2:2003 Section 4.4.6
[10] AS/NZS 3500.2.2:2003 Section 4.6.3
[11] NZBC E1 AS1
[12] NZBC E1 AS1Section 3.1
[13] AS/NZS 3500.2.2:2003 Section 3.4.2 Fig. 6
[14] AS/NZS 3500.2.2:2003 Section 3.7
[15] AS/NZS 3500.2.2:2003 Section 3.3.2 Fig. 5
[16] NZBC E1 VM 1 Section 9
[17] AS/NZS 1546:1998
[18] Note any additional information, including safety issues

Inspection Checklist –Preline – Single / Lower Storey

Address: 7 Galea Building Consent No.: 18059

Tradesperson: Japac Tradesperson:

Reg No.: Contact Details: Reg. No.: Contact Details:

Date: 18/09/2009 Time: 8.00

Staged/Partial Inspection: ___ of ___

Item to be inspected for compliance with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, C3, C4, E2, E3, F2, F4, F5, G4, H1 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviating from approved documents 3. Detail alternative solution & how compliance is achieved
Conditions of consent/site instructions read?				(Yes) / No
Approved plans & specifications sighted? [2]				(Yes) / No
Approved plans include specific design detail?				Yes / (No)
Approved plans include air/noise detail?				Yes / (No)
Framing inspection passed?	X			(Yes) / No Comment:
Plumbing pre-fine inspection passed? [3]	X			(Yes) / No Comment:
Subfloor inspection passed?				Yes / (No)
Exterior				
Exterior cladding in place & weathertight?				(Yes) / No
If "No" Weathertight Inspection Checklist MUST be completed & passed		X		
Exterior protected (where cladding is not in place)		X		
Roof				
Roof cladding & flashings [4]	X			
Access to roof space [5]	X			
Bracing				
Plan checked & wind zone confirmed	X			Low / (medium) / high / very high
Brace bottom plate fixings	X			Type:
Unit length as per plan	X			
Bracing limitations [6]	X			
Bracing as per approved plans	X			
Bracing plan amended & approved		X		Details:
Framing				
Bottom plate bracing fixings	X			Type:
Floor plan as per approved plans	X			
Moisture content [7]	X			MC Range 14 % - 16 %
Lintels & beams as per approved plans	X			
Lintel/beam support & fixings	X			
Fixings for high wind [8]		X		
Spacing (suitable for linings)	X			
Engineer detail as per approved plans		X		
Engineer design steel connections checked		X		
Fire Wall				
Fixings & straps		X		
Penetrations & electrical fittings [9]		X		
Insulation				
Insulation walls	X			Type: batts Grade: R 2.2
Insulation ceilings	X			Type: batts Grade: R 3.2
Blown insulation thickness		X		
Insulation in skillion roof		X		
Ply (roof & decks) thickness as per plans		X		
Safety Glazing				
Exterior windows	X			
Window restrictors fitted		X		
Doors	X			

Inspection Checklist – Preline – Single / Lower Storey

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, C3, C4, E2, E3, F2, F4, F5, G4, H1[1] and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviating from approved documents 3. Detail alternative solution & how compliance is achieved
Stairs		X		
Wet areas		X		
Wet Area				
Flooring substrate as per plans		X		
Waterproofing systems checked		X		

Notes[10]:

Amended plans required?	Yes (No)	**Officer:**	Warren Cummerfield
Amended specifications required?	Yes (No)		
Reinspection required?	Yes (No)	**Signed:**	
Site instruction issued?	Yes (No)		
Pre-line single/lower storey inspection passed?	(Yes) / No	**Date:**	18/09/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation.
[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail
[3] Where plumbing pre-line inspection has not been passed, site instruction to be issued detailing areas able to be fined & any other necessary actions
[4] Roof is weatherproofed i.e minimum of ridge caps, barge rolls, barge flashings, apron flashings in place
[5] NZS 3604:1999 Section 13.3.1 location to allow unobstructed access to roof space, min. 600mm headspace
[6] Check bracing limitations in appropriate bracing manual (e.g. Limitations Page 8 GIB Bracing Systems)
[7] Reference E2 / AS1, 11.2. Forest Research Institute recommends testing 10 studs, 6 ceiling battens & 6 lintels, 9 out of the 10 studs must be within the limits.
[8] Lintels, studs, wind straps, bottom & top plates
[9] All penetrations shall be fire rated to ensure the integrity of the fire separation is not compromised
[10] Note any additional information, such as: cast-in fixings, timber, etc.

Inspection Checklist –Preline Plumbing

Address: 7 Galea Grove Building Consent No.: 18059

Tradesperson: Brokenshire Tradesperson: Brett

Reg.No.: Contact Details: Reg. No.: Contact Details:

Date: 03/09/2009 Time: 1600

Staged/Partial Inspection: ___ ___ of ___

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13 & AS/NZS 3500.2.2:2003	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Conditions of consent/site instructions read?				(Yes) / No
Approved plans & specifications sighted?[2]				(Yes) / No
Approved plans include specific design detail?				Yes / (No)
Previous Underfloor/Preslab – Soil/Drain/Wastes inspection passed?	X			
Pipe Out				
Identify pipe material type[3]:	X			Hot: polybutelene Cold: polybutelene
Water supply pipe support[4]:	X			Wall spacing 600 mm Ceiling spacing 600 mm
Pipe-size– Water heater to kitchen [5]	X			15mm
Hot Water pipe lagging[6]		X		
Backflow Protection Required?		Yes / (No)		
Pipe Insulation[7]		X		
Pressure test observed[8]	X			200 lbs/Kpa
Internal terminal vent fitted[9]		X		Location:
Soil stack				
Branches enter at appropriate grade[10]		X		
Level invert fitted correctly[11]		X		
No connections within 600mm rollover[12]		X		
Soil stack vented correctly		X		
Size of vent		X		mm
Floor waste gullies				
Fixtures connecting to floor waste gully in same room		X		
Grade on pipework[13]		X		
AAV installed as per manufacturer's recommendation		X		
Drains & waste supported[14]		X		
Fire Collars				
Wall		X		
Floor		X		
Ceiling		X		

Notes[15]:

4IN1 VALVE IN GARAGE
RINNAI INFINITY

Inspection Checklist –Preline Plumbing

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13 & AS/NZS 3500.2.2:2003	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying Items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved

Amended plans required?	Yes (No)	Officer:	JAMES PITT
Amended specifications required?	Yes (No)		
Reinspection required?	Yes (No)	Signed:	
Site instruction issued?	Yes (No)		
Pre-line plumbing inspection passed?	(Yes) / No	Date:	03/09/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation.
[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail
[3] G12
[4] G12 AS1 7.1.3 Generally horizontally 600mm centres & vertically 1.2m centers
[5] NZS 4305: 1996 Section 3.2.1 Refer Table 5 below.

Table 5 – Acceptable maximum pipe lengths			
Nominal pipe size (mm)	10	15	20
Length (m)	25	12	7

[6] NZS 4305: 1996 Section 3.5.1 Fig 2, 3.6.1 and 3.7.1 Fig 3
[7] Refer H1 A/S 1 and NZS 4305:1996
[8] G12 AS1 7.5.1
[9] AS/NZS 3500.2.2:2003 Section 3.9.3.3
[10] AS/NZS 3500.2.2:2003 Section 3.4 & Table 3.2
[11] AS/NZS 3500.2.2:2003 Section 3.3.5 Fig. 3.1
[12] AS/NZS 3500.2.2:2003 Section 7.12.3 Fig. 7.12 / G13 AS1 Section 4.7.2 & Fig. 8
[13] AS/NZS 3500.2.2:2003 Section 4.6.7 & Fig. 4.2 & Table 4.4
32mm : 50mm/metre (max. permitted length of pipe 3.5m)
40mm : 25mm/metre (max. permitted length of pipe 3.5m)
50mm : 25mm/metre
65mm : 25mm/metre
[14] AS/NZS 3500.2.2:2003 Section 9.2 Table 9.1 / G13 AS1 Section 6.2 Table 7
[15] Note any additional information, including safety issues

BCA T-30J
Ver: 2
Date: 10/04/08

Inspection Checklist –Cavity

Address: 7 galea Building Consent No.: 18059

Tradesperson: japac Tradesperson:

Reg.No.: Contact Details: Reg. No.: Contact Details:

Date: 01/09/2009 Time: 2.00 Staged/Partial Inspection: of

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, E2, F5 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments **must** be made for: 1. **Non-complying** Items 2. **Items/work deviates** from approved documents 3. Detail alternative solution & how compliance achieved
Conditions of consent/site instructions read?				(Yes) / No
Approved plans & specifications sighted? [2]				(Yes) / No
Approved plans include specific design detail?				Yes (No)
Framing inspection passed?				(Yes) / No
Special PPE required for this site	(Yes) / No			Specify: (steelcapped footwear) / eye protection / dust mask Other:
External bracing sheets checked into framing?				Yes (No)
Building Wrap				
Type & weight	X			Type: Weight: Heavy / Light
Cavity Battens				
Set out as per plans	X			
Battens overhang bottom plate (min. 50mm)	X			
Min. cladding ground clearance as per plans	X			
Type of battens	X			Timber (other) Specify: hardies
Timber grade & treatment (H3.1 min.)		X		
Fixing of battens[3]	X			
Vermin proof flashing at base	X			
ExteriorBracingOverCavity				
Horizontal battens top (150mm x 19mm)		X		
Top batten fixing		X		
Horizontal battens bottom (75mm x 19mm)		X		
Bottom batten fixing		X		
Flashings				
Head flashings under battens	X			
Flexible (tape/building wrap) flashings	X			
Building wrap over head flashings	X			
Flashing of penetrations (e.g. meter boxes, water & gas pipes, electrical cables & fittings)	X			

Notes[4]:

Amended plans required?	Yes (No)	**Officer:** Warren Cummerfield
Amended specifications required?	Yes (No)	
Reinspection required?	Yes (No)	**Signed:**
Site instruction issued?	Yes (No)	
Cavity inspection passed?	(Yes) / No	**Date:** 01/09/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation.

[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail

[3] Check fixing of battens in accordance with approved plans & specifications i.e. E2 system or proprietary system

[4] Note any additional information, such as: cast in fixings, timber, etc.

