

This is a visual only Building Inspection & Report carried out in accordance with AS4349.0

Frame (Defect Inspection) REPORT (hereinafter called the "Report")



ALL INSPECT
All Building & Termite Inspections

Report Number 00024 Time:11:30 AM

Inspection Date: 17/03/2022

Property Address: LOT sample



SERVICES

New Construction

Slab
Frame
Lock-Up
Handover
Warranty

ALLINSPECT
PO BOX 1104
Park Ridge QLD
Licence 15012225
1300254677
ABN 66160880642

Pre-Purchase

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The parties

Report number:	00024 Time:11:30 AM
Name of Client:	Mr Sample
Building company	Sample Homes QBCC 000000 Phone 000000 Supervisor
Address:	LOT sample
Client's email:	sample@gmail.com
Client's telephone number:	00000000
Company name:	ALLINSPECT Licence 15012225
Company address and postcode:	PO BOX 1104 Park Ridge 4125
Company email:	info@allinspect.com.au
Company telephone number:	32970345 1300 25 46 77

Results of inspection - summary

This Summary is not the Report. The following Report MUST be read in full in conjunction with this Summary. If there is a discrepancy between the information provided in this Summary and that contained within the body of the Report, the information in the body of the Report shall override this Summary.

The purpose of the inspection is to give advice regarding the condition of the property and site with a view to provide the Licence Tradesman with a list of items to be rectified to achieve compliance of a new construction that are within the Australian Standards and the National Construction Code and QBCC Standards and Tolerances.

In summary the frame is need of rework, rectification **before moving forward** to bring it up to a minimum standard for new construction. Defective works have been found. The frame does not comply with the minimum Standards and will require rectifying. **This is well below the average standard.**

Unless stated otherwise, any recommendation or advice given in this Report should be implemented as a matter of urgency.

General description of the property

Residential building type: Detached house.

Number of storeys: Two storey.

Prevailing weather conditions at the time of inspection: Dry.

Primary method of construction

Main building – floor construction: Part suspended timber framed and slab-on-ground.

Main building – roof construction: Timber Framed Colorbond

Accessibility

Areas inspected

The inspection covered the Readily Accessible Areas of the property

Areas not inspected

The inspection did not include areas, which were inaccessible, not readily accessible or obstructed at the time of inspection. The Consultant did not move or remove any obstructions which may be concealing evidence of defects. Areas, which are not normally accessible, were not inspected. Evidence of defects in obstructed or concealed areas may only be revealed when the items are moved or removed or access has been provided. We do not measure everywhere this is a visual only inspection and we do not look at all plans and information.

Inaccessible areas

The inspection did not include areas, which were inaccessible, not readily accessible or obstructed at the time of inspection. We do not go on to new roofs as they are slip hazard and require edge protection.

Condition Report

The following items and matters were reported on in accordance with the Scope of Inspection.

1. Poor housekeeping site rubbish unsafe. **Trip hazard.**

Many slips, trips and injury are the results of poor housekeeping, and this is often a sign of a lack of storage, maintenance and cleaning. This should be cleaned as soon as possible.



2. The slab footings have the opportunity to pool with water, due to the temporary down pipes not been reinstalled and ground levels not graded away from the home.

Water management on site is paramount to ensuring that the foundations are not damaged. Water, when seeping down beside the slab, between the slab and the dirt softens the dirt. The soils capacity to withstand the downward pressure of the forces of the weight in the slab is greatly reduced. Hence slab failure occurs. The BCA is very clear in its requirements to have the soil graded from the start away from the dwelling as a minimum of 50 mm over 1 m. This has not been done. We refer all to the BCA, part 3.1.2.3.

We also refer the builder to the soil report and engineering drawings that clearly call for the site drainage to be managed via sloping water away from the slab and more so, managing same. The builder must act on this defect now.

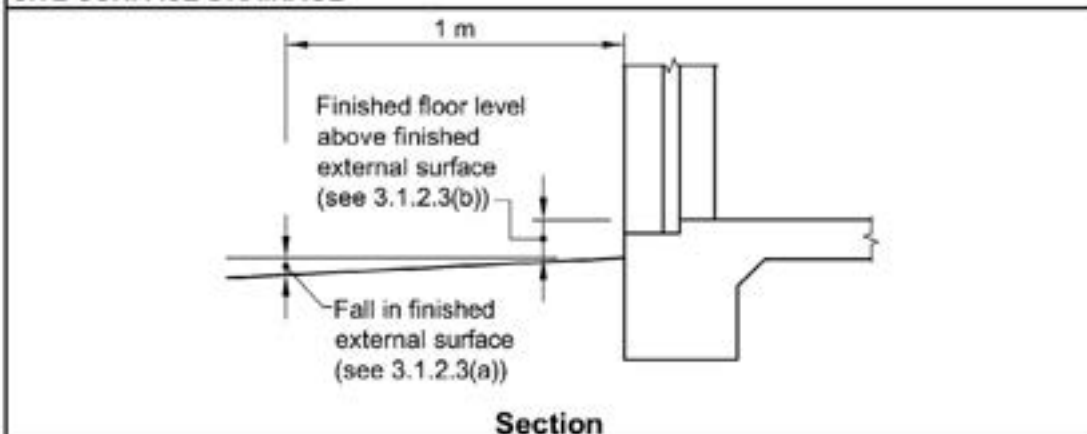
3.1.2.3 Surface water drainage

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 3.1.2.2](#))—
 - (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 3.1.2.2

SITE SURFACE DRAINAGE





3. The polyethylene vapour barrier from beneath the concrete floor slab has not been turned up along the external side faces of the edge beams. It must be turned up prior to the slab edge being back filled. If not completed this will allow moisture ingress via slab edge dampness into the internal building wall skins and/or the floor coverings if not done. As per insert.

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.

Vapour Barriers and Damp-proofing Membranes

Where required the raft or slab shall be provided with the following in accordance with AS2870-2011 'Residential Slabs and Footings' :-

QLD - Vapour Barrier (Medium Impact Resistance in accordance with 5.3.3.3, item (a) of AS2870).

NSW - Damp-proofing Membrane (High Impact Resistance in accordance with clause 5.3.3.3, item (b) and resistant to puncture and penetration, item (c)).

Installation :

1. The sheet shall be placed beneath the slab so that the bottom surface of the slab and beams, including internal beams, is entirely underlaid. The membrane shall extend under the edge beam to ground level.

Where a two pour system is adopted, the membrane shall extend over the top of the external footing and starter bars, before the bars are bent prior to the placement of slab mesh. The membrane shall extend a minimum of 0.4 m beyond the external footing perimeter to be later folded and fixed to underside of the bottom plate.

2. Lapping for continuity at joints shall be not less than 0.2 m.

3. Penetrations by pipes or plumbing fittings shall be taped or sealed with a close-fitting sleeve or made continuous with the vapour barrier or damp-proof membrane by taping or by lapping in accordance with item 2.





4. There are large areas of open concrete voids to the slab edge bonny slab edge. These areas are now showing the exposed reinforcement bars and that the slab has not been mechanic all compacted in areas as per the requirements of AS 2870. This must be reworked.

It is clear that the steel is not installed with the minimum concrete coverage area as per the mandated requirements of the BCA. We refer all to part 3.2.3.2. and AS 2870, part 6.4.7 that calls for the vibration.

