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Site Address:

Client Name:

Phone #:

Email:

Dwelling type:	Single Storey
Dwelling configuration:	House and Garage
Nature of works:	New Build
Stage of inspection:	Pre Plaster
Construction Type:	Brick Veneer
Garage:	Attached
Foundations:	Waffle Slab
Builder:	

Client Brief

I was 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 Building Commission.

Access

Access was gained to all required areas of the residence unless noted otherwise within the report. The use of ladders is regulated by the OH&S Regulations 2017, we have not visualised any part of the dwelling that cannot be seen by the author with their feet no higher than 2 m from FGL.

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.

An inspection was conducted at the above address on 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 precipitating at the time of the inspection.

Entry to site was obtained under the Building Act, 1993, section 240 and the Domestic Building Contracts Act, 1995, part 2, **section 17** and 19. We act and make limited representations under the direction of the dwelling owners under these two acts.

Schedule of Defects:

Defects, observations and other related comments from Pre-Plaster Inspection on.

1.

Anticon roof blanket installation manual: - The manufacturer recommends the insulation blanket to be trimmed at the eaves and valley gutters to reduce the risk of excess blanket meeting the water path, potentially drawing rain and moisture into the roof structure. This recommendation from the product manufacturer has not been met.

FASCIA AND GUTTER

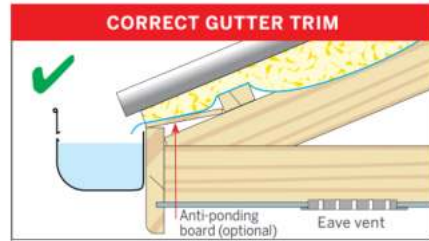
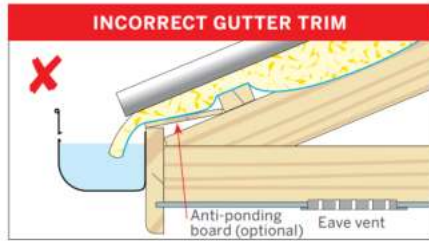
Note: If the Anticon is too long and allowed to drape into the gutter, rain/moisture may be drawn back onto the bulk insulation in the roof cavity. This may cause corrosion to the cladding and damage to the roof structure – this will void the product warranty.

VALLEYS

Similarly to step 5, ensure that any excess of blanket material that abuts the valley flashing is trimmed back to reduce the risk of the bulk insulation edge coming into contact with the valley water path.

It is an acceptable practice to peel bulk insulation and fold back away from the flashing whilst leaving RFL folded back at the flashing edge ensuring it is not in the water way.

Note: Refer to gutter trim low pitch option 1 for fold details.





All areas to comply

2.

SA HB 39; 5.4: - All valley gutters to enter eave gutters a minimum of 50 mm and be turned down. It must also be noted they must not extend so far as to obstruct ongoing maintenance. These dwellings eave valley gutters do not meet this requirement.

5.4 VALLEY GUTTERS

In addition to the recommendations of Clause 5.2, particular attention is to be given to the following:

- (a) *Shape* Valley gutters to be sized and manufactured in accordance with Figures 5.4(A) and 5.4(B).
- (b) *Valley head* Valley head to be securely fastened at the ridge and turned up against the weather.
- (c) *Discharge at eaves gutters* Valley gutters to enter eaves gutters 50 mm and have the ends turned down into the eaves gutter.
- (d) *Fastening* Valley gutters to be fixed with galvanised nails bent over or cleated at the outer edges of the gutter at intervals not exceeding 500 mm.
- (e) *Lap joints* Lap joints to have a lap of 25 mm in the direction of flow sealed and fastened.
- (f) *Discharge width* The effective discharge width of the valley gutter on completion is to be a minimum 150 mm as shown in Figure 5.4(B).
- (g) *Pierced roofs* Pierce-fastened roof covers to overlap the valley gutter by not less than 100 mm. Roof fastening screws to be clear of valley gutters.
- (h) *Supports* Valley boards, if used to support the whole of the valley gutter, to have a thickness not less than 19 mm. Alternatively, valley supports may be suitably rigidised galvanised, aluminium/zinc alloy-coated or aluminium/zinc/magnesium-coated steel.
- (i) *Grade* Valley gutters not to be installed on roof slopes less than 1:4.5 (12.5°).
- (j) *Angle* Valley gutters to have a nominal side angle of 1:3.4 (16.5°).
- (k) *Catchment* Valley gutters to be installed so as to service a catchment area not exceeding 20 m².

NOTE: Valley gutters discharging into eaves gutters should not overhang the gutter so as to make maintenance of the gutter impracticable.



3.

NCC 2019; 3.5.1.5: - Roof sheets must be fixed off as per Table 3.5.1.4.

Roof sheet fixing has not met this requirement.

3.5.1.5 Fixing of metal sheet roofing

Metal sheet roofing must—

- (a) be either fixed through the roofing (crest fastening) or have concealed fasteners; and
- (b) be fixed at spacings in accordance with Table 3.5.1.4; and

Table 3.5.1.4 Fixing requirements for sheet roofing

Sheet roofing profile	Fixing: End span	Fixing: Internal spans
Corrugated	Side lap and every second rib	Side lap and every third rib
Close pitched trapezoidal	Side lap and every second rib	Side lap and every third rib
Trapezoidal	Every rib	Every rib
Concealed fasteners	Every rib	Every rib



4.

NCC 2019; P2.2.2; AS 2589 section 4; AS 3999; G2: -It was noted that the dwelling was not watertight. A roof and external wall including openings around windows and doors must prevent the penetration of water that could cause unhealthy or dangerous conditions and undue dampness or deterioration of building elements.

The dwelling does not meet these requirements.

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

P2.2.2 Weatherproofing

A roof and *external wall* (including openings around *windows* and doors) must prevent the penetration of water that could cause—

- (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and
- (b) undue dampness or deterioration of building elements.

AS 2589-Gypsum Linings-Application and finishing

SECTION 4 INSTALLATION

4.1 SITE CONSIDERATIONS

4.1.1 Site organization prior to commencement of lining

Sufficient areas in proper sequence shall be available to enable the lining or partitioning work to commence and maintain continuity as part of the programme. The areas to be lined or partitioned shall be protected from the weather and sufficiently dry to ensure that the fixed gypsum lining will not suffer subsequent deterioration due to moisture absorption.

AS 3999-Bulk thermal insulation-Installation

G2 MOISTURE ISSUES

Moisture gives rise to the following problems:

- (a) Surface condensation occurs when the temperature of a surface is at or below dew point temperature of water vapour in the air adjacent to the surface.
- (b) Mould growth on internal surfaces—moulds and their spores are one of the most significant causes of respiratory problems.
- (c) Interstitial condensation occurs within building cavities such as roof spaces and wall cavities, this can give rise to—
 - (i) corrosion of metal components;
 - (ii) decay of timber based components;
 - (iii) nail plate pull-out;
 - (iv) reduction of the performance of insulations; and
 - (v) concealed mould growth.