Inspection Checklist –Framing

Address: 7 Gales Building Consent No.: 18059

Tradesperson: japac Tradesperson:

Reg.No.: Contact Details: Reg. No.: Contact Details:

Date: 21/08/2009 Time: 8.00 Staged/Partial Inspection: of

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, E2, F5, G4 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Conditions of consent/site instructions read?				(Yes) / No
Approved plans & specifications sighted? [2]				(Yes) / No
Approved plans include specific design detail?				Yes (No)
Concrete slab inspection passed?	X			
Subfloor framing inspection completed?		X		
Special PPE required for this site	Yes / No			Specify: (steelcapped footwear) eye protection / dust mask Other:
Exterior				
Polythene fixed to bottom plate (brick veneer) [3]	X			
Concrete sealed (mulseal/ bitumous tarseal for brick veneer) [4]	X			
Fixings Exterior Walls [5]				
Bottom plate fixing type	X			
Bottom plate fixing spacings	X			
Bottom plate brace straps & fixings [6]	X			
Ext. bracing sheets recessed into framing		X		(Batten cavity systems only)
Bracing set out as per plans	X			
Lintel & beam high wind fixings		X		
Top plate high wind fixings		X		
Framing - Exterior				
Timber grade & treatment [7]	X			
DPC under exterior bottom plate	X			
Stud size & spacing	X			
Double studs or blocking to openings for brick veneer ties	X			
Lintel & beam sizes	X			
Blocking under girder trusses & beams etc.	X			
Roof				
Timber grade & treatment [8]	X			
Truss/rafter set out [9]	X			
Truss/rafter fixings [10]	X			
Purlin/batten set out (span & spacing) [11]	X			
Purlin/batten fixings periphery & body [12]	X			
Interior				
Control joints/saw cuts in slab	X			
Framing - Interior				
Timber treatment & grade	X			
Internal lintel/beam sizes		X		
Blocking around penetrations for flashings		X		
Upper storey floor joists sizes & spans		X		
Mid span blocking		X		
Checks & notches in framing		X		
Strap fixings through floor		X		
Fixings Interior Walls [13]				
Bottom plate fixing type	X			
Bottom plate fixing spaces	X			

Inspection Checklist – Framing

Item to be inspected for compliance with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, E2, F5, G4 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Bottom plate brace straps & fixings	X			
Bracing set out as per plans	X			
Internal lintel/beam fixings & support	X			
Engr structural members as per plans		X		
Engr structural fixings as per plans		X		
Engr confirmation required?		X		Yes / (No)

Notes [14]:

Amended plans required?	Yes / (No)	**Officer:**	Warren Cummerfield
Amended specifications required?	Yes / (No)		
Reinspection required?	Yes / (No)	**Signed:**	
Site instruction issued?	Yes / (No)		
Framing inspection passed?	(Yes) / No	**Date:**	21/08/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation.
[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail
[3] NZS 3604:1999 Section 7.5 Fig. 7.10 & Section 11.7.4.6 & Fig. 11.1
[4] NZS 3604:1999 Section 7.5 Fig. 7.10 & Section 11.7.4.6 & Fig. 11.1
[5] NZS 3604:1999 Section 7.5.12
[6] Individually checked against approved plans & specifications
[7] NZS 3602:2003 Table 1
[8] NZS 3602:2003 Table 1
[9] Checked against manufacturer's set out plan
[10] Checked against manufacturer's fixing plan
[11] NZS 3604:1999 Table 10.9
[12] NZS 3604:1999 Table 10.9 & 10.10 & Figs. 10.16 & 10.17
[13] NZS 3604:1999 Section 7.5.12
[14] Note any additional information, such as: cast in fixings, timber, etc.

Inspection Checklist –Concrete Slab

Address: 7 Galea Building Consent No.: 18059

Tradesperson: Japac Tradesperson:

Reg No.: Contact Details: Reg. No.: Contact Details:

Date: 06/08/2009 Time: 7.30 Staged/Partial Inspection: of

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, E2, F5 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Conditions of consent/site instructions read?				(Yes) / No
Approved plans & specifications sighted? [2]				(Yes) / No
Approved plans include specific design detail?				Yes / (No)
Foundation inspection passed?	X			
Pre-slab drainage inspection passed?	X			Done at same time
Special PPE required for this site	(Yes) / No			Specify: (Steelcapped footwear) eye protection / dust mask Other:
Concrete strength specified on plans				
Confirm if other than 17.5MpA [3]	X			20 MpA
Retaining walls drained [4]		X		
Hard fill & blinding [5]				
Type:	X			Granular / (Compacted)
Compaction certificate required (fill>600mm)	X			
Damp Proof Membrane [6]	X			Type: 25 poly
Overlaps foundation	X			
Joins lapped & taped	X			
Penetrations or punctures sealed	X			
Engineer Detail				
Ribraft or similar		X		
Confirm engr inspection and approval [7]	X			
Slab thickness	X			100 mm
Insulation in Slab		X		
Unreinforced slab		X		
Reinforced slab				
Mesh [8] [9]	X			Specify: 665
Mesh clean, lapped & tied	X			
Supplementary bars [10]	X			
Free joints (slabs >24m) [11]	X			
Starters bent into slab	X			
Cover & placement [12]	X			
Supported on bar chairs	X			
Slab thickenings and pads [13]				
Reinforcing mat/mesh		X		
Reinforcing clean, lapped & tied		X		
Horizontal: type & size as per plans		X		
Starter: type & size as per plans		X		
Cover & placement [14]		X		
Supported on bar chairs		X		
Bracing posts/portal as per engr design		X		
Split floor levels				
Foundation		X		
Thickening		X		
Continuous DPM from upper to lower level		X		

Inspection Checklist –Concrete Slab

Item to be inspected for compliance with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, E2, F5 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
NOTES 15:				

Amended plans required?	Yes / (No)	**Officer:**	Warren Cummerfield
Amended specifications required?	Yes / (No)		
Reinspection required?	Yes / (No)	**Signed:**	
Site instruction issued?	Yes / (No)		
Concrete slab inspection passed?	(Yes) / No	**Date:**	06/08/2009

[1] Pass = Compliance with approved plans & documentation, N/A = Not applicable to this project, Fail = Non-compliance with approved plans & documentation.
[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail
[3] Obtain copy of delivery docket
[4] E2 AS1 Section 12 Fig 133
[5] NZS 3604:1999 Section 7.5.3
[6] NZS 3604:1999 Section 7.5.4 – 7.5.7
[7] Has Engineer visited site and approved foundations as required by consent conditions? Written confirmation is required signature on plan/fax etc
[8] NZS 3604:1999 Section 7.5.8
[9] 665, 668*, economesh, other *Note: 668 mesh requires free joints @ 12m centres maximum
[10] NZS 3604:1999 Fig 7.17
[11] NZS 3604:1999 Section 7.5.8
[12] NZS 3604:1999 Section 6.11.7 & 7.5.8 and Figs 7.12, 7.13, 7.14 & 7.15
[13] NZS 3604:1999 Section 7.5.11
[14] NZS 3604:1999 Section 6.11.7 & 7.5.8 and Figs 7.12, 7.13, 7.14 & 7.15
[15] Note any additional information; including safety issues

Inspection Checklist –Foundations

Address: 7 Galea — Building Consent No.: 18059

Tradesperson: japac — Tradesperson:

Reg. No.: — Contact Details: — Reg. No.: — Contact Details:

Date: 31/07/2009 — Time: 1.00 — Staged/Partial Inspection: — of

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, E2, F5, G4 - and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviating from approved documents 3. Detail alternative solution & how compliance is achieved
Conditions of consent/site instructions read?				(Yes) No
Approved plans & specifications sighted? [2]				(Yes) No
Approved plans include specific design detail?				Yes (No)
Confirmation of Corrosion Zone	(Yes) N/a / No			Sea spray / zone 1 / (zone 2)
Confirmation of Snow loading	Yes (N/a) No			0.5kPa / 1kPa / Specific Design
Confirmation of Wind Zone	(Yes) N/a / No			Low / (Medium) / High / Very High / Specific Design (SED)
Siting[3]				
Special PPE required for this site?	(Yes) No			Specify: (steelcapped footwear) / eye protection / dust mask Other:
Property address confirmed	X			
Boundary pegs identified	X			
Surveyor certificate required for siting [4]		X		
Building footprint matches plan [5]	X			
Measurements taken building to boundary	X			
Floor heights				
Foundation height in respect of proposed **finished** ground levels [6]	X			
Spot levels & floor heights				
Confirmed on site	X			
Surveyor's certificate provided		X		
Sloping site				
Back slope, forward slope [7]		X		
Specific design (Type B + Masonry/ in-situ foundation)				Yes (No)
Confirm engr inspection and approval [8]		X		
Ground bearing				
Prod check [9]	X			
Soil characteristics				silty, sandy, stony, (clay) soft, firm, (hard), wet, damp, (dry)
Engineer report required		X		
Foundation to be taken to solid bearing (Refinspection required)		X		
Organic matter removed [10]	X			
Foundation (NZS 3604)				(Yes) No
As per approved plans	X			
Dimensions	X			300 mm x 500 mm
Footing level, square & clean	X			
Formwork complete	X			External & internal
Stepped footing [12]		X		
Service penetration in foundation wall [13]				(Yes) No
Pads				
Set out as per plan – dimensions		X		mm x mm x mm
Ground Beams				
Set out as per plan–dimensions		X		mm x mm
Post Footings[14]				
Set out as per plan – dimensions		X		mm x mm x mm
Set out as per plan– dimensions		X		mm x mm x mm
Steel/Reinforcing: Specify	X			Deformed steel Round steel High tensile (Mild steel) Mesh
Horizontal bar size	X			Size: D12 x 2

Inspection Checklist – Foundations

Item to be inspected for compliance with the Building Act 2004, NZBC & Approved Documents B1, B2, E1, E2, F5, G4 and NZS 3604:1999	Outcome[1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviating from approved documents 3. Detail alternative solution & how compliance is achieved
Starter bar size & spacing	X			Size: D10 @ 600c
Reinforcing lapped & tied [13]	X			
Reinforcing clean & supported	X			
Reinforcing cover correct [15]	X			
Concrete strength as specified	X			
Notes [17]:				

Amended plans required?	Yes / (No)	**Officer:**	**Warren Cummerfield**
Amended specifications required?	Yes / (No)		
Reinspection required?	Yes / (No)	**Signed:**	
Site instruction issued?	Yes / (No)		
Foundation inspection passed?	(Yes) / No	**Date:**	**31/07/2009**

[1] Pass = Compliance with approved plans & documentation. N/A=not applicable to this project Fail = Non-compliance with approved plans & documentation

[2] Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail

[3] Refer to BLG -001p Policy on when to check the siting of proposed buildings during inspections and BLG -002p Policy on when to require surveyor's certificates as a condition of a resource consent

[4] Boundaries to be defined by surveyor for siting within 200mm of boundary or for structures sited 1m from the boundary- to be confirmed by PBO, Snr BOs

[5] Any change to the approved plans may affect site coverage and boundary issues. Check with Planning Officer before approving any further work

[6] NZS 3604:1999 Section 7.5.2 & Fig 7.10

[7] Sloping sites > 11°, refer to Tonkin Taylor report

[8] NZS 4230: 2004 Table 3.1 Type 'B' is the grade envisaged for the typical one - or two-storey structures which represent the bulk of current masonry construction

