

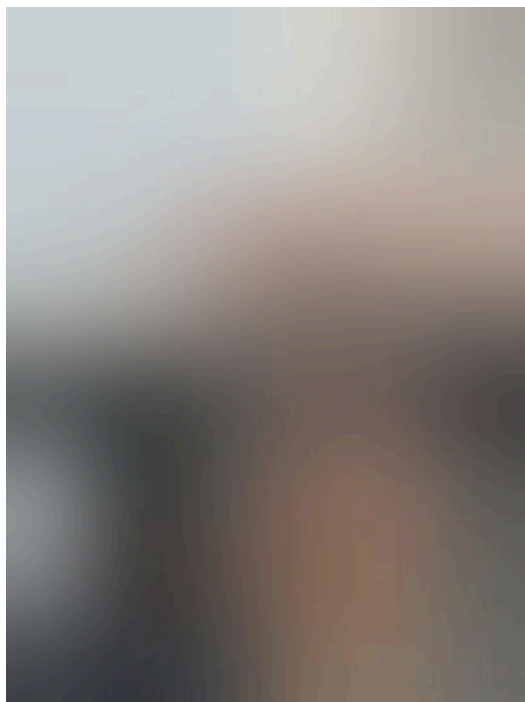


OWNER INSPECTIONS

1300 471 805

booking@ownerinspections.com.au

<https://www.ownerinspections.com.au/>



EXPERT WITNESS REPORT

Unit 5 / 21 Sample Street
Dandenong, VIC 3175

Client Name
DECEMBER 1, 2023



Inspector

Ty Pearson

Registered Building Practitioner

1300 471 805

booking@ownerinspections.com.au

TABLE OF CONTENTS

1: + Inspection Details	4
2: Inspection Summary	5
3: Instructions	7
4: Assumptions	8
5: Used Equipment	9
6: Reference Documents	15
7: Inspector's Details	16
8: + House Internal	18
9: + House External	38
10: Next Stages	48

SUMMARY

2.1.1 Inspection Summary - Expert's Opinion: Expert's opinion in summary

 8.1.1 + House Internal - + General Information - Ceiling/Wall plaster: + Bedroom First Floor - Plaster Repaired by owner - No Defect

 8.1.2 + House Internal - + General Information - Ceiling/Wall plaster: General Information - Moisture readings to living/dining area

 8.2.1 + House Internal - Plaster Damage & Mould to Garage Ceiling - Associated Defects: Location 1) Water Ingress/Damage to Garage Ceiling - Insufficient fall to balcony drain & Ponding Water

 8.2.2 + House Internal - Plaster Damage & Mould to Garage Ceiling - Associated Defects: Location 2) Water Ingress/Damage to Garage Ceiling - Various defects found/associated

 8.3.1 + House Internal - Plaster Damage & Mould to Kitchen Ceiling - Associated Defects: Location 3) Water Ingress/Damage to kitchen ceiling

 9.1.1 + House External - Front Garage Ceiling Water Damage - Associated Defects: Location 4) Water Ingress/Damage - Front garage at the front of cantilevered section to the corner of the ceiling

 9.2.1 + House External - Front Porch Ceiling Water Damage - Associated Defects: Location 5) Water Ingress/Damage - Front porch at the corner of the ceiling

 9.3.1 + House External - 3 x Leaks Above Garage Panel Lift Door - Associated Defects: Location 6,7,8) 3 x Leaks/Damage- Above garage panel lift door at 3 x corners of the ceiling

 10.1.1 Next Stages - Stage 3: Damage Repair Cost Estimate and Scott Schedule

 10.2.1 Next Stages - Stage 4: Expert Witness Services for Conclave



1: + INSPECTION DETAILS

		D	W	M	S	SP	O	MD
1.1	General Information							
1.2	Purpose of the Report							

D = Defective Design W = Defective or faulty workmanship M = Defective Material S = Safety SP = Structural Performance
O = Other Major Defects MD = MAJOR DEFECT

Information

General Information: Property Address

Unit 5 / 21 Sample Street,
Dandenong, VIC 3175

General Information: Type Of Building

Attached, Unit

General Information: Inspection(s) Date

01/12/2023

General Information: Weather Conditions

Cloudy

General Information: In Attendance

Client

General Information: Tribunal/Court Application Reference Number

TBC

General Information: Legal Advice

This report is a witness expert report and covers the technical side of the building only. The expert can present in the hearing if required (An extra charge applies). We highly recommend you get legal advice for the legal side of your matter.

Purpose of the Report: The Purpose and Scope of the report

The purpose of this report:

The purpose of this report is to provide an independent and objective assessment of building defects and damages in accordance with the Australian Standards (AS), National Construction Codes (NCC), Building Acts and Regulations, and any other relevant authority documents. The findings of this report are intended to assist the jury in making an informed decision.

Scope of the Report:

The scope of this report is to identify and report any building defects and damages that are observed during the inspection process. The inspection will be conducted in accordance with the applicable industry standards and guidelines. The report will detail the nature, location, and extent of any defects or damages, as well as any relevant factors that may have contributed to their occurrence.

2: INSPECTION SUMMARY

		D	W	M	S	SP	O	MD
2.1	Expert's Opinion		X					X
2.2	Building Act 1993							

D = Defective Design

W = Defective or faulty workmanship

M = Defective Material

S = Safety

SP = Structural Performance

O = Other Major Defects

MD = MAJOR DEFECT

Information

Building Act 1993: Proceeding for Building Action - Building Act 1993 - Section 134

Building Act 1993: Major Defect Definition - AS4349.1 - 2007 - Inspection of Buildings

PS 010.2
(Planning
substitute)
No. 30200
S.S.