Minimization of these problems depends on—

- (i) appropriate thermal design of the building fabric for the given climate;
- (ii) consideration of moisture production and ventilation within the building use of combinations of materials that allow for the possibility of storage and movement of moisture within the structure; and
- (iii) use of materials and detailing appropriate to the location and use of the building.



5.

Standards Australia HB 39: - The gutters and roof sheeting must be fully cleaned of metal particles, roof screws, pop rivets, mortar, paint, and the like.

The roof and gutter installation to this dwelling has not met this requirement.

3.6 CLEANING UP

Normal installation practices such as drilling and cutting usually leave offcuts and metallic swarf on or around the roof area. These materials and all other debris, including blind rivet shanks, nails and screws are to be cleaned from the roof area and gutter regularly during the installation process as unsightly staining of the surface due to oxidation of the metal particles will result, leading to corrosion and possible failure of the roofing material or guttering. Where practicable, the entire installation should be cleaned down with a blower vac, swept or, alternatively, if a water supply is available, hosed down at the completion of the work.



6.

AS 4200; 3.3.1(g), 4.1 & 4.2: - pliable building membrane shall be cut neatly around penetrations. 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.

This requirement has not been met.

3.3 COMMON REQUIREMENTS FOR ROOFS

3.3.1 General

- (g) The pliable building membrane shall be cut around obstacles, and all openings shall be sealed (see Section 4). Special care shall be taken to avoid tearing or puncturing the pliable building membrane during its installation, such as by contact with back edges of gutters.

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.



7.

A weather barrier is to be installed as per the manufacturer's installation guide.

2.3.1.3 Weather Barrier

Weather barrier

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

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

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

WEATHER BARRIER CLASSIFICATION		
CLIMATE ZONES	WATER BARRIER	VAPOUR PERMEANCE
2-8	High	Vapour permeable (Class 3 or 4)
1		Vapour Barrier (Class 1 or 2)

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



8.

AS 1684.2 part 6.2.5.2: - Non loadbearing walls shall be kept a minimum of 10 mm below the underside of the bottom chord, or ceiling batten when used.

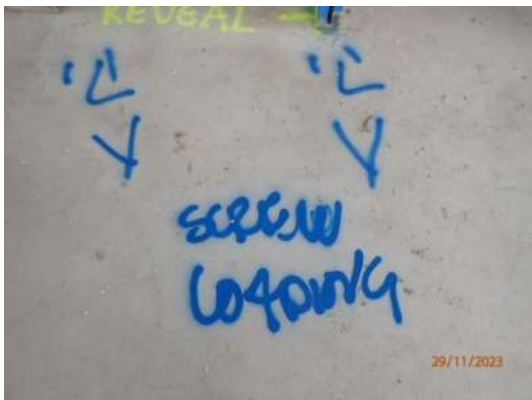
This requirement has not been met.

6.2.5.2 Internal walls — Trussed roofs

Non-loadbearing walls shall be kept a minimum of 10 mm below the underside of the bottom chord or ceiling battens when used. Trusses shall be fixed to internal non-loadbearing walls as shown in [Figure 6.11](#) or as required for bracing, see [Clause 8.3.6.9](#).

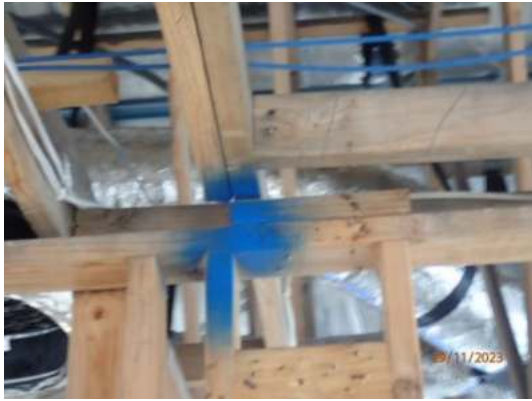


'L' brackets not vertical



Check all areas





9.

NCC Part 3.8.7.2, NCC; 3.12.1.1, AS 4200.2; 2.2, 2.3 & 3.2: - Pliable membrane/reflective insulation shall be continuously sealed and closely fitted against any penetration, door or window opening. Damage or tears to the membrane shall be repaired to restore the integrity and maintain the purpose of the membrane.

Please note - if taped from the inside, the tape must be compatible with AS 4200.

These requirements have not been met to a number of areas around the perimeter of the building.

3.8.7.2 Pliable building membrane

- (a) Where a *pliable building membrane* is installed in an *external wall*, it must—
 - (i) comply with AS/NZS 4200.1; and
 - (ii) be installed in accordance with AS 4200.2; and
 - (iii) be a vapour permeable membrane for *climate zones* 6, 7 and 8; and
 - (iv) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building.
- (b) Except for single skin masonry or single skin concrete, where a *pliable building membrane* is not installed in an *external wall*, the primary *water control layer* must be separated from *water sensitive materials* by a drained cavity.

2.2 VAPOUR CONTROL MEMBRANES

Where a pliable building membrane is installed as a vapour barrier, Class 1 or Class 2, it shall be continuously sealed at all discontinuities, end laps, joints and penetrations, by one of the following:

- (a) Heat and moisture resistant adhesive tape.
- (b) Mechanical fixing with adhesive sealant.
- (c) Adhesive bond.

NOTE: Bulk insulation or additional ventilation may also assist in reducing the condensation risk when used in conjunction with vapour control membranes.

2.3 AIR CONTROL MEMBRANES (AIR BARRIERS)

Where a pliable building membrane is to be installed as an air barrier, it shall be classified as an air barrier, in accordance with AS/NZS 4200.1. Where installed as an air barrier, the membrane shall be taped or sealed at overlaps, end laps, discontinuities and penetrations. This shall be achieved using the sealing requirement specified in Clause 2.2.

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).

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.



10.

AS 3700; 12.4.2: - Solid and cored brick units shall be laid on a full bed of mortar. Vertical joints in fully bedded masonry shall be filled with mortar unless specified. The mortar joints to this dwelling do not meet this requirement.

12.4.2 Mortar joints

Solid and cored units shall be laid on a full bed of mortar. Hollow units shall be face-shell bedded.

Vertical joints in fully bedded masonry shall be filled with mortar unless otherwise specified.





11.

AS 4773.2; 9.2 & 10.2: - The edges of the floor slab have not been correctly boxed up prior to being poured, which has resulted in it protruding past the wall frame in excess of 15 mm which will significantly reduce the required cavity width.