[9] Has Engineer visited site and approved foundations as required by consent conditions? Written confirmation is required. E.g. signature on plans/fax etc

[10] NZS 3604:1999 Section 3.1 Prod check around entire foundation at maximum 2m centers and all corners if soft ground is found, identify area of soft ground, note in comments field

[11] NZS 3604:1999 Section 3.5.1

[12] NZS 3604:1999 Section 6.11.4

[13] Penetration to provide adequate fall for all discharge waste

[14] NZS 3604:1999 Section 6.4.3.3 timber and ground contact shall have a minimum H5 treatment

[15] NZS 3604:1999 Section 6.11.7 & 7.5.8 and Figs 7.12, 7.13, 7.14 & 7.15

[16] NZS 3604:1999 Fig. 7.12

[17] Note any additional information, including safety issues

Inspection Checklist – Underfloor / Preslab Soil, Drain, Wastes

Address: 7 Galea Building Consent No.: 18059

Tradesperson: Japac Tradesperson:

Reg No.: Contact Details: Reg. No. Contact Details:

Date: 05/08/2009 Time: 7 30

Staged/Partial Inspection: of

Item to be inspected for compliance with the Building Act 2004, NZBC & Approved Documents G12, G13 & AS/NZS 3500.2.2:2003	Outcome [1] Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved
Conditions of consent/site instructions read?				Yes / No
Approved plans & specifications sighted? [2]				Yes / No
Approved plans include specific design detail?				Yes / No
Previous inspection passed?	X			
Identify type of systems				AS/NZ 3500.2.2:2003 G13
Drain uncovered		X		
Pipe sizes [3]				
Main drain	X			100 [3] mm
Branch sizes		X		mm
		X		mm
		X		mm
		X		mm
Branch drains over 10m vented		X		
Gradient for 100mm pipe [4]		X		Gradient:
Gradient for 65mm pipe [4]		X		Gradient:
Branches enter at grade [5]		X		
Level inverts installed correctly [7]		X		
Provision for vent(s) identified		X		
Joints primed and cemented		X		
Drains as per plans		X		
As laid plans required		X		
Pipes protected through concrete		X		
Drains bedded in granular fill		X		
Drain & waste support in subfloor [8]		X		
Water supply pipe support in subfloor [8]		X		
Floor waste gullies				
Length of fixture discharge pipe [10]		X		m
Fixture discharge pipe sizes		X		mm
		X		mm
		X		mm
Fixtures in same room as FWG		X		
Drain under water test observed [11]		X		
Waste pipes	X			
Graded discharge pipes [12]	X			
Discharge pipes protected through concrete	X			
HWC drain pipe size		X		mm

Notes [13]:

Underfloor / Preslab Soil, Drain, Wastes

Item to be inspected for compliance: with the Building Act 2004, NZBC & Approved Documents G12, G13 & AS/NZS 3500.2.2:2003	Pass	N/A	Fail	Details of Inspection & Comments: Comments must be made for: 1. Non-complying items 2. Items/work deviates from approved documents 3. Detail alternative solution & how compliance achieved

Amended plans required?	Yes / (No)	**Officer:**	**Warren Cummerfield**
Amended specifications required?	Yes / (No)		
Reinspection required?	Yes / (No)	**Signed:**	
Site instruction issued?	Yes / (No)		
Underfloor/pre-slab inspection passed?	(Yes) / No	**Date:**	**06/08/2009**

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1 Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail
2 Approved stamped site plan, foundation plan, cross section drawings, truss layout and fixing detail, specifications, engineer detail, floor plan, drainage plan, effluent disposal site plan and detail
3 AS/NZS 3500.2.2:2003 3.3 Size of drains Table 3.2 / G13 3.5 Table 2
4 100mm: 12mm/metre / 10mm/metre
5 65mm : 25mm/metre
6 AS/NZS 3500.2.2:2003 4.9.1 Branches shall enter at the top of main drains
7 AS/NZS 3500.2.2:2003 Figs. 3.1, 3.3.5
8 AS/NZS 3500.2.2:2003 Section 9.2 Table 9.1 / G13 AS1 Section 6.2 Table 7
9 G12 AS1 7.1.3 Generally horizontally 600mm centres & vertically 1.2m centres
10 AS/NZS 3500.2.2:2003 Section 4.6.7 & Fig. 4.2 & Table 4.4
11 water test held sound
12 AS/NZS 35002.2:2003 Section 4.6.7 & Fig 4.2 & Table 4.4
32mm : 50mm/metre (max. permitted length of pipe 3.5m)
40mm : 25mm/metre (max. permitted length of pipe 3.5m)
50mm : 25mm/metre
65mm : 25mm/metre
13 Note any additional information, including safety issues

Processing Checklist – New Dwelling

Applicant Name: JAPAC PIM No: 18059 BC No: 18059

Site Address: 7 Galea Grove Date: 10 JUL 2009

Notes[1]:

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments must be made for: 1. Non-complying items 2. Alternative solutions & how compliance with NZBC achieved
Application checklist completed & attached?	Yes/No			
Is the previously issued PIM attached relevant to this building work?	Yes/N/a/No			
If 'No' advised applicant new PIM application required & suspended BC?	Yes/N/a			
Planning PIM detail				
Planning checklist completed & attached?	Yes/No			
Planning requirements noted on consent/PIM?	Yes/No			
Is proposed addition over a 'Private Easement'[2]	Yes/No			
Survey certificates required[3]?	Yes/No			
Is this a sloping site[4]	Yes/No			
Spot levels & floor heights & datum shown on plans	✓			Floor Heights
Min. floor heights for areas subject to flood shown on plans		✓		

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments **must** be made for: 1. **Non-complying** items 2. Alternative solutions & how compliance with NZBC achieved
Building PIM detail				
Wind zone identified [5]	Yes / No			Low / medium / high / very high / specific design (SED)
Snow zone identified[6]	Yes / N/a / No			<200m – 0 kPa / >200m - <500m 0.5kPa / >500m - <750m 1kPa / >750 Specific Design
Corrosion zone identified [7]	Yes / N/a / No			Sea spray / 1 / 2
Site visit conducted[8]?	Yes/No			
Building PIM checklist completed & attached?	Yes/No			
Building requirements from PIM noted?	Yes/No			
Specified Life				
Does this building work have a specified life <50 years?	Yes/No			If 'Yes', add endorsement to BC
Building consent detail				
Earth brick/straw bale construction[9]	Yes/No			
Siting measurements from min. 2 boundaries shown	Yes/No			5·2 & 2 metres
Sloping site accurately shown on plans		✓		
Vehicle crossing required?	Yes/No			
Vehicle crossing application submitted[10]				
Foundations				
Engineer detail peer reviewed **(by 2nd engineer/PS1/2 provided)**		✓		**(Eng. to initial items checked)**
Engineer detail correctly shown on plans		✓		
Type B masonry[11]		✓		
Ribraft floor used	Yes/No			
Ribraft floor design checked (no. of piles)		✓		
Concrete strength specified[12]	✓	✓		Specified mPa: 17·5
Footing dimensions[13]		✓		
Pad & beam dimensions		✓		
Post footings[14]		✓		
Reinforcing: size, type, placement on plans		✓		
Concrete block foundation detail		✓		
Foundation walls[15]				
Floor heights in relation to finished ground levels		✓		
Heights & dimensions of foundation walls shown		✓		
Foundation height in respect of subfloor access, pile heights etc.[16]		✓		
Reinforcing: size, type, placement on plans		✓		
Ventilator set out[17&18]		✓		
Subfloor access door[19]		✓		
Retaining wall detail (incl. landscape walls)		✓		
Waterproofing of retaining walls on plans[20]		✓		

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments must be made for: 1. Non-complying items 2. Alternative solutions & how compliance with NZBC achieved
Protection of waterproofing detailed on plans		/		
Drainage of retaining walls detailed on plans		/		
Ordinary piles[21]:				
Footing dimensions[22]		/		
Pile dimensions shown on plans		/		
Set out, spacing & treatment		/		
Ordinary pile connections shown[23]		/		
Driven piles[24]				
Size, set out, spacing & treatment		/		
Specification for driving of piles[25]		/		
Certificate required confirming piles driven to approved specification entered on BC conditions?		/		
Anchor piles[26&27]:				
Footing dimensions		/		
Pile dimensions shown on plans		/		
Set out, spacing & treatment		/		
Anchor pile connections shown (min. 12Kn)		/		
Braced piles[28&29]:				
Footing dimensions		/		
Pile dimensions shown on plans		/		
Set out, spacing & treatment		/		
Braced pile connections shown (min. 12Kn)		/		
Brace type[30]		/		
Column/post footings[31&32]:				
Post dimensions shown on plans	/			100 x 100 mm
Chimney/fireplace foundation detailed on plans[33]		/		Timber framed only
Slab on Ground				
Concrete strength specified[34]	/			Specified mPa: 17.5
Floor heights shown on plans[35]	/			Not less than 225 to CGL sheets
Design for foundation >600mm		/		
Datum & spot levels detailed on plans		/		
Hardfill detail[36]	/			Spec 3
Compacted fill[37] (report required if > 600mm in depth)		/		
Damp proof membrane[38]	/			.25 Polythene
Slab Thickening[39 & 40]	/			
Pads		/		
Reinforcing: size, type, placement on plans	/			2/D12 & D10 stirrups 665 mesh
Supplementary reinforcing detailed on plans[41]	/			

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments **must** be made for: 1. **Non-complying** items 2. Alternative solutions & how compliance with NZBC achieved
Shrinkage control joints detailed on plans[42]	✓			
Free joints (slabs > 24m) detailed on plans[43]	✓			
Split floor levels				
Reinforcing: size, type, placement on plans[44]		✓		
Waterproofing detail (DPM)		✓		
Masonry foundations & walls[45]				
Concrete strength specified[46]		✓		Specified mPa:
Masonry detail		✓		
Reinforcing detail		✓		
Engineer detail peer reviewed **(by 2nd engineer/PS1/2 provided)**		✓		**(Eng. to initial items checked)**
Engineer detail shown on plans		✓		
Timber Treatment				
Timber grade & treatment schedule (for **all** timber)[47]	✓			Spec 5
Framing				
Wind zone identified (so fixings can be checked)[48]	✓			Medium
Exposure zones identified (so fixings can be checked)[49]	✓			(2)
Bearer size & spans[50]		✓		
Bearer fixing details to foundation walls shown on plans[51]		✓		
Joist size & spans[52]		✓		
Support of walls parallel to floor joists		✓		
Split floor level framing shown on plans		✓		
Flooring material specified		✓		
Bottom plate fixing (walls) detailed[53]	✓			Bottom Plate anchors @ 900/shot from @ 600ℓ
Stud height & spacing[54]	✓			2.4 @ 600ℓ
Verandah post, beam & fixing detail shown on plans	✓			
Lintel sizes & specifications shown on plans[55]	✓			Trifold 400L / 140x90 / 90x90
Design certificate(s) or calculation table(s) provided		✓		Approved from Trifold spec & 3604
Cantilever beams, corner window etc.[56]		✓		
Engineer beams & supports peer reviewed **(by 2nd Engr/PS1/2 provided)**		✓		**(Eng. to initial items checked)**
Engineer details, incl. connections shown on plans[57]		✓		
Ceiling batten size, grade. spacing, span	✓			
Ceiling joists size, spacing, span	✓			75x40 @ 400/600
Strongbacks/runners size, spacing, span		✓		

