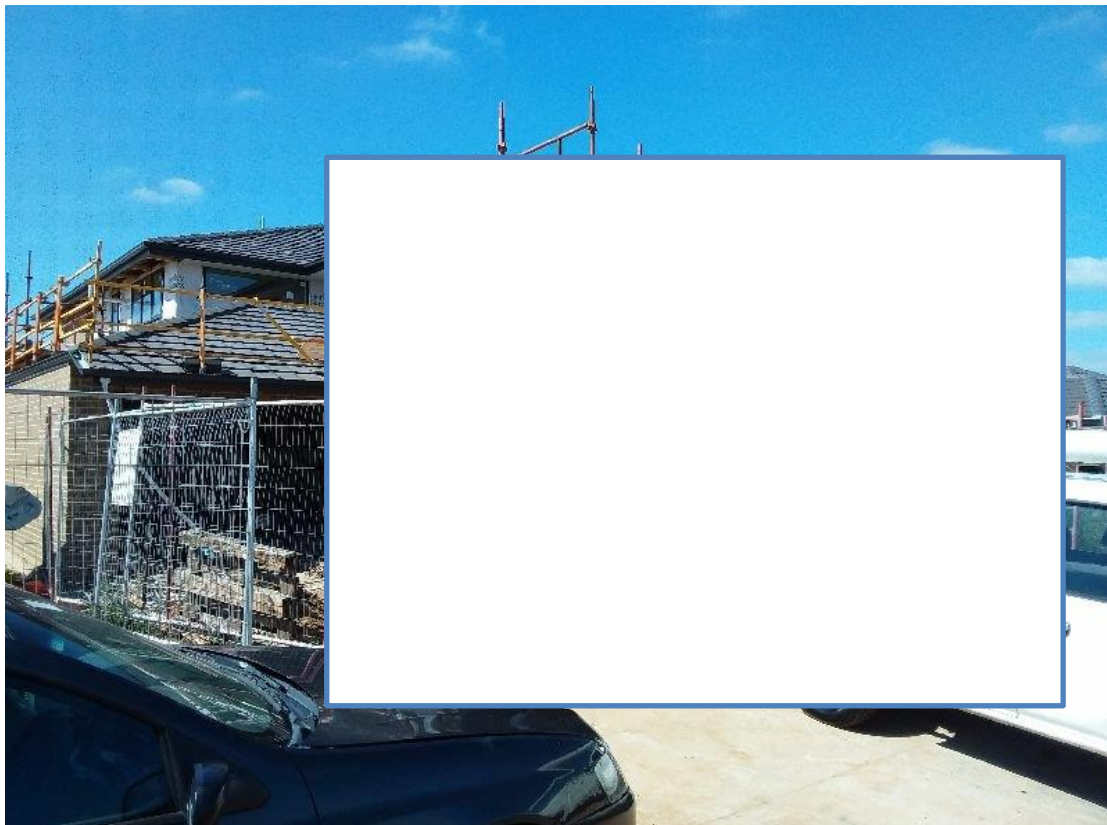




ABN 12 115 961 487
PO Box 88
Bacchus Marsh Vic 3340
Phone: (03) 5366 6900
Email:

16/03/2021



Site Address:

Client Name:

Phone #:

Email:

Dwelling type:	House and Garage.
Dwelling configuration:	Double Storey
Nature of works:	New Building.
Stage of inspection:	Fixing & Waterproofing.
Construction Type:	Multiple Claddings.
Garage:	Attached.
Foundations:	Slab.

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.

Report Conditions

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

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

Summary

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

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

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

An inspection was conducted at the above address on 16/03/2021 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's owners under these two acts.

Schedule of Defects:

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

Defects, observations and other related comments from the Fixing & Water Proofing Inspection on the 16/03/2021:

1. This item has not been addressed as of the 16/03/2021.

We noted sisalation missing to a large number of external walls.

Builder will need to install the sisalation to comply with the dwellings energy rating and following requirements.

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



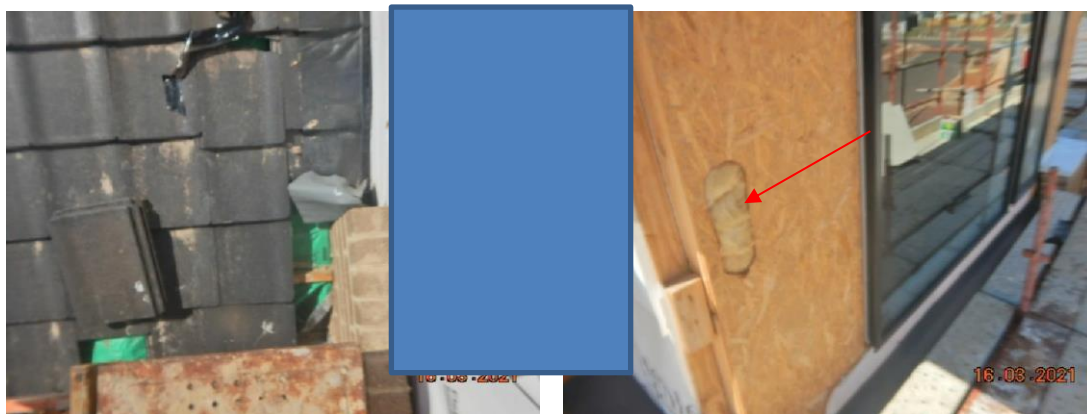
2. **This item has not been addressed as of the 16/03/2021. As this has the ability to cause damage it must be addressed without delay, as per section 39.1 of the domestic building contracts act.**

The dwellings roofing & cladding systems were not water tight as documented below.

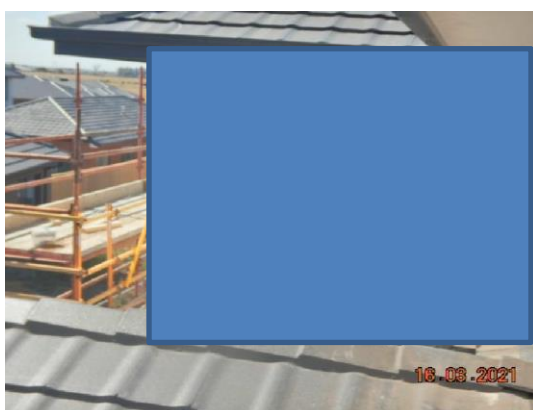
I further noted that the plaster and fix was installed. This would also mean that the wall and part of the roof batts to some areas have been installed.

Water cannot be allowed to enter a dwelling after the introduction of batts followed by plaster.

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.



Exposed insulation



Missing ridge pointing



Large number of broken roof tiles

3. This item has not been addressed as of the 16/03/2021.

VBA Guide to Standards and Tolerances: - Cracked or broken roof tiles are effective if caused by the builder's workmanship. Irregularities in tiles are defects if they are visible from a normal viewing position at ground or upper floor levels.

Roof tiles to this dwelling have not met this requirement.

6.03 Roof tiles

Roof tiles are defective if they do not conform to the manufacturer's sample. Irregularities in tiles are defects if they are visible from a normal viewing position at ground or upper floor levels.

Minor surface marks or blemishes arising from the tile manufacturing process are not defective.

Cracked or broken roof tiles are defective if caused by the builder's workmanship.



4.

AS 2050, part 3.6: - the cutting of roof tiles shall be neat and shall present a straight line.

Roof tiling to this dwelling has not met this requirement.

3.6 WORKMANSHIP

The cutting of tiles at ridges, hips, verges and valleys shall be neat and shall present a straight line. Tiles at ridges and hips shall extend under the capping by a sufficient distance to be weatherproof. Similarly, tiles shall overlap valleys by a sufficient distance to be weatherproof.



5. This item has not been addressed as of the 16/03/2021.

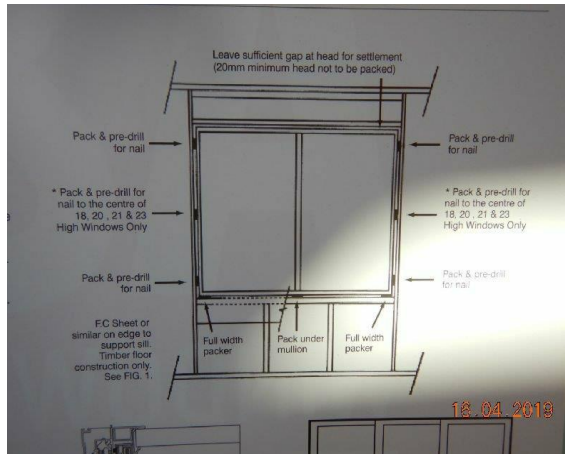
The window reveals and door frames around the dwelling have not been packed as per the manufacturer's installation requirements.