Division 2—Limitation of actions

129 Definitions

In this Division—

building action means an action (including a counter claim) for damages for loss or damage arising out of or concerning defective building work;

building work includes the design, inspection and issuing of a permit in respect of building work¹.

134 Limitation on time when building action may be brought

(1) Despite any thing to the contrary in the **Limitation of Actions Act 1958** or in any other Act or law, a building action cannot be brought more than 10 years after the date of issue of the occupancy permit in respect of the building work (whether or not the occupancy permit is subsequently cancelled or varied) or, if an occupancy permit is not issued, the date of issue under Part 4 of the certificate of final inspection of the building work.

S. 134(1)
amended by
No. 31/2020
s. 53 (LA
s. 39(B)(1)).

1.3.9 Major defect

A defect of sufficient magnitude whose rectification has to be carried out in order to avoid unsafe conditions, loss of utility or further deterioration of the property.

Observations

2.1.1 Expert's Opinion

EXPERT'S OPINION IN SUMMARY

!

Defective Work

There are (8) Locations throughout the building which are showing evidence of water ingress and damage to building components. Mostly all of these defects are due to the builders workmanship. These Locations have been separately categorized to individual areas and marked in numerical order throughout this report.

It is important to note, the Matrix Cladding to the front facade has gaps associated with normal foundation/footing movement, which require resealing by the Homeowner as part of normal Homeowner maintenance requirements. (Refer Clause in Report). This is the only defect associated with the Homeowner. All other defects have been caused by the Builders workmanship.

Due to water ingress being associated with unhealthy/dangerous conditions, and deterioration to adjacent building components, defects involving water ingress can be classified as Major Defects.

All relevant clauses have been included in this report, within the Defect Category and it's location. Refer to each location and their images for detailed information.

Due to the amount of leaks found (8), it is important to ensure that each leak is rectified individually as per the Codes/Standards and Manufacturers Requirements, to ensure the building remains watertight.

3: INSTRUCTIONS

		D	W	M	S	SP	O	MD
3.1	Instructions							

D = Defective Design W = Defective or faulty workmanship M = Defective Material S = Safety SP = Structural Performance
O = Other Major Defects MD = MAJOR DEFECT

Information

Instructions: By Client - Home Owner

This report is prepared in response to the instructions received from **Client Name** (Home Owner).

4: ASSUMPTIONS

		D	W	M	S	SP	O	MD
4.1	Assumptions							
D = Defective Design W = Defective or faulty workmanship M = Defective Material S = Safety SP = Structural Performance O = Other Major Defects MD = MAJOR DEFECT								

Information

Assumptions: Assumptions

I have assumed all information including the documents provided to me, is accurate.

I have assumed that, aside from compliance with Regulations, Code, Standards and Installation manuals, the workmanship was to be of reasonable trade quality.

Any work would be carried out by appropriately licensed and experienced contractors, using standard materials.

Where the material specification and installation manual were not supplied, I considered general specification/installation guide.

5: USED EQUIPMENT

		D	W	M	S	SP	O	MD
5.1	Used equipment							

D = Defective Design W = Defective or faulty workmanship M = Defective Material S = Safety SP = Structural Performance
O = Other Major Defects MD = MAJOR DEFECT

Information

Used equipment: Thermal Camera - FLIR E6-XT

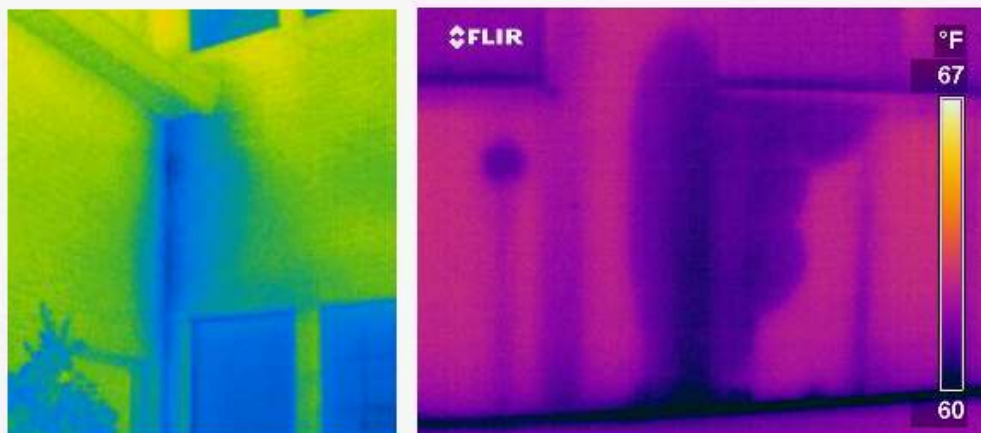
A Thermal Camera is a unique device detecting leaks in concealed walls or under the tiles. The camera is able to detect the temperature differences in the wall, and using a thermographic image, it will detect where the leak is from. A thermal imager does what a moisture meter can't: detect differences in surface temperature. These cameras are most useful in zeroing in on areas that might require testing with a moisture meter. Areas affected by moisture appear cooler- on the camera's screen. Water is detected with a thermal imager due to temperature differences caused by evaporation, capacitance, or conduction, and these processes can be affected by weather conditions or interior humidity.