3.2.3.2 Steel reinforcement

- (d) Footings and slabs-on-ground must have concrete cover between the outermost edge of the reinforcement (including ligatures, tie wire etc.) and the surface of the concrete of not less than:
 - (i) 40 mm to unprotected ground.
 - (ii) 30 mm to a membrane in contact with the ground.

QBCC Standards and tolerance 3.02 Footings and slabs

Slabs and footings are defective if they fail because they are not designed and constructed in accordance with the *Building Code of Australia and/or AS2870 – Residential slabs and footings*

Slab and footing failures are also defects where they are caused by foundation movement that is the result of inadequate fill, or inadequate compaction of either fill or natural material irrespective of whether or not the fill may have been provided with a Level 1 Compaction Certificate.

6.4.7 Placing, compaction and curing of concrete

The concrete shall be transported, placed, compacted and cured in accordance with good building practice.

The builder must:

- Send a competent person like the engineer to the site for approval **form 12 for the rectifications**. As per part 9, Division 2, section 74 of the BR 2021



5. Sisalation has defects like holes and gaps; Sisalation has to be installed correctly to prevent moisture from transferring to the frame. This will need to be reworked.

Few areas have been over cut allowing the transfer of water moisture to the frame, any moisture running down the wall will now exit into the frame. This will cause additional defects at a later stage. **The bricklayer needs to ensure that the correct configuration of lapping has been set in place prior to installing the wall.** This needs to be complete otherwise considerable rework will have to take place to ensure that the builder comply with requirements of the BCA and Australian standards AS 4200. All holes will need to be patched to comply with Energy efficiency requirements "Pliable Building Membranes and Underlay's" part 2 states: The only tapes that can be used on sisalation are AS 4254 compliant. Please note that any coloured tapes used on the foil side of the sisalation are defective. The tapes used to this side of the sisalation must be designed for installation on a foil surface and hence AS 4254 compliant.

AS 4200.2:2017

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- (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.

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:

AS 4200.2:2017

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SECTION 3 INSTALLATION OF PLIABLE BUILDING MEMBRANES

3.1 SCOPE OF SECTION

This Section sets out requirements for the installation of pliable building membranes within the structure depending on the location and functions specified.

3.2 GENERAL REQUIREMENTS

When installing pliable building membranes, the following requirements apply:

- (a) Damage or tears to the membrane shall be repaired to restore the integrity and maintain the purpose of the membrane.
- (b) The membrane shall be cut to provide a neat fit around obstacles and penetrations (see Section 4).
- (c) Exposure of pliable building membranes to intense heat, sparks, flames or abrasive tools shall be avoided.





6. The roof penetrations to the sisalation have defects, needs reworking.

Sisalation has to be installed correctly to prevent moisture from transferring to the frame. Areas have over cut thus allowing the transfer of water moisture to the frame, any moisture running down will now exit into the roof void. This will in itself cause additional defects at a later stage. All holes need to be patched to comply with Energy efficiency requirements "Pliable Building Membranes and Underlay's" part 2 states: The only tapes that can be used on sisalation are AS 4254 compliant. Please note that any coloured tapes used on the foil side of the sisalation are defective. The tapes used to this side of the sisalation must be designed for installation on a foil surface and hence AS 4254 compliant.

AS 4200.2:2017

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SECTION 4 PENETRATIONS

4.1 GENERAL

The pliable building membrane shall be cut neatly to allow penetration by chimneys, vents, pipes, cables and other services, as required.

4.2 THERMAL CONTROL

Where a pliable building membrane is installed as thermal control, penetrations shall be sealed to restrict air exchange between air cavities of either side of the membrane.

4.3 VAPOUR CONTROL AND AIR CONTROL

Where a pliable building membrane is installed as a vapour barrier or air barrier membrane, methods shall be used to restrict air exchange between air cavities of either side of the membrane in accordance with Clause 3.2.



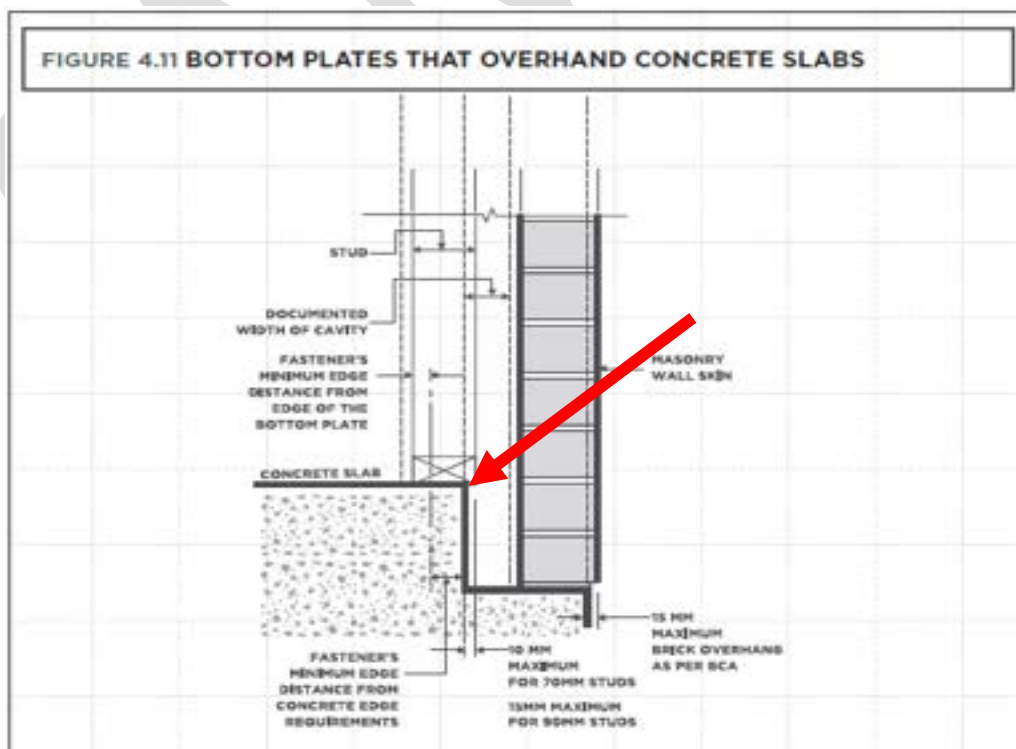
7. Bottom plates overhang to slab in excess of 10 mm. This will need to be rectified.

It was noted at the time of inspection that the bottom plates overhang to slab in excess of 10mm this will need to be reworked and completed before continuing. Have the site Engineer witness the repair of the slab to ensure that the builder has carried out the works in accordance with the process's and rectification statements in the engineering documentation.

Refer the builder to the

QBCC Standards and Tolerances 4.11 Bottom plates that overhang concrete slabs

Bottom plates that are at least 90 mm wide and overhang concrete slabs by in excess of 15 mm are defective and bottom plates that are 70 mm wide and overhang slabs by in excess of 10 mm are defective. 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 *Building Code of Australia* also being maintained.







8. Bottom plate has been damaged, some studs are not fully supported this will need to be rectified. As per AS 1684.2

Section 24 Schedule 1B of the Queensland Building and Construction Commission Act 1991 ('QBCC Act').