The window supplier has a detailed *installation* instruction manual, usually stuck to a minimum of one window to each and every dwelling. Those instructions clearly state that the windows and door frames are to be supported in the frame via packers, this will include the bottom and both sides.

Carpenters often state this will be completed at fixing stage; this is the same time the area is covered over with architraves. All windows need to be set to brick nominal measurements and fully packed. If required these packers can be adjusted if a slight adjustment is required to a window or two. In short there is no reason not to comply with the manufacturer's requirements when installing.

This dwelling's windows do not comply with these basic instructions. Additional works need to be completed to ensure that my client's new windows are installed in a manner that is approved by the supplier, thus protecting any and all warranties on the product.

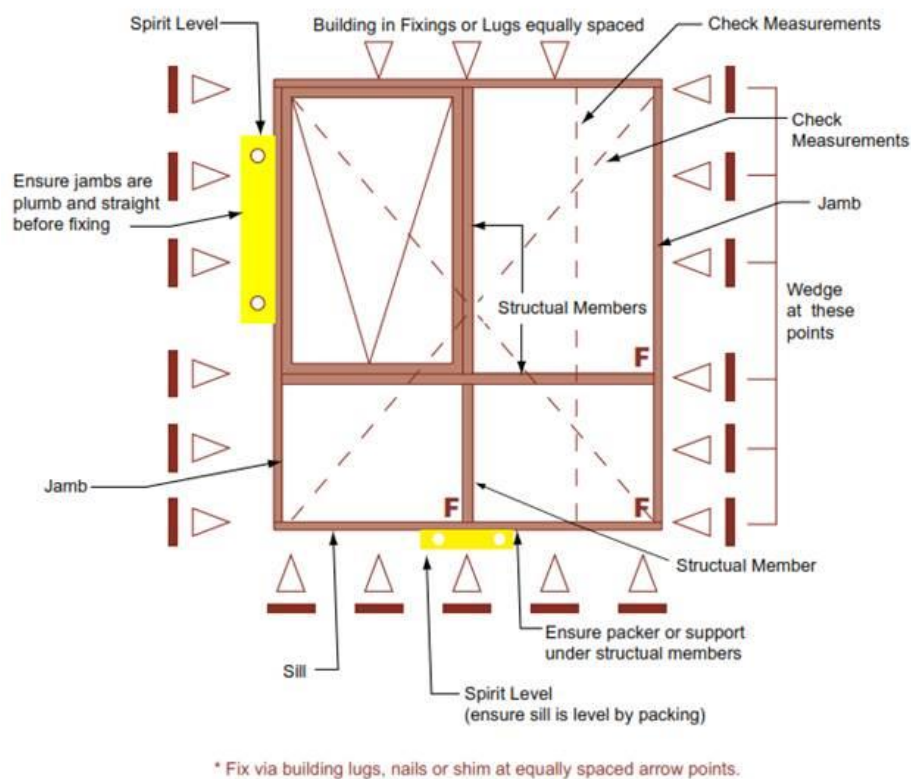




6.

AS 2047: - The carpenter has installed the windows and door frames with finishing gun nails. Finishing gun nails have no load resistant capacity and should not be used in this manner.

The installed frames to this dwelling do not comply with the inserted from the Australian Window Association table that considers the wind loadings in AS 2047. "Finishing" nails are not part of the fixing process as they are not 1.8 mm thick.





Nail Capacity - N2

ULS Wind Pressure: 1000 Pa, Nail Diameter: 1.8 mm

		Window Width										
Window Height		600	900	1200	1500	1800	2100	2400	2700	3000	3300	3600
	600	4	4	4	4	6	6	6	8	8	8	10
	900	4	4	6	6	8	8	10	10	12	12	14
	1200	4	6	6	8	10	10	12	14	16	16	18
	1500	4	6	8	10	12	14	16	16	18	20	22
	1800	6	8	10	12	14	16	18	20	22	24	26
	2100	6	8	10	14	16	18	20	24	26	28	30
	2400	6	10	12	16	18	20	24	26	30	32	34
2700	8	10	14	16	20	24	26	30	32	36	38	



7. This item has not been fully addressed as of the 16/03/2021.

The pre plaster insulation installation has the following defects.

- A number of wall batts have fallen out of the wall frames.

These areas are extremely tight and have no access and as such there will be no way of installing these batts after plaster is installed.

The installers will need to string these batts as a matter of process before the plaster is installed. All need to be fitted in a manner that has the batts flat to the plaster backing. Please note that any batts installed over pipes, wire or timber are a defective installation and will need to be reworked.

Please note the pictorial of how they must be installed below.

Acceptable construction practice

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

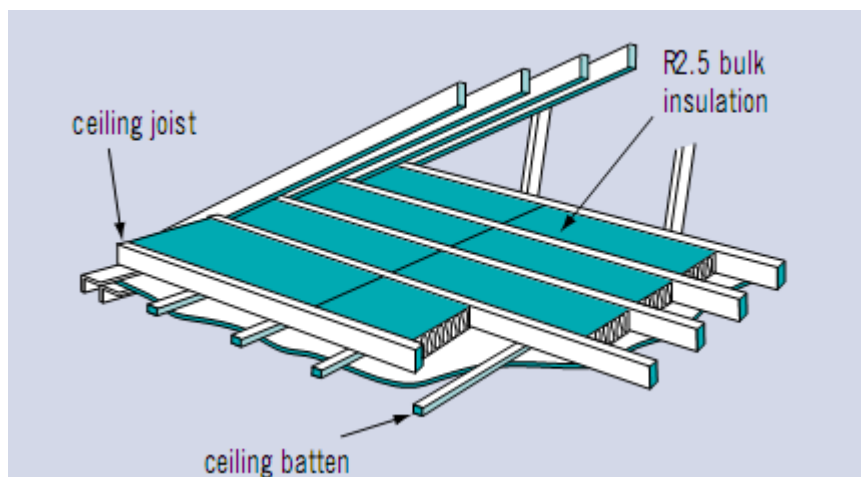
Explanatory information:

This means that, 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.

Installing insulation

INSTALLATION GUIDELINES

It is vital that insulation is installed with careful attention to detail, as incorrect or inappropriate installation will significantly decrease performance. For instance, failure to butt all ends and edges of batts to give a snug fit could result in 5% of the ceiling area not being covered, losing up to 50% of the potential insulation benefits.



The insulation needs to be reworked so as to be installed in a manner that complies with AS 3999 and the BCA part 3.12.1.1, with all areas covered and the batts flush to the top of the plaster.



8.

It was noted that the bricklayer had installed his brickwork in a manner that has a large number of mortar dags touching the sisalation paper. The Cavity must have a minimum clearance between the back of the brick and the sisalation of 25 mm. I refer all to AS 4773.2.

I also draw the bricklayer's attention to AS 3700, part 12.4.13. Both Australian Standards call for a cavity no less than 25 mm.

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.

12.4.13 Cavities in walls

Cavities shall be free from mortar droppings or other materials that might bridge the cavity and allow transmission of moisture. Where ducts, sleeves or pipes are laid along or across a cavity, construction shall be such that transmission of moisture is prevented.





9. This item has not been fully addressed as of the 16/03/2021.

It was noted that most of the Articulation or Control Joints in the dwelling have non-compressive material (mortar) still in the joints.

All of the AJ's must be stripped, cleaned of all non-compressive material and then presented to the dwelling's owner for inspection and only then sealed.

We refer the builder to AS 4773.2, section 7.1.

Failure to remove the hardened mortar will result in brick-and-mortar cracking if the dwelling needs to expand by its full measure. If the AJ's (CJ's) are blocked, the movement must dissipate elsewhere. Hence cracking occurs.

7.1 GENERAL

Control joints shall be used in masonry construction to reduce cracking and distress caused by movement.

Where the control joint is a combined articulation and expansion joint, the joint width shall accommodate movement from both articulation and expansion.

NOTE: Articulation joints may be used as contraction or expansion joints.

Control joints perform one or more of the following functions:

- (a) *Articulation joints* Reduce cracking caused by footing and other structural movement.
- (b) *Contraction joints* Reduce cracking caused by contraction of masonry units (predominantly concrete) and concrete shrinkage in the supporting structure.
- (c) *Expansion joints* Reduce cracking caused by the expansion of masonry units (predominantly clay).

Control joints shall be in accordance with the documents but shall be not less than the requirements of this Section.

