ABN 12 115 961 487
PO Box 88
Bacchus Marsh Vic 3340
Phone: (03) 5366 6900
Email: admin@darbecca.com.au

Site Address:

Client Name:

Phone #:

Email:

Dwelling type:	Double Storey
Dwelling configuration:	House and Garage
Nature of works:	New Build
Stage of inspection:	Fixing & Waterproofing
Construction Type:	Multiple Claddings
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 31/10/2023 for the purpose of a general home inspection, requested by the 'client'.

The inspection was conducted without the 'client' present, and details exterior and interior.

The weather was fine at the time of the inspection.

Entry to site was obtained under the 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 Fixing & Waterproofing Inspection on.

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

1.

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.

2.

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.

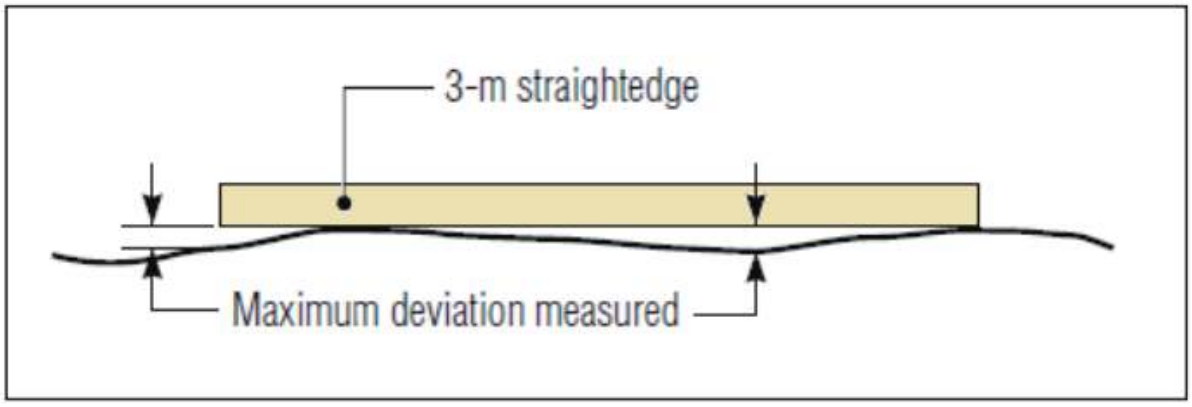
	AS 1884:2021	AS 2455.1:2019	AS 2455.2:2019
Planeness	No part of the subfloor shall be more than 4 mm below the 2 m straightedge		
Smoothness	There shall be no more than a 0.5 mm abrupt surface deviation below the 150 mm straightedge	There shall be no gap larger than 1mm under the 150 mm straightedge	

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.



3.

AS 1860.2; 10.3: - Fixings shall be driven flush or maximum 1mm below the surface.

Fixing heads left proud may be seen and felt through the future floor coverings and cause premature wear of carpets and vinyls.

Nails, applied by hand or with a nailing machine, shall comply with the following:

(a) Nails shall be driven flush initially and not punched below the surface until immediately prior to sanding (see Clause 12).

(b) Nailing machines shall be adjusted so that the heads of the nails penetrate the surface by not more than 1 mm. The use of a flush drive attachment, a chisel drive nail machine or similar is required.

Examples – check all

4.

AS 3500.3; 4.4.3: - Metal roof drainage systems and support systems shall be designed to achieve complete drainage or drying and ensure no premature corrosion.

The current installation has not met these requirements.

4.4.3 Corrosion due to crevices

Metal roof drainage systems and support systems shall be designed and installed to achieve complete drainage or drying. Shielded areas capable of causing permanent ponding shall be avoided to prevent the possibility of intense localized corrosion known as crevice corrosion.

NOTE: This type of attack results from contact of metal with moisture and salts under oxygen-deficient conditions in which trapped moisture cannot readily evaporate. It can be caused by lap joints, absorbent gaskets, holes, crevices under bolt or rivet heads, or surface deposits, including non-metallic materials such as elastomeric materials, plastics, fabrics, lifted paint films or accumulated solids.

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.

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

All areas to comply

7.

Hardies Scyon 'Axon' cladding system installation guide: - Axon cladding installation to allow a clearance of a minimum of 20mm to flashing.

This installation requirement has not been met.

