



ABN 12 115 961 487
PO Box 3010
Birkdale QLD 4159
Phone: (07) 2101 5331
Email:
Report By:

28/04/2021



Site Address:

Client Name:

Phone #:

Email:

Dwelling type:	House and Garage.
Dwelling configuration:	Single Storey.
Nature of works:	New Building.
Stage of inspection:	Pre Plaster.
Construction Type:	Multiple Claddings.
Garage:	Attached.
Foundations:	Slab.
Builder:	

Client Brief

We were instructed to inspect the client's new home to write a report as to the overall installation of all items required to construct a new home to completion stage. Our role is to assist the clients in outlining any issues that may be identified as being within the scope of the builder to ensure that all construction items are correctly constructed and completed in a workman like manner and meet with all relevant codes and industry practises. As such the client has engaged our services to assist with this report.

Inspection and Report

Our Inspection is a visual inspection of the overall finishes and the quality of those finishes presented by the Builder. This Report is a list of items that in our judgement do not reach an acceptable standard of quality, level of building practice, or have not been built in a proper workmanlike manner, in relation to the Building Code of Australia, (BCA's) the Building Regulations, any relevant Australian Standards and the acceptable standards and tolerances as set down by the QBCC.

Access

Access was gained to all required areas of the residence.

Report Conditions

The terms and conditions that our site inspection and this report are carried out and supplied under are listed on the last page of this report.

The building process is progressive and items in this report may or may not be covered during the build by materials installed over a documented defect. We recommend that all clients book a reinspection and state that the builder must present all defects rectified prior to moving forward with the build. All items that we are unable to look at from a previous report will not be included in any future reports. We will use all endeavours to ensure rectification, however we are limited to non-destructive method of detection.

Summary

The results of our inspection have been fully detailed in the attached schedule of Building Defects.

Should the reader of this report have any additional queries or questions in relation to the items set out within it, please do not hesitate to contact the writer via any of the methods detailed at the top of the cover page.

Please note: **A fee of \$350.00 per hour**, or part thereof, plus GST will be charged for any clarification required by the builder, or any of the builders' employees, and a purchase order for same will be required prior to any contact between Darbecca Pty Ltd and the builder.

An inspection was conducted at the above address on 28/04/2021 for the purpose of a general home inspection, requested by the 'client'.

The inspection was conducted with the 'client' present, and details exterior and interior.

The weather was fine at the time of the inspection.

Entry to site was obtained under the Queensland Building and Construction Commission Act, 1991 - Part 10, Section 109.

Schedule of Defects:

All completed items have been removed from the report, along with any items we are unable to inspect due to the progression of works. All outstanding items have been relisted with new photographs.

Defects, observations and other related comments from the Slab and Frame Inspection on the 13/04/2021:

1. This item has not been addressed as of the 28/04/2021.

The NCC; 3.2.2.6: - A vapour barrier must be installed to both the Class 1 and Class 10 parts of the slab edge and be turned up the edge of the slab to finished ground level.

The vapour barrier has not met this requirement.

3.2.2.6 Vapour barriers

A vapour barrier must be installed under slab-on-ground construction for all Class 1 buildings and for Class 10 buildings where the slab is continuous with the slab of a Class 1 building as follows—

(a) Materials

A vapour barrier must be—

- (i) 0.2 mm nominal thickness polyethylene film; and
- (ii) medium impact resistant, determined in accordance with criteria specified in clause 5.3.3.3 of AS 2870; and
- (iii) be branded continuously "AS 2870 Concrete underlay, 0.2 mm Medium impact resistance".

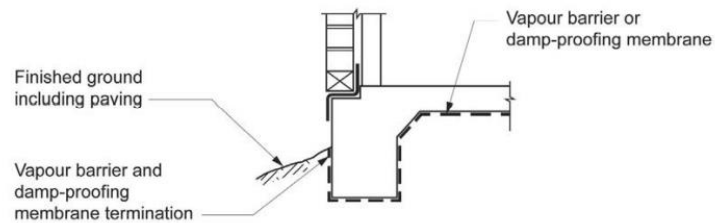
(b) Installation

A vapour barrier must be installed as follows—

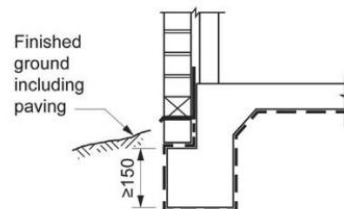
- (i) lap not less than 200 mm at all joints; and
- (ii) tape or seal with a close fitting sleeve around all service penetrations; and
- (iii) fully seal where punctured (unless for service penetrations) with additional polyethylene film and tape.

- (c) The vapour barrier must be placed beneath the slab so that the bottom surface of the slab is entirely underlaid and extends under edge beams to finish at ground level in accordance with [Figure 3.2.2.3](#).

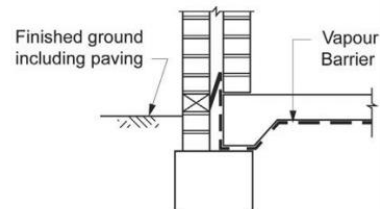
Figure 3.2.2.3 Acceptable vapour barrier and damp-proofing membrane location



(a) Minimum rebate for cavity masonry or veneer wall



(b) Deep edge rebate alternative



(c) Masonry alternative



Previous photo



Previous photo



2. This item has not been addressed as of the 28/04/2021.

NCC, 2019; 3.1.3.3: - The external finished surface surrounding the slab must be drained and graded to give a slope of not less than 50mm over the first 1 metre.
(25mm in areas of *low rainfall intensity areas*)

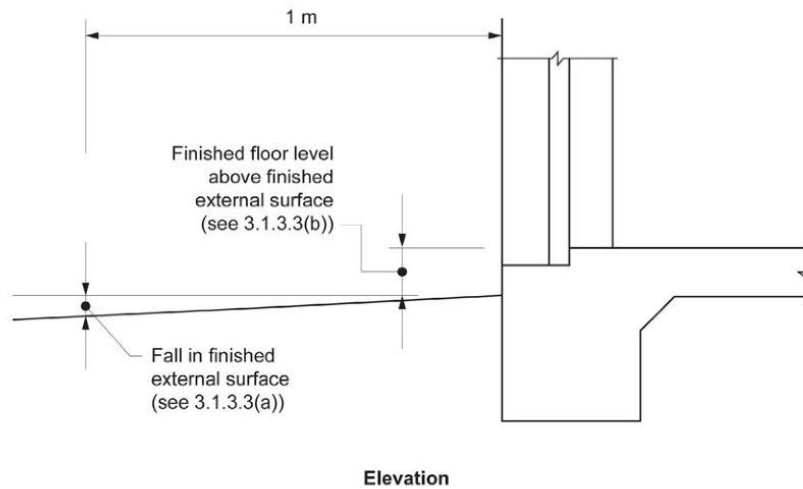
Surface water drainage on this site has not met the performance requirements of the National Construction Code.

3.1.3.3 Surface water drainage

Surface water must be diverted away from Class 1 buildings as follows:

- (a) Slab-on-ground — finished ground level adjacent to buildings:
the external finished surface surrounding the slab must be drained to move *surface water* away from the building and graded to give a slope of not less than (see [Figure 3.1.2.2](#))—
 - (i) 25 mm over the first 1 m from the building in *low rainfall intensity areas* for surfaces that are reasonably impermeable (such as concrete or clay paving); or
 - (ii) 50 mm over the first 1 m from the building in any other case.
- (b) Slab-on-ground — finished slab heights:
the height of the slab-on-ground above external finished surfaces must be not less than (see [Figure 3.1.3.2](#))—
 - (i) 100 mm above the finished ground level in *low rainfall intensity areas* or sandy, well-drained areas; or
 - (ii) 50 mm above impermeable (paved or concreted areas) that slope away from the building in accordance with (a); or
 - (iii) 150 mm in any other case.

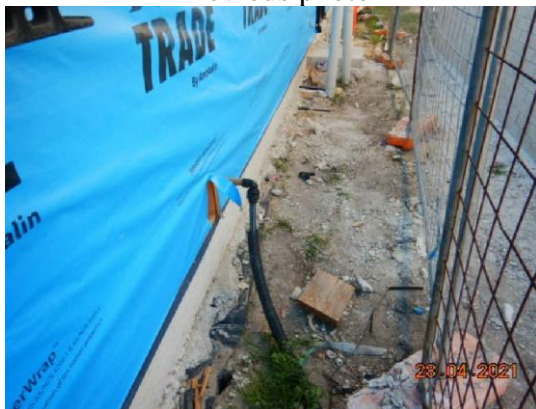
Figure 3.1.3.2 Site surface drainage



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3. This item has not been fully addressed as of the 28/04/2021.

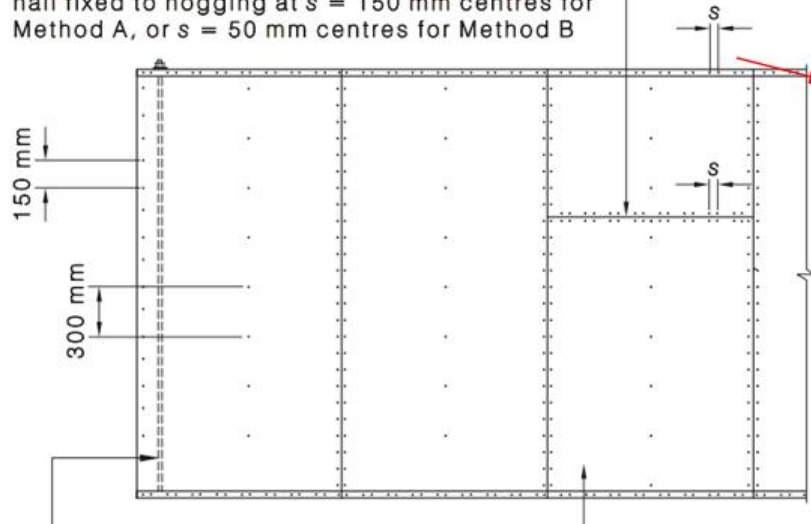
AS 1684.2; Table 8.18: - The sheet bracing shall be installed using 30 x 2.8 mm diameter galvanised flat head nails at the required spacings given in the table below. Many of the nails have been over driven or overshot below the surface of the bracing ply. Overshot nails have compromised the bracing sheet's ability to resist racking forces. Also note the minimum sheet thicknesses given below.

Bracing panels with overshot nails have not met these requirements.

- (h) **Plywood** Plywood shall be nailed to frame using $30 \times 2.8 \text{ } \varnothing$ galvanized flat-head nails or equivalent.

For Method A, M12 rods shall be used at each end of sheathed section top plate to bottom plate/floor frame. Method B has no rods but sheathing shall be nailed to top and bottom plates and any horizontal joints at 50 mm centres.