In reinforced masonry construction as described in Section 12, which relies on the continuity of bond beams, control joints shall not continue through bond beams. In other cases where reinforced walls are designed to be articulated, control joints shall be continuous through bond beams.

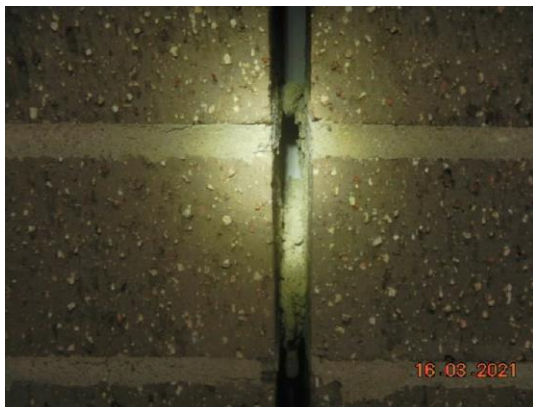
→ All hard and incompressible substances (e.g. mortar dags) shall be removed from the gap in articulation and expansion joints.

A control joint placed at an opening shall provide clearance to door and window frames to accommodate any movement within the control joint space and remain weatherproof.

When required, control joints shall be filled or otherwise constructed so as to maintain the required fire and acoustic performances.

Where walls are rendered or coated, provisions shall be made at the control joints for movement in the render or coating equal to that provided for in the masonry.

NOTE: For proprietary lintels, if a control joint passes through or close to a lintel, a check should be made to ensure that the manufacturer's load tables are not invalidated.



10. This item has not been addressed as of the 16/03/2021.

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 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.



11. This item has not been addressed as of the 16/03/2021.

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. These 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:

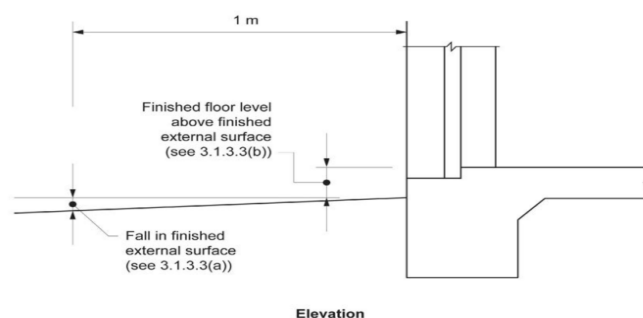
1. The local plumbing requirements; in particular the height of the overflow relief gully relative to drainage fittings and ground level (to work effectively they must be a minimum of 150 mm below the lowest sanitary fixture).
2. The run-off from storms, particularly in areas of high rainfall intensity,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



As per the dwellings site drainage requirements-

SITE DRAINAGE REQUIREMENTS – CONSTRUCTION STAGE

The Geotechnical Report has recommended the use of a certain Footing that is appropriate for this site. While making this recommendation it has been assumed that certain site drainage requirements (as per AS2870'11 & BCA) have been met. During the construction of the footing the following site drainage requirements are listed as being part of the Final Footing Design by VHC Engineers.

1. **MUST PREVENT WATER PONDING AGAINST OR NEAR THE FOOTING**
2. The ground in the immediate vicinity of the perimeter footing shall be graded to a **FALL OF 50mm (min) AWAY FROM THE FOOTING OVER A DISTANCE OF 1000mm (1:20)** and shaped to prevent ponding of water (this includes the ground uphill from the footing on a cut/fill site). If 1000mm is not possible due to the site boundary the 50mm min fall away from the footing is to be maintained over the available distance.
 - where filling is placed adjacent to the building, the filling shall be compacted and graded to ensure drainage of water away from the building
3. **ALL COLLECTED STORMWATER MUST BE DISCHARGED TO A LPOD.**
4. **SURFACE DRAINAGE** of the site shall be controlled from the start of the site preparation and construction; surface drainage includes surface water run-off and building water (roof/floor/concrete) run-off
 - all water run-off shall be controlled at all times
 - use temporary downpipes to collect water from the roofed building frame
 - when silt pits are used to gather surface water from areas adjacent to the footings, these silt pits are to be at least 1000mm away from the footing and connected to the stormwater system with solid pipe
 - stormwater drains shall be at least 90mm and have a minimum fall of 1:100 and 100mm cover under the soil and/or paved areas
 - Inspection Openings should be provided at each pipe connection point and at a nominal spacing of 10m
 - avoid undermining the footing with any trenches or pipes or pits





11/02/2021

12. This item has not been addressed as of the 16/03/2021.

The land to the garage falls back towards the foundations of the slab. Given that this is a zero boundary, the builder must work in provisions for draining the soil to this area.

I noted that the Engineering states that a 50 mm fall away from the footings must be installed. The builder needs to assist us with an understanding of how, with a zero boundary the builder expects to achieve this requirement.

The NCC mandates that water is controlled and must fall away from the dwelling. See part 3.1.2.3 and figure 3.1.2.2.

I also refer the builder to the soil report that would clearly call for the site drainage to be managed via sloping water away from the slab and more so, managing same.

The builder should have allowed a 150 mm set back to the Garage wall to boundary and installed a water management system to divert water away from the foundations and slab edge as an alternate solution to the mandated requirements.

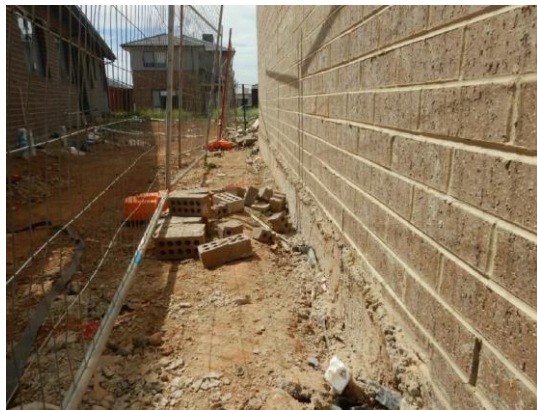
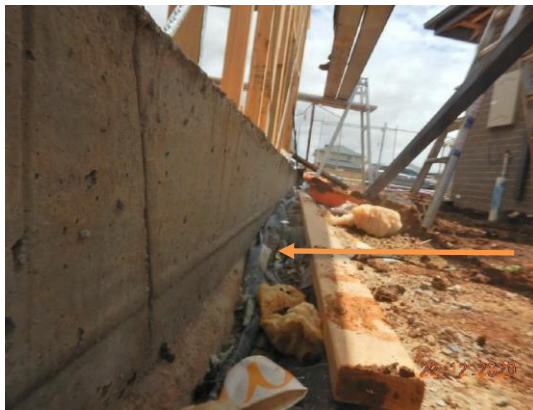
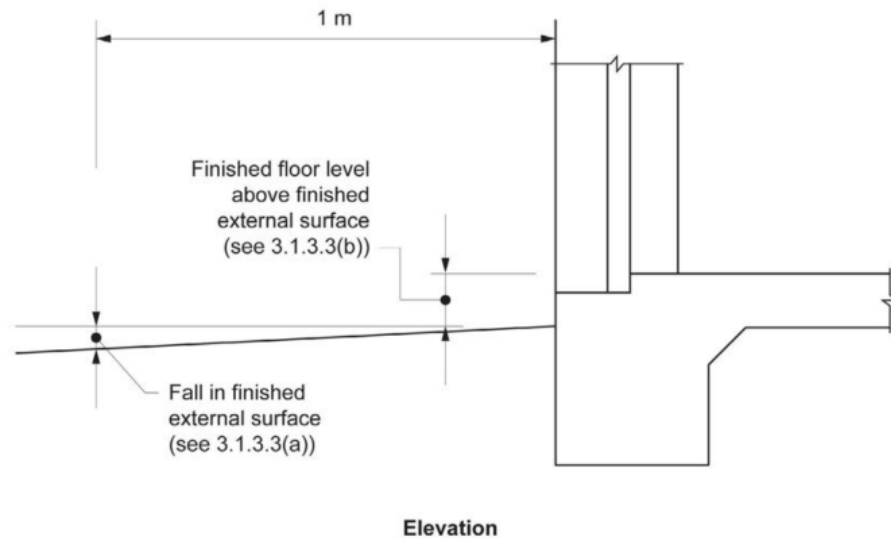
As this has the ability to cause damage it must be addressed without delay, as per section 39.1 of the domestic building contracts act.

3.1.3.3 Surface water drainage

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

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

Figure 3.1.3.2 Site surface drainage



11/02/2021



13. This item has not been addressed as of the 16/03/2021.

It was noted in parts around the dwelling the Vapour Barrier has been allowed to fall down below FGL. Other areas are well installed.