The builder should therefore, after consultation with the slabs design engineer, carefully trim back the edges of the slab to achieve the required minimum 25mm cavity width, ensuring the cavity remain open to functional weep holes. Consideration should be given to not exposing the edge of the steel reinforcement or reducing its side cover; not reducing the throat of the edge beam; and also, to any protrusion that may exist on the lower edge of the rebate out past the future finished face of the brickwork.

The NCC states compliance with AS 4773.2 and AS 3700.

9.2 CAVITY

The minimum clear width of any cavity in masonry veneer construction shall be 25 mm and shall be measured clear from any conduit, insulation, or services placed within the cavity.

NOTE: The maximum cavity width is limited by the rating of the wall ties as indicated on the package.

The cavity shall be free of obstructions that would allow the transfer of moisture across the cavity.

10.2 CAVITY

The cavity shall be free of obstructions that would allow the transfer of moisture across the cavity, clean and continuous, and not bridged other than by ties or accessories, flashings, doors, windows, head jambs and sills. Where insulating material is placed in a cavity, precautions shall be taken to maintain the moisture resistance of the wall.

The minimum cavity width shall be 35 mm and shall be measured clear from any conduit, insulation or service placed within the cavity. The maximum cavity width shall be 75 mm.

9.6.2 Flashings and weepholes

9.6.2.1 Cavity flashings

Veneer walls shall be drained by weepholes at 1200 mm maximum centres. The raking of perpendicular joints to form weepholes shall extend the full width of masonry (through the wall) including bed joint at the level of the flashing.



12.

AS 4773.2: - Cavity flashings including damp proof course flashings shall be turned up the frame 150mm minimum and fixed to the inner frame at 600 mm maximum centres.

Flashings to this dwelling do not meet this requirement.

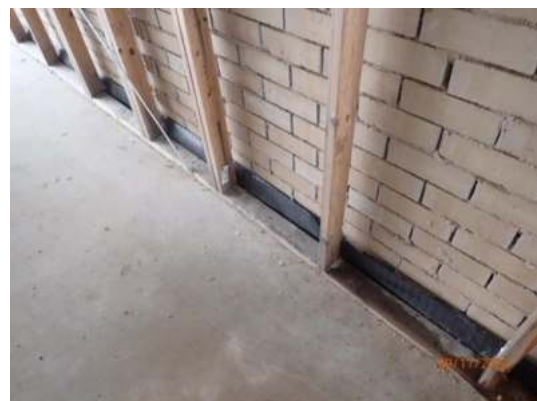
9.6.2 Flashings and weepholes

9.6.2.1 Cavity flashings

Where it is supported on a concrete slab, cavity flashing shall be located at the base of the cavity and at all points where the cavity is interrupted by a structural element, an opening or the like.

A cavity flashing shall be—

- (a) turned up a minimum of 150 mm at the inner frame;
- (b) fixed to the inner frame at 600 mm maximum centres;
- (c) lapped at joints in a straight run by a minimum of 150 mm;
- (d) lapped at corners by the width of the leaf and cavity in accordance with Figure 9.1 or fanned in accordance with Figure 9.2; and
- (e) embedded not less than 25 mm into the outer leaf.



13.

AS 2589; 2.6.2 & AS 1684.2; Appendix E: - The maximum moisture content for seasoned timber at the time of installing gypsum linings shall be less than 15%.

This seasoned pine house frame currently exceeds this maximum.

AS 2589:

2.6.2 Moisture content for Australia

The maximum moisture content for seasoned timber framing at the time of installing gypsum linings shall be less than 15%, in accordance with Appendix E of AS 1684.2. The moisture content of timber framing shall be measured in accordance with Appendix A.

NOTE: Moisture content within the timber frame may be affected by factors, such as environmental conditions refer to AS 1684.2 and AS 1684.3).

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.





Check all prior to enclosing
14.

AS 4773.2, part 9.6.2.1: - Veneer walls shall be drained to weep holes spaced at 1200 mm maximum centres. The raking of the perpendicular joints shall extend the full width of the masonry including the bed joint.

Blocked and/or partially blocked weep holes to this dwelling do not meet these requirements.

Special care must be taken to ensure the DPC flashing is not damaged / breached.

9.6.2 Flashings and weepholes

9.6.2.1 Cavity flashings

A cavity flashing that is also a DPC shall extend across the full width of the masonry skin. Flashing that protrudes past the face of the wall shall be either cut off or turned down.

→ Veneer walls shall be drained by weepholes at 1200 mm maximum centres. The raking of perpendicular joints to form weepholes shall extend the full width of masonry (through the wall) including bed joint at the level of the flashing.

→ Where cavity flashings are penetrated, the flashing shall be punched through or cut from the inside of the wall, and be fitted around the penetration and sealed.



15.

The NCC; 3.12.1.1(b)(ii): - Where required, the reflective insulation (sarking) must be closely fitted against any penetration, door or window opening.

This requirement has not been met to a number of windows and doors. As such, the builder will need to seal the gaps with a compatible foil tape.

Part 3.12.1 Building fabric

3.12.1 Application

- (a) The provisions of 3.12.1.1 to 3.12.1.5 apply to—
 - (i) a Class 1 building; and
 - (ii) a Class 10a building with a *conditioned space*.
- (b) The provisions of 3.12.1.6 apply to a Class 1 building with an attached Class 10a building.

Acceptable Construction Practice

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

Explanatory information:

Airspace adjoining reflective insulation

For *reflective insulation* and the adjoining airspace to achieve its tested *R-Value*, the airspace needs to be a certain width. This width varies depending on the particular type of *reflective insulation* and the *R-Value* to be achieved.

- (ii) the *reflective insulation* closely fitted against any penetration, door or *window* opening; and



16.

Site drainage is a well-publicised building requirement. The need to grade soil to drain surface water away from foundations is documented in this Dwellings Engineering, Soil Report, AS 2870 and the NCC to name a few. Builder's will often provide a copy of the CSIRO foundation maintenance guide to homeowners at settlement, see the link below: <http://www.residentialreports.com.au/wp-content/uploads/2015/03/Foundation-Maintenance.pdf>

There are areas around the dwelling with a non-compliant slope toward the slab footings. Said areas should have been appropriately graded during the backfill process. Site drainage is required to be present from the start of construction, maintained throughout and present upon completion.

Responsibilities of the builder

When building your house, the builder needs to comply with the Building Code of Australia, relevant Australian Standards, approved designs, specifications and contract documents.

Builders need to address the following important aspects:

- Make sure there are well-drained foundation conditions which will create 'normal' soil moisture and maintain adequate bearing capacity of the footings as soon as work begins at the site.
- Where abnormal moisture conditions exist or are anticipated, the footings will need to be designed by a structural engineer to suit these conditions.
- Ensure that the floor level allows for proper drainage around the outside of the house, and that the property is protected from any adjoining water flows (Figure 8).
- Slope the soil and paths away from the building by the minimum amount required by the Building Code of Australia to prevent water flowing towards the house's foundations.
- Special considerations may be needed if any excavations are to be dug near adjoining structures (i.e. when installing a swimming pool).
- Construct subsoil drains or moisture barriers on sloping sites to your engineer's requirements, in order to prevent stormwater affecting the building's foundations.