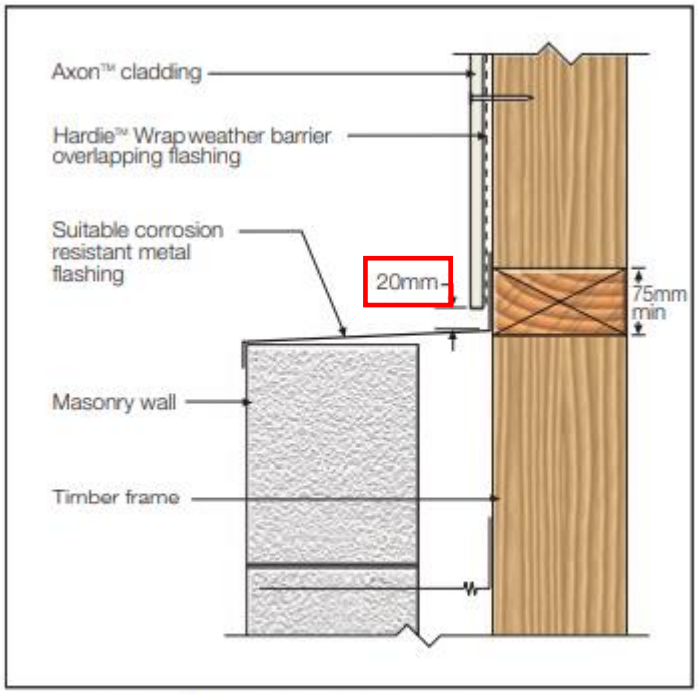


FIGURE 26 HORIZONTAL JUNCTION 2

Check all

8.

AS 3500.3; 4.4.3: - Roof drainage systems and support systems shall be designed and installed to achieve complete drainage or drying.

Flashings to this dwelling do not meet this requirement.

4.4.3 Corrosion due to crevices

Metal roof drainage systems and support systems shall be designed and installed to achieve complete drainage or drying. Shielded areas capable of causing permanent ponding shall be avoided to prevent the possibility of intense localized corrosion known as crevice corrosion.

NOTE: This type of attack results from contact of metal with moisture and salts under oxygen-deficient conditions in which trapped moisture cannot readily evaporate. It can be caused by lap joints, absorbent gaskets, holes, crevices under bolt or rivet heads, or surface deposits, including non-metallic materials such as elastomeric materials, plastics, fabrics, lifted paint films or accumulated solids.

9.

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.

(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.

Grinder marks & rust

10.

HB 39, part 8.4, section (c), (v): - The upstand to a pressure flashing to be a minimum 100 mm.

(c) Pressure flashings may be used in lieu of cutting grooves into walls, provided they are used only with smooth surface finished walls, e.g. smooth finished concrete or smooth finished brickwork with flush pointed mortar courses, provided [see Figure 8.4(C)]—

(i) the pressure flashings are purpose-made machine folded with a safety/stiffening fold at the upper edge or alternatively constructed with a safety/stiffening fold at 45° from vertical to allow for the placement of a silicone filler;

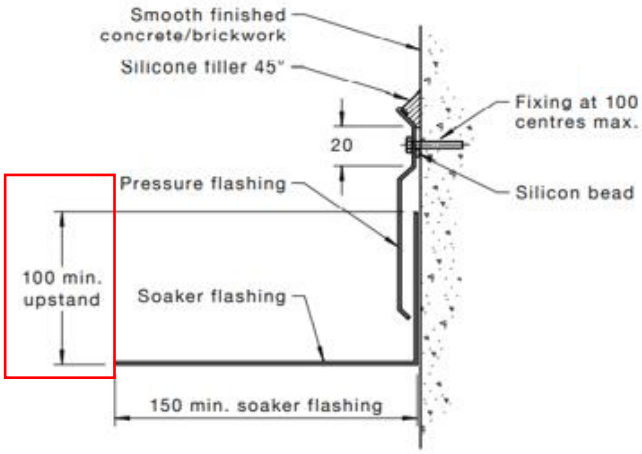
(ii) the sealant is applied in a sandwiched seal of approximately 20 mm wide;

(iii) the fixing of the flashing will ensure a durable seal is maintained;

(iv) the seal is protected from excessive movement due to expansion and contraction;

(v) the fixing centres are at no more than 100 mm spacings; and

(vi) the fixing devices are fit for purpose and compatible with the flashing material.



DIMENSIONS IN MILLIMETRES

FIGURE 8.4(C) PRESSURE FLASHING

Upstand to be 100 mm

11.

It was noted a number of connections/fasteners were not completed at 40mm intervals as per NCC 3.5.1.7 or AS 3500.3 part 4.7.2.2. These areas must be reworked ensuring the required silicon sandwich prior to settlement.