It is a requirement of Part 3.2.2.6 Vapour Barriers of the NCC that *'The vapour barrier must be placed beneath the slab so that the bottom surface of the slab is entirely under laid and extends under edge beams to finish at ground level in accordance with Figure 3.2.2.3.'*

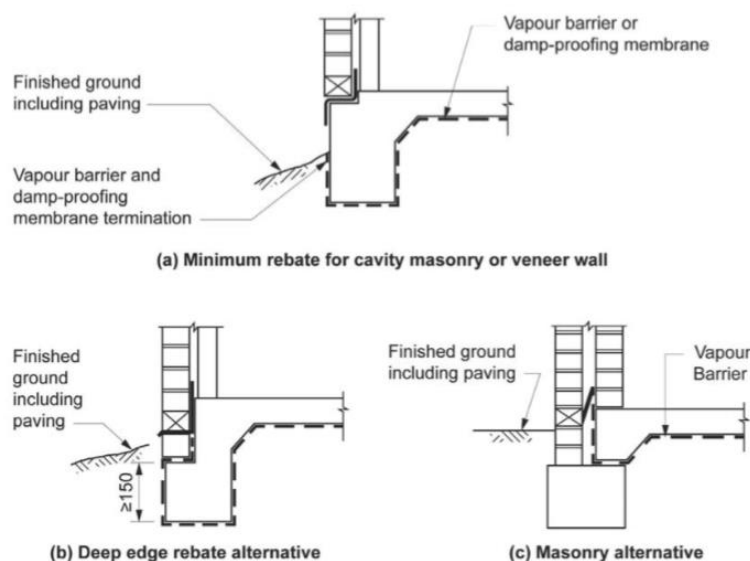
It must be further noted this is also required to class 10 buildings when the slab is continuous from a class 1 slab.

3.2.2.6 Vapour barriers

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

- (a) Materials
 - A vapour barrier must be—
 - (i) 0.2 mm nominal thickness polyethylene film; and
 - (ii) medium impact resistant, determined in accordance with criteria specified in clause 5.3.3.3 of AS 2870; and
 - (iii) be branded continuously "AS 2870 Concrete underlay, 0.2 mm Medium impact resistance".
- (b) Installation
 - A vapour barrier must be installed as follows—
 - (i) lap not less than 200 mm at all joints; and
 - (ii) tape or seal with a close fitting sleeve around all service penetrations; and
 - (iii) fully seal where punctured (unless for service penetrations) with additional polyethylene film and tape.
- (c) The vapour barrier must be placed beneath the slab so that the bottom surface of the slab is entirely underlaid and extends under edge beams to finish at ground level in accordance with [Figure 3.2.2.3](#).

Figure 3.2.2.3 Acceptable vapour barrier and damp-proofing membrane location



It is known in high quality soils the vapour barrier can terminate at the bottom of the edge beam with local expert approval. If the builder wishes to claim local approval, they must provide documentation from the local council's surveyor under section 26 of the domestic building contracts act 1995.

Otherwise, the builder must ensure that the barrier is fully installed as per the NCC and AS 2870.



11/02/2021

14.

There are a number of windows/bricks that have been installed short AS 2047 calls for installation in a manner that restricts water ingress and excessive air infiltration. Some reworking will need to take place. If the builder intends on using a silicon to bridge small gaps, the silicon must be neatly applied and be UV rated.

7.2 INSTALLATION

7.2.1 General

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

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

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

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

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

Note- first floor openings must be addressed prior to removal of scaffold.



15. This item has not been fully addressed as of the 16/03/2021.

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

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

Part 2.2 Damp and weatherproofing

Explanatory information:

Objective

O2.2

The Objective is to—

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

Functional statements

F2.2.1 *Surface water*

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



16.

It was noted the bricklayer has not removed the mortar excesses from the aluminium window frames or glass. Unfortunately, in removing this now dried mortar the builder will often damage both the glass and the aluminium window coated surface. The builder will need to remove these excesses in a manner that does not scratch the glass or damage the powder coated surface.

Note - The window and door frames and glazing will need to be checked for scratching and damage at the next inspection.



17.

The slab has been installed with what is known as over pour. On this particular home the over pour will affect the home owner's ability to install paving and other landscaping.

The over pour will need to be removed. This will require:

- Seek engineering process and design for rectification of this defect.
- Document same.
- Send the engineering to the site surveyor for approval.
- Have the site surveyor witness the repair of the slab to ensure that the builder has carried out the works in accordance with the processes and rectification statements in the engineering documentation.
- Supply a copy of all to my client as per section 26 of the Domestic building contracts Act 1995.
- Satisfy the defect has not been hidden by placing soil over the edge beam of the over poured slab.



18.

It was noted that no allowance for brick growth and frame shrinkage has been allowed to the framing members to brickwork connection as documented below.

AS 4773.1:2015, part 2.3.2 calls for the builder to design an allowance. This should then be represented onto the plans. I noted that this was not the case. The builder will need to rework this item.

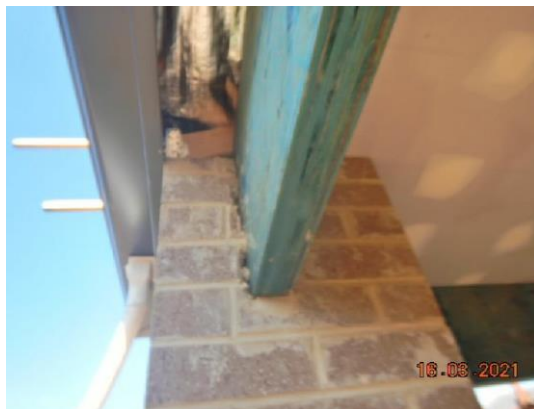
2.3.2 Design for serviceability

A masonry member or structure shall be designed to allow movements to be controlled or isolated so that damage to the masonry, the building and its components is avoided and the structural and other requirements are satisfied.

The movements to be allowed for shall include the following:

- (a) The expansion characteristics of clay masonry and the shrinkage characteristics of concrete masonry and calcium silicate masonry.
- (b) Thermal movements.
- (c) Deflections, shortening, shrinkage, creep and similar deformations in adjacent or associated materials.
- (d) Foundation movements.
- (e) Deformation due to construction loads or construction sequences.

If subjected to design loads or design building movement, masonry shall experience no damage, a low incidence of damage category 1 or an occasional incidence of damage category 2. The classification of damage with reference to walls is given in Table 2.1. Masonry is deemed to meet this performance requirement if it complies with this Standard and AS 4055 for the appropriate wind class and is constructed on concrete footings and/or concrete slabs complying with AS 2870 for the appropriate site classes nominated therein.



19. This item has not been addressed as of the 16/03/2021.

VBA Guide to Standards and Tolerances; 2.08: - New concrete & timber floors must not differ more than 4 mm over any 2 m length or 10 mm in any room or area.

We measured random areas of the concrete slab with a 2 m straight edge and found the slab levels to have not met this requirement.

Note: The builder cannot claim the 10 mm in any room because the 4 mm over 2 m requirement has been breached.

2.08 Levelness of concrete floors

Except where documented otherwise, new floors are defective if within the first 24 months of handover they differ in level by more than 10 mm in any room or area, or more than 4 mm in any 2 m length. The overall deviation of floor level to the entire building footprint shall not exceed 20 mm. Refer to Item I of this Guide where the new floor is to abut an existing floor.

Note -

→ Denotes direction of fall

○ Denotes rise in slab

✕ Denotes low area in slab





Large puddle- Low spot



Low Spot



Large puddle- Low spot



20.

It was noted the pre-paint plaster touch ups are not yet fully complete. The plasterers will need to address all required areas, ensuring a minimum level 4 finish in accordance with AS 2589.

1.2 APPLICATION

This Standard provides a choice of different levels of finish, which allows for flexibility of application. Unless otherwise specified, compliance with this Standard is achieved by a Level 4 finish for all gypsum linings except for those areas which are non-visible and generally non-habitable (i.e. non-walk-in cupboards, concealed storage areas and non-livable attics) where a Level 3 finish is acceptable.

This Standard is suitable for use with gypsum plasterboard in accordance with AS/NZS 2588, fibre-reinforced gypsum linings in accordance with Clause 2.3 and gypsum cornices in accordance with Clause 2.4.

3.1.4 Level 4

Level 4 shall be the default level for gypsum lining.

Flat, matt or low sheen paints shall be used for this Level 4.