Water leaks and moisture infiltration can cause serious damage to a house or building and can be challenging to detect until it is too late. Using a thermal imaging camera and under the right circumstances, It is possible to find hidden water and moisture issues without resorting to destructive testing. There are many sources of building moisture, including humidity (during any season), condensation, pipe leaks, rain and snow, and even people and animals breathing. Usually, a low moisture level is acceptable, but leaks or heavy condensation can cause serious problems. A thermal imaging camera cannot "see" moisture in walls, but it can detect subtle temperature differences and patterns that reveal the existence of water.

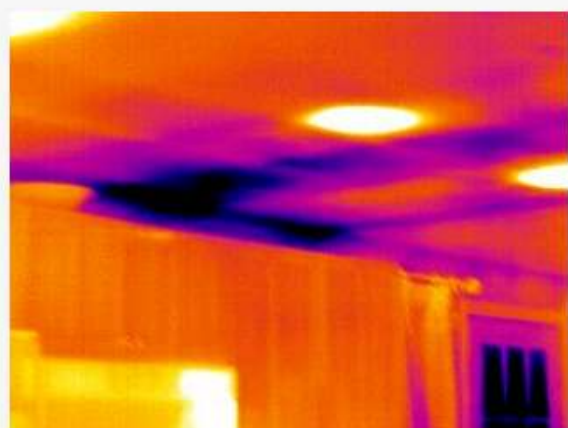
Moisture Patterns

Moisture in buildings usually spreads in a recognizable pattern depending on where the water is:

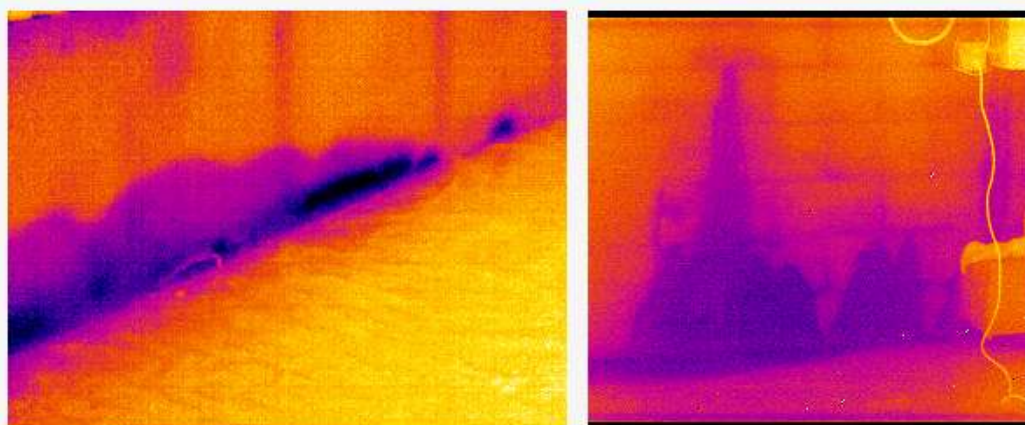
Walls - top-down triangular shape formed as water spreads downwards



Ceiling - amorphous, unstructured shape with areas of wet, damp, and moist material spreading outwards with different temperatures



Flooding - water wicking up a wall into the insulation and up wall studs



Hot Water Pipe - leaks shows as a warm area



Used equipment: Moisture Hygrometer - Flir MR77

FLIR MR77 Moisture Meter is the latest technology professional all-in-one tool designed for detecting general and building envelope moisture problems. Moisture meters are highly reliable instruments that measure moisture levels inside substrates and materials and provide accurate readings to within less than 0.1%. A pinless meter is a “relative” or unitless measurement device. To fully understand this measurement, it needs to be compared to a known dry sample of the same material. The best way to use a pinless meter is to measure a material of a known dryness, and then make a measurement of an item of the same material, thickness, and construction. **Any rise in a reading indicates moisture or the presence of some other conductor or high permittivity material.**

Flir MR77 Specs:

IR Temperature Range -4 to 392°F, -20 to 200°C / Basic Accuracy +/- 3.5%

Pin Moisture Range 0 to 99% WME / Basic Accuracy +/- 5%

Pinless Moisture Range 0 to 99.9 / Basic Accuracy Relative

Sensor Temperature Range -18 to 170°F, -28 to 77°C / Basic Accuracy +/- 3.6°F, 2°C

Relative Humidity Range 0 to 99% RH / Basic Accuracy +/- 2.5% RH

In this report, each mentioned material was tested by setting the driest part as a reference and comparing it with the defective area. The rise in the reading shows the moisture (% difference between the dry reference point and the defective area). For example, if the reference scale shows a reading of 20%, it does not mean that 20% of the dry weight of the tested material is water. Instead, it just means that the moisture content of the material represents 20% more than the reference scale.

Generally, a reference scale goes from 0 to 100, where 0 is bone dry, and 100 is saturated.

Material	Normal moisture reading
Interior wood and wooden furniture	6-10%
Exterior wood	6-20%
Drywall (gypsum)	0.2-1%
Concrete	0.5-1%
Plaster	0.5-1%
Brick	0.5-1%
Stone	0.5-1%
Mortar	1-4%
Stucco	0.5-2%

A moisture reading of 0-20% is quite normal and gives no cause for concern. However, moisture readings over 20% indicate the need for further inspection. Levels between 20-30% (20% max for timber) indicate that there may be water ingress, meaning that remedial work could be required.