3.5.1.7 Flashings and cappings

(iv) Joints in *flashings* and cappings must be not less than 75 mm, lapped in the direction of the fall of the roof, and fastened at intervals not more than 40 mm.

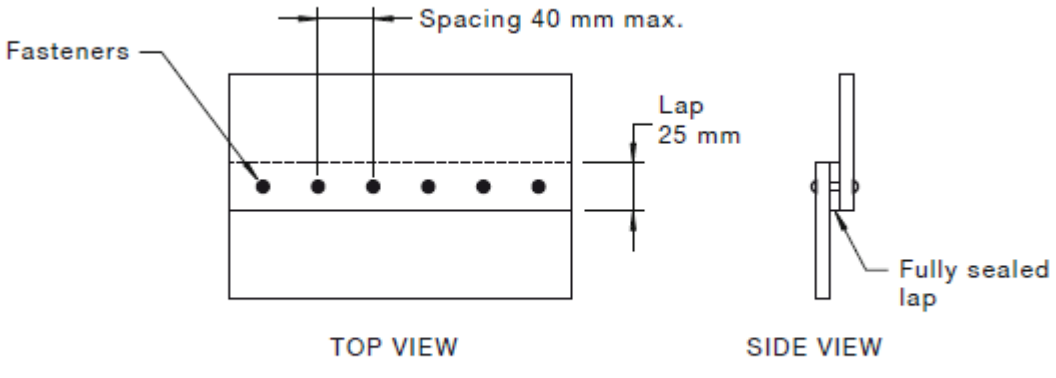
4.7.2.2 *Sealant*

Sealant joints shall be used in conjunction with mechanical connections or fasteners as specified in AS/NZS 2179.1, and spaced at not more than 40 mm centres. The sealant shall be sandwiched between clean surfaces of the components of the joint to ensure a positive seal and to protect the sealant from exposure to ultraviolet radiation.

Laps shall be as per Clause 4.7.2.3.

4.7.2.3 *Laps*

The laps for eaves gutters shall be not less than 25 mm. The laps for box gutter fasteners shall be spaced at not more than 40 mm centres and not less than 10 mm from the edges of the joint.



(b) Fasteners

All areas to comply

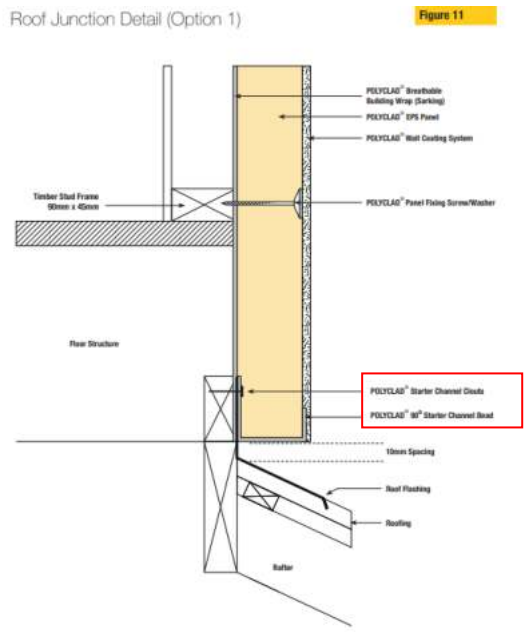
12.

The Domestic Building Contracts Act 1995, Section 26: - A starter channel has not been installed to the underside of the polystyrene panels. The installation currently used appears to be a standard metal render angle. The builder to ensure installation is as per manufacturer's instructions. Supply a copy of details of cladding system used to my client as per section 26 of the Domestic building contracts Act 1995.

26. Builder must supply copies of relevant reports etc.

(1) A builder must give to a building owner a copy of any report, notice, order or other document that the builder is given in relation to the building work being carried out by the builder for the building owner by any public statutory authority, provider of services such as gas, electricity, telephone, water and sewerage or person registered under the **Building Act 1993**, and must do so as soon as practicable after receiving the report, notice, order or document.

Penalty: 20 penalty units.



Example only

Clarify gap requirements to roofing

13.

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

Temporary downpipes have not been installed to this dwelling.

Part 2.2 Damp and weatherproofing

Explanatory information:

Objective

O2.2

The Objective is to—

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

(b) protect *other property* from damage caused by—
  (i) redirected *surface water*; and
  (ii) the discharge of *swimming pool* waste water.