All joints and interior angles shall have tape embedded in jointing cement/jointing compound and a minimum of two separate coats of jointing cement/jointing compound applied over all joints, angles, fastener heads and accessories. All jointing cement/jointing compound shall be finished evenly and be free of tool marks and ridges in preparation for decoration.

Please note AS 2589 calls for a level of finish in accordance with the dwelling design. In simple terms a level 5 finish is required to areas directly affected by elements as detailed below.

3.1 QUALITY OF GYPSUM LINING APPLICATION AND FINISHING

3.1.1 General

The needs of the client shall be determined at the design stage. Gypsum lining will require different specifications depending on where they are installed and the level of finish required. Level 4, as specified in Clause 3.1.4, shall be the default level for gypsum lining systems unless specified otherwise.

NOTES:

- 1 At the time of design, factors that will affect visual appearance are as follows:
 - (a) Architectural designs that encompass large unbroken ceiling areas, large windows and a minimalist and uncluttered look.
 - (b) The direction and location of natural and artificial lighting, as it may have detrimental effect on the appearance of the gypsum lining.
 - (c) The construction schedule and site conditions.
 - (d) The quality of workmanship at all stages of installation, jointing and decoration of linings.
 - (e) The framing quality.
 - (f) The type of decoration to be applied.
- 2 Prior to the commencement of interior lining work, it is good practice to establish a sample or reference area of the finished decorated wall or ceiling, or both, which may be used to subjectively judge acceptability of the quality of finish under prescribed conditions of inspection.
- 3 Customer satisfaction with the quality of the final decorated finish will be achieved by setting expectations followed by the appropriate specification of materials, work standards and choice of skilled trade people. Specification of key aspects of functionality and the performance of the walls and ceilings of a building should reflect the needs and expectations of the customer.

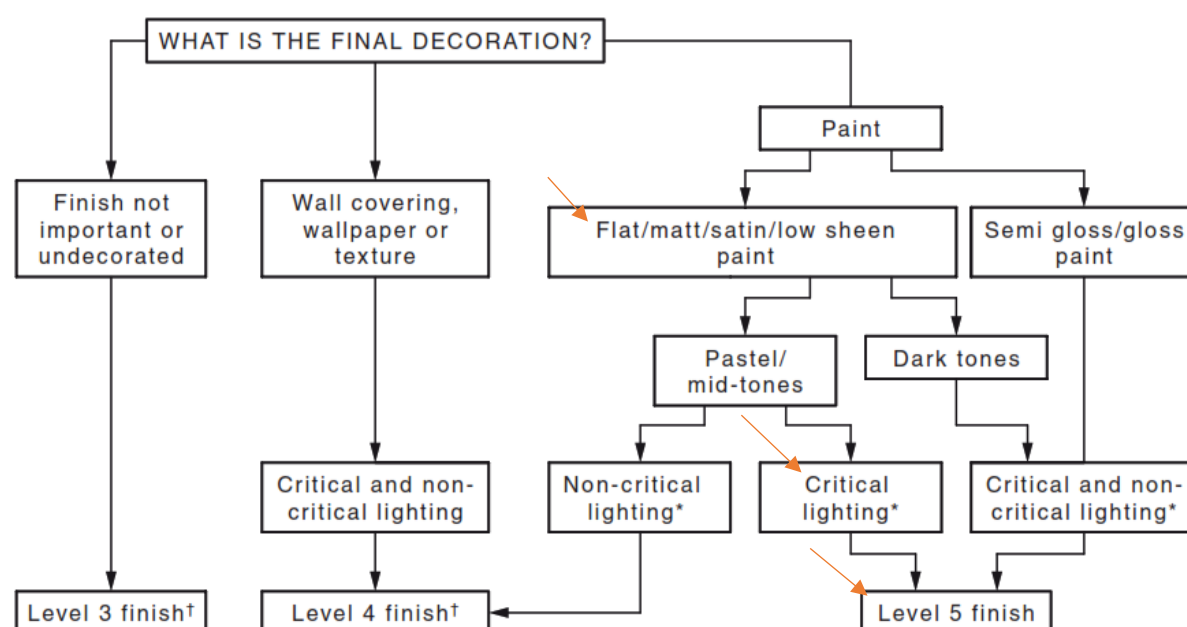
3.1.2 Gypsum lining finishes

Gypsum linings will require different specifications depending on where they are installed and the level of gypsum lining finish required. These levels of gypsum lining finish [see Items (a), (b) and (c)] only apply to gypsum-lined walls and ceilings, prior to decoration.

The specification levels of gypsum lining finishes shall be as follows:

- (a) Level 3 (see Clause 3.1.3).
- (b) Level 4 (see Clause 3.1.4).
- (c) Level 5 (see Clause 3.1.5).

The choice of a level of finish, depending on the final decoration of the room or lining, shall be as shown in Figure 3.1.2.



3.1.5 Level 5

Level 5 shall be used where gloss or semi-gloss paints are to be used or where critical lighting conditions occur on flat, matt or low sheen paints.

A Level 5 finish is characterized by a parity of texture and porosity. The surface texture shall be random in fashion and monolithic, concealing joints and fixing points.

All joints and interior angles shall have tape embedded into jointing cement/jointing compound and a minimum of two separate coats of jointing cement/jointing compound applied over all joints, angles, fastener heads and accessories. All jointing cements/jointing compounds shall be finished free of tool marks and ridges.

A paint or plaster material shall then be sprayed, rolled or trowelled over the defined area.

NOTES:

- 1 See Clause 3.1.1 for achieving agreed quality of finish.
- 2 A Level 5 finish does not mean the surface is without texture variation.
- 3 When installed and jointed in accordance with Clause 4.5, fibre-reinforced gypsum linings will inherently be in accordance with the requirements of Level 5 without the need for further surface treatment to achieve parity of texture and porosity.
- 4 A Level 5 finish is difficult to achieve and always requires the cooperation of the framer, plasterer and painter in establishing suitable work practices that deliver the agreed painted finish for the given project.
- 5 Some minor surface imperfections may still be visible in a Level 5 finish; however, these will be minimized under the additional measures applied under Level 5.
- 6 Level 5 expectations can be compromised by dark colours, glancing light and gloss finishes.
- 7 The surface of the defined area may require sanding to be suitable for decoration.

Examples



21.

We noted the plaster wall above the skirtings in a number of areas is showing a noticeable bow. This bowing has come about following the carpenter straightening the skirting because of excessive plaster build-up at the external corners. If filled with no more gaps, this wall bowing will cause visible unsightly thickening of the skirting top edge at the junction to the wall.

The builder will need to plaster float these areas to present a flat plastered surface that aligns evenly to the skirting.

4.03 Straightness of steel and timber frame surfaces

Frames are defective if they deviate from plane (horizontal or vertical bow) by more than 4 mm in any 2 m length of wall. Refer to Diagram E.

We also refer the builder to AS 2589, clause 4.2.2.

4.2.2 Finished framing deviations and tolerances

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

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

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

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

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

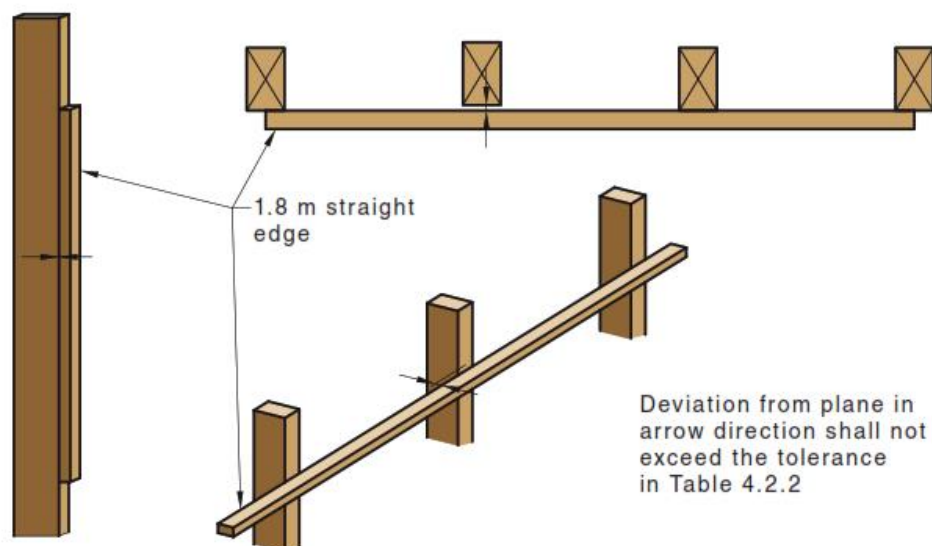


FIGURE 4.2.2(A) ASSESSING FRAMING TOLERANCE

Examples



22.