Division 2—Implied warranties for all contracts

Compliance with legal requirements

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AS 1684.2—2010

Where the bottom plate supports studs supporting concentrated loads, posts or jamb studs, the plate shall be supported over a floor joist, solid blocking between bottom plate and bearer or concrete slab.

Trenching and holes in bottom plates shall not exceed the limitations given in Clause 6.2.1.4.

Design parameters for bottom plates shall be as shown in Figure 6.18.



9. Bottom plate not nailed. This will need to be reworked.

The nailing of the bottom plates to the concrete slab requires the use of 75 mm masonry nails. bottom plates in the home at the correct maximum 1200mm spacing using 75mm masonry nails as per the AS1684 table 9.4 requirements.

TABLE 9.4
NOMINAL FIXINGS FOR TIMBER MEMBERS

Joint		Minimum fixing for each joint
Floor framing		
Bearer to timber stump/post		4/75 × 3.33 mm or 5/75 × 3.05 mm machine-driven nails plus 1/30 × 0.8 mm G.I. strap over bearer and fixed both ends to stump with 4/2.8 mm dia. each end; OR 1/M10 bolt through bearer halved to stump; OR 1/M12 cranked bolt fixed vertically through bearer and bolted to stump plus 4/75 × 3.33 mm or 5/75 × 3.05 mm machine-driven nails
Bearer to masonry column/wall/pier (excluding masonry veneer construction)		1/M10 bolt or 1/50 × 4 mm mild steel bar fixed to bearer with M10 bolt and cast into masonry (to footing)
Bearer to supports (masonry veneer construction)		No requirement
Bearer to concrete stump/post		1/6 mm dia. rod cast into stump, vertically through bearer and bent over
Bearers to steel post		1/M10 coach screw or bolt
Floor joist to bearer		2/75 × 3.05 mm dia. nails
Wall framing		
Plates to studs and plates to ring beams at 600mm max. centres		Plates up to 38 mm thick—2/75 × 3.05 mm nails through plate; Plates 38 to 50 mm thick—2/90 × 3.05 mm nails through plate; OR 2/75 × 3.05 mm nails skewed through stud into plate
Noggings to studs		2/75 × 3.05 mm nail skewed or through nailed
Timber braces to studs or plates/ring beams		2/50 × 2.8 mm dia. nails at each joint
Lintel to jamb stud		2/75 × 3.05 mm dia. nails at each joint
Bottom plates to joists	Non-loadbearing and non-bracing walls	2/2.8 mm dia. nails at max. 600 mm centres
	Other walls	Plates up to 38 mm thick—2/75 × 3.05 mm nails at max.600 mm centres Plates 38 to 50 mm thick—2/90 × 3.05 mm nails at max.600 mm centres
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
Ribbon plate to top plate		Refer to Clause 2.5 and Clause 9.2.8
Multiple studs		1/75 × 3.05 mm nail at 600 centres max.
Posts to bearers or joists		1/M12 or 2/M10 bolts (unless otherwise specified)

(continued)

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10. Poor substandard timber/materials used is bowed this will need rework, not in an appropriate, skilful way or with reasonable care and skill.



11. The load bearing studs are not supported, this will need rework, not in an appropriate, skilful way or with reasonable care and skill.



12. There are large gaps to the frame packers, studs/missing, this will need rework, not in an appropriate, skilful way or Multiple studs at sides of openings or in locations supporting concentrated loads shall be laminated together as follows. **AS 1684.2; 2.4**

- 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.

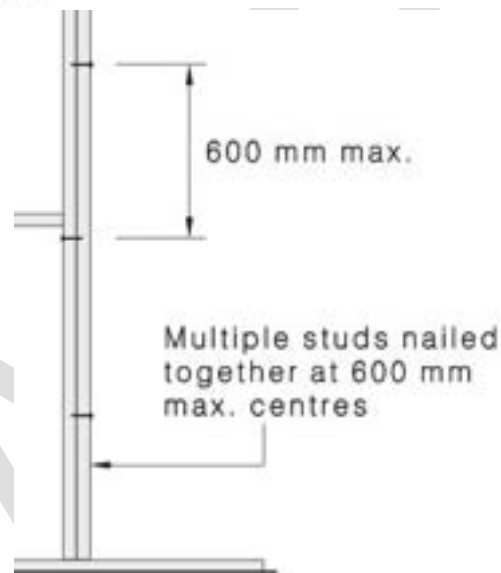
Nail spacings exceed 600 mm.

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.





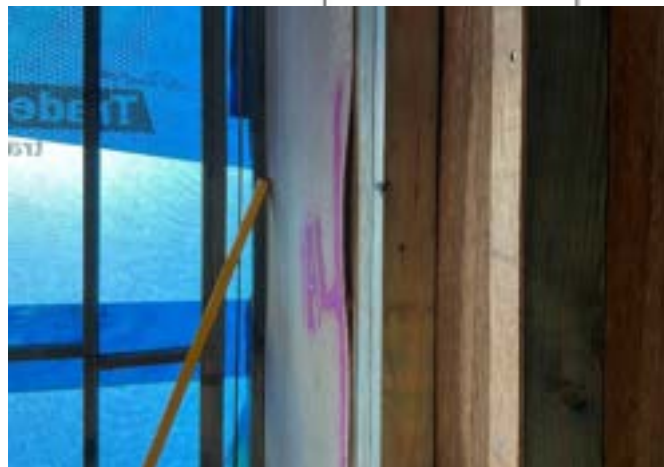
13. There are a number of sheets bracing, not as per plan and sheets have missing nails and loose bracing sheets therefore decreasing the function of the bracing and don't look new. This must be reworked.

The timber sheet bracing installation is a vital structural member in the overall build of the dwelling. It stops the house from moving when racking forces, such as wind, are applied to a dwelling. The installation of the timber sheet bracing on this house is defective for several reasons. The outer sheet edge must be secured at a maximum of top & bottom 50mm edges 150 centres. This dwellings installation fails that requirement. The central studs must all be nailed off at 300 mm centres maximum. We refer the builder to AS 1684.2, table 8.18 on page 143. The requirements stated above are clearly defined and must be rectified prior to moving forward with the dwelling.

(h) Plywood Plywood shall be nailed to frame using 30 x 2.8 Ø galvanized flat-head nails or equivalent.		Minimum plywood thickness, mm	
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.	Stress grade	Stud spacing mm	
		450	600
Horizontal butt joints are permitted, provided nail fixed to nogging at s = 150 mm centres for Method A, or s = 50 mm centres for Method B	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 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.







14. There are some bowed bracing sheets, this will need rework, not in an appropriate, skilful way or with reasonable care and skill.



15. It was noted at the time of inspection that the fabricated steel connections the bolts do not extend 1 ½ turns beyond the face of the nut.

The Builder needs to rework these items as mark. we refer to AS 5131 and AS 4100. This will need to be reworked and completed before continuing.

AS/NZS 5131:2016

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8.2.2 Bolts

The nominal diameter of a bolt used for structural bolting shall be at least M12.

The length of a bolt shall be such that at least one clear thread shows above the nut and at least one thread plus the thread run out is clear beneath the nut after snug-tightening.