Functional statements

F2.2.1 Surface water

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

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.

Examples – check all

15.

AS 4773.2; clause 7.1: - Articulation joints shall be clear of hard and non-compressible substances.

This dwelling's articulation joints require cleaning prior to sealing in order to meet this requirement.

7.1 GENERAL

All hard and incompressible substances (e.g. mortar dags) shall be removed from the gap in articulation and expansion joints.

Example – check all

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:

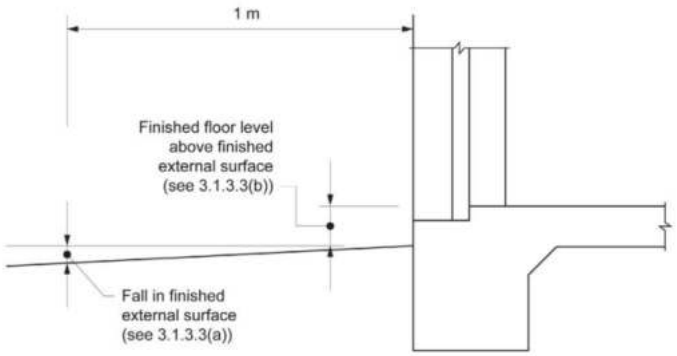
The appropriate slab height above finished ground level and the slope of the external finished surface surrounding the slab may vary depending on:

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



Elevation

17.

NCC, part 3.1.3.5: - It was noted the storm water system is presenting with less than the required coverage to the areas as documented in the photographs below.
All areas must meet the minimum standards set out in the NCC.

3.1.3.5 Stormwater drainage

Where a stormwater drainage system is installed, it must comply with the following:

(a) The position and manner of discharge of the stormwater drainage system must be to the satisfaction of the *appropriate authority*.

(b) The stormwater drainage system must be designed so that any overflow during heavy rain periods is prevented from flowing back into the building.

Explanatory information:

The manner of discharge of stormwater drainage systems includes consideration of discharge points. Some examples of discharge points which may be acceptable to the *appropriate authority* are:

(a) A legal discharge point at the allotment boundary.

(b) On-site catchment systems, such as stormwater tanks.

(c) On-site soil drainage systems, such as soaker wells.

(c) Cover to stormwater drains:

the cover to 90 mm Class 6 UPVC stormwater drains installed underground must be not less than—

(i) under soil — 100 mm; or

(ii) under paved or concrete areas — 50 mm; or

(iii) under areas subject to light vehicle traffic—

(A) reinforced concrete — 75 mm; or

(B) paved — 100 mm.

Explanatory information:

Different depths of soil cover (or no cover at all) can be achieved using other types of pipes. The cover specified is measured from the top of the pipe to either the finished ground level or, in the case of paved or concreted areas, to the underside of the paving or concrete.

18.

NCC 2019: - Exterior masonry must not overhang more than 15mm past the edge of the slab.

Brickwork to this dwelling that is overhanging the slab edge in-excess of 15mm is non-compliant.

3.2.2.7 Edge rebates

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

(a) The rebate must not be less than 20 mm, except as provided for in (d).

(b) Exterior masonry must not overhang more than 15 mm past the edge of the slab.

(c) The edge rebate must be flashed and drained in accordance with Part 3.3.4 and where it cannot be flashed it must be filled with mortar.

(d) Edge rebates are not *required* for *single leaf masonry*.

Explanatory information:

See 3.2.5.4 for minimum edge beam details.

19.

NCC 2019: - Articulation Joints (AJ's) between masonry elements must have a width of not less than 10mm. This width needs to be maintained beside window and door frames.

The Articulation Joints beside windows and doors fail to meet this requirement.

3.3.5.13 Vertical articulation joints

(a) Vertical articulation joints must be provided in masonry veneer walls in accordance with (b), except in walls constructed on *sites* where the soil classification is A or S (see Part 3.2.4).

Explanatory information:

For the purposes of 3.3.5.13, the vertical articulation joint also performs the function of a contraction or expansion joint.

(b) Articulation joints between masonry elements must have a width of not less than 10 mm and be provided (see Figures 3.3.5.3, 3.3.5.4 and 3.3.5.5)—

(i) in straight, continuous walls having no openings — at not more than 6 m centres and within 4.5 m, but not closer than 470 mm of all corners; and

(ii) in straight, continuous walls with openings more than 900 x 900 mm — at not more than 5 m centres and located so that they are not more than 1.2 m away from openings; and

Trim infill

20.