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments must be made for: 1. Non-complying items 2. Alternative solutions & how compliance with NZBC achieved
Wall & ceiling linings shown on plans	✓			Gib 10 & or 13 mm
Framing set out suitable for linings	✓			600 ctrs
Fire rated walls & ceilings shown on plans		✓		
Fire design checked[58]		✓		
Fire wall detail e.g. fixings etc. shown on plans		✓		
Truss manufacturer's design certificate	✓			ITM / Mitek
Truss manufacturer's set out detail[59]	✓			
Truss manufacturer's fixing detail[60]	✓			
Point loads to lintels identified[61]		✓		
Rafter size, spacing & span		✓		
Rafter fixing shown on plans[62]		✓		
Underpurlin size shown on plans[63]		✓		
Strutting beams size shown on plans[64]		✓		
Struts loading on strutting beam or load bearing walls[65]		✓		
Ridge beam detail and fixings shown on plans		✓		
Purlin/batten size, spacing & span	✓			75 x 50 @ 900 ctrs & 900 span
Purlin/batten fixing detail specified	✓			2 nails to all + 1 Brog to periphery
Skillion roof detail[66]		✓		
Building paper/wrap specified - walls[67]	✓			Thermakraft Watergate
Building paper/wrap specified - roof[68]	✓			Rurrod Bitumus Paper
Chimney/flue construction detail on plans[69]	✓			Timber framed H3.2
Chimney roof restraint detail[70]		✓		
Roof membrane substrate detail shown on plans		✓		
Roof framing set out suitable for substrate		✓		
Roof cladding specified	✓			MC 700
Roof cladding suitable for min. roof pitches (length of sheet may effect min. pitch)	✓			5° (min 3°)
Internal gutter(s) construction detail shown on plans		✓		
Internal gutter(s) overflow detail shown on plans		✓		
Balcony drainage & overflow detail shown on plans		✓		
Deck joists size, spacing & span[71]		✓		
Saddle flashings fitted to deck joists[72]		✓		
Deck stringer spaced off cladding min. 12mm[73]		✓		
Fixing of deck barrier detail		✓		

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments must be made for: 1. Non-complying items 2. Alternative solutions & how compliance with NZBC achieved
Pergola/porch framing detail shown on plans	✓			
Pergola/porch fixing detail shown on plans	✓			Bowmacs Top & Bottom
Bracing				
Calculations incl. subfloor / lower / upper storeys (circle calculations applicable)	✓			
Fixing details for framing and sheet material provided[74]	✓			
Elements equally distributed throughout building	✓			
Double sided bracing of exterior walls checked[75]		✓		
Interior walls: bracing limitations e.g. bathrooms[76]		✓		
Ceiling diaphragms shown on plans		✓		
Ceiling dragon ties shown on plans		✓		
Roof bracing shown on plans	✓			
Decks > 2m width bracing calculation provided[77]		✓		
Interior				
Area of glazing > 30% of wall[78]	Yes / (No)			Schedule Method
Insulation				Ceiling R 3.2 Batts
Non Solid Construction[79]	✓			Walls R 2.4 Batts
Solid Timber Construction[80]		✓		Double Glazing
Solid Construction[81]		✓		100mm Slab
Heated ceiling / wall / floor[82]		✓		
Calculation Method (Glazed area < 50%)[83]		✓		
Modelling Method (Glazed area > 50%)[84]		✓		
Verification Method – with Producer Statement		✓		
Waterproofing detail showers, floors, decks/balconies[85]	✓			Acrylic showers & bath
Stair, handrail & barrier details shown on plans[86]		✓		
Stair min. tread max. rise specified[87]		✓		
Fireplace / solid fuel heater shown on plans[88]		✓		
Manufacturers' specifications provided	Yes / (No)			
Flue location shown on elevations[89]		✓		
Smoke alarms specified & shown on plans	✓			
Light & visual awareness (incl. attic windows & skylights)[90]	✓			

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments must be made for: 1. **Non-complying** items 2. Alternative solutions & how compliance with NZBC achieved
Ventilation (incl. all habitable spaces)[91]	✓			
Safety glazing detail bathrooms, window seats, etc.	✓			
Air noise: design, construction detail shown on plans		✓		
Air noise: producer statement – design received		✓		
Food preparation & prevention of contamination[92]				
Sink & preparation surfaces	✓			
Food storage	✓			
Wall linings	✓			
Exterior				
E2 risk matrix assessment checked	✓			
Exterior cladding(s) specified	✓			Titan Board & Linea
System specification provided	✓			
Cavity system details (batten size, fixing & treatment)	✓			
Control joints shown on plans (solid plaster)	✓			
Vermin proofing	✓			
Internal & external corner details	✓			
Junction details of dissimilar materials	✓			
Bottom edge clearances to ground levels &/or decks	✓			
Brick veneer cavity, fixing & waterproofing detail		✓		
Double studs or blocking to openings for brick veneer ties		✓		
Brick veneer > 4m high[93]		✓		
Brick veneer lintel bars		✓		
Brick veneer shelf angles		✓		
Brick veneer panel widths[94]		✓		
Plaster supports[95]		✓		
Flashings[96]				
Windows & doors[97], meter boxes, gas boxes, etc.	✓			
Apron flashing detail	✓			
Chimney & flue flashing detail	✓			
Stop end apron flashing detail	✓			
Sill threshold flashing detail[98]	✓			
Soffitt/wall junction flashing detail	✓			For Both Claddings
Penetrations @ fixing points, pergolas, decks	✓			

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments must be made for: 1. Non-complying items 2. Alternative solutions & how compliance with NZBC achieved
Penetrations of electrical cables[99]		✓		
Parapets - caps, walls, intersections, etc.		✓		
Intersections, roof walls, dissimilar claddings	✓			
Stairs & Barriers				
Exterior stair construction detail shown on plans		✓		
Exterior balcony, stair & landing barrier detail shown on plans		✓		
Stair min. tread max. rise specified[100]		✓		
Slip resistant surface (main entry decks & stairs)		✓		
Conditions/Endorsements & Inspections entered onto computer system?		Yes/No		
Plumbing[101]				**Plumbing Processing Officer:** Ross
Schematic layout provided – waste/drains		Yes/No		
Discharge length of pipes	✓			
Discharge pipes venting		✓		
Soil stack layout provided		Yes/No		
Soil stack layout (incl. relationship to floor joists)		✓		
Soil stack venting		✓		
Water supply				
Type of material	✓			Polybutelene
Backflow prevention		✓		
Pipe Insulation[102]	✓			
Tempered hot water	✓			
Provision of laundering facilities[103]	✓			
Water main pressure for sprinklers		✓		
Drainage				
Stormwater layout shown on plans	✓			
Gutter & outfall sizes in relation to roof size	✓			4x 80mm DPs.
Site stormwater/surface water collection & disposal detail (Erosion of sloping sites)	✓			Yard Sump in driveway
Water tank overflow detail on plans (Erosion of sloping sites)		✓		
Sewer layout	✓			
Gulley traps/ overflow relief gullies (ORGs)	✓			
Sewer venting	✓			
Effluent disposal				
Septic tank & effluent disposal design		✓		
Effluent disposal site plan		✓		

Processing Checklist – New Dwelling

Item to be checked for compliance: with the NZ Building Act 2004, NZBC & Approved Documents. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Complies	N/A	Non-Complying	Details of Processing & Comments: Comments must be made for: 1. Non-complying items 2. Alternative solutions & how compliance with NZBC achieved
Proximity to water course(s) & buildings		✓		
Stormwater cut off drain above effluent bed shown on plans (Sloping sites)		✓		
Site Servicing				
Is site serviced?	Yes/No			
Age of existing lateral (pre 1960)		✓		
Service plan details provided/ service application forms enclosed		✓		
Conditions/Endorsements & Inspections entered onto computer system?	(Yes)/No			

Structural - Application approved:	**Yes/No**	**Officer:** **Signed:**	**Date:**
Plumbing & Drainage - Application approved:	(Yes)/No	**Officer:** Ross Marshall **Signed:**	**Date:** 14/7/09.
Building Officer - Application approved for Granting:	**Yes/No**	**Officer:** **Signed:**	**Date:**

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[1] General notes and observations
[2] If proposed building work is to be constructed over a 'Private Easement' the building consent shall be suspended until written permission is received from all parties with an interest over the easement
[3] Refer to Policy BLG-001p siting of proposed buildings & Policy BLG-002p when to require surveyor's certificates as a condition of a resource consent
[4] Sloping sites > 11°, refer to Tonkin Taylor report
[5] NZS 3604:1999 Section 5.2 Fig. 5.1
[6] Confirm altitude of site – Refer Section 15 – 0.5kPa or 1kPa Snow Loading & Figure 15.1 – Snow zones
[7] NZS 3604:1999 Section 4.2 & Fig. 4.1 sea spray zone <500m from high tide mark, zones 1, 2 & 3
[8] Sloping sites > 11°, refer to Tonkin Taylor report
[9] This checksheet should be used as a general guideline for these types of construction, specific notes should be made for items not covered in the checksheet
[10] If vehicle crossing application is required and has not yet been submitted, this results in a "non-compliance"
[11] NZS 4230:2004 Table 3.1
[12] Where other than 17.5MpA concrete is specified, tag consent for delivery docket
[13] NZS 3604:1999 Section 7.5 & Fig.s 7.12 – 7.14
[14] NZS 3604:1999 Section 9 1 Table 9.1
[15] NZS 3604:1999 Section 6.11 Fig.s 6.11 – 6.15
[16] NZS 3604:1999 Section 6.4.1, 6.11 2, 6.14.4 Check that minimum pile heights and subfloor access will be satisfied, particle board floor required to be > 550mm above ground level
[17] NZS 3604:1999 Section 6.14
[18] Maximum 750mm from corners and ends. Spaced at 1.8m centres maximum
[19] NZS 3604:1999 Section 6.11 7.3 openings in foundations walls exceeding 300mm any direction require one D12 trimming bar each side
[20] NZBC E2 AS1 12.1 & Fig. 133
[21] NZS 3604:1999 Section 6.4 & NZS 3602. The minimum treatment for all timber in contact with ground is H5.
[22] NZS 3604:1999 Table 6.1
[23] NZS 3604:1999 Section 6.5.2 & Fig. 6.3 (min. 2 x skew nails & 2 wire dogs)
[24] NZS 3604:1999 Section 6.4 & NZS 3602. The minimum treatment for all timber in contact with ground is H5.
[25] NZS 3604:1999 Sections 6 6 Driven timber piles, 6.6.2 Soil bearing capacity, 6.6.4 Driving of piles, 6.6.5 Driving resistance
[26] NZS 3604.1999 Section 6 4 & NZS 3602 The minimum treatment for all timber in contact with ground is H5.
[27] NZS 3604:1999 Section 6.9 & Fig s 6.9 & 6.10
[28] NZS 3604:1999 Section 6.4 & NZS 3602. The minimum treatment for all timber in contact with ground is H5.
[29] NZS 3604:1999 Section 6.8 & Fig.s 6.6 - 6.8
[30] NZS 3604: Section 6.8.3.3
[31] NZS 3604:1999 Section 6.4 & NZS 3602. The minimum treatment for all timber in contact with ground is H5.
[32] NZS 3604:1999 Section 9.1 Table 9.1
[33] NZBC B1 AS3
[34] Where other than 17.5MpA concrete is specified, tag consent for delivery docket