All the above-mentioned publications mirror the mandated 50 mm of fall over the first metre as per the NCC part 3.1.3.3.

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.

Explanatory information:

The appropriate slab height above finished ground level and the slope of the external finished surface surrounding the slab may vary depending on:

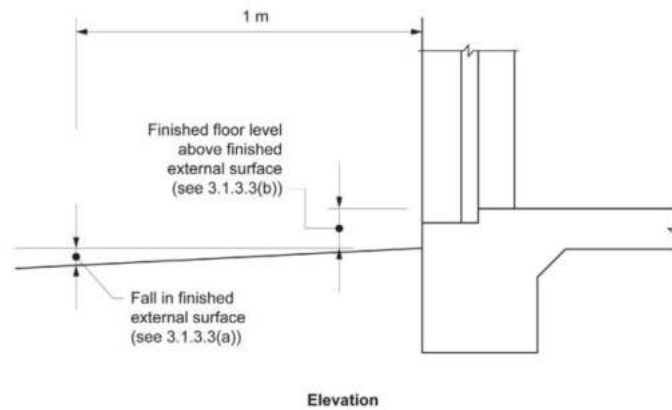
1. The local plumbing requirements; in particular the height of the overflow relief gully relative to drainage fittings and ground level (to work effectively they must be a minimum of 150 mm below the lowest sanitary fixture).
2. The run-off from storms, particularly in areas of high rainfall intensity, and the local topography.
3. The effect of excavation on a cut and fill [site](#).

4. The possibility of flooding.
5. Termite risk management provisions.

Clearances between wall cladding and the finished ground level are provided in [3.5.4.7](#).

- (c) The ground beneath suspended floors must be graded so that the area beneath the building is above the adjacent external finished ground level and **surface water** is prevented from ponding under the building (see [Figure 3.1.3.3](#)).

Figure 3.1.3.2 Site surface drainage



17.

NCC 2019; 3.3.5.6 & AS 4773.2: - The clear width of the cavity must be not less than 25mm and must be maintained regardless of any wall membranes, sheet bracing, or the like, installed to the supporting frame.

Clear widths less than 25mm between the masonry veneer and installed services are non-compliant.

NCC:

3.3.5.6 Cavities

The clear width of a *cavity* between the masonry veneer and the exterior face of the supporting frame must be not less than 25 mm wide and where the masonry veneer is constructed on a slab-on-ground, the *cavity* must be drained to the outside in accordance with 3.3.5.9.

Explanatory information:

The 25 mm clear width of the *cavity* needs to be maintained regardless of any wall membranes, sheet bracing or services installed to the supporting frame.

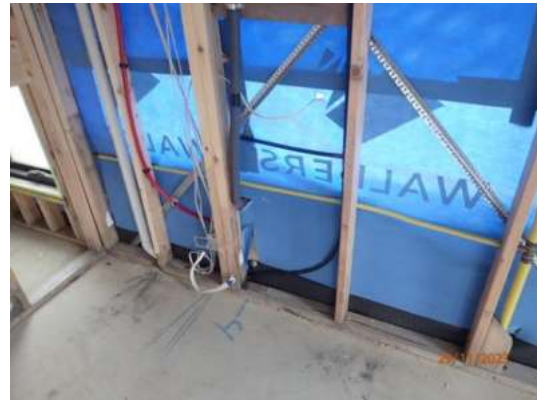
AS 4773.2:

9.2 CAVITY

The minimum clear width of any cavity in masonry veneer construction shall be 25 mm and shall be measured clear from any conduit, insulation, or services placed within the cavity.

NOTE: The maximum cavity width is limited by the rating of the wall ties as indicated on the package.

The cavity shall be free of obstructions that would allow the transfer of moisture across the cavity.



18.

AS 4773.2, part 9.6.2.1: Where cavity flashings are penetrated, the flashing shall be punched through or cut from the inside of the wall, and be fitted around the penetration and sealed.

Cavity flashings to the dwelling do not meet this requirement

9.6.2 Flashings and weepholes

9.6.2.1 Cavity flashings

Where it is supported on a concrete slab, cavity flashing shall be located at the base of the cavity and at all points where the cavity is interrupted by a structural element, an opening or the like.

A cavity flashing shall be—

- (a) turned up a minimum of 150 mm at the inner frame;
- (b) fixed to the inner frame at 600 mm maximum centres;
- (c) lapped at joints in a straight run by a minimum of 150 mm;
- (d) lapped at corners by the width of the leaf and cavity in accordance with Figure 9.1 or fanned in accordance with Figure 9.2; and
- (e) embedded not less than 25 mm into the outer leaf.

A cavity flashing that is also a DPC shall extend across the full width of the masonry skin. Flashing that protrudes past the face of the wall shall be either cut off or turned down.

Veneer walls shall be drained by weepholes at 1200 mm maximum centres. The raking of perpendicular joints to form weepholes shall extend the full width of masonry (through the wall) including bed joint at the level of the flashing.

Where cavity flashings are penetrated, the flashing shall be punched through or cut from the inside of the wall, and be fitted around the penetration and sealed.

In areas where termite management systems are required, all penetrations within the cavity shall be managed in accordance with the requirements of the NCC.



19.

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 noggling size shall be the depth of the stud minus 25 mm by 25mm thick, or the noggling 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.

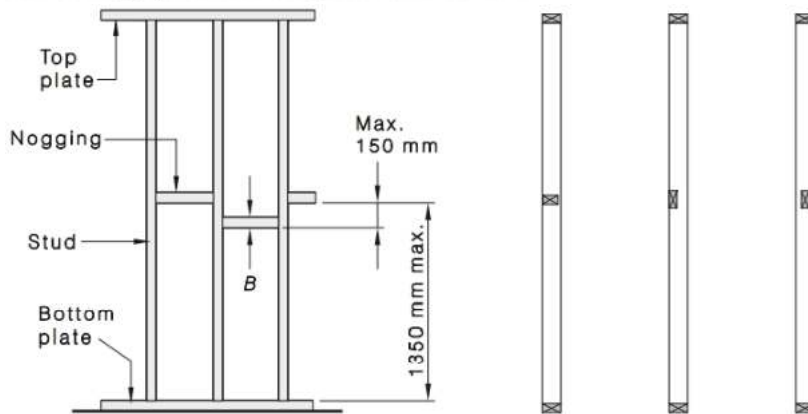


FIGURE 6.6 NOGGING





20.