16. It was noted at the time of inspection that the fabricated steel connections some have no washer installed at all, these will need to be installed.

The Builder needs to rework these items as mark. we refer to AS 5131 and AS 4100. This will need to be reworked and completed before continuing.

AS/NZS 5131:2016

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8.2.4 Washers

Where uncoated steel is used, one washer shall be provided under the part (nut or bolt head) rotated during tightening.

For painted or galvanized surfaces, one washer shall be provided under the part (nut or bolt head) rotated during tightening.

NOTE: The construction specification may specify one washer to be placed under both the nut and head where it is desired to limit the potential for touch-up painting from paint damage caused by the tightening process.



17. Tie down rods are loose, not installed, this will need to be rectified to comply with engineering.

Section 24 Schedule 1B of the Queensland Building and Construction Commission Act 1991 ('QBCC Act').

Division 2—Implied warranties for all contracts

Compliance with legal requirements

43. The building contractor warrants the subject work will be carried out in accordance with all relevant laws and legal requirements, including, for example, the *Building Act 1975*.



18. Some of the tie down bolts have broken out of the slab, this will need to be rectified to comply with engineering.

The installation of the tie down bolts are a vital structural component in the overall build of the dwelling. It stops the house from moving when forces, such as wind, are applied to a dwelling. This needs to be reworked and rectified. AS per AS 1684. BCA

Deemed-to-Satisfy Provisions are an optional means of achieving compliance with the mandatory Performance and the engineering. We assume this was overlook when the frame inspection was done.

Section 24 Schedule 1B of the Queensland Building and Construction Commission Act 1991 ('QBCC Act').

Division 2—Implied warranties for all contracts

Compliance with legal requirements

43. The building contractor warrants the subject work will be carried out in accordance with all relevant laws and legal requirements, including, for example, the *Building Act 1975*.



19. Some noggings are missing, loose, too far apart 1350mm and are not continuous, have been marked

There are a number of wall noggings that need to be installed or in parts reinstalled. We refer the builder to **AS 1684.2, clause 6.2.1.5**.

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.

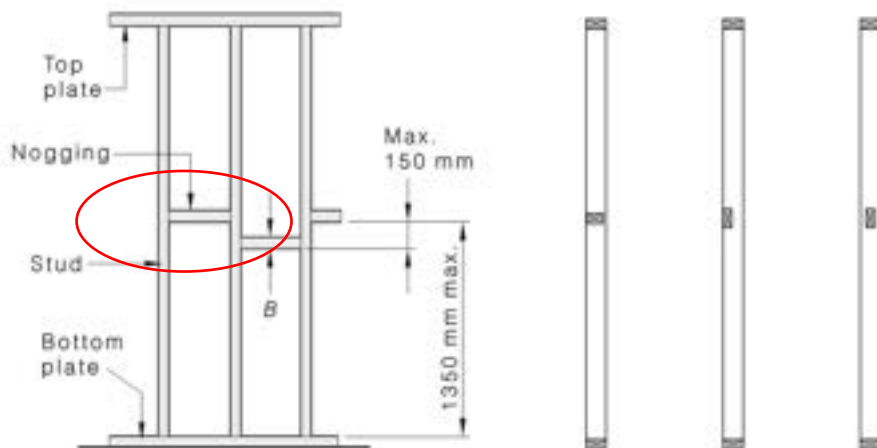


FIGURE 6.6 NOGGING





20. Intersecting blocks as marked have not been nailed and some are missing.

This does not comply with the standard, additional nails and blocks will need to be installed as per insert below:

The intersecting wall blocking, and nails are a vital part of the overall installation of the frame. The blocking and nailing allows the walls at intersections to be fully connected in a manner that resists the forces that could be applied to the home.

In very basic terms they stop the house from moving when all walls are fully connected by nailing the blocks.

AS 1684.2 mandate that the blocks are a minimum of 200 mm long and max centres of 900 mm and nailed with 2/75 mm nails.

As per figure 6.1 the blocking has not been installed to the underside of the top plate and hard up to the underside of the bottom plate.

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.

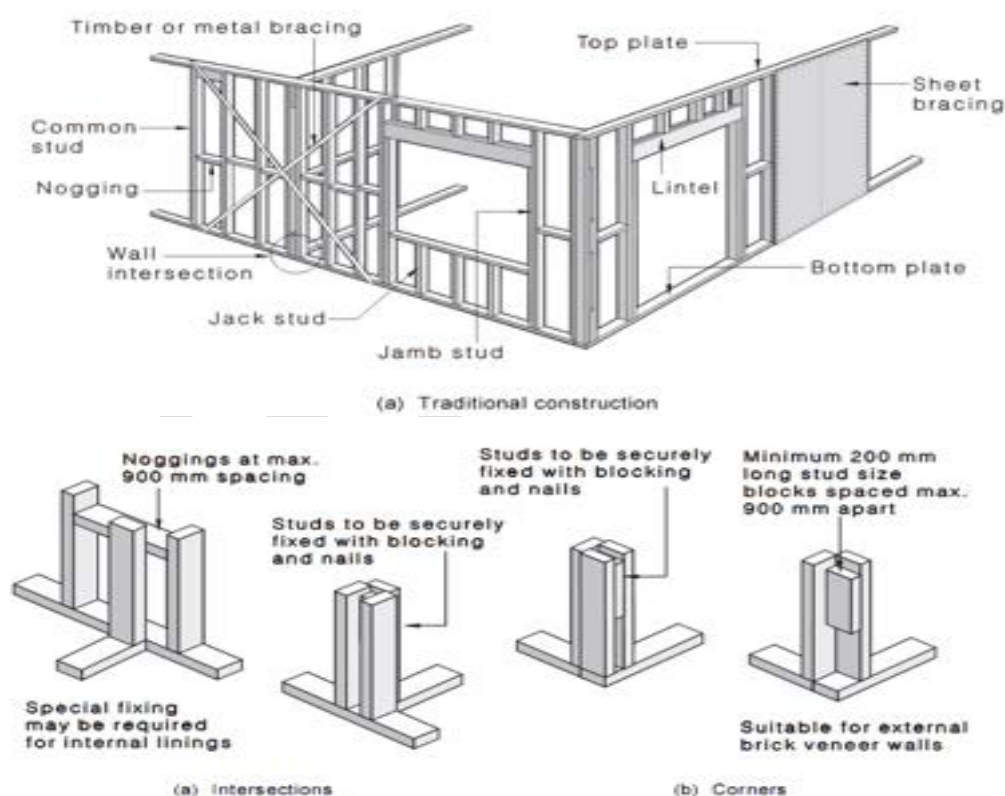


FIGURE 6.3 TYPICAL WALL JUNCTIONS

Please note the use of a corner stud does not negate the need for blocks. As clearly shown in part (b) of figure 6.3.



21. Substandard workmanship (poor installation) As per AS 3500.1 (5.3.2) - plumbing cannot be installed within 25 mm of an electrical wire. The electrical wire must be relocated or the plumbing relocated.

5.3 PROXIMITY TO OTHER SERVICES

5.3.1 General

Where electrical conduits, wires, cables or consumer gas pipes, drains and other services are in existence, pipes shall be installed in accordance with the requirements of Clauses 5.3.2 to 5.3.10.