Horizontal butt joints are permitted, provided nail fixed to nogging at $s = 150 \text{ mm}$ centres for Method A, or $s = 50 \text{ mm}$ centres for Method B



Minimum plywood thickness, mm		
Stress grade	Stud spacing mm	
	450	600
F8	7	9
F11	6	7
F14	4	6
F27	4	4.5
Fastener spacing (s) mm		
Top and bottom plate:		
— Method A	150	
— Method B	50	
Vertical edges		150
Intermediate studs		300
Fixing of bottom plate to floor frame or slab		
Method A: M12 rods as shown plus a 13 kN capacity connection at max. 1200 mm centres		
Method B: A 13 kN capacity connection at each end and intermediately at max. 1200 mm centres		

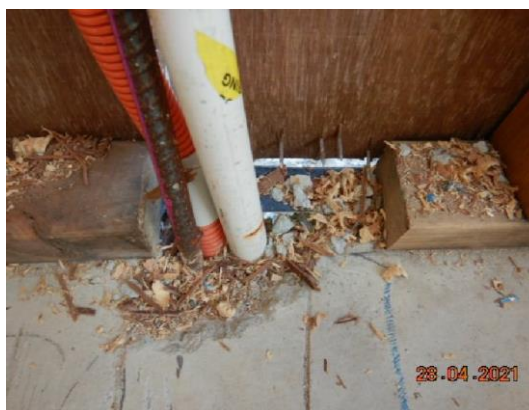
Method A
6.4
Method B
6.0

Method A only: M12 rod top to bottom plate each end of sheathed section Sheathed panels shall be connected to subfloor

NOTE: For plywood fixed to both sides of the wall, see Clauses 8.3.6.5 and 8.3.6.10.



Sample



All sheets to be checked



Sample



4. This item has not been addressed as of the 28/04/2021.

QBCC Act Schedule 1B, Implied Warranties, sect. 20: - The building contractor warrants that all materials supplied for use in the subject work will be good and unless stated otherwise shall be new.

A few bracing sheets present with water damage resulting in delamination of the plywood. All damaged sheets will need to be replaced to ensure the engineer designed wind resistance is achieved.

Alternatively have the engineer inspect and sign off the current installation.

20 Suitability of materials

- (1) The building contractor warrants that all materials to be supplied for use in the subject work—
 - (a) will be good and, having regard to the relevant criteria, suitable for the purpose for which they are used; and
 - (b) unless otherwise stated in the contract, will be new.
- (2) Subsection (1) applies to the building contractor for materials only if the materials are supplied by the responsible person for the contract.

In this section—

relevant criteria, for materials, means—

- (a) generally accepted practices or standards applied in the building industry for the materials; or
- (b) specifications, instructions or recommendations of manufacturers or suppliers of the materials.



Previous photo



5. This item has not been fully addressed as of the 28/04/2021.

AS 1684.2; Appendix J2: - Mechanically laminated members utilising EWP's (Engineered Wood Products) such as LVL's should be undertaken in accordance with the manufacturer's specifications.

LVL laminations are presenting with sizeable gaps, and as such, have not met these requirements.

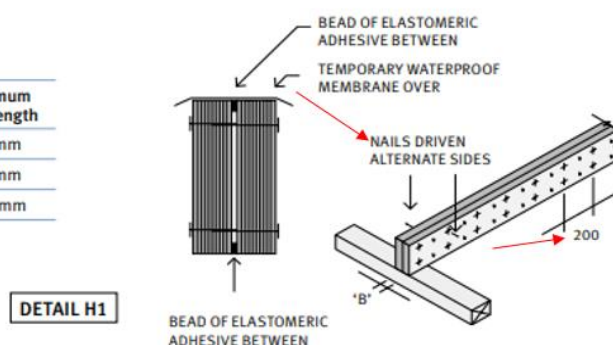
J2 VERTICAL NAIL LAMINATION

In situations where rectangular beams manufactured from EWPs are vertically laminated together using nails, screws or bolts, the requirements of Clause 2.3, applicable to sawn timber, are generally inadequate. As such, fabrication of mechanically laminated members utilizing EWPs, such as LVL, should be undertaken in accordance with the manufacturer's specifications.

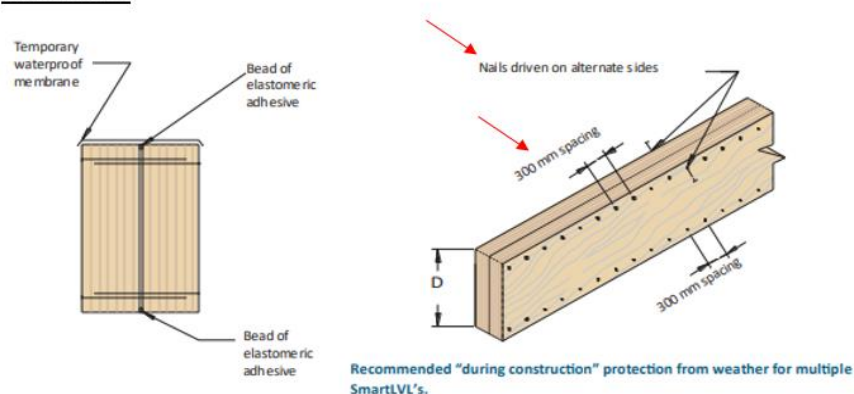
hySPAN:

VERTICAL NAIL LAMINATION

Section Size "B"	Minimum Nail Dia	Minimum Nail Length
35	3.06 mm	75 mm
45	3.30 mm	90 mm
63	3.30 mm	100 mm



Smart LVL:



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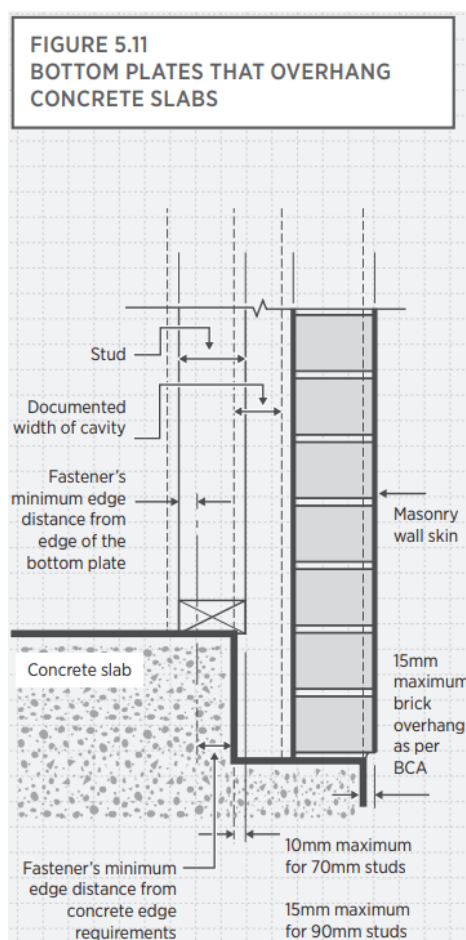
6. This item has not been addressed as of the 28/04/2021.

QBCC Standards and Tolerances Guide 5.11 & the NCC; 3.2.2.7: - 70 mm and 90 mm wide bottom plates shall not overhang the slab rebate by more than 10 mm and 15 mm respectively to satisfy each of the following requirements.

Areas of the frame to this dwelling have not met this requirement.

5.11 Bottom plates that overhang concrete slabs

Bottom plates that are at least 90mm wide and overhang concrete slabs by in excess of 15mm are defective and bottom plates that are 70mm wide and overhang slabs by in excess of 10mm are defective, refer to figure 5.11. In each instance, these permissible overhangs, are subject to the minimum edge distance for both the bottom plate and the concrete slab fixing locations being satisfied and minimum cavity widths as required by the BCA also being maintained.



3.2.2.7 Edge rebates

Edge rebates for slab-on-ground, stiffened raft or *waffle raft* with masonry *cavity* or veneer construction must comply with the following:

- (a) The rebate must not be less than 20 mm, except as provided for in (d).
- (b) ➤ Exterior masonry must not overhang more than 15 mm past the edge of the slab.
- (c) The edge rebate must be flashed and drained in accordance with [Part 3.3.4](#) and where it cannot be flashed it must be filled with mortar.
- (d) Edge rebates are not *required* for *single leaf masonry*.

Explanatory information:

See [3.2.5.4](#) for minimum edge beam details.



Previous photo



7. This item has not been addressed as of the 28/04/2021.

AS 4440; Fig 5.2: - Creeper rafters and jack trusses up to 1800 mm shall be fixed to the hip with 3/65mm nails (minimum).

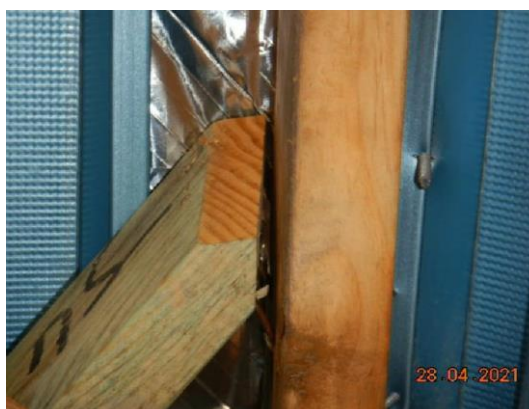
This requirement has not been met.

FIGURE 5.2 (in part) CONNECTION DETAILS—HIP-END TRUSSES FOR WIND CLASSIFICATION N1, N2, N3 OR C1

Detail	Description	Connection details
D1	<p>Creepers or jack truss to hip truss (maximum creeper/jack station 1800 mm)</p> <p><i>Top chord</i>—three effective flat-head 65 mm nails through jack truss top chord into hip truss top chord</p> <p><i>Bottom chord</i>—three effective flat-head 65 mm nails through jack truss bottom chord to hip truss bottom chord</p>	



Only one nail



Nails bending over, not fully nailed

8. This item has not been addressed as of the 28/04/2021.
AS 4440; clause 4.3.8(c) and Pryda Installation Guide: - Diagonal steel roof braces (speed brace) shall be fixed to the top plate in accordance with one of the following methods.

The roof frame speed brace has not met this requirement.

4.3.8 Fixing

The steelbrace shall be arranged in a V-shape or X-shape configuration over the top of the top chords as specified in the bracing layouts in Clauses 4.3.3 to 4.3.6. Steelbrace shall be fixed to each truss in the brace section and to the supports, using a minimum of Ø2.8 mm × 30 mm reinforced-head nails in accordance with the following details:

(c) *End fixing details (at heel, to top plate)* See Figures 4.22 and 4.23.