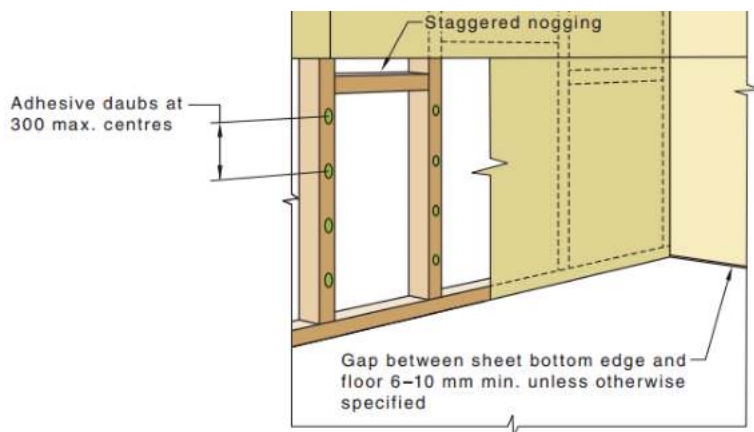
AS 2589; 4.4.3.2.3: - Adhesive shall be applied to the framing members at 300 mm spacings.

The packer strips used to straighten bowed walls have been only 'tacked' in place.

The carpenter will need to install additional fixings to enable the minimum plasterboard installation requirements to be met.

4.4.3.2.3 *Application of adhesive to wall framing*

Daubs of adhesive approximately 25 mm in diameter by 15 mm high shall be applied to the framing members at a maximum of 300 mm centres and at a minimum of 200 mm from the fastening points at the board edges (see Figure 4.3.3).



(a) Level 3 joint

DIMENSIONS IN MILLIMETRES

FIGURE 4.3.3 (in part) PLACEMENT OF NOGGINGS



Check all
21.

AS 3500.1, part 5.5.2.1: - The pipes crossing over each other and against other metals and structures all need to be secured and isolated from long term wear and tear.

5.5.2.1 Walls

Water services located in timber- or metal-framed walls of brick veneer construction shall be installed as follows:

- (a) *Timber wall framework* Holes or notches made in timber studs and plates in walls shall be in accordance with the following:
 - (i) The maximum size and spacing of holes or notches in studs shall be in accordance with Figure 5.2 and Table 5.1.
 - (ii) Where uninsulated pipes are used, a collar of lagging material or a neutral cure silicone sealant shall be used to fill the annular space.



22.

AS 3500.1; 5.2.2: - Where electrical wire, cables or consumer gas pipes are in existence, plumbing pipes will be installed and maintain a separation at least 25 mm distance.

Installation fails to meet this requirement.

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. ←



23.

The NCC Performance Provision P2.4.7 clearly states that water vapour and condensation must be managed to minimise the health risks to occupants. All water must be removed from the void as documented.

P2.4.7 Condensation and water vapour management

Risks associated with water vapour and *condensation* must be managed to minimise their impact on the health of occupants.

Application:

P2.4.7 only applies to a Class 1 building.

If left unresolved the resulting mould and fungi build ups, once established, will be very difficult to arrest. They are a known cause of “Sick Building Syndrome”.

What is mould?

Mould is part of a group of very common organisms called fungi that also include mushrooms and yeast. It is present virtually everywhere, both indoors and outdoors.

Mould may grow indoors in wet or moist areas lacking adequate ventilation, including walls/ wallpaper, ceilings, bathroom tiles, carpets (especially those with jute backing), insulation material and wood. If moisture accumulates in a building mould growth will often occur. Many different types of mould exist and all have the potential to cause health problems.



24.

AS 2589, clause 4.2.2: - The deviation in the position of the bearing surface of the finished framing immediately prior to installation of lining, shall not exceed the dimensions provided in Table 4.2.2.

Areas in the dwelling exceed this set allowance.

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

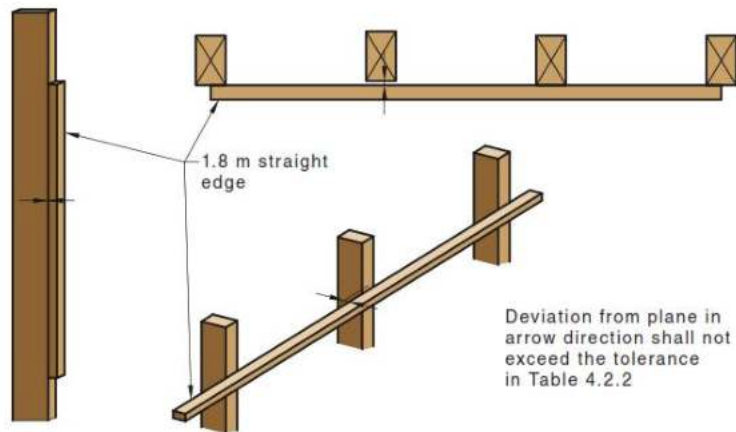


FIGURE 4.2.2(A) ASSESSING FRAMING TOLERANCE



25.

Victorian Domestic Building Contracts Act; Part 9 s.137: - The vendor (builder) warrants that all materials must be good and suitable for the purpose which they are used. Unless otherwise stated in the contract, materials shall be new.

Part 9—Liability

s. 137D

- (b) the vendor warrants that all materials used in that domestic building work were good and suitable for the purpose for which they were used and that, unless otherwise stated in the contract, those materials were new; and
- (c) the vendor warrants that that domestic building work was carried out in accordance with all laws and legal requirements, including, without limiting the generality of this warranty, this Act and the regulations.



Bowed from the tension

26.

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.

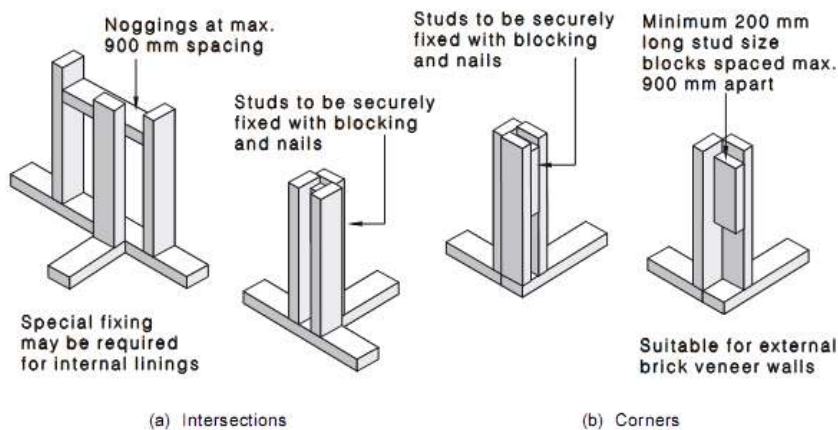


FIGURE 6.3 TYPICAL WALL JUNCTIONS



27.