5.3.2 Separation from above-ground electrical conduit, wire, cable or consumer gas pipes

A separation of at least 25 mm shall be maintained between any above-ground water service and any of the following services:

- (a) Electrical conduit.
- (b) Electrical wire or cable. ←
- (c) Consumer gas pipes.



22. Some of the window/door frames have not been packed, not installed to the manufacture's installation guide as per below, this will need to be rectified.

Australian Glass and Window Association (AGWA): -

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.

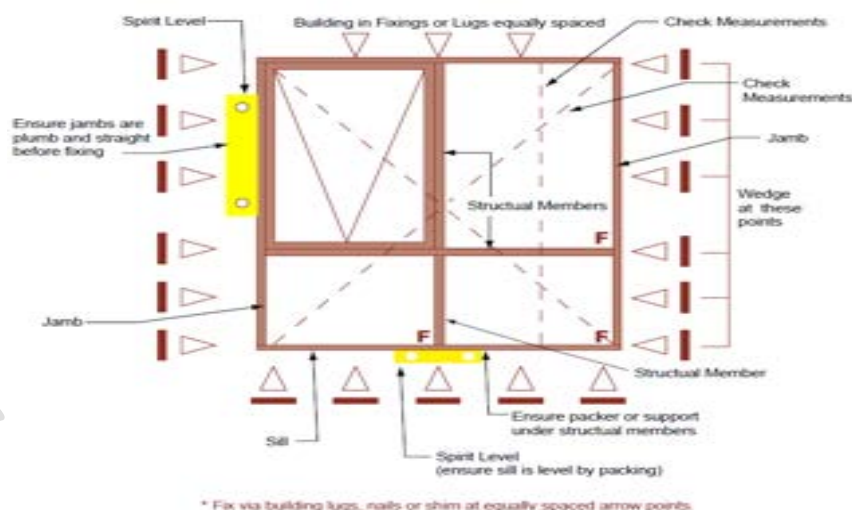
Sills on all windows and doors must be straight and level and should be packed and secured.

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.





23. It appears that the window frames for the house have exposed to the weather moisture. As per AS 2047 inserted, some of the windows are now be defective and will need to be made “as new” prior to installing.

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AS 2047—2014

APPENDIX E 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 might be damaged.

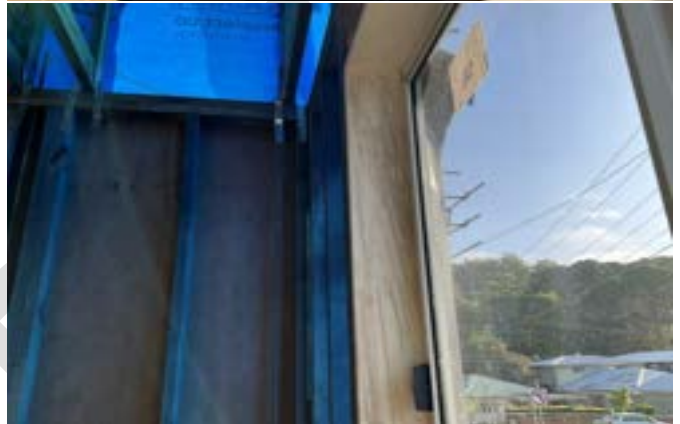
NOTE: Window framing could be affected by corrosive salts migrating from masonry construction and from the ground. Where necessary, care should be taken by the use of damp courses or other protective measures to eliminate this corrosive cause.

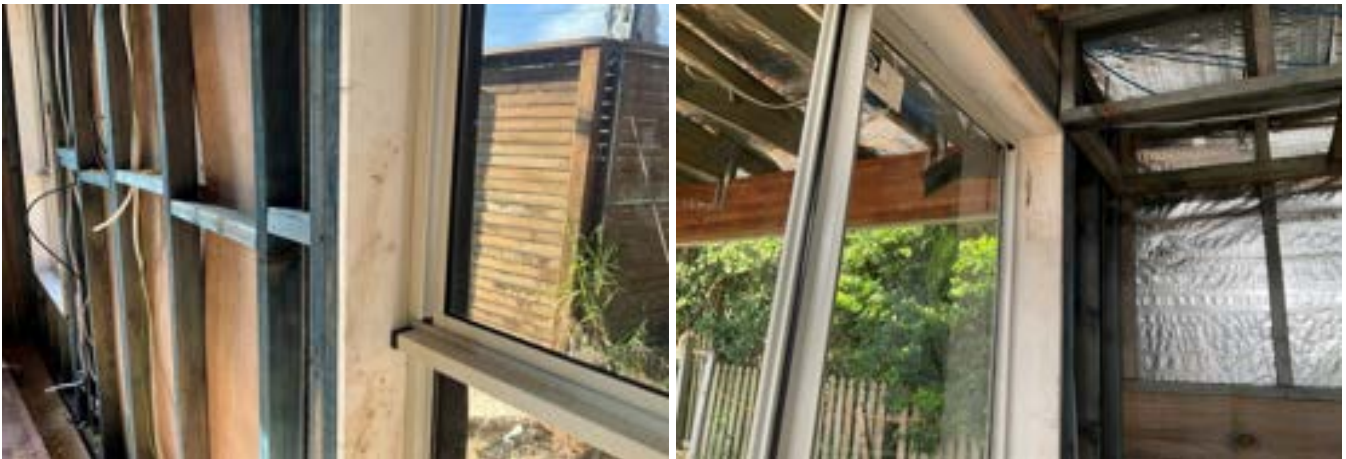
Acid used for cleaning brickwork should be prevented from dripping onto aluminium. If this dripping onto aluminium occurs, the acid should be immediately washed off with clean water.

If strippable 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 details of protection of finishes for different framing material.





24. Windows/door openings, reveals are bowed, there should be suitable packing material to support the load of the window/glazer, and packing shouldn't deform the window in anyway.

We refer the builder to AS2047. Will need to be reworked.

7.2 INSTALLATION

7.2.1 General

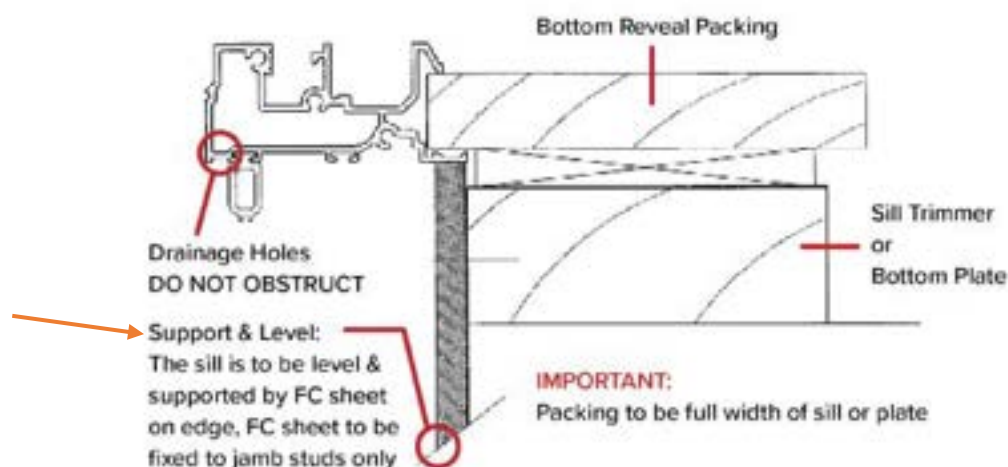
Openings in buildings into which windows are to be installed shall be of sufficient size to allow the window frame to be installed level and plumb.