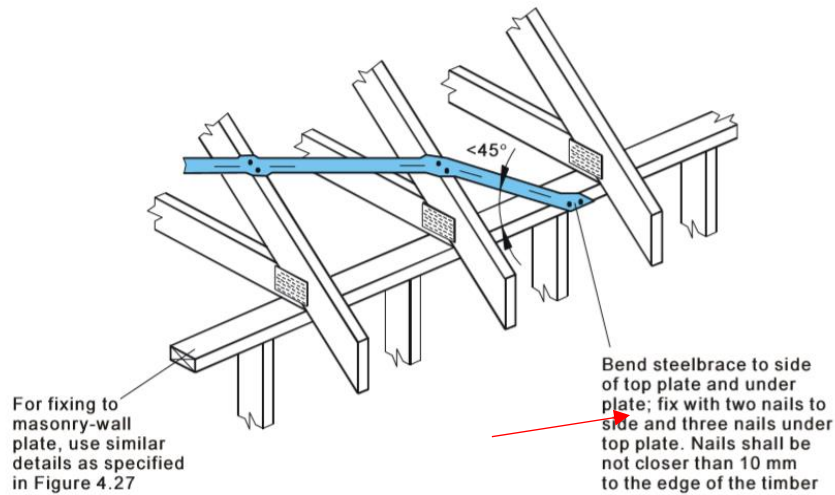


FIGURE 4.22 END FIXING DETAILS AT HEEL—TO TOP PLATE

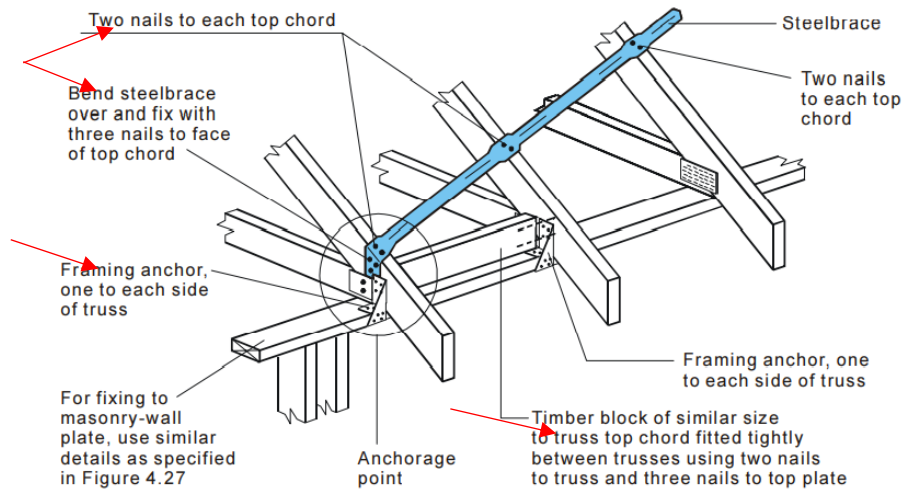


FIGURE 4.23 END FIXING DETAILS AT HEEL—TO TOP PLATE (ALTERNATIVE)



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9. This item has not been addressed as of the 28/04/2021.

The edges of the floor slab have not been correctly boxed up prior to being poured, or the framing not positioned correctly on the slab. This has resulted in the slab protruding out past the pine wall frame more than 30 mm, this will interfere with the cladding, DPC and sarking to overlap the slab edge.

NCC 3.5.4.7. Wall cladding is to extend below the frame by a minimum of 50 mm.

3.5.4.7 Clearance between cladding and ground

- (a) The minimum clearance from the bottom of the wall cladding to the adjoining finished ground level must be—
 - (i) 100 mm in *low rainfall intensity areas* or sandy, well-drained areas; or
 - (ii) 50 mm above impermeable (paved or concreted) areas that slope away from the building in accordance with [3.1.3.3\(a\)](#); or
 - (iii) 150 mm in any other case.
- (b) Wall cladding must extend a minimum of 50 mm below the bearer or lowest horizontal part of the suspended floor framing.



Previous photo



Previous photo



10. This item has not been addressed as of the 28/04/2021.

The rusting steel rod to the earthing on the slab is connected to the steel inside the slab.

As such it must be a treated material such as a galvanised rod or the like. The current installation will continue to rust and will allow the transference of rust.

The builder needs to treat the rod to remove all rust and then paint same one the earthing strap has been applied. Please note it must be painted after the earthing strap has been installed.

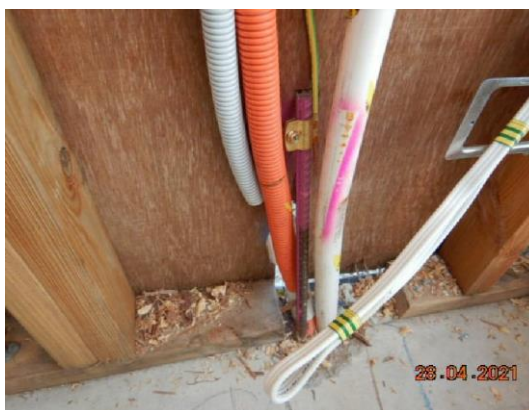
3.7.2.3 *Loosening of connections*

3.7.2.3.1 *General*

Connections shall be made so that no loosening is likely because of vibration, alteration of materials or temperature variations to which the connections are likely to be subjected in normal service.



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11. This item has not been addressed as of the 28/04/2021.

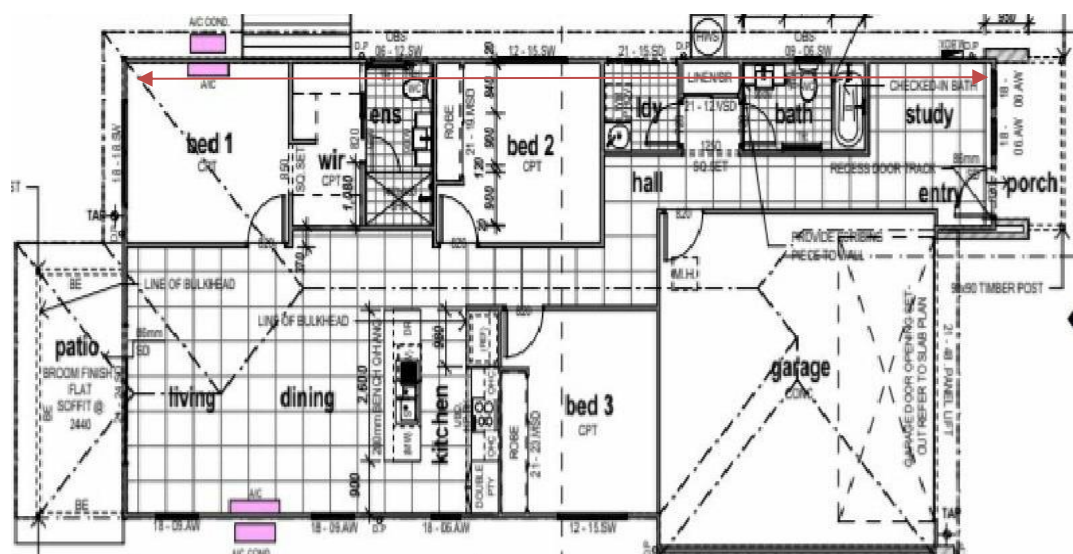
QBCC Standards and Tolerances Guide: - Timber wall frames and exposed posts are defective if they deviate from vertical by more than 4 mm within any 2-metre height.

Walls frames and/or exposed posts to this dwelling have not met this requirement.

5.2 Verticality or plumbness of timber frames and exposed posts

Within the first 12 months from completion of the work, posts and wall frames are defective if they deviate from vertical by more than 4mm within any 2m height. Refer to Figure 1.3 B in this Guide for method of measurement.

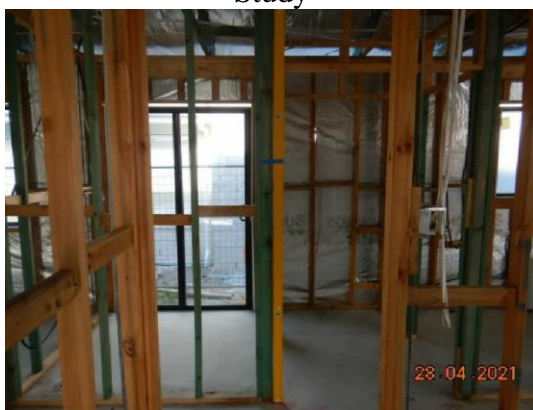
Within 6 years and 6 months from completion of the work, posts and wall frames are defective if they deviate from vertical by more than 4mm within any 2m height and as a result compromises the structural adequacy of the wall or building, allows water penetration into the building or compromises the health and safety of those who use the building.



Note: walls along the right side of dwelling are out, not all marked up.



Study



Hall

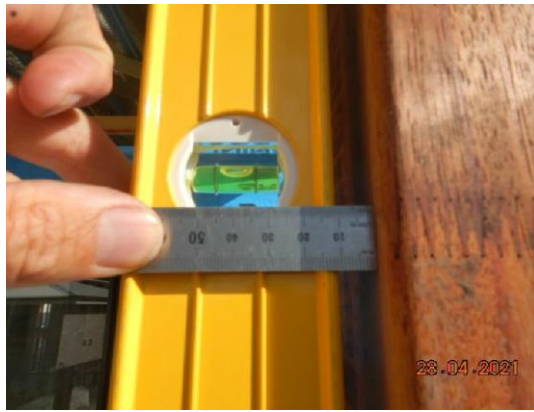


Laundry



Bed 1





Kitchen



12. This item has not been addressed as of the 28/04/2021.

AS 1684.2; 9.2.8: - calls for the installation of a plate connector (gang nail plate or equiv.) at the top of all intersecting walls. Where plates interlock, they are not required.

There are gang nails missing to several of the top plates to the wall's connections. These plates play a vital role in securing one wall to another. It also assists with the racking force resistance on a home.

In areas, top plate connections have not met this requirement.

9.2.8 Joining of top plates and ring beam

Top plates and ring beam in walls shall be joined by one of the methods shown in Figure 9.2 for the relevant wind classification.