6: REFERENCE DOCUMENTS

		D	W	M	S	SP	O	MD
6.1	Reference Documents							
D = Defective Design W = Defective or faulty workmanship M = Defective Material S = Safety SP = Structural Performance O = Other Major Defects MD = MAJOR DEFECT								

Information

Reference Documents: James Hardie Scyon Matrix Cladding Installation Manual	Reference Documents: GUIDE TO STANDARDS AND TOLERANCES VIC - 2015	Reference Documents: Building Act 1993
		Reference Documents: Euroclad Seleкта Installation Manual
Reference Documents: Lysaught Installation Manual	Reference Documents: AS4654.2 - 2012 - External Waterproofing Membranes - Design and Installation	Reference Documents: AS1562.1 - 2018 - Sheet Roof and Wall Cladding Design

7: INSPECTOR'S DETAILS

		D	W	M	S	SP	O	MD
7.1	Expert Witness: Ty Pearson							
7.2	Expert's Codes of Conduct							

D = Defective Design

W = Defective or faulty workmanship

M = Defective Material

S = Safety

SP = Structural Performance

O = Other Major Defects

MD = MAJOR DEFECT

Information

Expert Witness: Ty Pearson: Details, Qualifications and Experience

Expert's Details:

Full Name: Ty Pearson

Address: Level 14, 380 St Kilda Rd, Melbourne, VIC 3000

Email: enquiries@ownerinspections.com.au

Mobile: 1300 471 805

Inspector's Qualifications:

- * VBA Registered Domestic Building Contractor – DB-Unlimited / 62996.
- * Qualified Carpenter - Certificate III in Carpentry, Formwork and Finishing - BCG30798.
- * Certificate IV in Building & Construction (Building) - BCG40106.
- * Diploma of Building and Construction (Building) - CPC50210.
- * Advanced Diploma of Building Surveying – CPC60115.
- * Waterproofing Compliance Certificate of Attainment - Master Builders
- * Thermal Imaging - Infrared Theory & Applications - Flir
- * Bachelor of Architecture:
 - COMS1007 - APC100 - Academic and Professional Communications.
 - ARCH1019 - BAS110 - Architecture Design.
 - ARCH1020 - BAS115 - Architecture Methods.
 - ARCH1010 - BAS130 - Understanding Architecture.
 - ARCH1009 - BAS120 - Technology of Design

Inspector's Experience:

- 7 years of Site Supervision experience (Architectural Residential, Government Commercial, Project Residential, Medium Density Attached).

- **Currently completed (Approx) 1500 varied Building Inspections to date.**

Expert Witness: Ty Pearson: Statement that explains why the expert is qualified to make the report

Originating as a carpenter in 2003 allowed me to gain a practical understanding of both the primary and secondary elements of a building's structure. My 8 years as a carpenter gave me knowledge of the structural framework, lockup, internal fixing, fit-off, conventional timber pitched roofing and concrete formwork in preparation for pouring concrete. During my years as a Site Supervisor which began in 2010, allowed me to obtain my Builders License in 2015 which followed the completion of a Cert IV and then a Diploma in Building and Construction. Throughout this period I managed approximately 200 diverse and complex buildings learning the machinations of building processes and ensuring the quality of workmanship and compliance. Becoming an Independent Building Inspector (2020) I have since completed a diverse range of Building Inspections (approx. 1500). I have completed an Advanced Diploma in Building Surveying which covers both building compliance and the legislative building hierarchy (Acts, Regulations, Code, Standards, Guides). I have also obtained a Certificate of attainment from the Master Builders for a Waterproofing Compliance Course (2019), and completed multiple units of a Bachelor of Architecture which has allowed me to better understand design drawings, material qualities, research methods and problem-solving skills.

Expert Witness: Ty Pearson: Reference to any personal or professional relationship between the expert witness and the party for whom the report is prepared

The expert has NO personal or professional relationship with the party for whom the report is prepared.

Expert Witness: Ty Pearson: Inspector's declaration and Signature - Ty Pearson

I have read the relevant Expert Witness Code of Conduct and followed the instructions in preparing this report and agree to be bound by it.

I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance that I regard as relevant have to my knowledge been withheld from the Tribunal.

Signature:



Expert's Codes of Conduct: The Procedural Practice Note that Inspector read and followed for preparing this report and agree to be bound by it:

Expert's Codes of Conduct: VCAT Practice note - PNVCAT2 - Expert evidence (2014)

8: + HOUSE INTERNAL

		D	W	M	S	SP	O	MD
8.1	+ General Information - Ceiling/Wall plaster							
8.2	Plaster Damage & Mould to Garage Ceiling - Associated Defects							X
8.3	Plaster Damage & Mould to Kitchen Ceiling - Associated Defects							X

D = Defective Design W = Defective or faulty workmanship M = Defective Material S = Safety SP = Structural Performance
O = Other Major Defects MD = MAJOR DEFECT

Observations

8.1.1 + General Information - Ceiling/Wall plaster

 Information Only

+ **BEDROOM FIRST FLOOR - PLASTER REPAIRED BY OWNER - NO DEFECT**

The first floor bedroom ceiling had previously been repaired by the owner due to a roof leak to the first floor roof. This is noted and checked for general information only. There was no moisture detected to this area.



1st Floor bedroom



1st Floor bedroom



1st Floor bedroom



1st Floor roof



1st Floor roof



8.1.2 + General Information - Ceiling/Wall plaster

GENERAL INFORMATION - MOISTURE READINGS TO LIVING/DINING AREA

 Information Only

General Relative Moisture Readings to the Living and Dining Room Area. Information provided only for the purpose of this report.