AS 1884; 3.1.1.4, AS 2455.1, 2455.2 & 3958.1; 5.4.6: - Concrete and timber subfloor to be prepared for finished floor covering. Australian standards: 1884 Floor coverings - Resilient sheet and tiles - Installation practices call a planeness of 4 mm below a straightedge. Installation guides for several timber coverings call for concrete subfloor levels should not exceed 3 mm variation over 1 metre in any direction, using a 1 metre straightedge. As per AS 3958 the finished floor tiling surface should be flat and true to within a tolerance of 4 mm in 2 m from the required plane. Specific recommendations for individual flooring products or as recommended by adhesive manufacturers will apply. Where concrete subfloors are not sufficiently flat, leveling compounds, grinding or other means to level the subfloor need to be undertaken. Timber subfloors, packing of joists and sanding of sheet subfloors may be necessary.

Preparation for finished flooring material has not been met.

3.1.1.4 Surface quality

The surface of a concrete subfloor shall be thoroughly checked for the following:

- (a) *Planeness*—When a straightedge 2000 mm long is placed at rest at two points 2000 mm apart on the surface, no part of the surface shall be more than 4 mm below the straightedge.
- (b) *Smoothness*—When a straightedge 150 mm long is placed at any position at rest at two points on the surface, no part of the surface shall be more than 1 mm below the straightedge.
- (c) *Soundness*—The surface shall be without cracks, crazing, dusting, rain damage, spalling, efflorescence or blistering.

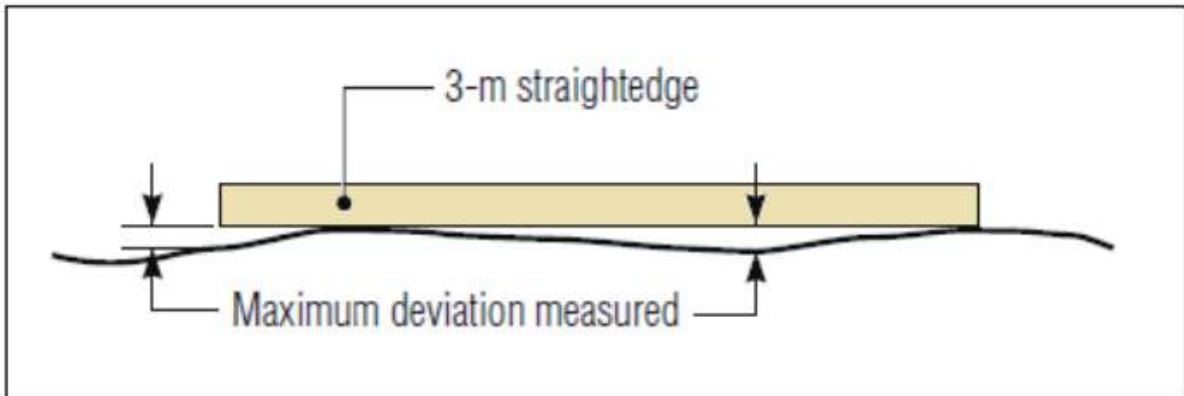
	AS 1884:2021	AS 2455.1:2019	AS 2455.2:2019
Planeness	No part of the subfloor shall be more than 4 mm below the 2 m straightedge		
Smoothness	There shall be no more than a 0.5 mm abrupt surface deviation below the 150 mm straightedge	There shall be no gap larger than 1mm under the 150 mm straightedge	

AS 3958.1; 5.4.6: -

5.4.6 Tile finish and joints

The recommendations for tile finish and joints are as follows:

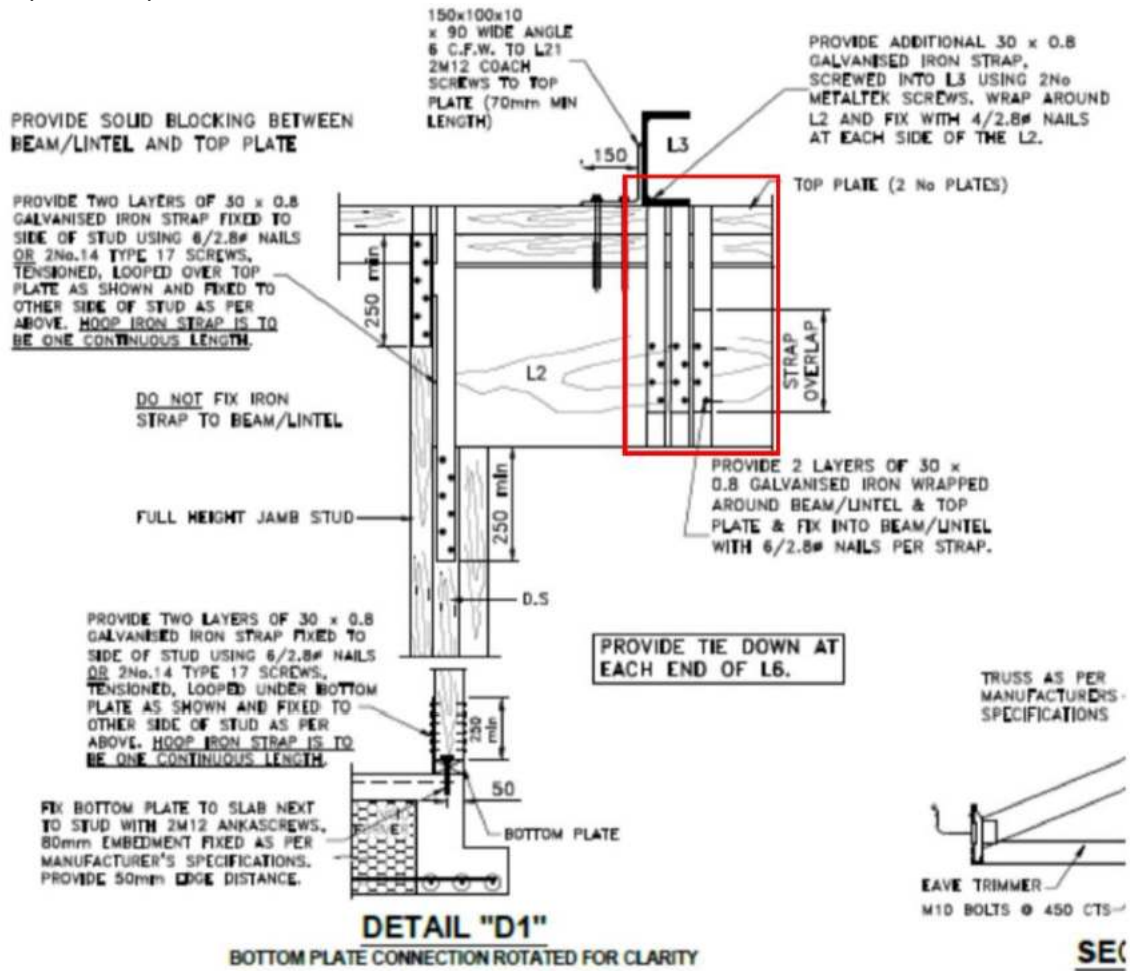
- (a) When measured with a straightedge, the finished surface of the tiling should be flat and true to within a tolerance of ± 4 mm in 2 m from the required plane. The lippage between two adjacent tiles should not exceed 2 mm. In the case of tiles where the surface has been ground flat, for example polished tiles, the lippage should not exceed 1.5 mm, and for joint widths of 3.0 mm or less the lippage should not exceed 1.0 mm.