Windows shall only be installed in locations for which they are designed in accordance with this Standard.

Window assemblies shall be fixed into the building using recognized building practices. Fixing shall not deform the window assembly. Non-loadbearing window assemblies shall not carry building loads.

Installed windows assemblies shall prevent water penetration and excessive air infiltration.

NOTE: Window manufacturers' installation procedures may need to be followed for particular installations.





25. Openings in non-loadbearing walls (internal and external) greater than 1800mm shall have a lintel as determined by Table 23 for a ceiling load width of 1800mm. As per **AS 1684.2; 6.3.6.5:**

Non-loadbearing openings >1800mm have not met this requirement, will need to be rectified.

6.3.6.5 Lintels in non-loadbearing walls

The size of lintels in internal walls supporting ceiling joists only, or supporting hanging beams, shall be determined by using the hanging beam Span Table 23 (see Clause 7.3.7) or the counter beam (beams supporting hanging beams) Span Table 24 (see Clause 7.3.8) for these two applications respectively.

For internal walls where ceiling loads are not supported and wall openings are wider than 1800 mm, the size of the lintel shall be determined from Span Table 23 using a ceiling load width of 1800 mm.

Where wall openings wider than 1800 mm occur in non-loadbearing external walls, a lintel shall be provided and the size of the lintel shall be determined from Span Table 23 using a ceiling load width of 1800 mm.

AS 1684.2 N1/N2 SUPP. 4 - 2010

Wind classification N1/N2 – Seasoned softwood – Stress grade MGP 10

TABLE 23 HANGING BEAMS – Supporting ceiling loads

Size DxB (mm)	Ceiling Load Width (mm)							
	1800	2400	3000	3600	4200	4800	5400	6000
	Maximum Beam Span (mm)							
90x35	1400	1300	1300	1200	1200	1100	1100	1000
90x45	1900	1700	1600	1500	1400	1400	1300	1200
120x35	2600	2200	2000	1900	1800	1700	1600	1600
120x45	3000	2700	2400	2200	2100	2000	1800	1800
140x35	3200	2900	2600	2400	2200	2100	1900	1800
140x45	3500	3100	2800	2600	2400	2300	2200	2100
170x35	3900	3500	3200	2900	2700	2500	2300	2200
170x45	4200	3800	3400	3200	3000	2800	2600	2500
190x35	4300	3900	3500	3200	3000	2700	2600	2400
190x45	4700	4200	3800	3500	3300	3100	2900	2700
240x35	5400	4900	4300	3900	3600	3300	3100	2900
240x45	5800	5200	4800	4400	4100	3800	3500	3300
290x35	6500	5600	5000	4500	4200	3900	3600	3400
290x45	6900	6300	5600	5100	4700	4400	4100	3800

NOTES:

- Maximum spans are based on the support of a maximum ceiling mass of 12 kg/m². For guidance on roof and ceiling mass refer to Appendix A.
- Beam ends may be chamfered to a minimum depth of 100 mm or 1/3 of the beam depth, whichever is greater.
- Where ceiling joist spans are not the same each side of the beam, the average of the spans may be used.
- Roof loads shall not be strutted onto hanging beams.
- Minimum bearing length = 70 mm at end supports.
- Where the depth to breadth ratio exceeds 7:1, G.I. strapping or similar restraint shall be provided to the top edge of the beam at support points. Refer to Clause 7.2.26.
- For design parameters refer to Figure 7.20.

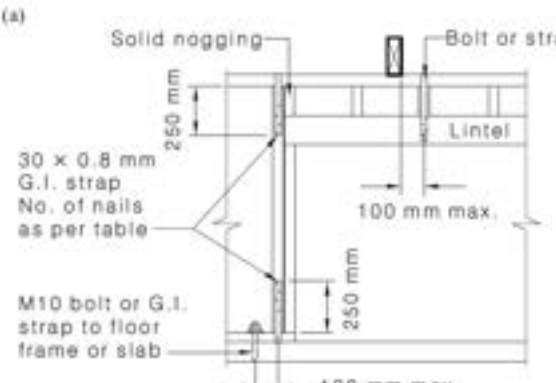


26. It appears that no strapping/ tie down for the top plate to lintel as been installed. As it states in table **9.20 Uplift capacity of beam/lintel tie down connections**, that top plate shall be fixed to lintel within 100mm of each rafter/truss or fixed to the lintel with a fixing of equivalent tie-down strength.

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TABLE 9.20
UPLIFT CAPACITY OF BEAM/LINTEL TIE-DOWN CONNECTIONS

Position of tie-down connection	Uplift capacity, kN					
	Unseasoned timber			Seasoned timber		
Beams/lintels/ring beams to studs/posts/floor	J2	J3	J4	JD4	JD5	JD6
(a)	4/2.8 mm \odot nails each end of strap					
	8.3	5.9	4.2	5.9	4.9	3.7
	6/2.8 mm \odot nails each end of strap					
	12	8.4	5.9	8.4	6.9	5.2

The top plate shall be fixed or tied to the lintel within 100 mm of each rafter/truss, or the rafter/truss fixed directly to the lintel with a fixing of equivalent tie-down strength to that required for the rafter/truss.



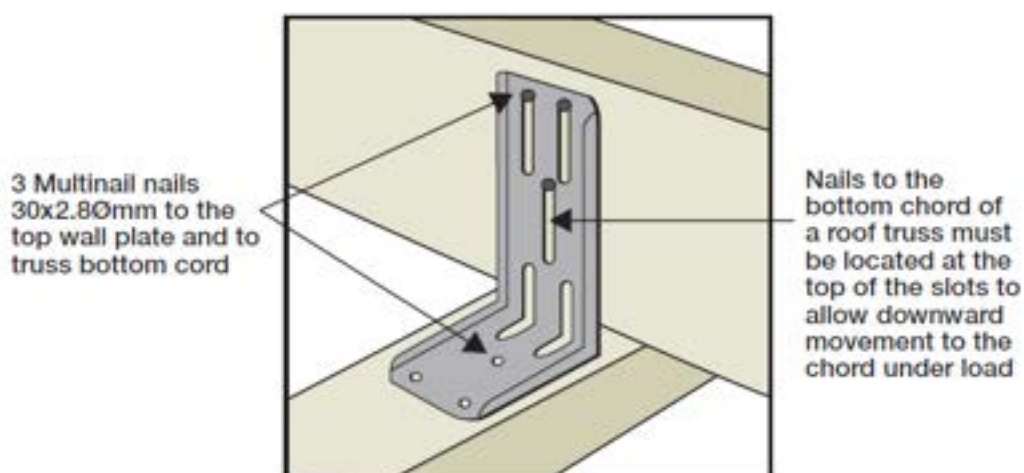


27. Some 'L' brackets have not been installed at the maximum 1800mm spacing. Some have not been nailed off throughout the non-load-bearing top plates.