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[35] NZS 3604:1999 Section 7.5 & Fig.s 7.10 – 7.12
[36] NZS 3604:1999 Section 7.5.3
[37] NZS 3604:1999 Section 7.5.3.1
[38] NZS 3604:1999 Section 7.5.4 & Fig. 7.12
[39] Check truss manufacturer's design and set out detail for special requirements
[40] NZS 3604:1999 Fig. 7.19
[41] NZS 3604:1999 Fig. 7.17
[42] NZS 3604:1999 Section 7.5.8.6
[43] NZS 3604:1999 Section 7.5.8.3
[44] NZS 3604:1999 Fig.s 7.12 & 7.14
[45] NZS 4229:2000
[46] Where other than 17.5MpA concrete is specified, tag consent for delivery docket
[47] NZS 3604:1999 Section 4.3.1 & NZS 3602:2003 Tables 1, 2 & 3
[48] NZS 3604:1999 Section 5.2 Fig. 5.1
[49] NZS 3604:1999 Section 4.2 & Fig. 4.1 sea spray zone <500m from high tide mark, zones 1, 2 & 3
[50] NZS 3604:1999 Section 6.12 & Table 6.6
[51] NZS 3604:1999 Section 6.11.9 & Fig.s 6.16 – 6.18
[52] NZS 3604:1999 Section 7.1 & Table 7.1
[53] NZS 3604:1999 Section 7.5.12 Type & spacing of fixings is required to be shown on plans
[54] NZS 3604:1999 Section 8.5
[55] Where proprietary lintels are specified, manufacturer's detail/specification tables copied & included on file. For timber lintels: Reference NZS 3604:1999 Section 8.6 & Tables 8.9 –8.13
[56] Construction detail of corner window showing cantilever beams required
[57] Check load path from beam supports for slab thickening, piles and enlarged pile footings
[58] Where proprietary design is used, e.g. from GIB manual, include a copy on file
[59] Check set out detail for girder trusses, etc., loadings requiring slab thickenings or pads/piles & pile footings
[60] Copy placed in "green" folder for on site checking
[61] Check for point loads to lintels from girder trusses, beams etc, and ensure if specific lintels sizes have been identified by the truss designer or engineer these are consistent with the proposed lintels shown.
[62] NZS 3604:1999 Tables 10.9 & 10 10 & Fig.s 10.5, 10.16 –10.21
[63] NZS 3604:1999 Table 10.6
[64] NZS 3604:1999 Table 10.7 & Fig. 10.12
[65] NZS 3604:1999 Fig s 10.10 & 10.11
[66] Check for air gap over ceiling insulation
[67] NZS 3604:1999 Section 11.4
[68] NZS 3604:1999 Section 11.2
[69] Check support of "false" chimneys on roofs and flashing details
[70] NZBC B1 AS3
[71] NZS 3604:1999 Section 7 Table 7.1(b) 2kPa floor load
[72] NZBC E2 AS1 Section 7.2 Fig. 16
[73] NZBC E2 AS1 Section 7.2 Fig. 15
[74] Details to be provided for framing fixing requirements and fixing of the sheet material on all types of bracing systems proposed, i.e. Gib, Ply, Strand board, MDF, Hardibacker etc
[75] Double sided bracing e.g. GS2 & BLG braces not appropriate for exterior walls. Recessing of sheet bracing into wall framing on approved cavity systems.
[76] Check bracing limitations in appropriate bracing manual e.g. GIB bracing systems Page 8. GIB Winstone Bracing limitations prohibit the use of bracing elements behind showers & baths, etc.
[77] NZS 3604:1999 Section 7.4.2 & Table 5.8 – light/light/light
[78] NZBC H1, NZS 4218:2004 Fig 1 total area of glazing (including skylights) and glazed area of doors in the building thermal envelope, including frames and opening tolerances and Table 4 H1 A/S 1
[79]

Climate Zone 1 and 2	Climate Zone 3
Roof R2.9	R3.3
Wall R1.9	R2.0
Floor R1.3	R1.3
Glazing (Vertical) R0.26	R0.26
Glazing (Skylights) R0.26	R0.31

[80] Table 2(a) p19 H1/AS1

Building thermal envelope component	Minimum R-values (m² °C/W)					
	Climate Zone 1		Climate Zone 2		Climate Zone 3	
	Option 1a	Option 1b	Option 2a	Option 2b	Option 3a	Option 3b
Roof	R 3.5	R 3.5	R 3.5	R 3.5	R 3.5	R 3.5
Walls – external 75 mm thick and timber framed internal walls	R 1.3	R 1.0	R 1.4	R 1.1	R 1.6	R 1.2
Walls – external 60 mm thick and solid timber internal walls 45 mm thick	R 1.0	R 0.8	R 1.3	R 1.0	R 1.6	R 1.2
Walls – external 90 mm thick and solid timber internal walls 45 mm thick	R 1.0	R 0.8	R 1.2	R 0.9	R 1.4	R 1.1

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Walls – external 60 mm thick and solid timber internal walls 60 mm thick	R 1.0	R 0.8	R 1.2	R 0.9	R 1.4	R 1.1
Floor	R 1.3	R 1.3	R 1.3	R 1.3	R 1.3	R 1.3
Glazing (vertical)	R 0.26	R 0.31	R 0.26	R 0.31	R 0.26	R 0.31
Glazing (skylights)	R 0.26	R 0.31	R 0.26	R 0.31	R 0.31	R 0.31

[81] Table 2(b) p20 H1/AS1

Building thermal envelope component	Minimum R-values (m² °C/W)					
	Climate Zone 1		Climate Zone 2		Climate Zone 3	
	Option 1a	Option 1b	Option 2a	Option 2b	Option 3a	Option 3b
Roof	R 3.5	R 3.5	R 3.5	R 3.5	R 3.5	R 3.5
Wall	R 0.8	R 0.8	R 1.0	R .09	R 1.2	R 1.0
Floor	R 1.5	R 1.3	R 1.5	R 1.3	R 1.5	R 1.3
Glazing (vertical)	R 0.26	R 0.31	R 0.26	R 0.31	R 0.26	R 0.31
Glazing (skylights)	R 0.26	R 0.31	R 0.26	R 0.31	R 0.31	R 0.31

[82] Heated ceiling R3.5
Heated wall R2.6
Heated floor R1.9

[83] Refer NZS 4218 Appendix D
[84] Refer NZS 4218 Appendix A
[85] NZBC E3 AS1
[86] NZBC F4 & D1
[87] NZBC D1 AS1
[88] Copy of manufacturer's specifications showing clearances, etc. Copy placed in "green" folder for on site checking
[89] Flue location in accordance with NZS 2918, i.e. Flue to be min of 1000mm above roof or when situated within 3m of ridge, height to be min of 600mm above ridge
[90] NZBC G7, Functional Requirement G7.2
[91] NZBC G4 AS 1.3 Where opening windows do not provide adequate ventilation, detail of the alternative solution specified on plans
[92] NZBC G3 AS1
[93] NZS 3604:1999 Section 11.7
[94] NZS 3604:1999 Section 11.7.2.2
[95] Relocated dwellings – bottom edge support for stucco clad dwellings
[96] NZBC E2
[97] Head, jamb & sill flashing details
[98] NZBC E2 AS1 Section 7
[99] NZBC E2 AS1 Section 9.9.8 & Fig. 126
[100] NZBC D1 AS1
[101] AS/NZS 3500.2.2:2003 & G13
[102] Refer H1/AS1 and NZS 5305:1996
[103] NZBC G2 Table 1

Planning Processing - Building Consent

Applicant Name: Japac **PIM No:** 18059 **BC No:** 18059

Site Address: 7 Galea Grove **Date:** 9/6/09

Item to be checked for compliance: with the PNCC District Plan & NZ Building Act 2004. Note: N/A = this item is not applicable to this application and has not been assessed	Plans/Specs Checked: Yes	N/A	No	Details of Processing & Comments: Comments must be made for Non-complying items
P.I.M been issued?			✓	
Plans / Information satisfactory?	✓			
Timeframes met from issue of P.I.M, *(i.e. P.I.M issued pre 31 March 2005)*		✓		Specify:
Development in accordance with project assessed for P.I.M?	✓			
New District Plan provisions come into affect since the P.I.M was issued?			✓	Specify:
New P.I.M required?			✓	
New non-compliances with the District Plan?			✓	Specify:
Resource Consent required for the project?		✓		
Resource Consent been 'Granted'?		✓		
Resource Consent still valid, <5yrs old?		✓		
Applicant advised & BCR applied?		✓		
'Development Contribution' payable?		✓		
Development Contribution payment condition of Building Consent?		✓		
Development Contribution been paid at 224 subdivision stage?		✓		
Building over 2 or more allotments?		✓		
Sec 75 required, BSO advised to forward to Claims Management?		✓		
Building over public or private easement?		✓		
PNCC Drainage engineer approved building over PNCC Easement?		✓		
Applicant been advised of 'Private Easement'?		✓		

Conditions entered on consent ?	Yes/No	**Officer:** Daniel	**Date:** 19/6/09.
Application approved?	Yes/No	**Signed:**	