8.2.1 Plaster Damage & Mould to Garage Ceiling - Associated Defects
**LOCATION 1) WATER INGRESS/DAMAGE TO GARAGE CEILING -
INSUFFICIENT FALL TO BALCONY DRAIN & PONDING WATER**

 Defective Work

A minimal fall of 5mm occurs in the first 200mm section at the end of the balcony, then flattens out to the drain. This has caused ponding water, efflorescence and trapped water in the balcony substrate.

AS4654.2 - 2012 Waterproofing membranes for external above-ground use states that in minimum fall for balconies is 1:100.

The existing fall to the balcony is 0.25:100 (5mm over 2m), and is well under the required standard.

Also, The VBA Guide to Standards and Tolerances 2015 does not allow ponding water to balconies, nor does it allow efflorescence to form to the tile grout on balconies.

Insufficient fall to tiled balcony surfaces, can lead to membrane degradation and allow water ingress to the ceiling below. It also leads to water ponding which is a safety hazard and allow efflorescence to form to the grout which damages the grout and lessens the aesthetic appearance of the balcony tiles.

The tiles to the balcony are required to be removed and the balcony system reconstructed to rectify the ponding water, efflorescence and lack of fall to the tiles.

13.05 Waterproof decks and balconies substrate

Waterproof decks and balconies are defective if they are not constructed in accordance with the Building Code of Australia and AS 4654.2.

Waterproof decks and balconies are defective if the waterproofing system is not installed in accordance with the manufacturer's installation requirements.

13.07 Ponding on waterproof decks and balconies

Waterproof decks and balconies are defective if water ponds (with the exception of residual water remaining due to surface tension) or does not drain to the outer edge⁹ or a stormwater inlet.

Decks and balconies that are required to be waterproofed are defective if they are not provided with adequate drainage and provision for overflow.

13.08 Calcification and efflorescence associated with decks and balconies

Calcification or efflorescence caused by water coming from a deck or balcony that occurs on walls below or beside the deck or balcony, or that appears in the mortar joints of the deck or balcony tiling, is defective. Activities of others, such as owners watering plants, may also contribute to the efflorescence, which may not be attributed to the work of the builder.

2.5.2 Falls

Falls in finishes shall ensure water drains to the drainage outlet. Water shall not be retained on the finished surface with the exception of residual water remaining due to surface tension.

The fall shall be in the structural substrate, or formed by a screed over the structural substrate.

NOTE: Falls for surface drainage should be no flatter than 1 in 100.

Sources:

AS4654.2 - 2012: Waterproofing membranes for external above-ground use

VBA Guide to Standards and Tolerances - 2015



Roof over balcony.



Hose test carried out to check ponding water and leak to garage ceiling



Water ponding to balcony



Negative fall where ponding begins



5mm fall over 2m - Insufficient



5mm packer used



Using a 1200mm level, shows no fall at the drain



Efflorescence to balcony tiles below ponding water



Moisture increase with time, as water ponds to the balcony.



Moisture reading after hose test.
Reading shows high moisture reading

8.2.2 Plaster Damage & Mould to Garage Ceiling - Associated Defects

**LOCATION 2) WATER INGRESS/DAMAGE TO GARAGE CEILING -
VARIOUS DEFECTS FOUND/ASSOCIATED**

 Defective Work

An additional area that is showing water ingress to the garage ceiling adjacent to Location 1) was detected. The defects associated with this water ingress are as per the below:

- a) 3 render cracks to the first floor wall cladding above this area. Render cladding is defective if it allows the ingress of water. These cracks are to be repaired and sealed watertight. At external corners, render is likely to crack if the panel joint has not been done correctly. During repairs to these external corners, it is necessary to ensure the panels have adequate adhesive between the panels to prevent cracking. It is likely the installation manual was not followed, and the reason for the large corner crack.
- b) The sealant around the timber post has visible holes that are allowing water ingress. The metal flashing around the post is loose and is falling towards the timber post. Additionally, the metal capping as a whole is ponding water and does not have the required 3 degrees of fall to prevent corrosion to the metal surface. The manufacturer of the metal flashing '**Lysaught**', states in their installation manual that ponding of water should be prevented. **AS1562.1 - Sheet Roof and Wall Cladding Design** also states 'ponding of rainwater can accelerate corrosion. The metal capping should be removed and reinstalled with the required fall, and sealed appropriately around the timber post junction. An upstand to the flashing should be implemented around the timber post to ensure water drain properly away from the timber post.
- c) The sealant to the internal corner of the metal capping has a visible hole that is required to be sealed water tight. A hot water hose test was carried out to this hole, which showed water ingress to the ceiling below. This hole should have been sealed at construction stage.

Ponding of water and build-up of debris should be prevented and all flashings should be designed to prevent this from happening. Flashings must be designed to provide weather-resistance for the roof or wall cladding, independent of the use of sealants or other materials to provide such weather-resistance.

- 2 Appendix C provides guidance on acceptable combinations of metals in the light of current knowledge, based on the premise that the area of cladding and accessories is relatively large in comparison to that of the fastener material.
- 3 If the atmosphere inside a building with metal cladding contains corrosive gases or vapours, some roof materials will need extra protection against the corrosive agents if the cladding is not lined. Such extra protection should also apply to the fastenings and accessories.
- 4 Ponding of rainwater and accumulation of dust can accelerate corrosion.
- 5 The life of most metals in severe marine atmospheres and industrial areas with atmospheres contaminated by acid-bearing agents can be extended by the use of special painting procedures (refer to AS/NZS 2312.1).