Victorian Domestic Building Contracts Act; Part 9 s.137: - The vendor (builder) warrants that 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.



Water retention to a large number of MDF members.



Discoloured hinges- most likely due to the acid the wash process.

23.

Some of the bottom reveals too wide windows are presenting with significant fall back towards the window.

Many window manufactures require a 7 mm cement sheet or pine board strip placed in the cavity to support the heavy glazed section; this was not present at the time of inspection. This often also results in bows to the top styles long after the windows are installed.

We refer the builder to AS2047 - 2014.

7.2 INSTALLATION

7.2.1 General

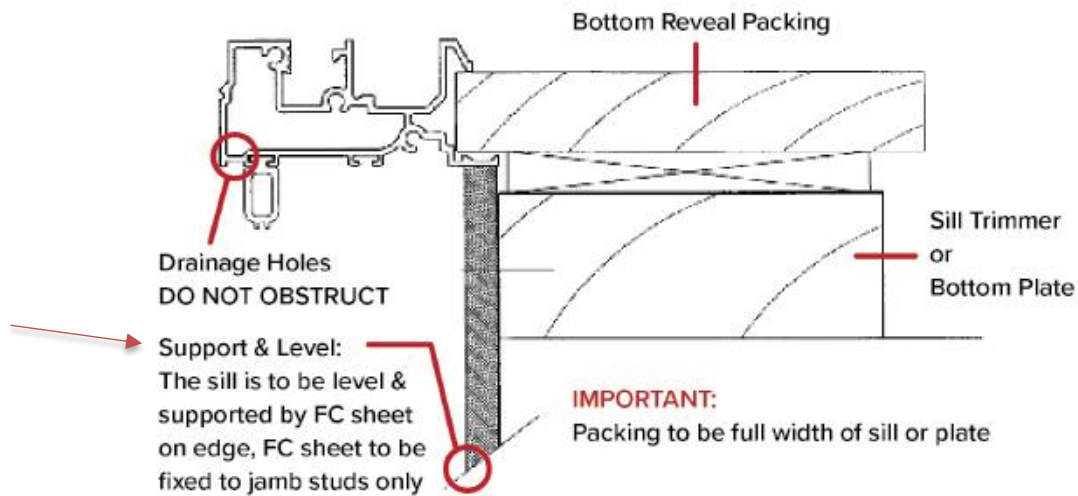
Openings in buildings into which windows are to be installed shall be of sufficient size to allow the window frame to be installed level and plumb.

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

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

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

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



24.

There are a number of areas in the home that exceed the allowance of 4 mm tolerance over 2 m, please refer to photographs below.

As stated, the acceptable allowance is 4 mm over 2 m. These walls will need to be reworked to ensure that the builder complies with this requirement.

4.03 Straightness of steel and timber frame surfaces

Frames are defective if they deviate from plane (horizontal or vertical bow) by more than 4 mm in any 2 m length of wall. Refer to Diagram E.

We also refer the builder to AS 2589, clause 4.2.2.

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

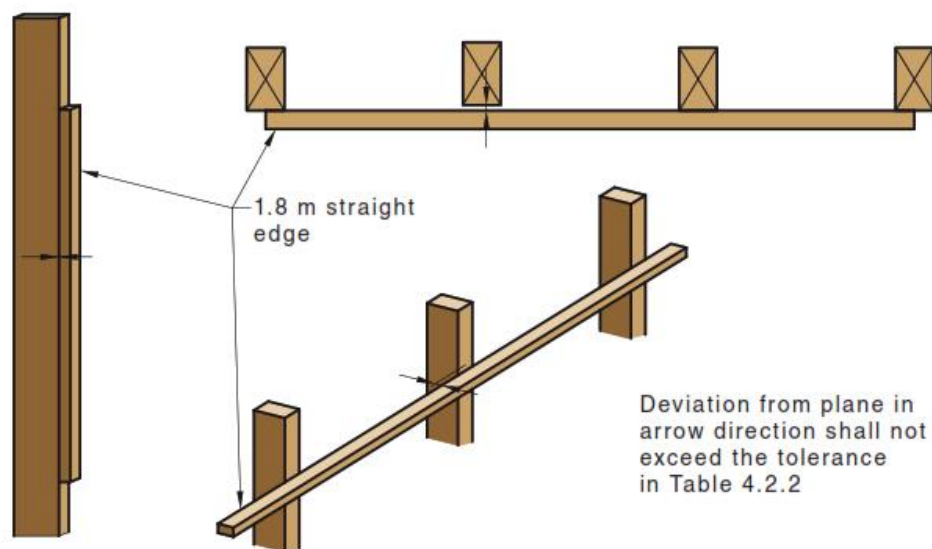
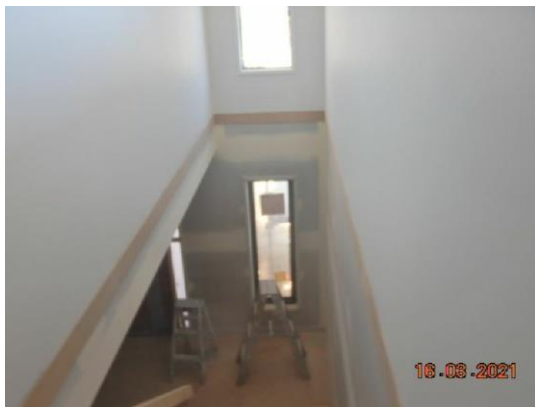


FIGURE 4.2.2(A) ASSESSING FRAMING TOLERANCE



Bowed Wall



Bowed Wall



Bowed Wall

25.

We noted a peak on the first floor of the dwelling.

The area has been marked and obviously exceed the tolerance of 4 mm over 2 m.

Once the floor has been sanded these areas will need to be reinspected to determine the extent of the peaks.

Note - The builder will need to be cautious when having the flooring sanded of the depth removed, I also refer the builder to AS 1860.2 section 12.

14.08 Levelness of timber floor

New floors are defective if within the first 24 months of handover they differ in level by more than 10 mm in any room or area, or more than 4 mm in any 2 m length.

The overall deviation of floor level to the entire building footprint shall not exceed 20 mm within 24 months of handover. Refer to Item I of this Guide where the new floor is to adjoin an existing floor.

- (d) For other surface finishes, full sanding shall be required if the particleboard has been exposed to the weather. The surface shall be given a first cut with 60-80 grit closed coat paper, followed by a finishing cut with 100 grit closed coat paper.

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

- (e) The depth of material removed shall not exceed the following, except where otherwise specified by the manufacturer:
 - (i) Over the general panel area 1 mm.
 - (ii) Within 50 mm of any supported edge 2 mm.



26.

VBA Guide to Standards & Tolerances; 14.06: - Structural floors that consistently squeak in trafficable areas are defective.

Trafficable areas of the floor to this dwelling are deemed to be squeaking excessively.

14.06 Squeaking floors

Floors that consistently squeak by a person walking normally in a trafficable area within the first 24 months from handover are defective.



WATER PROOFING

27.

The water proofer is required to install a water stop at the doorways to form a barrier to the unprotected floor.

We refer all too AS 3740—2010, part 3.9.1.2 and figure 3.3.

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.