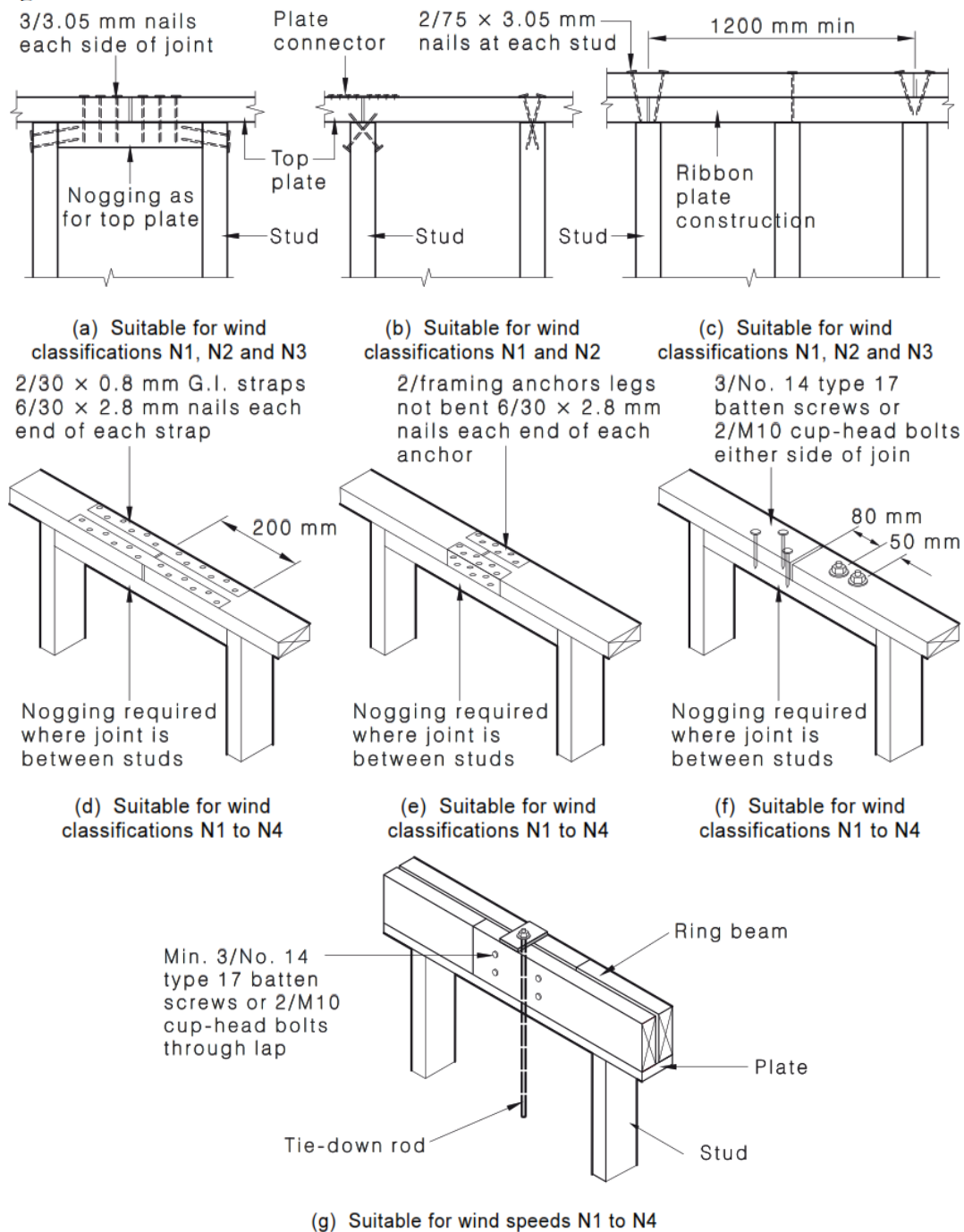


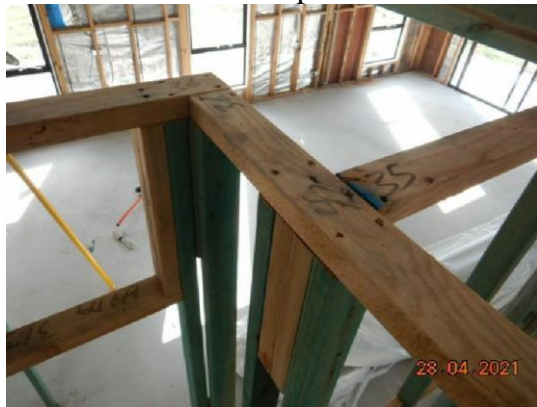
FIGURE 9.2 JOINING OF TOP PLATES AND RING BEAMS



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Previous photo



13. This item has not been addressed as of the 28/04/2021.

AS 1684.2, 6.2.1.3: - All intersecting walls shall be fixed at their junctions with two nails to each block or nogging. Blocks or noggings shall be spaced at maximum 900mm crs.

This frame has not met this requirement.

6.2.1.3 Wall junctions

Studs at wall junctions and intersections shall be in accordance with one of the details shown in Figure 6.3. Studs shall be not less in size than common studs. All junctions shall have sufficient studs, which shall be located so as to allow adequate fixing of linings.

→ All intersecting walls shall be fixed at their junction with blocks or noggings fixed to each wall with 2/75 mm nails. Blocks or noggings shall be installed at 900 mm max. centres.

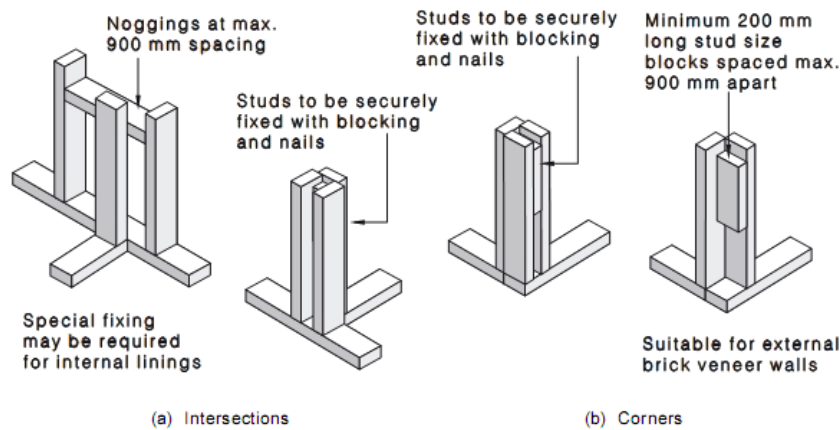


FIGURE 6.3 TYPICAL WALL JUNCTIONS



Sample



Previous photo



14. This item has not been addressed as of the 28/04/2021.

AS 1684.2; 2.4: - Multiple studs at sides of openings or in locations supporting concentrated loads shall be laminated together as follows.

- 35 mm studs shall be laminated using 75 mm nails @ 600 mm spacings.
- 45 mm studs shall be laminated using 90 mm nails @ 600 mm spacings.

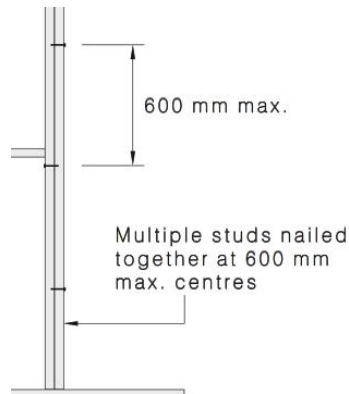
Nail spacings exceed 600 mm.

2.4 STUD LAMINATION

In the case of studs at sides of openings and studs supporting concentrations of load, the required size may be built up by using two or more laminations of the same timber type, stress grade and moisture content condition, provided the achieved width is at least that of the nominated size. Studs up to 38 mm thick shall be nailed together with one 75 mm nail at maximum 600 mm centres. Studs over 38 mm but not exceeding 50 mm thick shall be nailed with one 90 mm nail at maximum 600 mm centres (see Figure 2.9).

Where screws are used in lieu of nails, they shall be minimum No. 10 screws. They may be at the same spacing and pattern, provided they penetrate a minimum of 75% into the thickness of the final receiving member.

Posts shall not be nail-laminated.



Previous photo



Previous photo



Previous photo



15. This item has not been addressed as of the 28/04/2021.

AS 4440; part 3.4: - Timber roof trusses shall be installed straight and plumb to within the maximum tolerances.

Bow; Lesser of $L/200$ and 50mm

Plumb; Lesser of height/50 and 50mm (at any point along its length)

Trusses present beyond these maximum allowable tolerances.

3.4 INSTALLATION TOLERANCES

3.4.1 General

Trusses shall be installed straight and vertical and in their correct position as specified in Clauses 3.4.2 to 3.4.4.

NOTE: The best method for ensuring correct truss positioning is to mark the locations on the top plate or other supporting elements in accordance with the truss layout prior to truss installation.

3.4.2 Bow

Trusses shall be erected with minimal bow, in the truss and in any chord, with a tolerance not exceeding the lesser of $L/200$ and 50 mm, where L is as defined in Figure 3.2(a) or Figure 3.2(b).

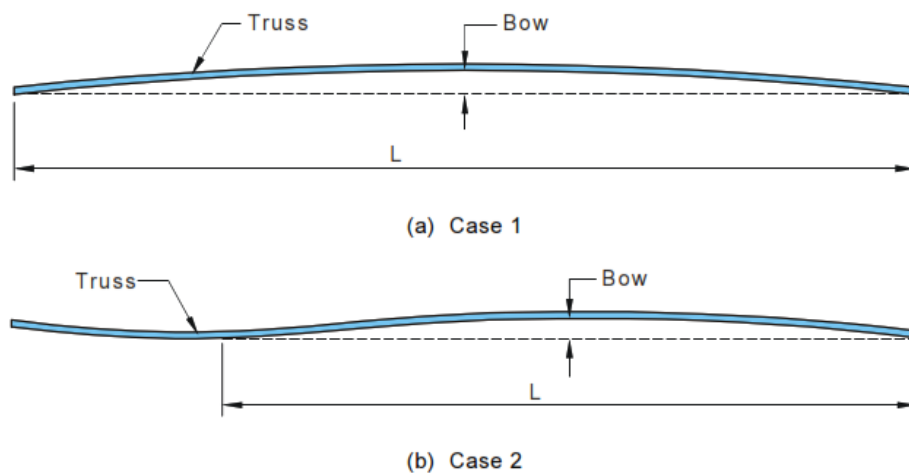


FIGURE 3.2 BOW

3.4.3 Plumb

Trusses shall be so erected that no part of the truss is out of plumb with a tolerance exceeding the lesser of height/50 and 50 mm (see Figure 3.3).

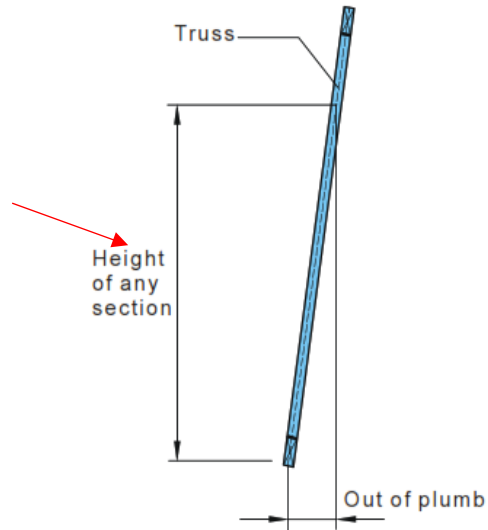


FIGURE 3.3 PLUMB



Bow in bottom cords



Previous photo



16. This item has not been addressed as of the 28/04/2021.
AS 4440; 2.2.3(c): - Internal nonloadbearing walls shall be stabilised in accordance with AS 4440.

The batten screws used need to be removed and replaced with a proprietary purpose made L bracket.

This requirement has not been met.

- (c) *Non-bracing wall* For an internal non-loadbearing wall not designated as a bracing unit, stability of the wall shall be required to resist normal applied force, e.g., when closing doors. The top plate of the wall shall be stabilized at maximum 1800 mm centres. Where trusses are parallel to the wall, nogging shall be used in between the bottom chords and fixed to the bracket. Figure 2.3 gives an example of fixing details.