Sources:

VBA Guide to Standards and Tolerances 2015

Lysaught Installation Manual

AS1562.1 - AS1562.1 - Sheet Roof and Wall Cladding Design

6.01 Leaks in roofing, flashings and accessories

Roofing, including flashings and accessories, is defective if it leaks under normal weather conditions and is due to the builder's workmanship, causes unhealthy or dangerous conditions, loss of amenity for occupants, undue dampness or deterioration of building elements.

7.11 Parapet flashings/cappings

Parapet flashings/cappings are defective if a minimum fall of three degrees is not provided across the width of the flashing to divert water runoff from dripping down the fascia and causing unsightly staining.



Garage Ceiling Prior to Hose Test Carried Out



Additional leak towards the front of the garage.



2 x locations to garage showing water ingress





High Moisture Reading to Garage Ceiling at Leak No.2

Hose test to render cracks and timber post to metal flashing connection



Render crack over garage - No.1

Render crack over garage - No.2

Render crack over garage - No.3



Sealant degraded to Timber post to metal capping connection.



Water ponding adjacent to post connection



Water ponding to cappings adjacent to post



Negative fall towards timber posts which is causing water to pond around the timber post





Hot water spray test to hole below metal capping to left corner of balcony



Hole in flashing at corner of balcony



Hot water spray test at timber post to metal flashing connection, and the hole to render underneath flashing at corner of balcony



How Water (Red)

8.3.1 Plaster Damage & Mould to Kitchen Ceiling - Associated Defects

LOCATION 3) WATER INGRESS/DAMAGE TO KITCHEN CEILING

 Defective Work

The defects associated with the water ingress above the kitchen are as per the below:

- a) There are visible holes to the timber post to metal flashing junction, which are to be sealed water tight.
- b) The render has a crack that is allowing water ingress and is to be rectified to ensure it is water tight. Render cracks that allow water ingress are considered defects. This is another external corner that was likely not constructed as per installation manual.
- c) The external corner junction to the metal capping is not sealed. Capillary action will allow water to traverse back into the wall cavity. This corner is to be sealed water tight. It was not sealed during construction as required.
- d) The metal capping is falling towards the timber post, which is the same as the opposite side of the balcony. This is required to be replaced and done correctly.
- e) There is a hole underneath the metal capping to the internal corner of the balcony, which is the same as the opposite side of the balcony. This was not completed during construction.
- f) The balcony does not have the required fall to the drainage outlet and is ponding water, which is the same as the opposite side of the balcony. As stated previously, the balcony tiles are required to be removed and the balcony system reinstated.

Ponding of water and build-up of debris should be prevented and all flashings should be designed to prevent this from happening. Flashings must be designed to provide weather-resistance for the roof or wall cladding, independent of the use of sealants or other materials to provide such weather-resistance.

- 2 Appendix C provides guidance on acceptable combinations of metals in the light of current knowledge, based on the premise that the area of cladding and accessories is relatively large in comparison to that of the fastener material.
- 3 If the atmosphere inside a building with metal cladding contains corrosive gases or vapours, some roof materials will need extra protection against the corrosive agents if the cladding is not lined. Such extra protection should also apply to the fastenings and accessories.
- 4 Ponding of rainwater and accumulation of dust can accelerate corrosion.
- 5 The life of most metals in severe marine atmospheres and industrial areas with atmospheres contaminated by acid-bearing agents can be extended by the use of special painting procedures (refer to AS/NZS 2312.1).

Sources:

VBA Guide to Standards and Tolerances 2015

Lysaught Installation Manual

AS1562.1 - AS1562.1 - Sheet Roof and Wall Cladding Design

6.01 Leaks in roofing, flashings and accessories

Roofing, including flashings and accessories, is defective if it leaks under normal weather conditions and is due to the builder's workmanship, causes unhealthy or dangerous conditions, loss of amenity for occupants, undue dampness or deterioration of building elements.

7.11 Parapet flashings/cappings

Parapet flashings/cappings are defective if a minimum fall of three degrees is not provided across the width of the flashing to divert water runoff from dripping down the fascia and causing unsightly staining.

9.08 Cracking in applied finishes used over lightweight substrate

Cracks or open joints in finishes applied to lightweight substrate are defective if they exist at handover or exceed 1 mm in width within the first 24 months and can be seen from a normal viewing position².

Cracks or open joints in finishes applied to lightweight sheet substrate are defective if they allow the ingress of water.

2.5.2 Falls

Falls in finishes shall ensure water drains to the drainage outlet. Water shall not be retained on the finished surface with the exception of residual water remaining due to surface tension.

The fall shall be in the structural substrate, or formed by a screed over the structural substrate.

NOTE: Falls for surface drainage should be no flatter than 1 in 100.

13.07 Ponding on waterproof decks and balconies

Waterproof decks and balconies are defective if water ponds (with the exception of residual water remaining due to surface tension) or does not drain to the outer edge⁹ or a stormwater inlet.

Decks and balconies that are required to be waterproofed are defective if they are not provided with adequate drainage and provision for overflow.

13.08 Calcification and efflorescence associated with decks and balconies

Calcification or efflorescence caused by water coming from a deck or balcony that occurs on walls below or beside the deck or balcony, or that appears in the mortar joints of the deck or balcony tiling, is defective. Activities of others, such as owners watering plants, may also contribute to the efflorescence, which may not be attributed to the work of the builder.