18059

BCA T-04a
Ver:2.0
Date: 28/05/09

PALMERSTON NORTH CITY COUNCIL

PIM/Building Consent Application Checklist

Project Address: 7 GABLEA GROVE

Interviewing Officer/s: PHIL **Date:** 17 JUN 09

Building Officer

Application Documentation	Yes	N/a	No
Application type: ☐ PIM ☐ BC ☑ Combination PIM & BC			
Residential: **Two** sets of plans and specifications provided	✓		
Commercial: **Three** sets of plans and specifications provided		✓	
Site confirmed on City View by applicant	✓		
Legal Description Completed	✓		
Proof of ownership matches applicant details	✓		
Application form signed and dated	✓		
Description of work accurate	✓		
Value of work checked	✓		
Compliance detail completed on application form	✓		
Trades peoples' details filled out (back page)	✓		
Application form completed & correct	✓		
Commercial	**Yes**	**N/a**	**No**
Demolition work – copy of Building Consent application to Information Services		✓	
Building being used or intended to be used by the public prior to CCC being issued (if 'Yes' Application for Certificate of Public Use & Project Management Plan required)		✓	
Work likely to impact on road reserves (If yes, provide City Network handout)		✓	
Fire analysis report for new buildings & alterations to existing buildings provided		✓	
N Z Fire Service Design Review Unit, review required?		✓	
To City Networks for Service Connections, Backflow and Trade Waste (grease traps/oil interceptors etc)		✓	
Accessibility for new buildings & alterations to existing buildings addressed & checked on plans		✓	
Hazardous substances	**Yes**	**N/a**	**No**
Test certifier location certificate/preliminary test certifier letter of approval provided		✓	
Plans	**Yes**	**N/a**	**No**
Plans to standard i.e. to scale, no graph paper, no pencil drawings, no single line drawings	✓		
Site plans show distance to a minimum of two boundaries (for all buildings)	✓		
Site plans show location of septic systems & distances to boundaries		✓	
Slab & foundation detail shown on plans	✓		
Datum shown		✓	
Engineer detail shown on plans		✓	
Drainage detail shown on plans	✓		
Rooms Identified	✓		
Smoke alarms shown on plans	✓		
Windows shown on plans	✓		
Ventilation (mechanical detail where no windows)	✓		
Dimensions shown on plans	✓		
Cross Section	**Yes**	**N/a**	**No**
Full cross section – min. 1 for garages		✓	
Full cross section – min. 2 for dwellings	✓		
Finished floor levels shown on plans	✓		
Stair, barrier, handrail detail & dimensions shown on plans		✓	
Weather Tightness	**Yes**	**N/a**	**No**
Flashing of windows, doors, junction, balcony, parapet, int/ext corner details shown on plans	✓		
Specifications	**Yes**	**N/a**	**No**
Bracing schedule for walls/subfloor provided	✓		
Truss design certificate & layout details provided	✓		
Timber grade & treatment schedule provided	✓		
Lintel schedule provided	✓		

	Exterior cladding system information provided (including E2 risk matrix)	✓	✓	
	Effluent disposal system (rural only) provided		✓	
	Relevant & comprehensive specifications provided	✓		
	Specific Design	**Yes**	**N/a**	**No**
	Engineer calculations & details provided		✓	
	Existing Vehicle Crossing	**Yes**	**N/a**	**No**
	Existing vehicle crossing shown on plans		✓	
	New Vehicle Crossing	**Yes**	**N/a**	**No**
	New crossing application completed	✓		
	Location of vehicle crossing distance to boundary shown on plans	✓		
	Width of vehicle crossing shown on plans	✓		
	Service Connections	**Yes**	**N/a**	**No**
	Application for service connections		✓	

Planning Officer

	Planning Information	**Yes**	**N/a**	**No**
	North direction point & all boundaries shown	✓	✓	
	Show distances to two boundaries min	✓	✓	
	Show existing ground & finished floor levels	✓	✓	
	Street frontage identified	✓	✓	
	Existing & proposed buildings shown	✓	✓	
	Six metre living court shown	✓		
	Any buildings over boundaries (Section 75) shown		✓	
	Instant resource consent required for separation distances		✓	
	Neighbour's consent form & plan provided & signed by all property owners		✓	
	Site area & coverage details provided	✓	✓	
	Height recession zones shown on plans	✓		
	Lot & DP number shown on plans	✓		
	Proximity to stop banks shown		✓	
	Demonstrated compliance to air noise schedules or acoustics report provided		✓	

Building Officer

	For Office Use Only: Administration Information	**Yes**	**N/a**	**No**
	Letter of confirmation to applicant		✓	
	Fees calculated	✓		
	City View plan attached	✓		
	Receipt number & fee code entered on application form		✓	
	Risk assessment number entered on fees sheet	✓		
	Building Officers time entered on fees sheet	✓		
	Fees sheet dated & signed	✓		

Additional information required from applicant:

-Planning - Check with Greg re. HRP non-compliance on the east elevation (looks like it should be ok, Mike).

Building Services

Site Instruction Notice

To: JAPAC HOMES

Address: 7 GALEA GROVE

This notice relates to the building work being carried out under building consent number: 18059.

The following building work **does not comply** or **is required to be carried out**

* GAS CERT Recived 2-11-09

* SHOWER CUBICLES NOT WATER TIGHT
checked 3-11-09
ok

The work is to be carried out by 30 / 12 / 09

An inspection of the completed works will be required. Please contact Building Services at the relevant Council once work is completed.

Signed for and on behalf of the Council:

Name: JANICE [illegible] Position: P+D INSPECTOR

Signature: [illegible] Issue Date: 30 / 11 / 09.

PALMERSTON NORTH CITY COUNCIL

Private Bag 11034, Manawatu Mail Centre, Palmerston North 4442, New Zealand P 64 6 356 8199 W www.pncc.govt.nz

Building Consent No: 18059
Section 51, Building Act 2004

107659 0353/14

The Building

Street Address of building:	7 GALEA GROVE PALMERSTON NORTH
Legal Description of land where building is located:	LOT 53 DP 411222

The Owner

Name of owner:	JAPAC DEVELOPMENTS LTD
Mailing Address:	C/O PS & JM HAYDOCK 509 ALBERT STREET PALMERSTON NORTH 5301
Contact person:	
Street address/registered office:	
Phone number:	
Facsimile number:	
Email address:	

Building Work

The following building work is authorised by this consent:

Project:	ERECT SINGLE STOREY, 4 BEDROOM DWELLING WITH ATTACHED GARAGE.
Intended Use:	RESIDENTIAL DWELLING

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

THIS BUILDING CONSENT IS SUBJECT TO THE FOLLOWING CONDITIONS;

BUILDING ACT 2004, SECTION 90:

Inspections by Building Consent Authorities

Agents authorised by the building consent authority for the purposes of this section are entitled, at all times during normal working hours or while building work is being done, to inspect

(a) land on which building work is being or is proposed to be carried out; and

(b) building work that has been or is being carried out on or off the building site; and

(c) any building.

ENDORSEMENTS – The following items will need to be addressed prior to the issue of the code compliance certificate;

STREET NUMBER (LGA 1974 SECT. 3198):

The official street address of this property is 7 Galea Grove.

PLUMBING:

NZ Building Code Clause G13
As per the plans and specifications, the potable water pipe work is polybutelene, with the under floor plumbing to AS/NZS 3500.

THE FOLLOWING INSPECTIONS ARE MANDATORY, FAILURE TO NOTIFY THE PALMERSTON NORTH CITY COUNCIL BUILDING SERVICES SECTION OF ANY OF THE REQUIRED INSPECTIONS WILL RESULT IN A NOTICE TO FIX BEING ISSUED.

- 1 x FOUNDATIONS ✓
- 1 x UNDERFLOOR/PRESLAB SOIL/DRAIN/WASTE ✓
- 1 x CONCRETE SLAB ✓

1 x FRAMING

1 x CAVITY

1 x PRELINE - SINGLE/LOWER STOREY

1 x PRELINE - PLUMBING

1 x POSTLINE

1 x DRAINAGE

1 x FINAL - BUILDING

1 x FINAL - PLUMBING

NOTE: FURTHER INSPECTIONS MAY INCUR ADDITIONAL COST AT TIME OF CODE COMPLIANCE CERTIFICATE ISSUE.

Signature:

Name: **TONY KELLERMAN**

Position: **BUILDING OFFICER**

On behalf of: **PALMERSTON NORTH CITY COUNCIL**

Date: **14TH JULY 2009**

Application for Code Compliance Certificate

PALMERSTON NORTH CITY COUNCIL

Section 92, Building Act 2004

The Building Consent:

Building Consent number: 18059 ~~18059~~

Issued by:
[Name of building consent authority that granted building consent]

Address of work: ~~7~~ LOT 53 SAGA

The Owner: [All contact details must be in New Zealand.]

Name of owner:
[eg, Mr, Mrs, Miss, Dr if an individual] SAPAC

Contact person:
[insert n/a if the applicant is an individual] PAUL HADDOCK

Mailing address: 509 ALBERT ST
PALMERSTON NORTH

Street address/registered office: AS ABOVE

Phone numbers

Landline:

Mobile: 027 ~~2~~820 ~~2~~00

Daytime:

After hours:

Facsimile number:

Email address:

Evidence of ownership is attached to this application:

- ☐ Certificate of Title
- ☐ Agreement for Sale and Purchase
- ☐ Lease
- ☐ Other document

The Agent: [Only required if application is being made on behalf of the owner.]

Name of agent:
[eg, Mr, Mrs, Miss, Dr if an individual]

Contact person:
[insert n/a if the applicant is an individual]

Mailing address:

Street address/registered office:

Phone numbers **Landline:**

Mobile:

Daytime:

After hours:

Facsimile number:

Email address:

Relationship to owner:

[State details of the authorisation from the owner to make the application on the owner's behalf

First point of contact for communications with the council/building consent authority:

Full name: PAUL HAYDOCK

Mailing address: 502 AVIGERI ST

PAKOTERSION NORTH

Phone numbers: [Landline] 027 2870800 [Mobile]

Facsimile number:

Email address JAPAC.DEV.GTRA.CO.NZ

Application:

All building work to be carried out under the above building consent was completed on: _____

The personnel who carried out the building work are as follows:

Designer/Architect:

Business/name: OWNER

Address:

Daytime: Mobile:

After hours: Facsimile:

Registration/qualification:

Structural Engineer:

Business/name:

Address:

Daytime: Mobile:

After hours: Facsimile:

Registration/qualification:

Engineer (identify practice college):

Business/name: KEVIN O'CONNOR.