AS 3500.2; 13.15 & 13.21: - Refrigerated air conditioner outlet pipes shall be connected to a tundish in accordance with Clause 13.21.

The installed air conditioner unit has not met this requirement.

13.15 REFRIGERATED AIR CONDITIONERS, HEAT PUMPS, REFRIGERATORS, DEEP-FREEZE CABINETS, COMMERCIAL COFFEE-MAKING MACHINES AND ICE-MAKING MACHINES

Outlet pipes from refrigerated air conditioners, heat pumps, refrigerators, deep-freeze cabinets, commercial coffee-making machines and ice-making machines shall be connected to a tundish installed in accordance with Clause 13.21 or discharge above the inlet to a self-sealing device.

13.21 CONNECTION OF TUNDISHES

Tundishes may be connected—

(a) to a waste pipe, not smaller than DN 25, in accordance with Clause 4.6.7.8;

(b) to a trapped waste pipe, not smaller than DN 40, in accordance with Appendix B; or

(c) to a fixture trap.

When the tundish and discharge pipe is connected to a fixture trap—

(i) the connection shall be made above the level of the water seal; and

(ii) the top of the tundish shall be above the flood level rim of the fixture.

Pipes discharging over a tundish shall have an air gap of a size at least twice the internal diameter of the discharging pipe.

Tundishes shall be accessible.

21.

AS 2589 & AS 3999: - It was noted that the dwelling was not watertight as per the photos below.

Water cannot be allowed to enter a dwelling after the installation of batts or plaster.
This requirement has not been met.

The builder as a matter of urgency must seal the dwelling or alternately replace batts and plaster if they are wetted. I refer the builder to AS 2589 (Australian Plaster Standard) and AS 3999, (Australian Insulation Standard) which calls for both to be fully protected from moisture.

Missing screws

22.

AS 3740: 3.9.1.2: - A water stop with a vertical leg finishing flush with the top of the finished floor level shall be installed at floor level openings (doorways). The water stop shall be waterproofed to the perimeter flashing.

Wet area waterproofing requirements to this dwelling have not been met.

3.9.1.2 *Perimeter flashing at floor level openings*

The following applies:

(a) *For whole wet area floor waterproofing* A water stop that has a vertical leg finishing flush with the top of the finished floor level shall be installed at floor level openings. The floor membrane shall be terminated to create a waterproof seal to the water stop and to the perimeter flashing.

NOTE: For typical bathroom detail for whole bathroom waterproofing, see Figures 3.3(a) and 3.3(b).

(b) *For other than whole wet area floor waterproofing* A water stop that has a vertical leg finishing flush with the top of the finished floor level shall be installed at floor level openings. The water stop shall be waterproofed to the perimeter flashing.

23.

AS 3740; 3.9.1: - Water stop angles at cavity sliding doors shall return / terminate into the door frame and be waterproofed in order to comply with the requirements of this AS.3740 and the NCC.
Water stops to this dwelling have not met this requirement.

3.9 JUNCTIONS

3.9.1 Perimeter flashing

3.9.1.1 *General*

The following list specifies the minimum requirements for the treatment for various junctions. Junctions may be either wall to floor or wall to wall. Either the floor or wall may be waterproof, water resistant or have no treatment specified.

The types of junctions that shall be used are as follows:

(a) *Type 1* Where waterproof to waterproof surfaces meet, the waterproofing shall be continuous across the junctions and, where required, incorporate an appropriate bond breaker.

(b) *Type 2* Where waterproof to water-resistant surfaces meet, a bead of sealant shall be deemed to be a waterproof junction.

(c) *Type 3* Where water-resistant to water-resistant surfaces meet, a bead of sealant shall be deemed to be a water-resistant junction.

(d) *Type 4* Where non-water-resistant to water-resistant surfaces meet, a bead of sealant shall be deemed to be a water-resistant junction.

(e) *Type 5* Perimeter flashing to wall/floor surfaces shall be continuously sealed to the horizontal surface and have a vertical leg of a minimum of 25 mm above the finished floor level, except across doorways, and the horizontal leg shall be a minimum width of 50 mm.