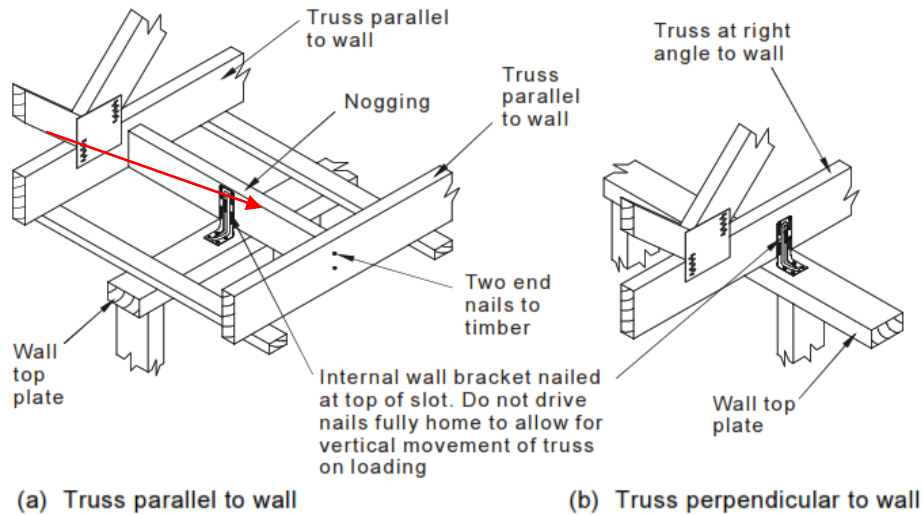


FIGURE 2.3 FIXING OF TRUSSES TO FREESTANDING NON-LOADBEARING WALL THAT IS NOT A BRACING WALL



Previous photo



Previous photo



17. This item has been fully addressed as of the 28/04/2021. Engineer to clarify cut brace.

AS 1684.2; Table 8.18 (c): - 2 / 30 x 2.8 mm dia. nails are required at each stud and at top and bottom plates for metal angle braces.

Bracing to this dwelling has not met this requirement.

TABLE 8.18 (continued)

Type of bracing	Bracing capacity kN/m
<p>(c) <i>Timber and metal angle braces</i> The maximum depth of a notch or saw-cut shall not exceed 20 mm. Saw-cuts studs shall be designed as notched.</p> <p>2/50 x 2.8 mm Ø nails for timber brace, or 2/30 x 2.8 mm Ø nails for metal brace, to each stud and plate</p> <p>Min. 75 x 15 mm F8 brace or metal angle of min. nominal section 20 x 18 x 1.2 mm</p> <p>(See Detail 1)</p> <p>No end splits allowed; drill if necessary</p> <p>(See Detail 1)</p> <p>1800 mm min. to 2700 mm max.</p> <p>Detail 1: 30 x 0.8 mm galv. metal strap looped over plate and fixed to stud with 3/30 x 2.8 mm Ø galv. flat-head nails (or equivalent) to each end. Alternatively, provide single straps to both sides, with 3 nails per strap end, or equivalent anchors or other fasteners.</p> <p>Fix bottom plate to floor frame or slab with nominal fixing only (see Table 9.4)</p>	1.5

It was noted that one of the braces has been cut for a vent pipe.

The builder to ensure that structural bracing is in accordance with engineering prior to proceeding with the build.



Previous photo



Previous photo



Addressed



18. This item has not been addressed as of the 28/04/2021.

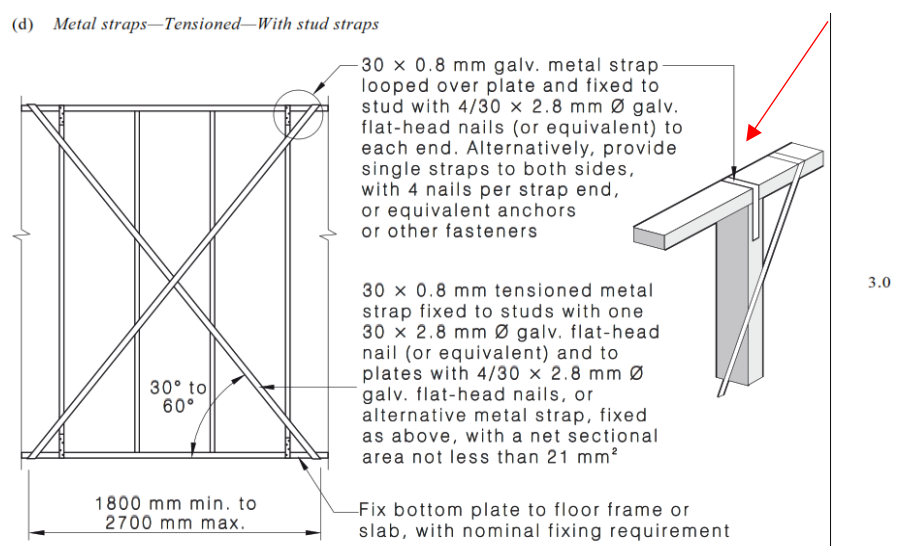
AS 1684.2; Table 8.18: - To be effective, bracing and tie down straps looped over top and bottom plates, must be fitted firm and without undulations.

Straps to this frame are loosely fitted with undulations. Failure to rectify can result in undulations in plaster lines and future plaster cracking.

TABLE 8.18 (continued)

Type of bracing	Bracing capacity kN/m
<p>(c) <i>Timber and metal angle braces</i> The maximum depth of a notch or saw-cut shall not exceed 20 mm. Saw-cuts studs shall be designed as notched.</p> <p>2/50 × 2.8 mm Ø nails for timber brace, or 2/30 × 2.8 mm Ø nails for metal brace, to each stud and plate</p> <p>Min. 75 × 15 mm F8 brace or metal angle of min. nominal section 20 × 18 × 1.2 mm</p> <p>(See Detail 1)</p> <p>(See Detail 1)</p> <p>(See Detail 1)</p> <p>Fix bottom plate to floor frame or slab with nominal fixing only (see Table 9.4)</p>	<p>1.5</p>

(d) Metal straps—Tensioned—With stud straps



Previous photo



19. This item has not been addressed as of the 28/04/2021.

AS 1684.2, Table 6.1: - Top and bottom plates of internal non loadbearing and non bracing walls may be discontinued or drilled up to a maximum of 60 mm to permit services, provided that the plate is stiffened with a trimmer or otherwise reinforced to maintain the longitudinal and lateral integrity of the wall.

The frame has not met this requirement.

TABLE 6.1
HOLES AND NOTCHES IN STUDS AND PLATES

Symbol	Description	Limits	
		Notched	Not notched
<i>A</i>	Distance between holes and/or notches in stud breadth	Min. 3 <i>D</i>	Min. 3 <i>D</i>
<i>H</i>	Hole diameter (studs and plates)	Max. 25 mm (wide face only)	Max. 25 mm (wide face only)
<i>C</i>	Notch into stud breadth	Max. 10 mm	Max. 10 mm
<i>E</i>	Notch into stud depth	Max. 20 mm (for diagonal cut in bracing only) (see Notes 1 and 2)	Not permitted (see Note 1)
<i>F</i>	Distance between notches in stud depth	Min. 12 <i>B</i>	N/A
<i>P</i>	Trenches in plates	3 mm max.	

NOTES:

- 1 A horizontal line of notches up to 25 mm may be provided for the installation of baths.
- 2 Except as permitted for diagonal cut in bracing, notches up to 20 mm may occur in every fifth individual stud.
- 3 For additional jamb stud requirements, see Figures 6.5 and 6.9.
- 4 Top and bottom plates in internal non-loadbearing and non-bracing walls may be discontinuous up to 60 mm (cut or drilled) to permit installation of services provided that, at the discontinuity, the plates are trimmed or otherwise reinforced either side of the discontinuity to maintain the lateral and longitudinal integrity of the wall.



Previous photo



20. This item has not been fully addressed as of the 28/04/2021.

AS 1684.2; 6.2.1.5: - Wall studs shall have continuous rows of noggings at 1350 mm maximum centres.

Breaks in the continuity of the noggling row through either short or missed noggling means that this requirement has not been met.

6.2.1.5 Nogging

Where required, wall studs shall have continuous rows of noggings, located on flat or on edge, at 1350 mm maximum centres (see Figure 6.6).

Noggings are not required to be stress-graded.

Unless otherwise specified, the minimum nogging size shall be the depth of the stud minus 25 mm by 25mm thick, or the nogging shall have a minimum cross-section of 50 mm × 38 mm for unseasoned timber and 42 mm × 35 mm for seasoned timber, and shall be suitable, where required, for the proper fixing of cladding, linings, and bracing.

Where required to provide fixing or support to cladding or lining or for joining bracing sheets at horizontal joints, noggings shall be installed flush with one face of the stud.

Where required to permit joining bracing sheets at horizontal joints, noggings shall be the same size as the top or bottom plate required for that bracing wall.

In other cases, noggings may be installed anywhere in the depth of the stud. Stagger in the row of noggings shall be not greater than 150 mm.

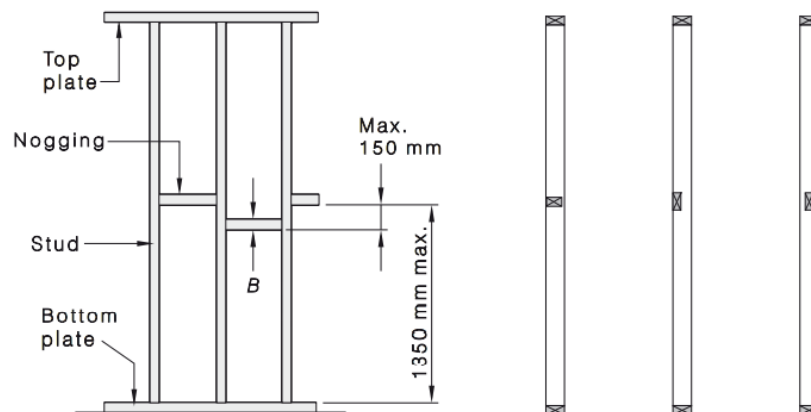


FIGURE 6.6 NOGGING



Previous photo



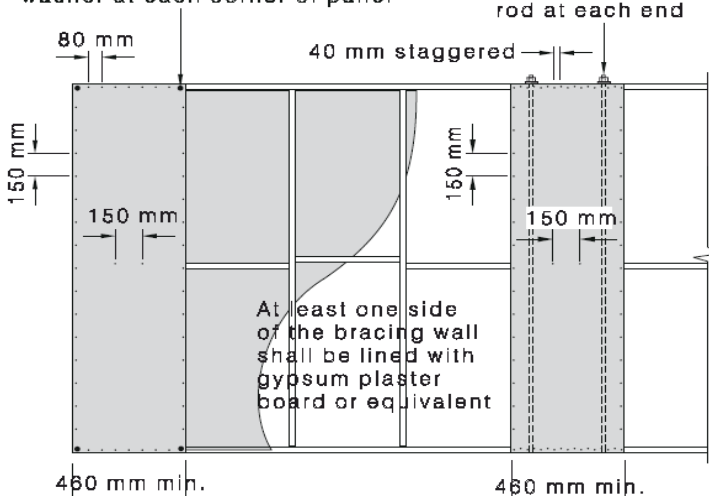


21. This item has not been addressed as of the 28/04/2021.

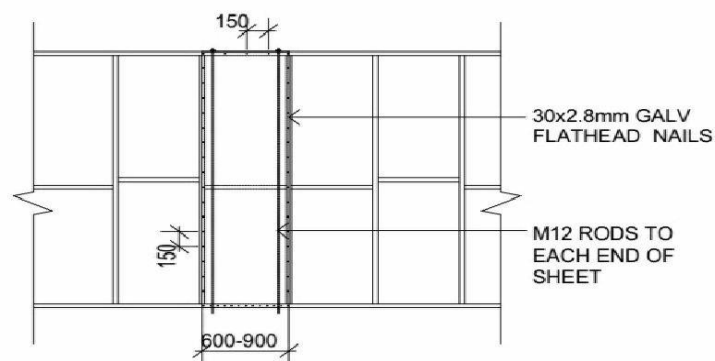
AS 1684.2; Table 8.18 (n): - Type D and Type E short wall bracing systems shall have coach screws or M12 tie down rods installed, respectively.