Address:

Daytime: Mobile: 027 566220

After hours: Facsimile:

Registration/qualification:

Plumber:

Business/name: BROADSHIRE PLUMBING

Address:

Daytime: Mobile: 027 442 7778

After hours: Facsimile:

Registration/qualification:

Builder:

Business/name: JAPAC

Address:

Daytime: Mobile:

After hours: Facsimile:

Registration/qualification:

Drainlayer:

Business/name: BROADSHIRE

Address:

Daytime: Mobile: 027 442 7778

After hours: Facsimile:

Registration/qualification:

Head Contractor / Site Manager:

Business/name:

Address:

Daytime: Mobile:

After hours: Facsimile:

Registration/qualification:

Bricklayer:

Business/name:

Address:

Daytime: Mobile:

After hours: Facsimile:

Registration/qualification:

Plasterer:

Business/name:

Address:

Daytime: Mobile:

After hours: Facsimile:

Registration/qualification:

Other:

Business/name:

Address:

Daytime: Mobile:

After hours: Facsimile:

Registration/qualification:

SPECIFIED SYSTEMS FORM

Street Address: _____ Building Consent No.: _____

Applicants Name: _____ Date: _____

The specified systems for the building are as follows: (tick system present)

Tick applicable		
☐	**SS1 -**	Automatic systems for fire suppression (for example, Sprinkler systems)
☐	**SS 2 -**	Automatic and manual emergency warning systems Fire Alarm Type: _____
☐	**SS 3 -**	Electromagnetic or automatic doors or windows ☐ **SS 3 / 1:** Automatic doors ☐ **SS 3 / 2:** Access controlled doors ☐ **SS 3 / 3:** Interfaced fire or smoke doors or windows
☐	**SS 4 -**	Emergency lighting systems
☐	**SS 5 -**	Escape route pressurisation systems
☐	**SS 6 -**	Riser mains
☐	**SS 7 -**	Automatic back-flow preventers
☐	**SS 8 -**	Lifts, escalators, or travelators or other systems for moving people or goods within building ☐ **SS 8 / 1:** Passenger carrying lifts ☐ **SS 8 / 2:** Service Lifts ☐ **SS 8 / 3:** Escalators and moving walks
☐	**SS 9 -**	Mechanical ventilation or air conditioning systems
☐	**SS 10 -**	Building maintenance units
☐	**SS 11 -**	Laboratory fume cupboards
☐	**SS 12 -**	Audio loops or other assistive listening systems ☐ **SS 12 / 1:** Audio loops ☐ **SS 12 / 2:** FM radio frequency systems and infrared beam transmission systems
☐	**SS 13 -**	Smoke control systems ☐ **SS 13 / 1:** Mechanical smoke control ☐ **SS 13 / 2:** Natural smoke control ☐ **SS 13 / 3:** Smoke curtains
☐	**SS 14 -**	Emergency power systems for, or signs relating to, a system or feature specified in any clauses.1-13 ☐ **SS 14 / 1:** Emergency power systems ☐ **SS 14 / 2:** Signs
☐	**SS 15 -**	Other fire safety systems and features ☐ **SS 15 / 1:** Systems for communicating spoken information intended to facilitate evacuation ☐ **SS 15 / 2:** Final exits ☐ **SS 15 / 3:** Fire separations ☐ **SS 15 / 4:** Signs for communicating information intended to facilitate evacuation ☐ **SS 15 / 5:** Smoke separations
☐		Purpose Group: _____ Maximum Occupants: _____ Highest fire hazard category for building use: FHC _____

New Compliance Schedule required	**Yes / No**	**Existing Compliance Schedule requires amending**	**Yes / No**
Officer:		**Signed:**	

I request that you issue a code compliance certificate for this work under section 95 of the Building Act 2004.

The code compliance certificate should be sent to: IAPAC
509 ALBERT St
PALMERSTON NORTH

Signature of the owner / agent on behalf of and with the authority of the owner:

Name of person signing:

Date:

Attachments:

The following documents are attached to this application:
[Tick as applicable or put n/a if there are no attachments.]

- ○ Certificates from the personnel who carried out the work.
- ○ Certificates that relate to the energy work
- ○ Evidence that specified systems are capable of performing to the performance standards set out in the building consent

03-06-09;11:38 ;E09 HZ

184 4 4748094 3561656

18059

Fifth Edition 2006 (2)

AGREEMENT FOR SALE AND PURCHASE OF REAL ESTATE

This form is approved by the Real Estate Institute of New Zealand Inc and by Auckland District Law Society.

DATE:

VENDOR: Cedric Backhouse, Susan Galea as trustees of Galea & Backhouse Trust. S. Galea JMH

PURCHASER: Japac Developments

CAAB

PROPERTY Address: LOT 53 Green Grove, Kelvin Grove, Palmerston North

Estate: FEE SIMPLE LEASEHOLD CROSSLEASE (FEE SIMPLE) CROSSLEASE (LEASEHOLD) STRATUM IN FREEHOLD STRATUM IN LEASEHOLD (If none is deleted fee simple)

Legal Description: Area (more or less): 761m² more or less Lot/Flat/Unit: 53 DP: 411222 Unique Identifier/CT: 449158

JMH CAAB

$113,000 JMH ~~$112,500~~ JMH S. Galea JMH SG

PAYMENT OF PURCHASE PRICE

Purchase price: $ ~~112,500~~ One hundred and ~~twelve~~ thirteen thousand five dollars only S. Galea JMH Plus GST (if any) OR Inclusive of GST (if any). If neither is deleted the purchase price includes GST (if any).

GST date (refer clause 12.0): 17th July

Deposit (clause 2.0): $ 5000 payable to Taranui Realty Trust Account upon this contract becoming unconditional.

Balance of purchase price to be paid or satisfied as follows: ~~3rd July 2009~~ ~~17 July 2009~~ 2009 S. Galea JMH

(1) By payment in cleared funds on the settlement date which is

OR (2) In the manner described in the Further Terms of Sale. ... Interest rate for late settlement: 14 % p.a.

~~3rd July 2009~~ S. Galea CAAB

POSSESSION

Possession date (clause 3.0): ~~17 July 2009~~ JMH 17th July 2009

CONDITIONS (clause 9.0) LIM required: Yes/No

Finance condition

Lender: OIA Consent required: Yes/No

Amount required:

Land Act/OIA date:

Finance date:

JMH

TENANCIES (if any)

Name of tenant:

Bond: Rent: Term: Right of renewal:

SALE BY: Taranui Realty Limited MREINZ

Licensed Real Estate Agent

It is agreed that the vendor sells and the purchaser purchases the property, and the chattels listed in Schedule 1, on the terms set out above and in the General Terms of Sale and any Further Terms of Sale.

JMH SG CAAB JMH

03 Jun 09 08:59 JANINE HAYDOCK (06) 3561656 p.1

04 Jun 09 10:21a JANINE HAYDOCK (06) 3561656 p.1

ELECTRICAL WORKERS REGISTRATION BOARD
Safety • Competency

Electrical Certificate of Compliance

No. 3097532

No. of attachments

for prescribed electrical work that is carried out on electrical installations and involves the placing or positioning or the replacing or repositioning of conductors (including fittings attached to those conductors).
To be completed whether or not an inspection is required.

CUSTOMER INFORMATION - PLEASE PRINT CLEARLY

Name of customer: Jepac Homes Phone:

Address of installation: 7 Colee Cove.

Postal address of customer (if not as above):

WORK DETAILS

45 No. of lighting outlets

28 No. of socket outlets

Was any installation work carried out by the homeowner? ☐ Yes ☒ No

1 No. of ranges

☐ No. of water heaters

Please tick (✓) as appropriate where work includes:

✓ Mains ✓ Main earthing system

✓ Switchboard ☐ Electric lines

Description Install lights, power outlets & appliances in new house.

It is recommended that test results be recorded here:

Visual Examination ✓

Earth Continuity ✓

Bonding ✓

Polarity ✓

Insulation Resistance ✓ Mohm

Other

If necessary attach any pages with sketches of work done

CERTIFICATION OF WORK

I certify that the above electrical work has been carried out in accordance with the requirements of the Electricity Act 1992 and Electricity Regulations 1997.

ELECTRICAL WORKER DETAILS

Name: D. Swift-Pilling

Registration no.: E5739

Company: Dean Swift-Pilly Elec

Signature: DS

Date: 30/11/9

Contact Ph No.: 0274473609

CERTIFICATION OF ELECTRIC LINES

(to be completed where a separate electrical worker has installed the electric line portion of the mains)

Name:

Registration no.:

Company:

Signature:

Date:

Contact Ph No.:

INSPECTION DETAILS

Electrical work requiring inspection by a registered electrical inspector

☐ New mains ☐ Switchboard ☐ Earthing system ☐ Installation work in hazardous areas

I certify that the inspection has been carried out in accordance with the requirements of regulation 41 of the Electricity Regulations 1997.

Name: Registration no.:

Signature: Date:

This form is approved by the Electrical Workers Registration Board (PO Box 10-156, Wellington. Freephone 0800 66 1000) for the purposes of the Electricity Regulations 1997.

CONSUMERS COPY

Plumbers, Gasfitters and Drainlayers Board

PLUMBERS, GASFITTERS AND DRAINLAYERS BOARD

GASFITTING CERTIFICATION CERTIFICATE
(Pursuant to the Gas Act 1992 and the Gas Regulations 1993 and amendments)
ENERGY WORK CERTIFICATE
(Pursuant to the Building Act 1991)

Certificate No 513772

9th Floor, 70 The Terrace
PO Box 10655
WELLINGTON
Tel 04 494 2970
Fax 04 494 2975
website www.pgdb.co.nz

THIS CERTIFICATE IS NOT TRANSFERABLE

Installation address: (Box No's not acceptable) — Please complete in block letters

(Number) 7 (Street name) Galea Cr
(Suburb) Kelvin Grove.
(Town/City) Palmerston North.

Consumer: (Title) (Initials) (Family/Business name)

DESCRIPTION OF GASFITTING TO WHICH THIS CERTIFICATE APPLIES

	Appliance				Flue		Ventilation	
Qty	Type	Location	Make/model	Input rate	Type	Location	Type	Location
1	Space Heater	Living Room Zero Box	Rinnai Timberline Radius E.T.R	33	Twin skin	out Roof	complies	
1	Hot plate	kitchen	Delonghi DE 91GW	39	Flueless		complies	
1	Water Heater	outside	Rinnai INFinity +R24	188	Powerflue		outside	

Category
- ☑ Domestic
- ☐ Commercial
- ☐ Industrial
- ☐ Temporary
- ☐ Other

Type (Regulation 24(1))
- ☑ New
- ☐ Addition, ☐ Extension,
- ☐ Replacement
- ☐ Alteration
- ☐ Repair following accident

Gas Type ☑ NG ☐ LPG ☐ TLP ☐ Bio

Name of Gas Supplier Contact

Pipework Installed (attach pipework diagram) ☑ YES ☐ NO

Test Results		Other Testing
5 min	Duration	Combustion
2.5 kPa	Test pressure	☐ Yes ☑ No
0 kPa	Loss / gain	Ventilation
2.5 kPa	Working pressure	☑ Yes ☐ No

Test Date 30/11/09.

I certify that :-

1. All appliances and fittings worked on by me or by persons working under my supervision are safe and that all work carried out was in accordance with all applicable requirements of the Gas Act 1992 and Gas Regulations 1993 as amended.
2. The gasfitting to which this certificate applies does not make other parts of the installation unsafe or otherwise non-compliant with the Gas Act 1992 and Gas Regulations 1993 as amended.
3. Gasfitting work to which this certificate applies ☐ **does** ☑ **does not** include work on an appliance or fitting imported or manufactured by a person for their own use.