28.

Alfresco L3 & L4 have not been installed as per the supplied detail. All connection to be reviewed to reflect the below details.

3 straps are required



29.

AS 1684.2; 6.2.1.4: - The maximum stud notching depth is 20 mm.

Note: Only one 20mm notch is permitted every 5th stud unless the notches are for a diagonal speed brace (see note 2).

Notching to studs has not met this requirement.

6.2.1.4 Notching, trenching and holes in studs and plates

The maximum size and spacing of cuts, holes, notches, and similar section-reductions, in studs and plates shall be in accordance with Figure 6.4 and Table 6.1. Holes in studs and plates shall be located within the middle half of the depth and breadth of the member, respectively. A longitudinal groove up to 18 mm wide \times 10 mm deep may be machined into the middle third depth of a stud to accept full-length anchor rods. Where the groove exceeds this dimension, the remaining net breadth and depth of the stud shall be not less than the minimum size required.

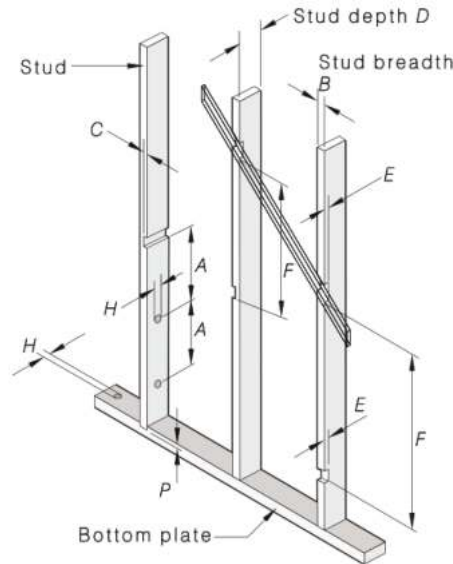


FIGURE 6.4 NOTCHING OF WALL STUDS

TABLE 6.1
HOLES AND NOTCHES IN STUDS AND PLATES

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



30.

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.

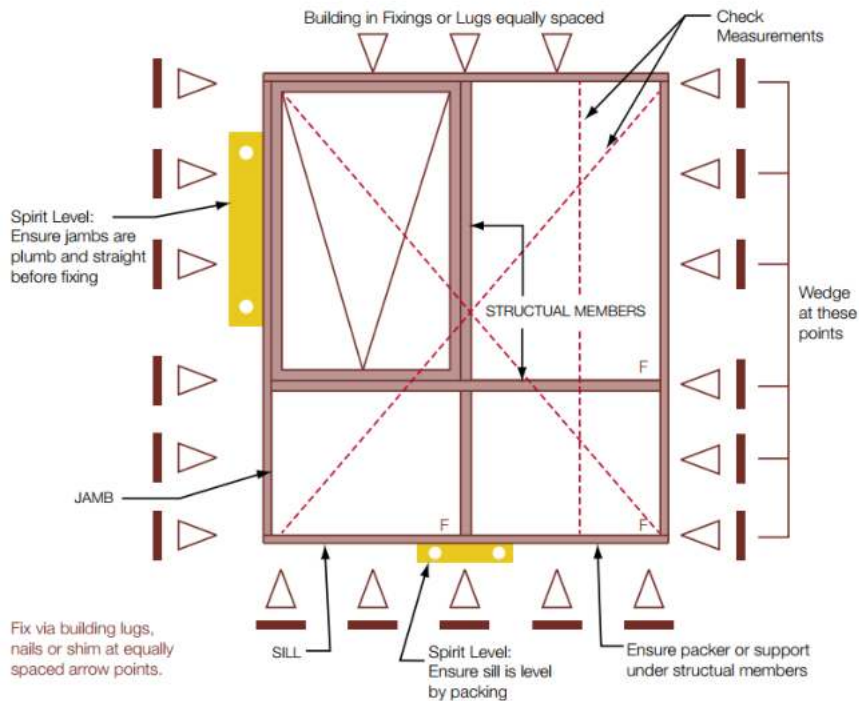
Keep sashes closed whilst installing frames.

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





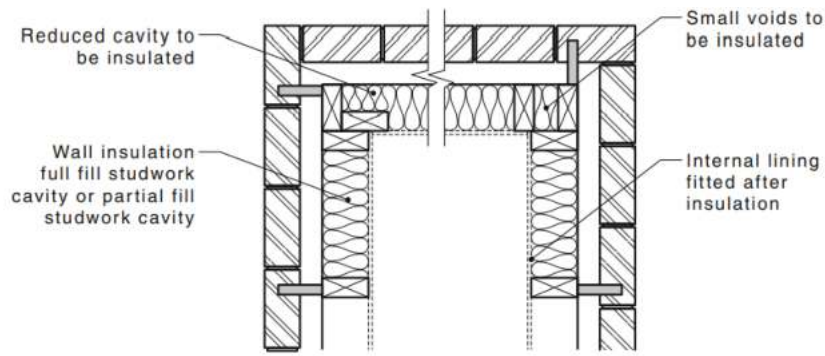
Note: Builder to ensure insulation installation is completed as per **AS 3999; NCC 3.12.1.1:**

- **AS 3999 3.2.4.** All need to be fitted in a manner that has the batts flat to the plaster backing and form a continuous barrier. This included heater platform/walkway
- **AS3999 5.3.4** Ceilings to be insulated in the difficult to reach perimeter, including the tight hip ends.
- **AS 3999 2.6.3** Insulation installed no closer than 50mm around downlights and appliances.
- **AS 3999 5.4.3** Wall insulation full fill studwork cavity.
- **AS 3999 5.4.3 Figure 5.4.3.1.2** Insulation between nonstandard stud spacings.
- **AS 3999 3.2.4 Figure 3.2.4.2 Insulation to** window opening and small gaps around window jambs.