13.05 Waterproof decks and balconies substrate

Waterproof decks and balconies are defective if they are not constructed in accordance with the Building Code of Australia and AS 4654.2.

Waterproof decks and balconies are defective if the waterproofing system is not installed in accordance with the manufacturer's installation requirements.



Water Stain and Mould to Kitchen Area



Plaster cracking due to water ingress



No moisture prior to hose test





Hose test conducted to timber post above water stain in kitchen



Moisture evidence after hose test to timber post



High Moisture reading after hose test



Hole to silicone at timber post to metal flashing connection



Silicone has degraded and a hole is present



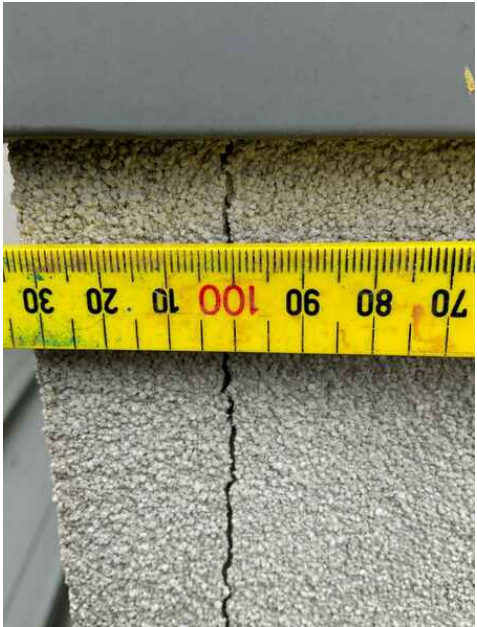
Render crack in this area above water stain



End of flashing is not sealed.



Cracks in timber post which can allow water ingress to travel past the timber post to metal flashing connection



0.7mm render crack in this area above



Moisture increased substantially with time after hose test



Negative fall towards post to flashing connection



Hot water spray test



Hot water spray test over kitchen



3mm fall over 2m - Insufficient



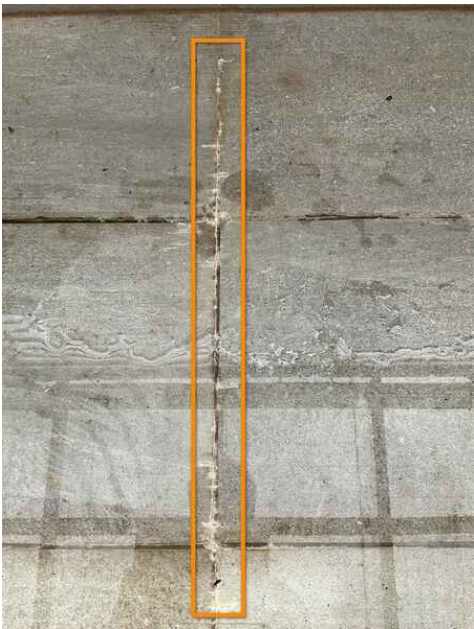
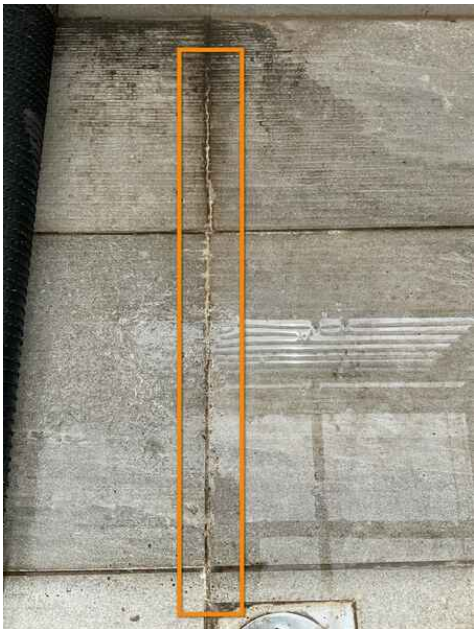
Water ponding to balcony above the water stain area



3mm packer



Floor is level for the first 1200mm away from the drain.



Efflorescence to the balcony in this area



9: + HOUSE EXTERNAL

		D	W	M	S	SP	O	MD
9.1	Front Garage Ceiling Water Damage - Associated Defects							X
9.2	Front Porch Ceiling Water Damage - Associated Defects							X
9.3	3 x Leaks Above Garage Panel Lift Door - Associated Defects							X

D = Defective Design

W = Defective or faulty workmanship

M = Defective Material

S = Safety

SP = Structural Performance

O = Other Major Defects

MD = MAJOR DEFECT

Observations

9.1.1 Front Garage Ceiling Water Damage - Associated Defects



LOCATION 4) WATER INGRESS/DAMAGE - FRONT GARAGE AT THE FRONT OF CANTILEVERED SECTION TO THE CORNER OF THE CEILING

As per normal homeowners maintenance, all gaps that eventuate from normal footing and building movement should be sealed approximately every 5 years. Sealant products (in particular that are open to UV radiation), will only last approximately 5 years. It is the homeowners responsibility to ensure the cladding is maintained as per the installation manual and the VBA guide to Standards and Tolerances - 2015. I recommend the entire facade matrix cladding to be resealed by a professional caulking sealant contractor.

Next to this, the sill flashing junction does not have the required gap of 6mm to drain any water ingress out via the sill flashing itself. In addition to the required gap not been installed, the bottom of the matrix cladding has been sealed which is trapping water behind the cladding system. The sill flashing is also falling towards the building, rather than away from the building. Ponding water residue is evident to this flashing.