Certifiers Name L.Drake
Address 18 Limerick St P.North.

Registration No 10949
Signature
Date 30/11/09

Registered Gasfitter/Supervised by certifier
Name K.Gill
Registration No 12587
Name
Registration No

Certificate owner
Registration No
On behalf of
Address
(If other than certifying gasfitter)

INSTALLER DECLARATION

CLIENT: Jaipac Development

ADDRESS: 7 Galea

SYSTEM INSTALLED: House Drains
(e.g. house drain, effluent system etc)

DATE OF INSTALLATION: 29/9/09

I declare that I am a licensed drainlayer and have installed the drainage at the above address in accordance with the New Zealand Building Code and relevant plans and specifications, and hereby guarantee the quality of the workmanship. Attached is an accurate " as laid " drainage plan.

Signed:

Authorised Installer: David Blakenshire

Company Name: Blakenshire Plumbing Co Ltd

Registration Number: 12156

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BCA T-04b
Ver: 15.0
Date: 10/06/2009

Development Services Project Sheet

Project Address: 7 GALEA GROVE

Project Description: ERECT SINGLE STOREY 4 BEDROOM DWELLING ATTACHED GARAGE.

Project Type Definition (circle): 0 1 2 (3) 4 5 6 7 **Commercial or Industrial** (circle)

Project Value ($): 320,000-00 **Person Making Payment:** INVOICE JAPAC DEVELOPMENT.

TYPE	Code	V/G NO (PNCC)	Code (MDC)	AMOUNT
PIM	03	Lodgement	BA	$ INVOICE
BUILDING CONSENT	03	Lodgement	BA	$ INVOICE
BUILDING CONSENT AMENDMENT		SI against owner of BC	BA	$
CERTIFICATE FOR PUBLIC USE		SI against owner of BC	BA	$
EXEMPT/UNAUTHORISED BUILDING WORK		020104 4001	BA	$
CERTIFICATE OF ACCEPTANCE		Lodgement	BA	$
DEVELOPMENT CONTRIBUTION		SI DCON		$
INSTANT RESOURCE CONSENT		RCON INST		$
LAND USE CONSENT		RCON LUSE		$
CERTIFICATE OF COMPLIANCE INCL. OVERSEAS INVESTMENT/EXISTING USE RIGHTS		RCON COMP		$
SUBDIVISION CERTIFICATE		RCON SUBC		$
SUBDIVISION DEPOSIT		RCON SUBV		$
RELOCATION BOND		RBND		$
CERTIFICATE OF TITLE (CT)		030205 4023		$ —
VEHICLE CROSSING (VEHX)	T2	Lodgement		$ INVOICE
COUNCIL ASSET BOND (No GST)	—	99 99 99 2156		$ INVOICE.
SERVICE CONNECTIONS STORMWATER		640120 4001		$
SERVICE CONNECTIONS WASTEWATER		640322 4001		$
SERVICE CONNECTIONS WATER		640442 4001		$
PLANNING			PL	$
BRANZ LEVY - $1.00 / $1,000.00 (set fees)			BA	$
DBH - $1.97 / $1,000.00 (set fees)			BA	$
			TOTAL	$

Project Number:		Application Accepted by:	Name: / Signature:	Date Accepted	17 JUN 09.

Comments:

Please tick technical inputs for processing as required:					
	Planning		Building		City Networks
	Plumbing & Drainage		Structural		Claims Management
	Environmental Health		NZ Fire Service DRU		Palmerston North Office
Please tick appropriate processing checklist:					
	T-08a Planning processing PIM		T-19e Garage/Carport/Pergola		T19l EH Hazardous Substances
	T-08b Building processing PIM		T-19f Conservatory		T19m Swimming Pool
	T-08c PIM/Building Consent Site Visit		T-19g Commercial – New Building		T19n Relocation
	T-19a Planning Processing BC		T-19h Commercial Addition & Alteration		T19o Fires
	T-19b New Dwelling		T-19i Commercial Minor Alteration		T-19p Farm Buildings
	T-19c Small Addition		T-19j EH Food Premises		T-21b Amendment to Building Consent
	T-19d Minor Alteration		T-19k EH Hair Premises		T-47a Certificate for Public Use C/list

18059

CHARGE SHEET

ADMINISTRATION

Date	Time	Task	Who	
18/6/09	0.50	LOAD/MAKE FILE	JEN.G.	
18/6/09	0.25	MONITORING	ANG	
14.7.09	.25	FORMAT / FEES.	U/C	
Total Hours	1	**@ $90 per hour**		**$ 90**

MANAGER/PRINCIPAL/SENIOR/ADVANCED OFFICERS

Date	Time	Task	Who	
● Jun 09	0.75	APP IN	PRIL	
14/7/09.	1.5	RA	Boss.	
Total Hours	2.25	**@ $160 ph (PNCC) / $135 ph (MDC)**		**$360**

BUILDING/PLANNING OFFICERS/OTHER UNIT STAFF

Date	Time	Task	Who	
19/6/09	0.25	BC	Daniel.	35
10/7/09	5	Process	TONY	
14.7.09	.25	Signoff	"	
●				
Total Hours	1	**@ $140 ph (PNCC) / $115 ph (MDC)**		**$140**

CONTRACTORS / CONSULTANTS TIME

Date	Time	Task	Who	Sub Total
			TOTAL	**$**

SUB TOTAL LABOUR	**$**
LESS DEPOSIT PAID	**$**
TOTAL LABOUR COST	**$ 590**

CHARGE SHEET

TOTAL LABOUR COST (Carried forward)	$590

OTHER FEES			N°	
LEVIES:	BRANZ	$1.00 / $1000.00		$320
	DBH	$1.97 / $1000.00		$630.40
Code Compliance Certificate		$70.00		$70
Building Inspections		$75.00 / Half Insp		
		$150.00 / Insp	11	$1650
Scanning	A3	$5.00 ea	15	$75
	A4	$3.00 ea	113	$339
	MDC	$40.00		
Vehicle Crossings		$160.00 / Insp		$
Legal Fee	Sect 75	$680.00		$
	Sect 72	$305.00		$
Producer Statement		$65.00ea		$
Compliance Schedule		$100.00		$
Compliance Schedule (amendment only)		$60.00		$
Council Asset Bond (No GST)		$1000.00		$1000
Development Levy *(pre 1/7/04)*				$
NZ Fire Service DRU				$
				$
				$
				$
DEVELOPMENT CONTRIBUTIONS		City Wide Reserves		$
		Roading		$
		Water		$
		Wastewater		$
		Local Reserves		$
		Stormwater		$

TOTAL COST	$
TOTAL FEE TO BE WAIVED (See Below)	$
TOTAL TO BE INVOICED/PAID	$4674.40

Date Fees Entered into Computer System: 14.7.09 Signed off by BSO: N. Bell

Description of Fees To Be Waived:

Type of fee	Reason for waiving	Amount
	Total	$

Waived Fees Approved By (Manager): _____ Date: _____

INSPECTIONS REQUIRED

		Tick if Applicable	No
291 / T28A	Building WOF		
292 / T30A	Foundations	✓	1
293 / T30AA	Reinspection		
294 / T30AB	Inbuilt Fireplace Pre-Install Check		
295 / T30AC	Final - Fireplace		
296 / T30AD	COMM - Structural Concrete & Masonry		
297 / T30AE	COMM - Foundation/Pads/Ground Beams		
298 / T30AF	COMM - Concrete slab		
299 / T30AG	COMM - Framing		
300 / T30AH	COMM - Preline		
301 / T30AI	COMM - Postline		
302 / T30AJ	COMM - Final		
303 / T30AK	Swimming & Spa Pool		
304 / T30AL	CPU Inspection		
305 / T30B	Foundations Slab Single Pour		
[illegible] / T30C	Retaining Wall/Split Level Foundation		
307 / T30D	Ring and Pile Foundation		
T30DA	Farm Building Foundation		
308 / T30E	Subfloor Framing		
309 / T30F	Underfloor/Preslab Soil/Drain/Waste	✓	1
310 / T30G	Concrete Slab	✓	1
311 / T30GH	Blockfill		
312 / T30H	Framing	✓	1
313 / T30I	Preclad/Plaster System Flashings		
314 / T30J	Cavity	✓	1
315 / T30K	Monolithic Backing		
316 / T30L	Paper Netting		
317 / T30M	Scratch Coat		
318 / T30N	Half High Brick		
319 / T30O	Weathertightness		
320 / T30P	Preline - Single/Lower Storey	✓	1
[illegible] / T30Q	Preline - Upper Level		
322 / T30R	Preline - Plumbing	✓	1
T30PR	Preline - Building & Plumbing		
323 / T30S	Postline	✓	1
324 / T30T	Drainage	✓	1
325 / T30U	Final - Building	✓	1
326 / T30V	Final - Plumbing	✓	1
T30VA	COMM - Final - Plumbing		
327 / T30W	Final - Building & Plumbing		
T30WA	Final - Relocation		
328 / T30X	Final - Garage, Carport, Pergola		
T30XA	Final - Farm Buildings		
329 / T30Y	Final - Minor Internal Alteration		
330 / T30Z	Final - Demolition		
331 / T30ZZ	Engineer Observation		
	Total Number of Inspections Charged		11

Plans Located in:
☐ Blue Folder ☑ Codafile ☐ Plan Drawer Nº:

Project Type (0-7) (C/I)	Building Officer Responsible	FOH Received Date
3	TK	17/6/09
		NZFS DRU Input Required? Y / N

		Completed:
PLANNING/SUBDVN	Name: Daniel Date: 19/6/09	(Y) N
P OK		~~PK~~ LS
CLAIMS MANAGEMENT		In Progress:
Does this consent require a:		
Section 72	YES / NO	Completed:
Section 75	YES / NO	
Memorandum of Encumberance	YES / NO	
BUILDING PIM:	Name: Date:	Completed: Y N
PIM Site Visit:	Name: Date:	Completed: Y N
BUILDING BC:	Name: TONY Date: 10/7/09	Completed: (Y) N
P&D WASTEWATER	Name: R.P.M Date: 14/7/09	Completed: (Y) N
CITY NETWORKS	Name: Date:	Completed: Y N
STRUCTURAL	Name: Date:	Completed: Y N
HEALTH/HSNO	Name: Date:	Completed: Y N

PROJECT DESCRIPTION
ERECT SINGLE STOREY, 4 BDRM DWELLING, ATTACHED GARAGE

Site Folder

- Cityview Map
- Site Plan
- Drainage Plan
- Copy of PIM
- Copy of B/C

Project Number	PIM Number	VC number
18059	18059	18063

PROJECT ADDRESS
7 GALEA GROVE

Provisional Due Date
15/7/09