AS 1684 framing requirements state these brackets must be installed no less than 1800 mm apart. This requirement is also detailed in the 2014 Mitek roofing fixing and bracing guidelines. We have attached the installation guidelines from the 2014 MiTek manual.

NB: the MiTek 2009 manual advises 3 nails to the top plate, but this has been amended to 4 nails in the 2015 manual. These walls have been marked up with the letter 'L' in spray paint.

Internal Wall Brackets are used to connect internal non-loadbearing walls to roof trusses at maximum 1800mm centres. To enable the roof truss to deflect under loads, nails to the truss must be installed at the top of the slotted holes and not hammered home to allow a loose fit only.





28. It appears that some of the L-brackets have been over driven, this doesn't not comply, see insert below for further information.

AS 4440; 2.2.3(c), Figure 2.3:

- (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.

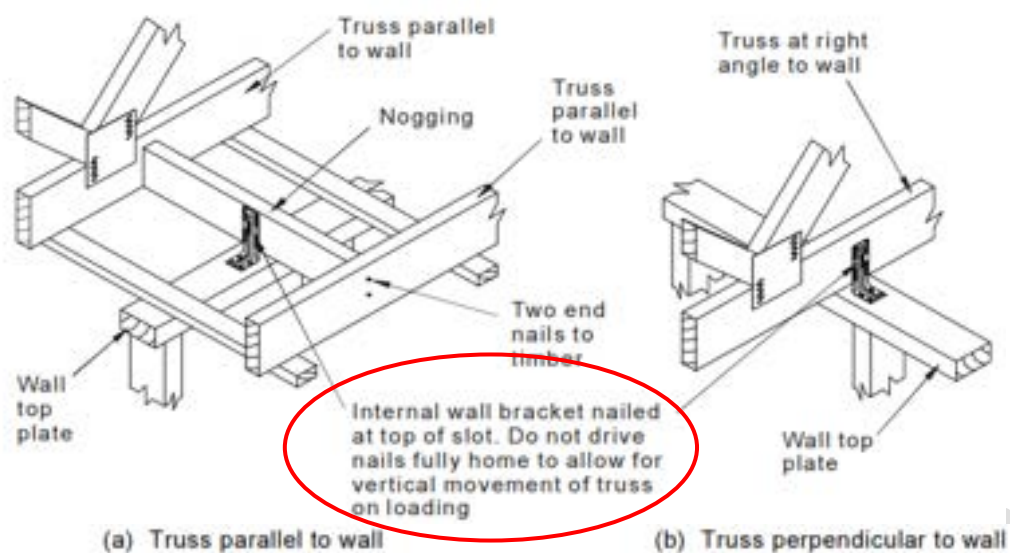


FIGURE 2.3 FIXING OF TRUSSES TO FREESTANDING NON-LOADBEARING WALL THAT IS NOT A BRACING WALL



29. The upper floor has been affected by moisture and has swollen the particleboard joints; all will need to be rectified and fit for the finish floor coverings. Needs to be sanded and fit for purpose as AS 1860.2 and 14.4. As per inserts

AS 1860.2—2006

12 SURFACE FINISHING

The following requirements apply to the finishing of particleboard flooring:

- (a) The floor shall be inspected for dampness before proceeding with finish operations; if found to be excessively damp, it shall be left until its moisture content is 15% or less.
NOTE: This is particularly important where exposure to weather has occurred.

- (b) Nails and screws shall be finished flush or below the surface, as appropriate to the floor covering and/or finish.

- (c) If the floor is to be covered with carpet, the surface shall be firm and tight with no loose flakes or particles.

NOTES:

- 1 If the surface has been exposed to the weather, rough or uneven areas should be spot sanded after punching the nails or countersinking the screws.
 - 2 Full sanding may be necessary if the particleboard flooring has been subjected to prolonged rain during the exposure period.
 - 3 Sanding before carpet laying should be with 40-60 grit closed coat paper only.
- (d) For other surface finishes, full sanding shall be required if the particleboard has been exposed to the weather. The surface shall be given a first cut with 60-80 grit closed coat paper, followed by a finishing cut with 100 grit closed coat paper.

Particleboard not exposed to weather during construction shall be sanded as above if the particleboard was supplied unsanded. If sanded particleboard was used, the joints shall be sanded over with 80-100 grit closed coat paper.

Standards & Tolerances Guide

14.4 Swelling in solid timber, plywood and particleboard flooring

Within 12 months from completion of the work joints in plywood and particleboard floors are defective if they can be detected through normal floor coverings.

Within 6 years and 3 months of the completion of the work, swelling in tongue and groove strip timber flooring is a defect if it causes boards or subfloor to be dislodged or movement of perimeter restraints such as walls.



30. The flooring has been damaged and has large gaps, this will need rework, not in an appropriate, skilful way or with reasonable care and skill.