Short sheet bracing panels have not met this requirement.

TABLE 8.18 (continued)

Type of bracing		Bracing capacity kN/m		
(n) <i>Hardboard Type D and E—Short wall bracing systems</i> Hardboard shall comply with AS/NZS 1859.4. Hardboard shall be nailed to frame using minimum 30 × 2.8 mm Ø galvanized flat-head nails or equivalent. Nails shall be located a minimum of 10 mm from the vertical edges and 15 mm from the top and bottom edges. Maximum stud spacing = 600 mm. Bracing panel minimum width = 460 mm. Type D only: M10 × 50 mm long coach screw with 30 × 38 mm washer at each corner of panel Type E only: M12 rod at each end  NOTE: Bolt/rod washer sizes as per Table 9.1.	Minimum hardboard thickness 4.8 mm			
	Fastener spacing, mm			
	Top and bottom plates	Type D		80
		Type E		40
	Vertical edges and nogging			150
Fixing of bottom plate to floor frame or slab.				
Type D: Fix bottom plate to floor frame or slab with nominal fixing only (see Table 9.4)		Type D 3.4		
Type E: M12 rods at each end.		Type E 6.0		

Construction plan bracing diagram:



1. 4mm F27 PLY WITH STUDS AT 450 CTRS
2. 4.5mm F27 PLY WITH STUDS AT 600 CTRS

PLY BRACING PANEL

TABLE 8.18 (FIG H "METHOD A") - VALUE 6.4kN/m
FOR 600mm WIDE SHEETS MULTIPLY CAPACITY BY 0.5



Previous photo



Previous photo



22. This item has not been addressed as of the 28/04/2021.

AS 4440; clause 4.3.8(a): - Diagonal steel roof braces (speed brace) shall be splice fixed to the top chord in accordance with one of the following methods.

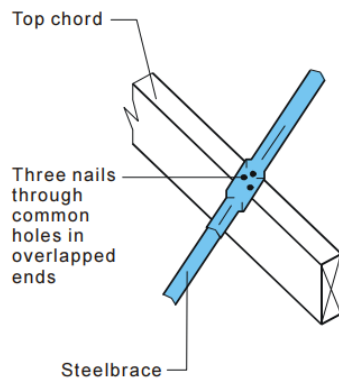
Note: The commonly adopted method of joining over two trusses also satisfies this requirement.

The roof frame has not met this requirement.

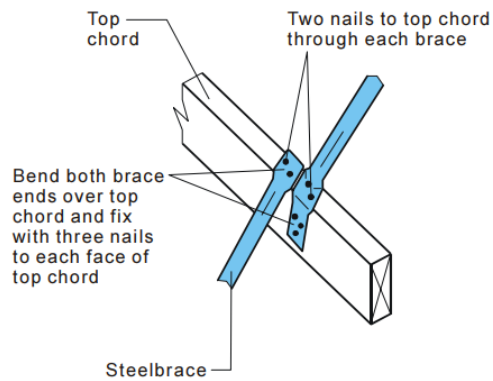
4.3.8 Fixing

The steelbrace shall be arranged in a V-shape or X-shape configuration over the top of the top chords as specified in the bracing layouts in Clauses 4.3.3 to 4.3.6. Steelbrace shall be fixed to each truss in the brace section and to the supports, using a minimum of Ø2.8 mm × 30 mm reinforced-head nails in accordance with the following details:

(a) *Typical spliced detail* See Figure 4.20.



(a) Lap splice



(b) Wraparound splice

FIGURE 4.20 TYPICAL SPLICE DETAILS



Bent around pipe and loose



Previous photo



Defects, observations and other related comments from the Pre Plaster Inspection on the 28/04/2021:

23.

We noted several sections to the 'pliable membrane' (reflective insulation / sarking) that require reinstating due to rips, tears, and openings.

All defective areas require reworking as per the requirements of the BCA Part 3.12 and the approved six star energy report.

Please note - if taped from the inside, the tape must be compatible with AS 4254 (foil backed tape).

3.12.1.1 Building fabric thermal insulation

- (b) Where *required*, *reflective insulation* must be installed with—
- (i) the necessary airspace, to achieve the required *R-Value* between a reflective side of the *reflective insulation* and a building lining or cladding; and
 - (ii) the *reflective insulation* closely fitted against any penetration, door or *window* opening; and
 - (iii) the *reflective insulation* adequately supported by framing members; and
 - (iv) each adjoining sheet of roll membrane being—
 - (A) overlapped greater than or equal to 150 mm; or
 - (B) taped together.

Explanatory information:

Adjoining sheets of roll membrane

Where *reflective insulation* also acts as a vapour barrier or sarking, both the minimum overlap and taping may be necessary.

Any water that enters the dwelling once the batts or plaster have been installed will render the batts or plaster damaged and they will need to be replaced. I refer the builder to AS 2589 and AS 3999.





24.

The NCC 2019; Part 2.2 Damp and Weatherproofing: - A building including any associated site work must be constructed in a way that protects people and other property from the adverse effects of redirected surface water.

Temporary downpipes have come away from the gutters and need to be reattached.

Part 2.2 Damp and weatherproofing

Explanatory information:

Objective

O2.2

The Objective is to—

- (a) safeguard occupants from illness or injury and protect the building from damage caused by—
 - (i) surface water; and
 - (ii) external moisture entering a building; and
 - (iii) the accumulation of internal moisture in a building; and
 - (iv) discharge of swimming pool waste water; and
- (b) protect other property from damage caused by—
 - (i) redirected surface water; and
 - (ii) the discharge of swimming pool waste water.

Functional statements

F2.2.1 Surface water

A building including any associated sitework is to be constructed in a way that protects people and other property from the adverse effects of redirected surface water.



25.

AS 3700: - The allowable tolerance for masonry perpends in table 12.1 is +/- 10 mm, with a minimum of 5 mm. The maximum is 20 mm.

Perpends in areas of brickwork to this dwelling have not met this requirement.

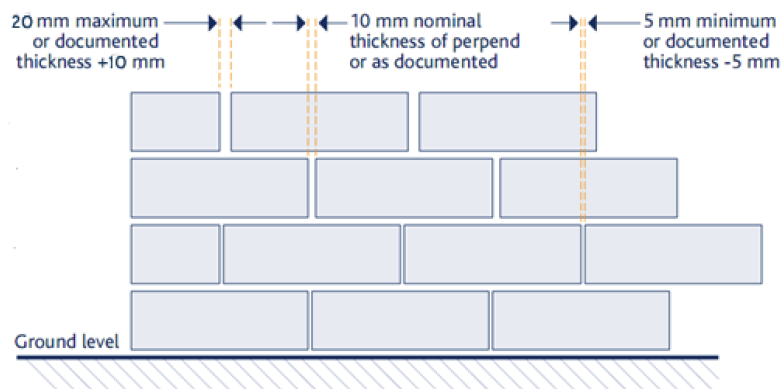


TABLE 12.1
TOLERANCES IN MASONRY CONSTRUCTION

Item	Tolerance
(a) Horizontal position of any masonry element specified or shown in plan at its base or at each storey level	±15 mm
(b) Relative displacement between loadbearing walls in adjacent storeys intended to be in vertical alignment	±10 mm
(c) Maximum deviation from plumb within a storey from a vertical line through the base of the member	The lesser of ±10 mm per 3 m of height or 0.05 times the thickness of the leaf
(d) Maximum deviation from plumb in the total height of the building (from the base)	±25 mm
(e) Maximum horizontal or vertical deviation of a surface from a plane surface (bow) when measured as described in Clause 12.5.2	±5 mm
(f) Deviation of bed joint from horizontal, or from the level specified or shown in elevation	±10 mm in any 10 m length, ±15 mm in total
(g) Deviation from specified thickness of bed joint	±3 mm
(h) Minimum perpend thickness	5 mm
(i) Deviation from specified thickness of perpend	±10 mm max.
(j) Deviation from specified width of cavity	±15 mm



26.

The BlueScope Colorbond roofing products to the dwelling have been damaged during construction.

BlueScope Technical Bulletin-38: - BlueScope do not support the use of touch-up paints on 'Colorbond' steel, and that their use will invalidate the BlueScope Warranty.

Damaged areas greater than 2mm in width will need to be replaced.

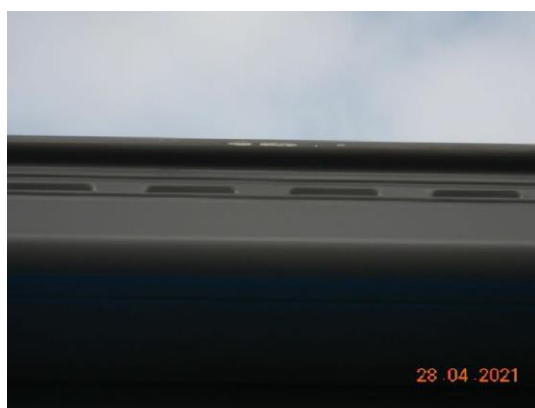
Technical Bulletin 38

May 2019. Revision 1.

REPAIR OF MINOR SCRATCHES AND BLEMISHES

BlueScope does not recommend the use of touch-up paint to repair damage or scratches to the painted surface. As explained above, air-drying paints have different weathering characteristics to COLORBOND® steel, which leads to variations in appearance over time where touch-up paint has been used. BlueScope does not have a recommended method for the removal of touch-up paint. Minor scratches (< 2mm in width) should be left alone as the available metallic coating will continue to protect against corrosion providing the scratches are superficial and the metallic coating is not damaged. If scratches are more noticeable on new material, it is the recommendation of BlueScope to replace the affected product.