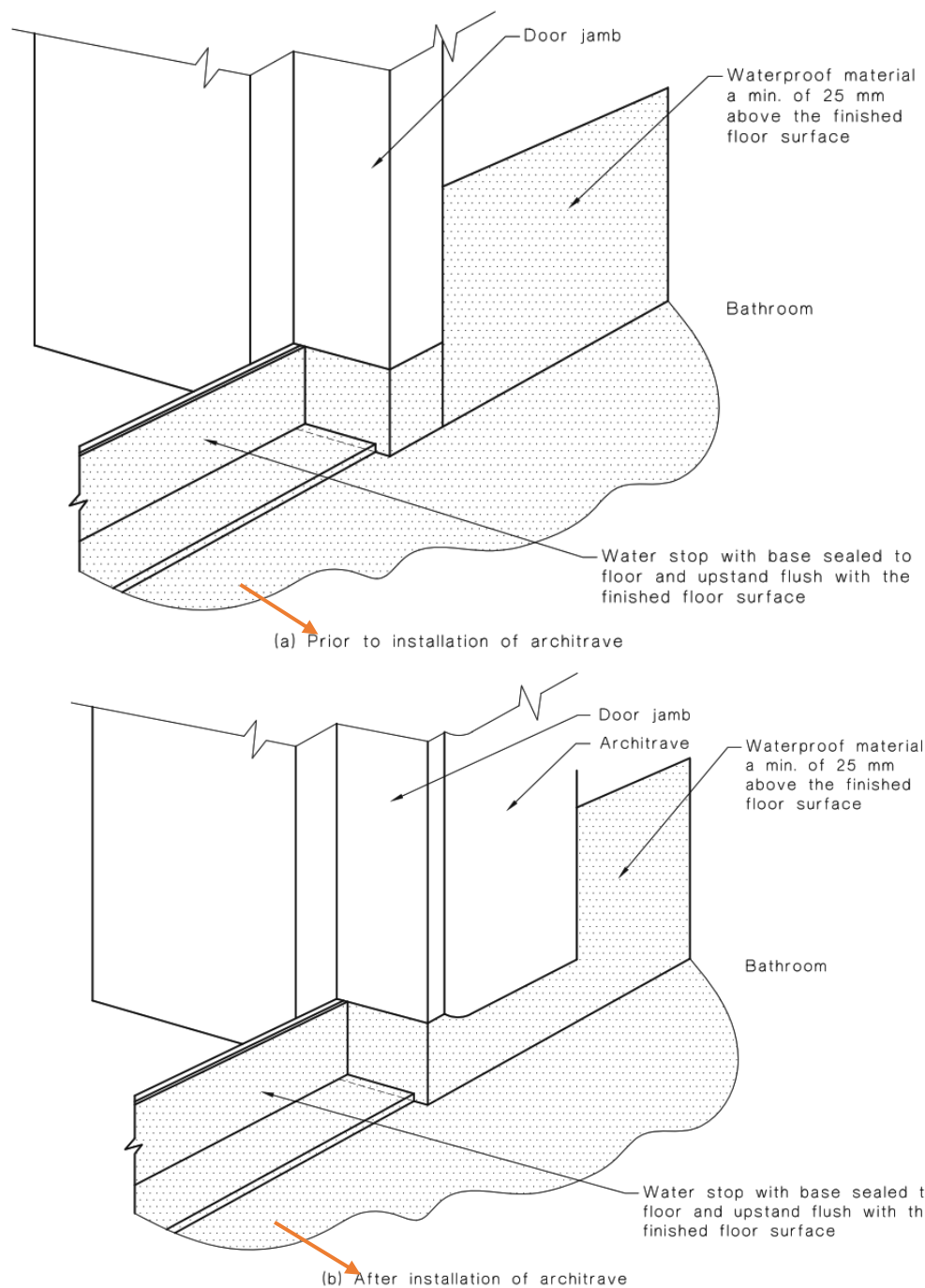


FIGURE 3.3 TYPICAL BATHROOM DOOR DETAIL FOR WHOLE BATHROOM WATERPROOFING



28.

The door jamb and architraves have not been installed in accordance with AS 3740-2010.

The MDF products will swell when exposed to moisture. Please note, the cut ends of jambs and architraves are really paint sealed.

The builder must rework this section to comply with the following.

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.

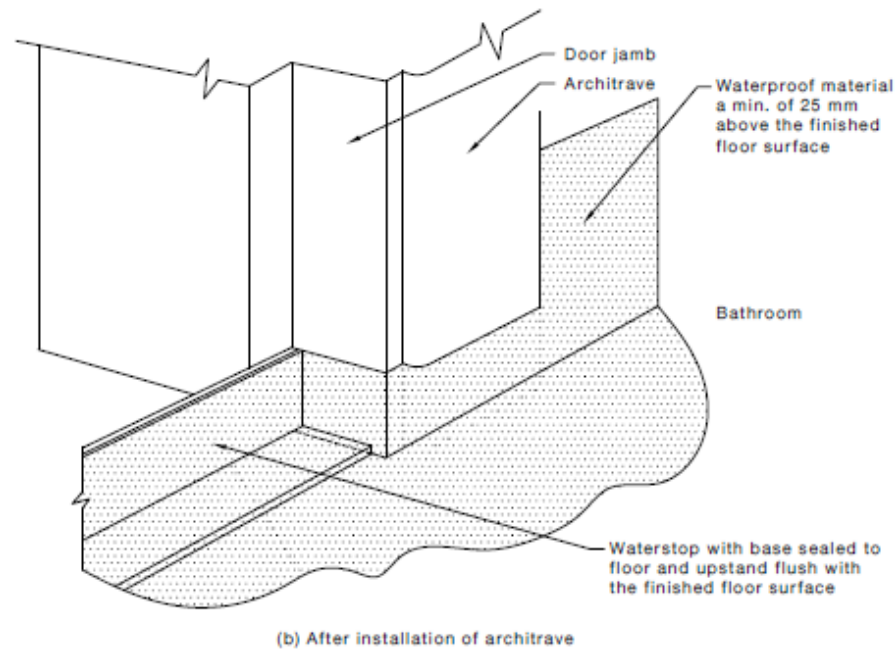
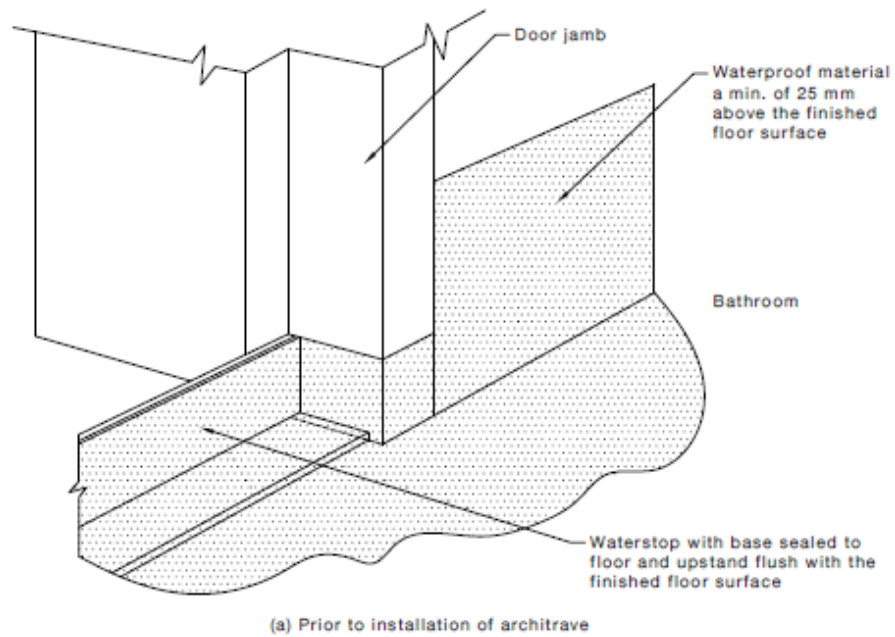


FIGURE 3.3 TYPICAL BATHROOM DOOR DETAIL FOR WHOLE BATHROOM WATERPROOFING



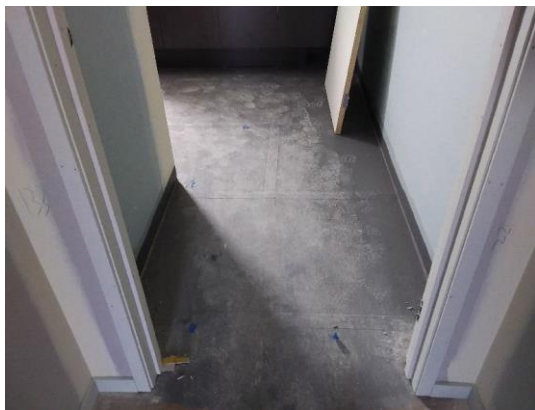
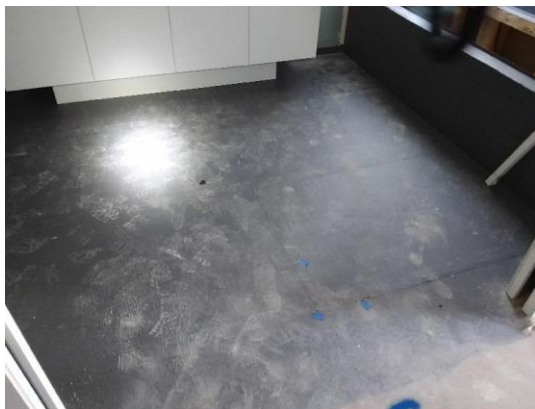
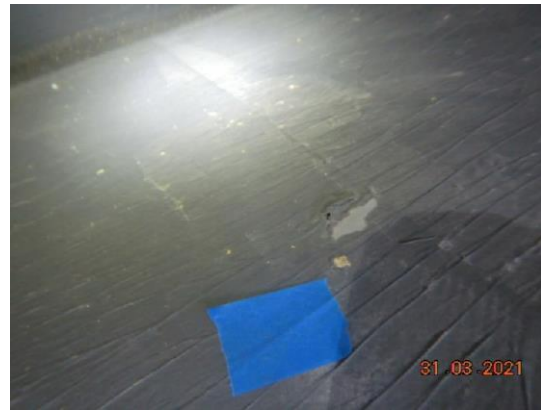
29.