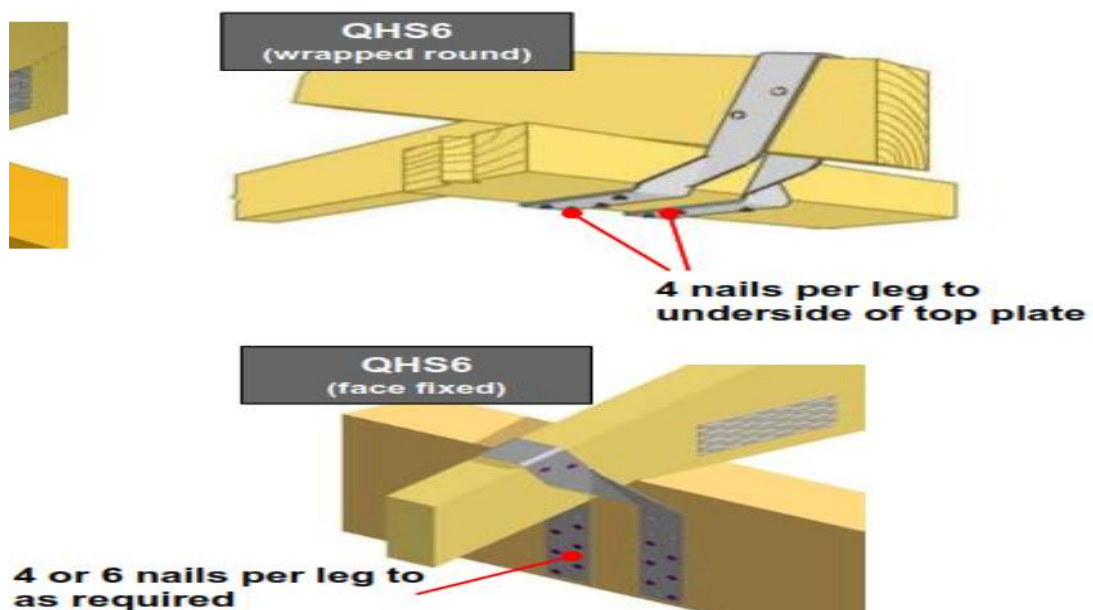


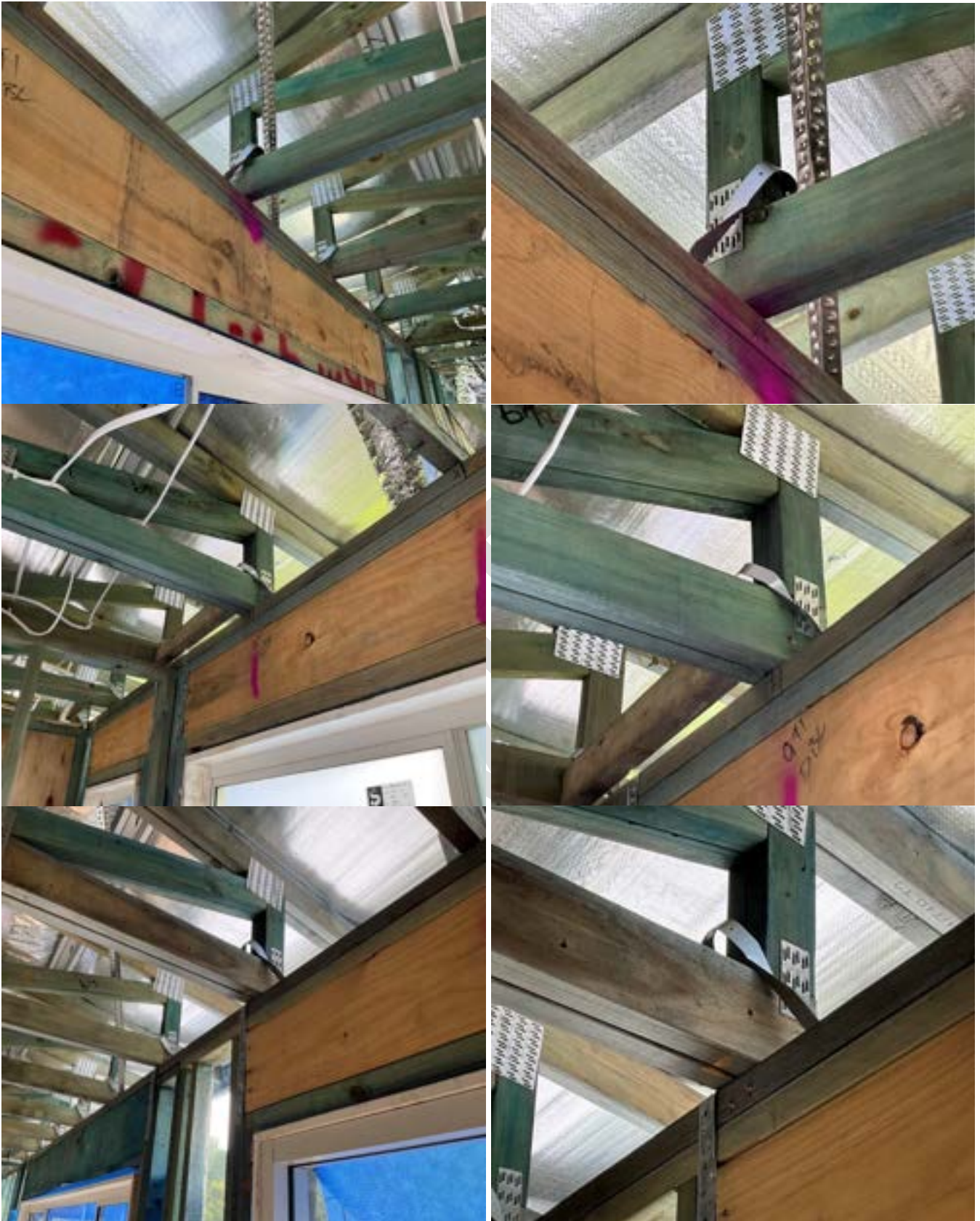
31. The flooring has been exposed to excess moisture and mould is forming on the underside, this will need to be further investigated by a hygienist to see if it can be treated or has to be replaced under the builders cost, not in an appropriate, skilful way or with reasonable care and skill.





32. A number of the cyclone straps have been installed loose and therefore not in accordance with the manufacturer's installation instructions. Reworking is required to ensure the straps are secured snug against the rafter and top plate, ensuring they perform as designed in the event of a cyclone.





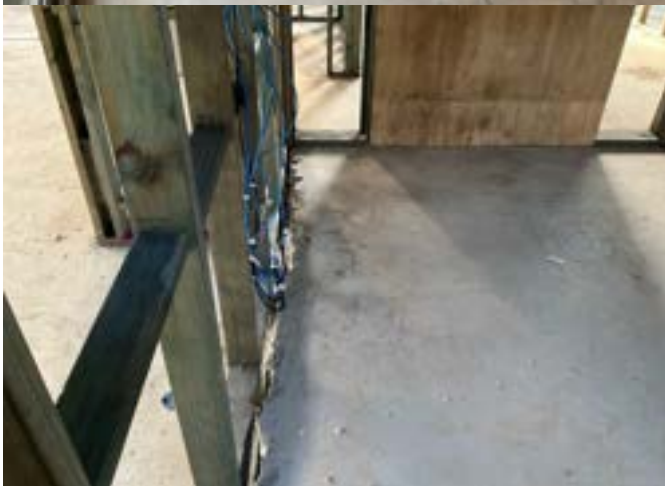
33. There is a steel post that has been modified but has not been welded together properly on all sides, this will need rework, not in an appropriate, skilful way or with reasonable care and skill.



34. There is a laminated beam that has been left out in the weather and is starting to delaminate, owner has advised that these have previously been replaced due to weather damage, this will need rework, not in an appropriate, skilful way or with reasonable care and skill.



35. The concrete slab has been jack hammered substandard finish, steel Rio set back may be compromised, send a competent person like the engineer to the site for approval **form 12 for the rectifications**. As per part 9, Division 2, section 74 of the BR 2021: This will need rework, not in an appropriate, skilful way or with reasonable care and skill.





SAMPLE

Conclusion

In conclusion, following the inspection of surface work in the readily accessible areas of the property, the building needs rework, rectification. **The build is below average standard for new construction.** Our clients have requested that we place in writing a formal request that all items in this report are rectified. We refer the builder to the builder's own contract with our client which calls for the builder to act on ALL KNOWN DEFECTS. All items in this report are therefore brought to the builder's attention and are therefore known to the builder. We would suggest that the builder rework the dwelling so that it complies with the minimums set out in the BCA, the Australian Standard and all other relevant requirements. If the builder feels that we are in error, we request that they justify with a counter reference that would support that position and show cause why they do not have to rectify the defects found.

Important note

Australian Standard AS4349.0-2007 *Inspection of Buildings, Part 0: General Requirements* recognises that a property report is not a warranty or an insurance policy against problems developing with the building in the future. Accordingly, a preventative maintenance program should be implemented for the property which includes systematic inspections, detection and prevention of incipient failure. Please contact the Consultant who carried out this inspection for further advice.

Your attention is drawn to the advice contained in the Terms and Conditions of this Report including any special conditions or instructions that need to be considered in relation to this Report.

Certification

This document certifies that the property described in this Report has been inspected by the Building Consultant for ALLINSPECT in accordance with the level of service requested by the Client and the Terms and Conditions set out in this Report, and in accordance with the current edition of the Report Systems Australia (RSA) Handbook Standard Property Inspection Reports 'Uniform Inspection Guidelines for Building Consultants'.

Authorised Signatory checked by: *David Tacon*

Name: David Tacon Date of Issue: 24 March, 2022