BlueScope does not recommend or support the use of touch-up paint on COLORBOND® steel. The application of post paint treatments or systems to the material will invalidate the BlueScope Warranty*.



27.

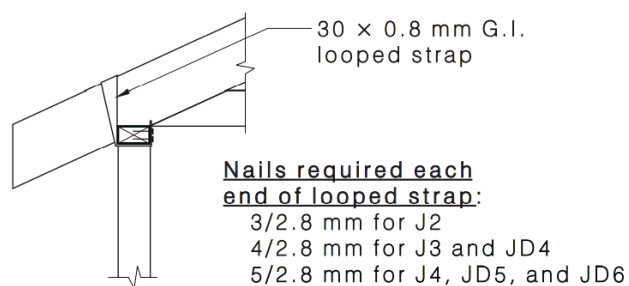
AS 1684.2; Table 9.21(e) & Pryda installation guide: - Cyclone straps shall be installed in accordance with the following table.

Further fixings are required to meet the minimum standard.

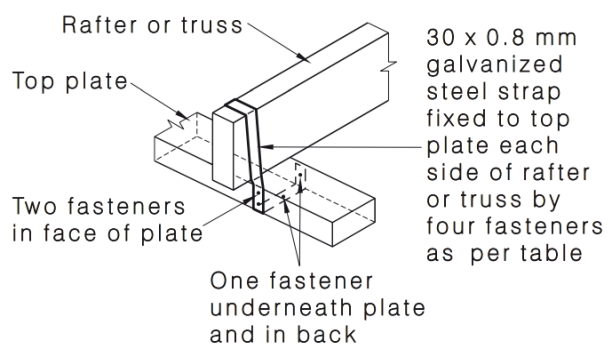
AS 1684.2 Table 9.21:

Rafters/trusses to wall frame or floor frame

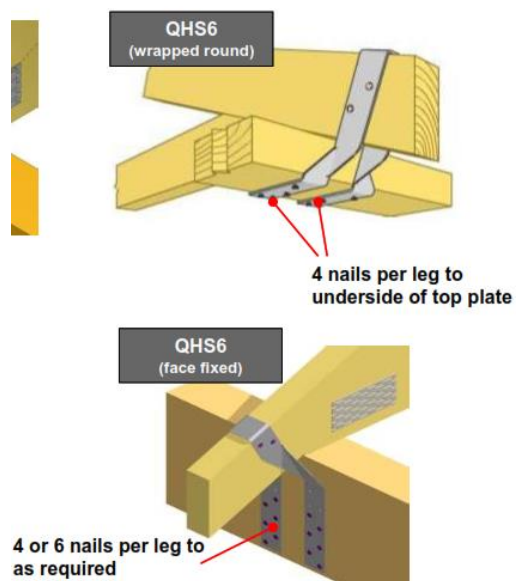
(c)



	J2	J3	J4	JD4	JD5	JD6
No. of looped straps						
1	13	13	13	13	13	13
2	25	25	25	25	25	25



Pryda; manufacturers often provide clear details in relation to fixing requirements when products are installed using alternative methods.



4 nails into LVL's and 6 nails into MGP10 MGP12.



Strap has been pulled off and now there is only 3 nails holding

28.

Openings in external wall cladding exposed to the weather must be flashed with materials complying with the NCC or AS 4200.2, we are not aware of any performance solution.

The minimum requirements are clearly defined in both publications, all openings must be protected. Note the top can be omitted if protected by an awning greater than 3 X the height of the cladding over.

AS 4200.2.

4.7 WINDOWS, ROOF WINDOWS, SKYLIGHTS AND DOORS

At windows, doors and other openings, the pliable building membrane shall be cut and dressed into all sides of the opening to achieve the desired function of the membrane in accordance with Clauses 4.1, 4.2, 4.3 and 4.4.

The building membrane shall be installed to facilitate drainage to the building flashing.

NOTE: An example of membrane installation adjacent to flashing is shown in Figure 4.7, including the following:

- (a) Cutting the membrane—Illustration (a).
- (b) Folding the membrane back into the window reveal—Illustration (b).
- (c) Taping the exposed inside corners of the window reveal to hold the membrane in place—Illustration (c).

For thicker membranes greater than 1 mm, the membrane may be terminated at the outer edge of the frame and sealed using a pressure-sensitive and heat- and moisture-resistant tape.

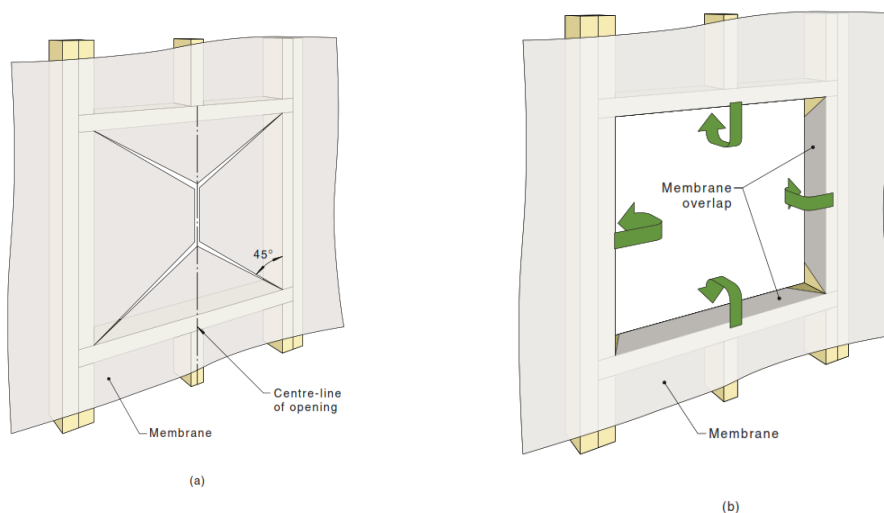


FIGURE 4.7 (in part) EXAMPLE OF WINDOW MEMBRANE TRIM DETAIL



29.

The pliable membrane to the walls has not been lapped at 150 mm minimums. AS 4200.2 “Pliable Building Membranes and Underlay’s” part 2 states:

3.7 COMMON REQUIREMENTS FOR WALLS

3.7.1 General

When installing pliable building membranes in walls, the following requirements apply.

Installation of pliable building membranes in walls shall be as follows:

(a) All joints shall be—

- (i) lapped not less than 150 mm;
- (ii) lapped not less than 50 mm jointed and taped; or
- (iii) butt-jointed and taped where the combined uncompressed nominal material thickness is greater than 5 mm and overlapping will compromise cladding installation.

(b) All end laps shall be fixed at a stud to form a continuous membrane.

The only tapes that can be used on the sisalation are AS 4254 compliant. Please note that any coloured tapes used on the foil side of sisalation are defective.



30.

It appears there is efflorescence forming as documented below.

This is likely due to exposure to moisture prior to laying or during laying as explained in the following guidelines.

Think Brick Australia Manual 10 Construction Guidelines for Clay Masonry

All materials must be properly stored on site. Cement and lime must be adequately protected against water damage and masonry units should be kept dry until laying.

Protecting masonry units from moisture

Masonry units of all types must be protected on site from moisture and contaminants from the ground, which can cause problems with efflorescence and salt attack in the completed masonry.

Entry of salts from the ground into the units will lead to unsightly efflorescence later, as the salts are mobilised by moisture from rain and the atmosphere. High moisture content at the time of laying can cause problems such as poor bond strength and efflorescence. It is strongly recommended that the masonry units should be stacked clear of the ground, for example on pallets, and covered to give protection from the rain. Figure 1 is an example of bad practice, where ground water can contact the units, with the possibility of staining and take-up of salts.



31.

AS 1684.2; Table 9.4: - Bottom plates shall be nominally fixed to concrete slabs with 1 x 75mm concrete nails at 1200 mm maximum spacings.

There are areas where sides of openings have not been fixed down and are moving.

TABLE 9.4
NOMINAL FIXINGS FOR TIMBER MEMBERS

Joint	Minimum fixing for each joint
Bottom plates to concrete slab	One 75 mm masonry nail (hand-driven at slab edge), screw or bolt at not more than 1200 mm centres



32.

There is damage and mould present to the window reveals and doors from the effects of the rain.

All builder supplied materials must present 'as new' with no damage or mould present.

QBCC Act; Schedule 1B, s.20:

20 Suitability of materials

- (1) The building contractor warrants that all materials to be supplied for use in the subject work—
 - (a) will be good and, having regard to the relevant criteria, suitable for the purpose for which they are used; and
 - (b) unless otherwise stated in the contract, will be new.

AS 1684.2:

APPENDIX E

MOISTURE CONTENT AND SHRINKAGE

(Informative)

E1 MOISTURE CONTENT

Timber should have a moisture content appropriate to its use.

Structural timber may be either seasoned (moisture content 15% or lower) or unseasoned (moisture content greater than 15%). Milled products (flooring, joinery, etc.) should be seasoned.

Any concerns regarding mould growth should be referred to Dr Cameron Jones:

<http://www.drcameronjones.com>

1300132350 OR 0414998900

cameron@drcameronjones.com

AS 2047; Appendix F: - Windows and doors should be stored onsite in a clean, dry area.

7.4 ON-SITE CARE

NOTE: Refer to Appendix F, for guidelines on on-site care.

APPENDIX F

ON-SITE CARE

(Informative)

Windows should be stored on site in a clean, dry area away from the damaging effects of cement, lime, paint, acid, and the like. During installation they should be protected from building fallout such as wet plaster, mortar, paint and welding splatter. Wet plaster and mortar should be removed immediately and the soiled area washed down with clean water. If removal is delayed and scraping becomes necessary, the surface finish may be damaged.

NOTE: Window framing may be affected by corrosive salts migrating from masonry construction and from the ground. Where necessary, care should be taken by the use of damp courses or other protective measures to eliminate this corrosive cause.

Acid used for cleaning brickwork should be prevented from dripping onto aluminium. Should this dripping onto aluminium occur, the acid should be immediately washed off with clean water.

If stripable coatings or pressure-sensitive tapes are used to protect exposed surfaces, care should be taken not to damage the finish during their removal. Prolonged exposure to sunlight can make temporary coating or tape difficult to remove.

Door tracks and window sills should be protected from damage by planks, scaffolding and barrows impacting them.

Refer to Section 3 for further details of protection of finishes for different framing material.



33.

AS 2589: - The maximum deviation of a bearing surface of the finished framing prior to installation of linings, when measured with a 1.8 metre straight edge, shall not exceed 4 mm over 90% of the area.

Framed surfaces to this dwelling do not meet this minimum requirement.

Note, these are sample photos, all walls need to be checked throughout.

4.2.2 Finished framing deviations and tolerances

The deviation in the position of the bearing surface of the finished framing immediately prior to installation of lining from a 1.8 m straight edge shall not exceed the values given in Table 4.2.2 when measured over a 1.8 m span at any point [see Figure 4.2.2(A)].