We noted some small holes, cracks or gaps in various sections to the water proof membrane in wet areas (marked with blue tape).

All areas must be sealed waterproof in accordance with the NCC Volume 2 and the manufactures specifications.

Waterproof means the property of a material that does not allow moisture to penetrate through it.





30.

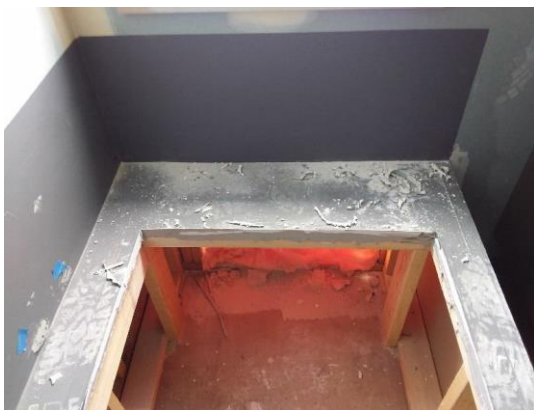
We noted dirty boot prints, builders waste and a door presenting on the waterproof membrane, as documented in the photographs below. The concern is potential damage to the membrane from scratches, possibly from dirt abrasion or scuffs from debris caught in the soles of foot ware. All areas should be protected.

We refer the builder to AS 3740.

3.5 CURING OF MATERIALS

Materials shall be cured adequately for their intended use.

NOTE: The membrane should be protected from physical and/or chemical damage until covered by the finished surfaces.



31.

AS 3740 Waterproofing of domestic wet areas; 3.10.1: - Recessed soap holders and similar (niches), shall have fall in the base to drain to the shower recess. Fall must be in the membrane.

Waterproofing has not met this requirement.

3.10 PENETRATIONS

3.10.1 Shower areas

Penetrations for taps, shower nozzles, recessed soap holders and similar fixtures shall be waterproofed by sealing with proprietary flange systems or a sealant. When sealing the tap body to the wall, allowance shall be made for the servicing of tap washers or ceramic disks without damaging the seal.

NOTE: Typical detail for recessed soap holders is shown in Figure 3.4.

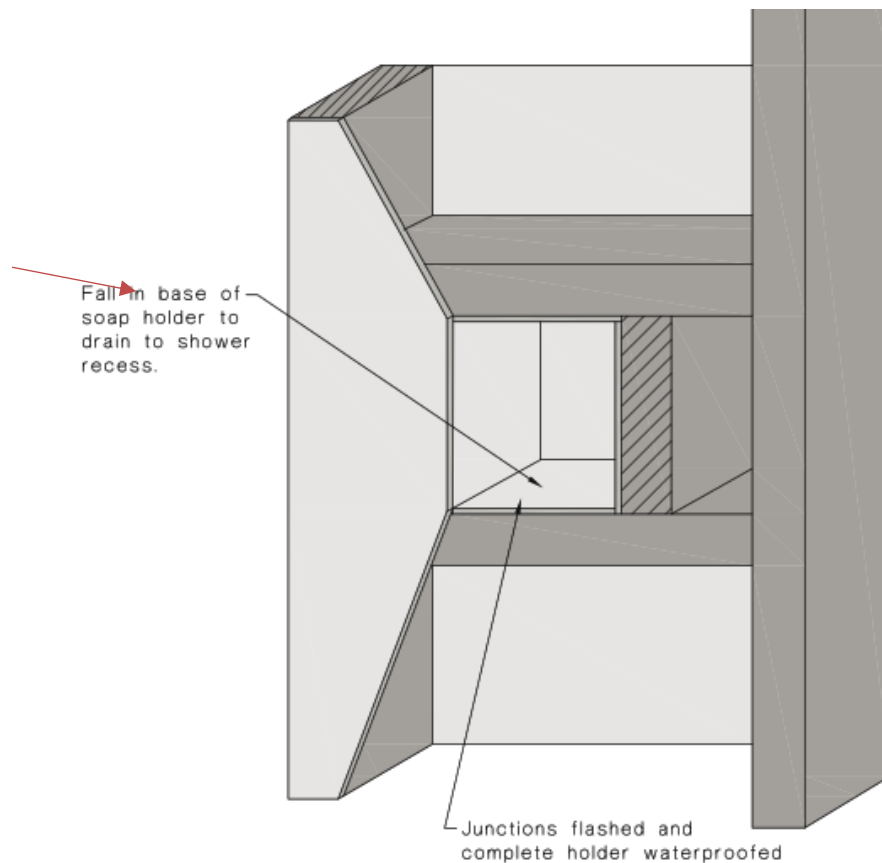


FIGURE 3.4 TYPICAL DETAIL FOR RECESSED SOAP HOLDERS



32.

AS 3740, part 3.14.1 and 3.14.3: - Requires all water proofing to be continuous over the drainage flange to the base of the first directional return.

This is dependent on the type of drainage flange used. A larger flange drainage outlet such as a smart waste must have the termination over the flange.

The waterproofing was not to the Standard. Patching waterproofing is not allowed as per supplier instructions. The builder needs to rectify taking into consideration that membranes cannot be patched or joined once applied.

3.14 MEMBRANE TO DRAINAGE CONNECTION

3.14.1 Termination to a drainage flange

For membrane drainage connections in other floors, any one of the following shall apply:

- (a) A drainage flange shall be installed with the waterproofing membrane terminated at/in the drainage flange to provide a waterproof connection.

NOTES:

- 1 For typical membrane termination at drainage outlet, see Figure 3.8.
- 2 Drainage flanges may be set into the floor or fixed to the top surface of the floor substrate or tile bed.

- (b) Where a prefabricated shower tray is used, provision shall be made to drain the tile bed and provide a waterproof connection to the drain.

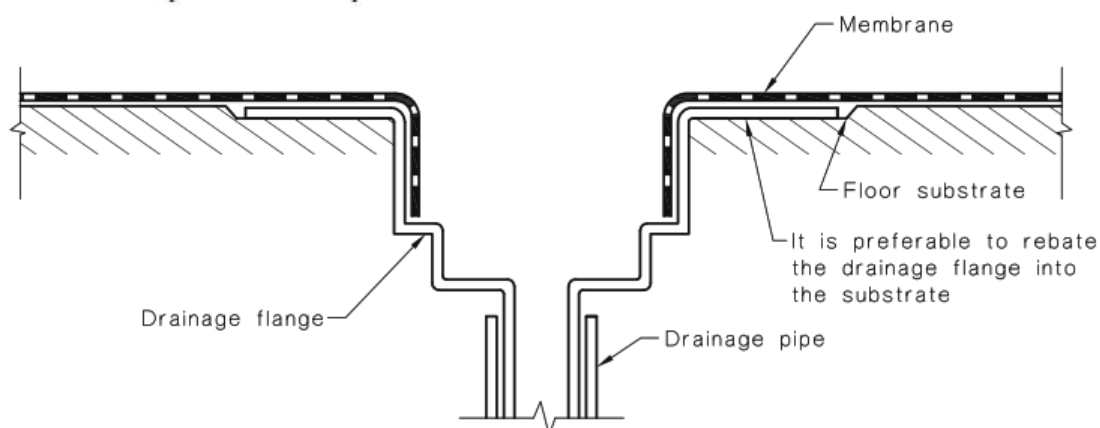


FIGURE 3.8 TYPICAL MEMBRANE TERMINATION AT DRAINAGE FLANGE

3.14.2 Floor waste

The floor waste shall be of sufficient height to suit the thickness of the tile and tile bed at the outlet position. The drainage flange/floor waste shall drain at the membrane level.

3.14.3 Termination to a drainage channel

The waterproof drainage shall be continuous for the membrane into the drainage outlet. Where the drainage channel does not have an integral horizontal surface of 50 mm for termination of the membrane, the membrane shall be continuous underneath the drainage channel, terminating at a recessed drainage flange.

NOTE: For a typical application of a membrane termination to a drainage channel, see Figure 3.9.



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 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 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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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.