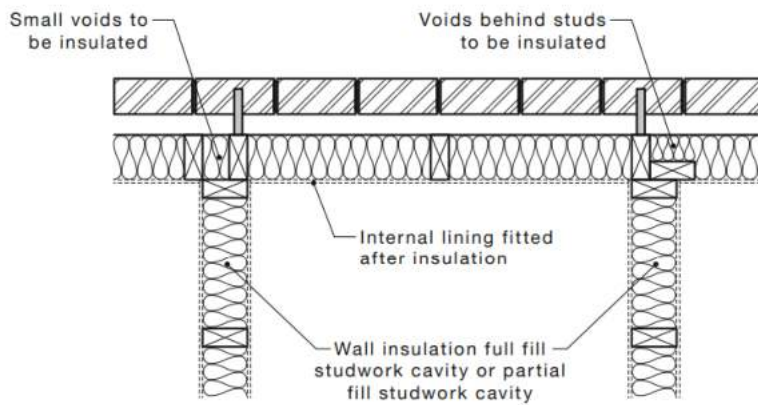
3.2.4 Continuity of insulation

The following requirements shall be met as appropriate:

- (a) Bulk insulation shall be installed so that it—
- (i) abuts or overlaps adjoining insulation other than at structural members such as columns, studs, noggins, joists, furring channels, and the like, where the insulation shall butt against the member;
 - (ii) forms a continuous barrier with ceilings, walls, bulkheads, floors, or the like, that inherently contribute to the thermal envelope (see examples in Figures 3.2.4.1 and 3.2.4.2); and
NOTE: The thermal envelope of a building is the part of a buildings fabric that separates heated or cooled spaces from the exterior of the building or other spaces that are not heated or cooled. A continuous thermal barrier around the envelope is necessary to achieve good performance.
 - (iii) does not affect the safe or effective operation of a service or fitting.



(a) At corners



(b) At wall junctions

FIGURE 5.4.3.1.2 INSULATING VOID BETWEEN CLOSELY SPACED STUDS

FIGURE 5.4.3.1.2 INSULATING VOID BETWEEN CLOSELY SPACED STUDS

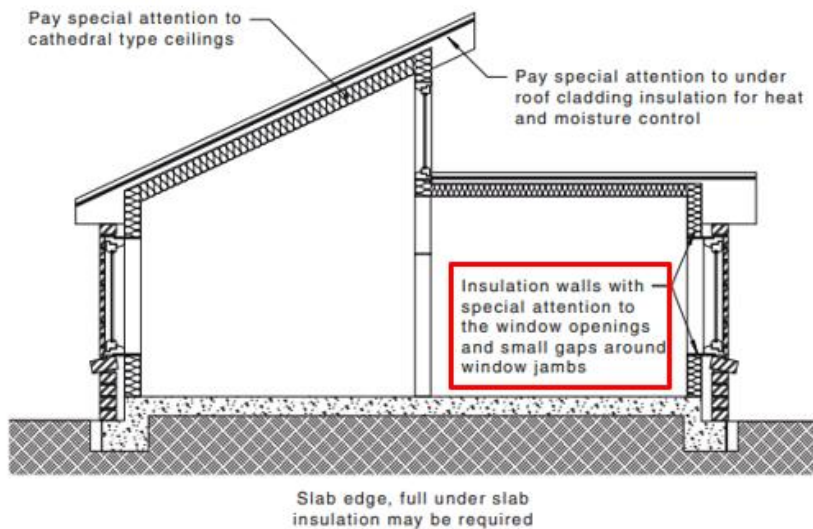


FIGURE 3.2.4.2 EXAMPLE OF THERMAL ENVELOPE WITH SLAB ON GROUND

3.12.1.1 Building fabric thermal insulation

- (a) Where *required*, insulation must comply with AS/NZS 4859.1 and be installed so that it—
- (i) abuts or overlaps adjoining insulation other than at supporting members such as columns, studs, noggings, joists, furring channels and the like where the insulation must butt against the member; and
 - (ii) forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and

Explanatory information:

1. For example, in a two storey house with the second storey set back, the insulation in the first storey wall, the second storey wall and the roof over the set-back must be continuous. Therefore if the roof over the set-back has insulation on a horizontal ceiling, then insulation is also needed on the vertical in any ceiling space in order to connect the ceiling insulation to the second storey wall.
2. To form a continuous barrier, insulation should be placed in gaps between window and door jambs, heads and sills, and the adjoining wall framing unless a gap is otherwise *required*. This may need to be compressible to allow for movement between members.



Note:

AS 2870; Table C2: - Classification of damage to concrete floors.

The concrete slab surface is showing category 1 cracking, these cracks are measuring between 1 - 2mm.

The builder and or homeowners may choose to photograph and document the cracking, then monitor its stability and changes (if any) over an agreed period.

TABLE C2

CLASSIFICATION OF DAMAGE WITH REFERENCE TO CONCRETE FLOORS

Description of typical damage	Approx. crack width limit in floor	Change in offset from a 3 m straightedge centred over defect (see Note 1)	Damage category
Hairline cracks, insignificant movement of slab from level	<0.3 mm	<8 mm	0 Negligible
Fine but noticeable cracks. Slab reasonably level	<1.0 mm	<10 mm	1 Very slight
Distinct cracks. Slab noticeably curved or changed in level	<2.0 mm	<15 mm	2 Slight
Wide cracks. Obvious curvature or change in level	2 mm to 4 mm	15 mm to 25 mm	3 Moderate
Gaps in slab. Disturbing curvature or change in level	4 mm to 10 mm	>25 mm	4 Severe

NOTES:

- 1 The straightedge is centred over the defect, usually, and supported at its ends by equal height spacers. The change in offset is then measured relative to this straightedge, which is not necessarily horizontal.
- 2 Local deviation of slope, from the horizontal or vertical, of more than 1:100 will normally be clearly visible. Overall deviations in excess of 1:150 is undesirable.
- 3 Account should be taken of the past history of damage in order to assess whether it is stable or likely to increase.



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 Surveyor as defined in the Victorian Building Act, of 1993. 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 Surveyor, 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.

8. Client Use

This report has been prepared for the exclusive use of the client/s whose name/s appear/s on the front of this report as supplied by Darbecca Pty Ltd ABN 12 115 961 487. Any other person who uses or relies on this report without the authors' written consent does so at his or her own risk and no responsibility is accepted by Darbecca Pty Ltd or the author of this report for such use and or reliance.

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Any reference contained within this report to the Building Code of Australian, an Australian Standard, a manufacturers technical data sheet or installation instruction is neither exhaustive nor a substitute for the original document and are provided as a guidance only. Darbecca Pty Ltd or the author of this report for the use or reliance upon of the part references contained within this report will accept no responsibility.

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. VCAT Suitability

Unless specifically noted this report has not been prepared in-line with the requirements of Practice Note VCAT 2. If you wish to have this report converted to a VCAT 2 Practice Note, please contact our office on 03 5366 6900.