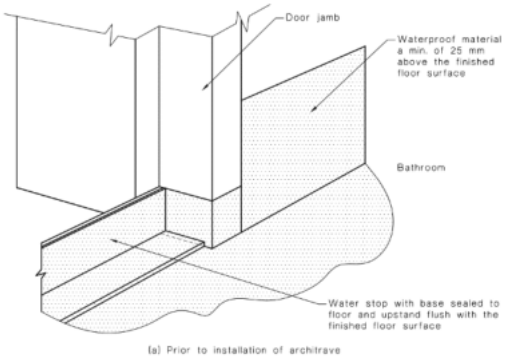
3.9.1.2 *Perimeter flashing at floor level openings*

The following applies:

(a) *For whole wet area floor waterproofing* A water stop that has a vertical leg finishing flush with the top of the finished floor level shall be installed at floor level openings. The floor membrane shall be terminated to create a waterproof seal to the water stop and to the perimeter flashing.

NOTE: For typical bathroom detail for whole bathroom waterproofing, see Figures 3.3(a) and 3.3(b).

(b) *For other than whole wet area floor waterproofing* A water stop that has a vertical leg finishing flush with the top of the finished floor level shall be installed at floor level openings. The water stop shall be waterproofed to the perimeter flashing.



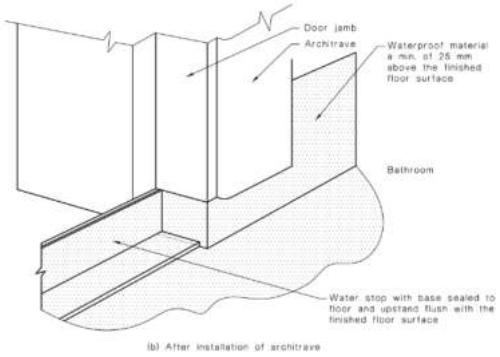


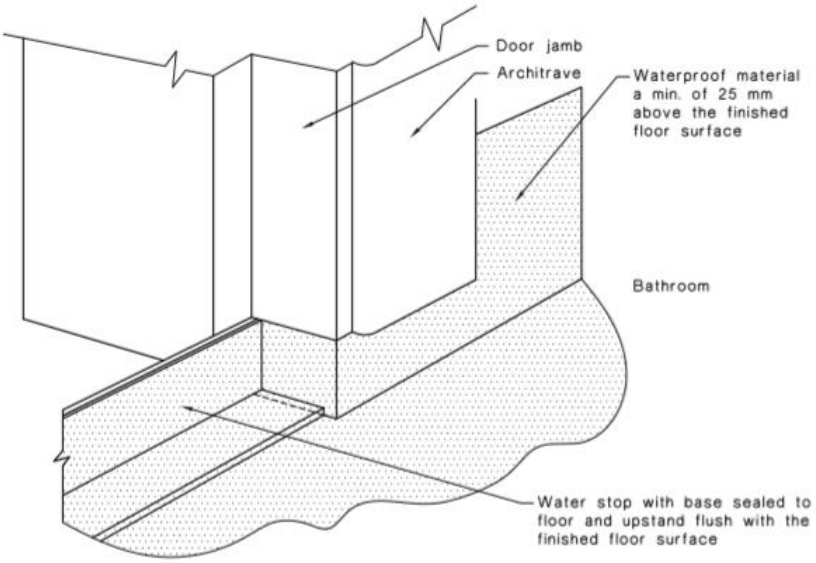
FIGURE 3.3 TYPICAL BATHROOM DOOR DETAIL FOR WHOLE BATHROOM WATERPROOFING

24.

AS 3740; 3.17: - Architraves and door jambs shall finish above the floor tiling where possible. Any portion below the floor tiling shall be waterproofed.

Architraves and / or door jambs do not meet this requirement.

Note: Trimming of the architraves whilst in place must be done with extreme care so as not to damage the waterproofing membrane.



(b) After installation of architrave

FIGURE 3.3 TYPICAL BATHROOM DOOR DETAIL FOR WHOLE BATHROOM WATERPROOFING

3.17 DOORJAMBS AND ARCHITRAVES

Where the bottom of doorjambs and architraves do not finish above the floor tiling, the portion of the doorframes and architraves below the floor tiling shall be waterproofed to provide a continuous seal between the perimeter flashing and the water stop.

NOTES:

1 For typical door detail, see Figure 3.3.

2 Where possible, the doorjambs and architraves should be installed above the floor tiling.

25.

AS 2589; 4.2.2: -Lined wall surfaces, internal and external, are defective if they deviate from plain (bow) by more than 4 millimetres within any 2-metre length of wall.

Visible hollows defined by thickening of skirting and cornice lines required plaster floating / skimming to fill the hollow.