Where the dimensional tolerances of the fixing surface plane fall outside these tolerances, a suitable levelling system shall be used [see Figure 4.2.2(B)].

For wall and ceiling framing that is in accordance with the dimensional tolerances of this Clause, gypsum linings may be fixed directly to the framing with an appropriate fastening system in accordance with Clause 4.4.3.

TABLE 4.2.2
DEVIATION IN THE POSITION OF THE
BEARING SURFACE OF THE FINISHED FRAMING

Substrate type	Levels 3 and 4		Level 5	
	Deviation of 90% of area	Deviation of remaining area	Deviation of 90% of area	Deviation of remaining area
	mm	mm	mm	mm
Steel and timber framing, and battened masonry	4	5	3	4

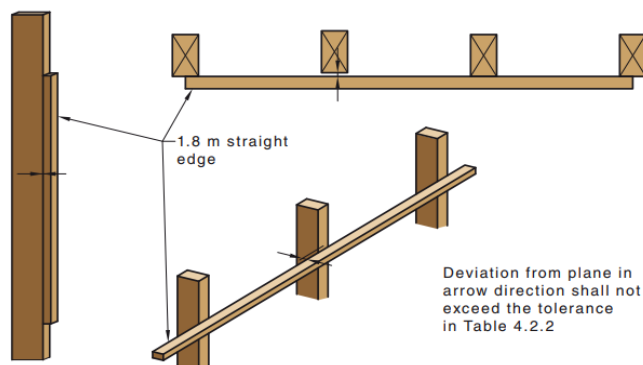
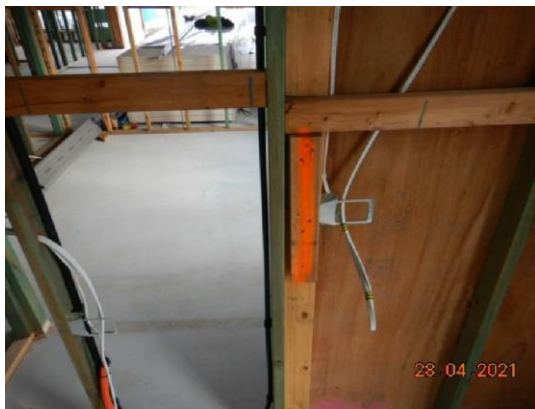


FIGURE 4.2.2(A) ASSESSING FRAMING TOLERANCE







34.

AS 2589; Clause 4.4.3.1.3: - Perimeter fasteners shall be installed to plasterboard at internal angles, external corners, and wall and ceiling junctions, at a maximum of 300 mm centres.

Note: square set wall ceiling junctions should be installed at 150 mm centres. This includes bulkhead junctions and the like.

Additional members (studs, nogging, trimmers, etc) need to be installed to the areas below for the plasterer to meet this requirement.

4.4.3.1.3 *Perimeter fixing*

Fasteners shall be installed at a maximum of 300 mm centres at all internal angles, external corners, wall ceiling junctions with cornices and at openings. For perimeter fastening, fasteners shall be spaced not less than 10 mm or more than 16 mm from the edges and ends of the gypsum plasterboard.

NOTE: Ceiling perimeter fasteners for square set wall ceiling junctions should be installed at 150 mm centres.



35.

Australian Glass and Window Association (AGWA): - Windows shall be packed plumb and square including under the sill.

The window reveals and door frames around the dwelling have not been installed in accordance with the AGWA installation instructions or the manufacturer's installation instructions.

CORRECT INSTALLATION OF FRAMES


1. Fit flashing to window surround as required.
2. Measure the frame opening to ensure that there is sufficient room for the product and additional packing.

Stud Opening

Height = O/A reveal size +
adequate clearance

Width = O/A reveal size +
adequate clearance

Clearance dimensions vary between manufacturer's products. For adequate clearance, refer to instructions.

- 
3. Frame must be packed plumb, square and not twisted between the openings. Ensure the sill is fully supported. Failure to do so may result in sill roll on sliding windows.

Sills on all windows and doors must be straight and level and should be packed and secured.

To ensure the satisfactory long term performance of sliding doors, the sill should be fully supported. Where the sill projects during construction the sill should be fully supported.

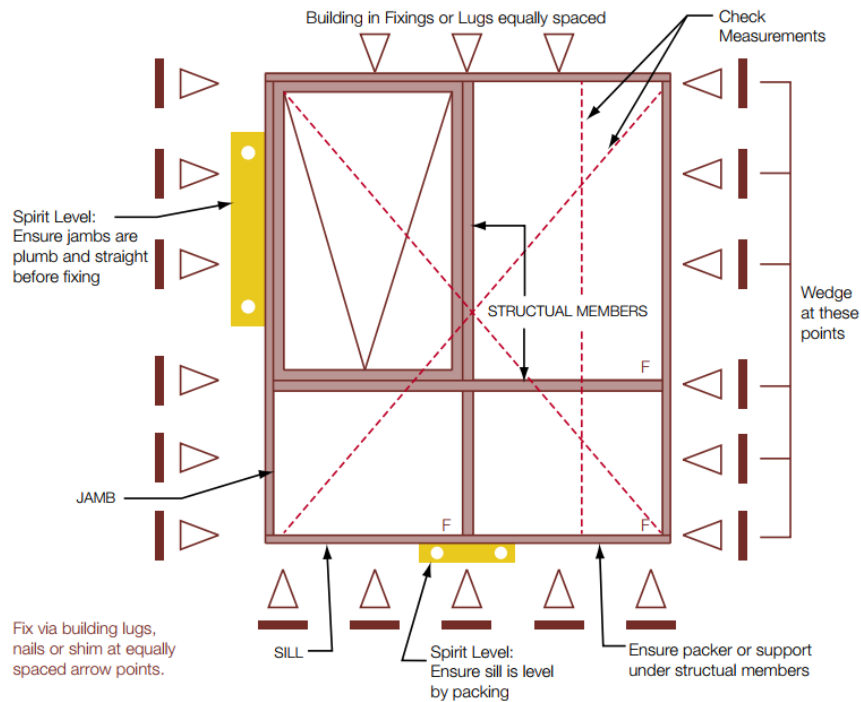
Keep sashes closed whilst installing frames.

Secure frames with a fixing of a gauge and spacing appropriate for the wind load.

In brick veneer constructions, aluminium frames should be secured by nailing or screwing through reveal into stud work.

INSTALLATION

Figure 11 Installation Summary



36.

The dwelling is presenting with loose nut and bolt connections. It is critical that the builder ensure all structural connections are fastened in accordance with the engineering.

The builder must check all areas.



37.

AS 4440; 2.2.1 and B1: - There is a gap present between the top plate and ribbon plate where a truss sits. This truss needs to be fully supported. The minimum bearing width shall be 70 mm unless stated otherwise by the engineer.

The current installation has not met this requirement.

Note: - All areas to be checked and rectified accordingly by the builder.

2.2.1 Loadbearing walls

Loadbearing walls shall comply with the requirements specified in the relevant Standards, as appropriate to the material, and shall not be lower than the non-loadbearing walls when trusses are supporting a level ceiling.

B4 BEARING WIDTH

The minimum bearing width for timber trusses should be 70 mm. For bearing widths less than 70 mm, confirmation from the truss engineer should be sought.



38.

QBCC Act, Schedule 1B: - The building contractor warrants the subject work will be carried out in an appropriate and skilful way, and with reasonable care and skill.

There is at least one window that has been installed out of level and the carpenters have already started to install cladding around the window.

Areas of the dwelling are deemed to have not satisfied these requirements.

22 Standard of work and exercise of care and skill

The building contractor warrants the subject work will be carried out—

- (a) in an appropriate and skilful way; and
- (b) with reasonable care and skill.





Ribbon plate too long



Tear in sarking sheeted over



Loose valley boards

Rectification Required: YES

TERMS & CONDITIONS OF Darbecca Pty Ltd SITE INSPECTION AND REPORT

1. Purpose

The purpose of our inspection is to identify any defects in the finishes and the quality of those finishes presented by the builder at the stage of works nominated on the front of this report. This report contains a schedule of building defects that in the writer's judgement do not reach an acceptable standard of quality, level of building practice, or have not been built in a proper workmanlike manner relative to the Building Code of Australia, the relevant Australian Standards or the acceptable standards and tolerances as set down by the Building Control Commission.

2. Scope

Our engagement is confined to that of a Building Consultant and not that of a Building Certifier as defined in the Queensland Building Act, of 1975. We therefore have not checked and make no comment on the structural integrity of the building, nor have we checked the title boundaries, location of any easements, boundary setbacks, room dimensions, height limitations and or datum's, glazing, alpine and bush-fire code compliance, or any other requirements that is the responsibility of the Relevant Building Certifier, unless otherwise specifically noted within this report.

3. Assumed Finishes

Our inspection was carried out on the quality of the fixtures and finishes as installed, and no investigation of any documentation or statutory requirements was carried out to verify their correctness.

4. Documentation

Unless otherwise noted any contractual documentation made available to us during our inspection is only viewed on an informal basis and we make no certification that the building has been constructed in accordance with them.

5. Non-Destructive Inspection

Unless otherwise noted our inspection was carried out on a non-destructive basis and exclude anything that would have require the removal of any fixtures, fittings, cladding, insulation, sisalation, roofing, lining materials, excavated of any soil or the removal of any part of the plastic membrane.

6. Measurements/Levels

Unless otherwise noted all measurements have been taken with a standard ruler, and levels with either a 900 or 2100mm long spirit level.

7. Services, Appliances, Plants and Equipment

Unless otherwise noted, we did not test or check for appropriateness, capacity, correct installation or certification of any service, appliances, plant and equipment, i.e. heaters, hot water units, air conditioners, ovens, hotplates, dishwashers, range hoods, spa pump, electrical wiring, gas lines, electricity and water supply, sewer, stormwater and agricultural drains.

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11. Report Exclusions

- a) Defects in inaccessible parts of the building including, but not limited to, the roof space and or the sub-floor area unless otherwise noted,
- b) Defects not apparent by visual inspection, or only apparent in different weather or environmental conditions as to those prevailing at the time of the inspection,
- c) Defects that we did not consider significant enough to warrant any rectification work at the time of our inspection,
- d) Defects outside the scope of the client brief
- e) Check measure of rooms, walls and the overall building, for size, parallel and squareness unless otherwise noted,
- f) Landscaping, retaining wall/s, or any structures outside the roofline of the main building unless otherwise noted,
- g) Enquiries of Council or any other Authorities,
- h) Investigation for asbestos and or soil contamination,
- i) Investigation for the presence of any termites or borers and for the correct installation of any termite barriers and or other risk management procedures or devices.
- j) Defects in relation to PVC sewage and storm water pipes are not covered in this inspection. Clients must seek the services of a licenced plumber to check all sewage and storm water pipes.

12. QCAT Suitability

Unless specifically noted this report has not been prepared in-line with the requirements of QCAT.