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

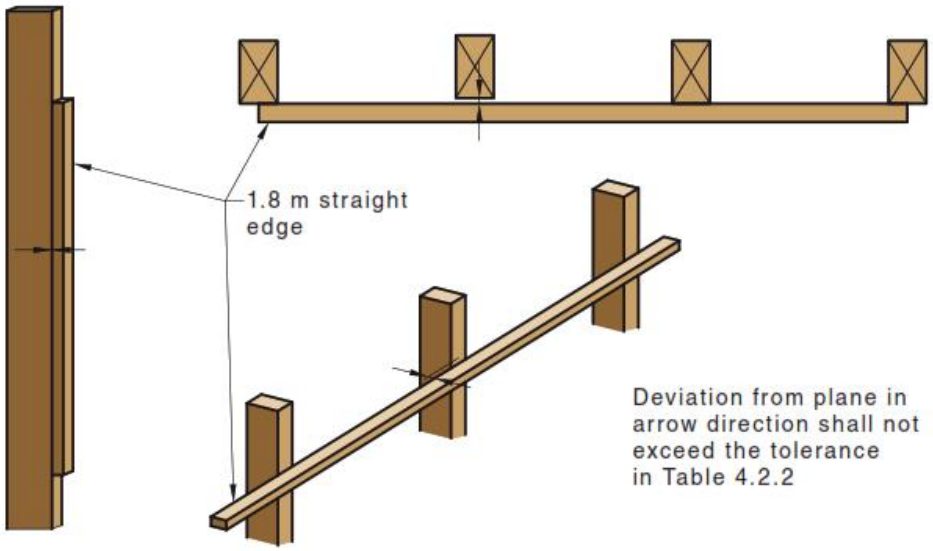
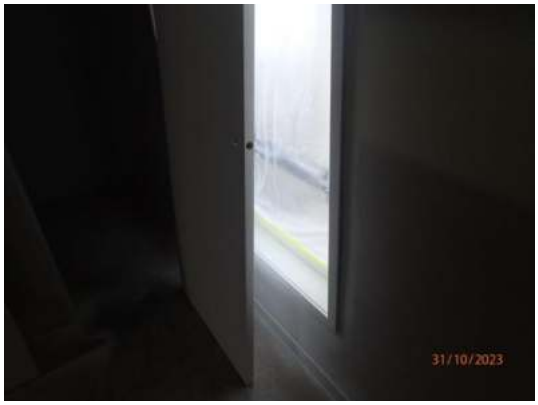


FIGURE 4.2.2(A) ASSESSING FRAMING TOLERANCE



26.

The painter has not acted in a professional and workman like manner when applying paint to the wet areas. There is a large amount of paint coverage over tiled areas. Whilst it is not yet determined that the membrane can be affected by paint, it does affect the tile glue adhesion.

The builder will need to seek direction from the water proofing membrane manufacturer to see if they can lightly sand or treat the waterproofed areas. Some manufactures do allow this process. Other areas will need to be mechanically cleaned. Reasonable care and skill by the painter would see this issue resolved for all future jobs.

Due diligence is required to ensure the membrane remains compliant with AS 3740 and the NCC 3.8.1 and to ensure the tile glue achieves the require adhesion to the substrate.

3.1.1.5 *Surface preparation*
Before laying operations begin, materials such as grease, oil, paint, existing floor coverings and their adhesives, curing or parting agents, or any surface treatment, particularly oxides, markout paints, wax crayons which could adversely affect adhesion, discolouration or any other detrimental effect shall be removed from the subfloor via mechanical means.
AS 3958.1, floor coverings.

4.3.3 Existing concrete floors

Where a bonded Portland cement mortar bed is to be used and the surface is uncontaminated, an appropriate method from Table 4.3 should be used. Where the surface has an unsuitable finish, mechanical equipment should be used to scabble the surface of the slab to expose the coarse aggregate. All loose debris and dirt should be removed by thorough sweeping, or preferably by vacuum equipment. Alternatively a screed (see Clause 4.2.2) or a separating layer may be used (see Clause 4.2.3).

Where the slab is sound and true with a suitable trowel or float finish but is contaminated by grease, oil, paint, curing compounds, etc., these should be mechanically removed, or the surface of the slab should be cleaned with a suitable wash and allowed to dry, prior to the application of the adhesive (see Clause 4.3.2(b)).

AS 3958.1, wall tiling.

TABLE 4.5

SUBSTRATE AND BACKGROUND PREPARATION FOR WALL TILING

Fixing method		Background preparation										Maximum variation in plane of background
		Concrete			Masonry							
Fixative	System	Concrete wall	Cement render	Plaster	Concrete block	Clay brick	Cal/sil brick	Paint	Stone	Contaminated (soot, oil)	Tiled surfaces	
Mortar	Buttering	C	—	—	G	A	B/G	D	G/B	D	—	8 mm in 2 m
	Render and lay (mosaics)	C	—	—	A	A	A	D	G/B	D	G	4 mm in 2 m
Adhesive	Thick-bed	F	F	F	B	F	F	F	F	F	F	4 mm in 2 m
	Thin-bed	F*	F	F	B	—	—	F	F	F	F	4 mm in 2 m
	Framed construction plus adhesive	E	E	E	E	E	E	E	E	E	E	4 mm in 2 m

* Class 3 concrete finish or better—thin-bed fixing possible

LEGEND:
A = brush off loose dirt and damp down
B = apply cement render
C = apply slurry of bond coat
D = expose sufficient of underlying surface to form a key
E = follow sheet manufacturer's recommendations
F = follow adhesive manufacturer's recommendations
G = apply scratch coat

Check all

27.

NCC; 3.12.1.1: - Insulation must form a continuous barrier with ceilings, walls, bulkheads, floors, or the like that inherently contribute to the thermal barrier.

Wall insulation batts are therefore required to be installed external walls at / under bath hobs.

This requirement has not been met.

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.

28.

NCC 2022; 10.2.2 & AS 3740; 4.4.1: - The preparation of the substrate for membranes shall result in the surface of the substrate being smooth, without protrusions, voids or formwork distortions and imperfections.

Substrates shall be treated in order to eliminate pin-holing caused by substrate degassing during the wet film curing process, and for adhesion to the substrate.

The preparation for the substrate failed to meet this requirement resulting in surface irregularities.

10.2.22 Substrate surface preparation for application of membrane

[New for 2022]

The substrate surface area where a membrane is to be applied must—

(a) be clean and dust free; and

(b) free of indentations and imperfections.

4.4.1 Surface preparation

The preparation of the substrate for membranes shall result in the surface of the substrate being smooth, without protrusions, voids or formwork distortions, and clean, dry, and free from dust and contamination.

Substrates shall be treated in order to eliminate pin-holing caused by substrate degassing during the wet film curing process, and for adhesion to the substrate.

NOTE 1 To aid in adhesion on a concrete or screeded surface, the smoothness of substrate should be at least the equivalent to that of a wood float or light broom finish. Priming may be required for some types of membrane.

NOTE 2 Refer to product specifications for guidance on appropriate treatments.

NOTE 3 All surfaces to which a waterproofing system is to be applied should be treated to improve adhesion of the membrane, with particular emphasis on liquid waterproofing systems. Cured materials should be well bonded to the substrate to prevent subsequent failure through shear, cyclical or elongation stress.

NOTE 4 Surface irregularities may be addressed by grinding, shot blasting, scarification, localized filling, self-levelling topping or any other mechanical means deemed appropriate. The importance of surface irregularities is reflected in the use of a standardized measure of concrete surface roughness known as the Concrete Surface Profile (CSP). For more information regarding CSP, refer to Appendix E of AS 1884:2021.

29.

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

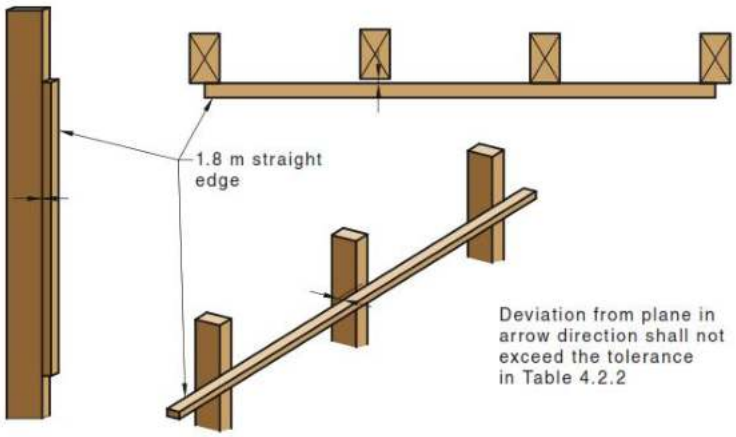


FIGURE 4.2.2(A) ASSESSING FRAMING TOLERANCE

Bed 2 – out of plumb

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 statuary 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.

9. Report Reproduction

This report cannot be reproduced in part; it must only be done so in full.

10. Reference

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.