The sill flashing needs to be rectified to ensure adequate fall is achieved, the matrix cladding is to have the required 6mm gap installed between the bottom of the cladding and the sill flashing, and the existing sealant is to be removed. These building defects must be repaired to ensure no future water ingress occurs to this area.

Sources:

VBA Guide to Standards and Tolerances 2015

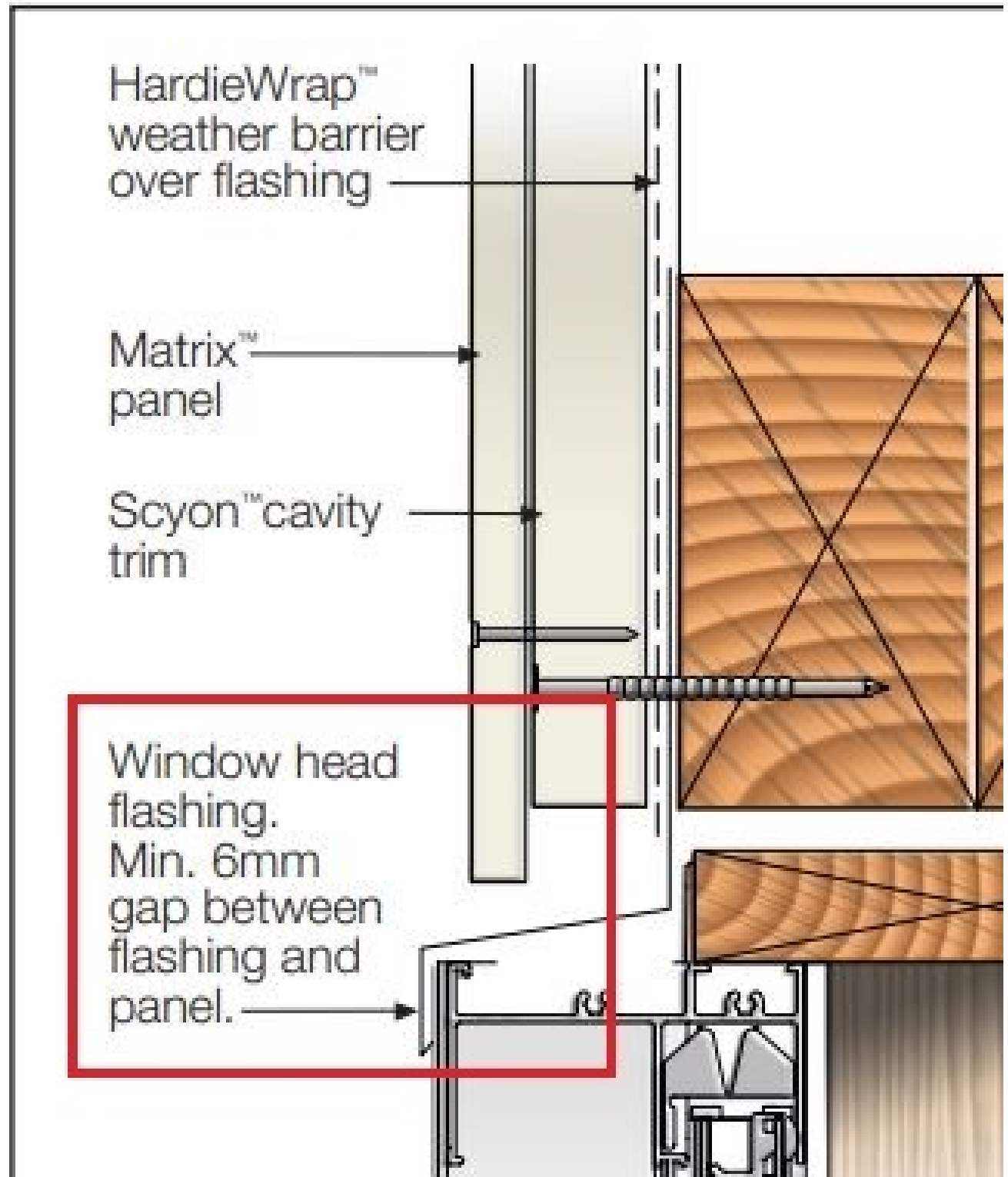
James Hardies Scyon Matrix Installation Manual

MAINTENANCE

The extent and nature of maintenance will depend on the geographical location and exposure of the building. As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:

- Washing down exterior surfaces every 6-12 months*
- Periodic inspections should be made to ensure fasteners are adequately securing the panels to framing.
- Re-applying of exterior protective finishes*
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants that may provide a means of moisture entry beyond the exterior cladding.
- Cleaning out gutters, blocked pipes and overflows as required.
- Pruning back vegetation that is close to or touching the building.

WINDOWS/ PARAPETS



5.01 Leaks in wall cladding

Completed wall cladding and accessories are defective if they leak under normal weather conditions and are due to the builder's workmanship, cause unhealthy or dangerous conditions, loss of amenity for occupants, undue dampness or deterioration of building elements.

18.09 Maintenance in relation to the performance of building foundations/footings

Proper ongoing maintenance of the building is a normal part of homeownership and the homeowner is responsible for all maintenance after handover.



Visible water damage



Matrix cladding joints require re sealing. - Homeowners Maintenance



Homeowners Maintenance



No 6mm gap and silicone installed between sill flashing and matrix cladding.



Negative fall to sill flashing.



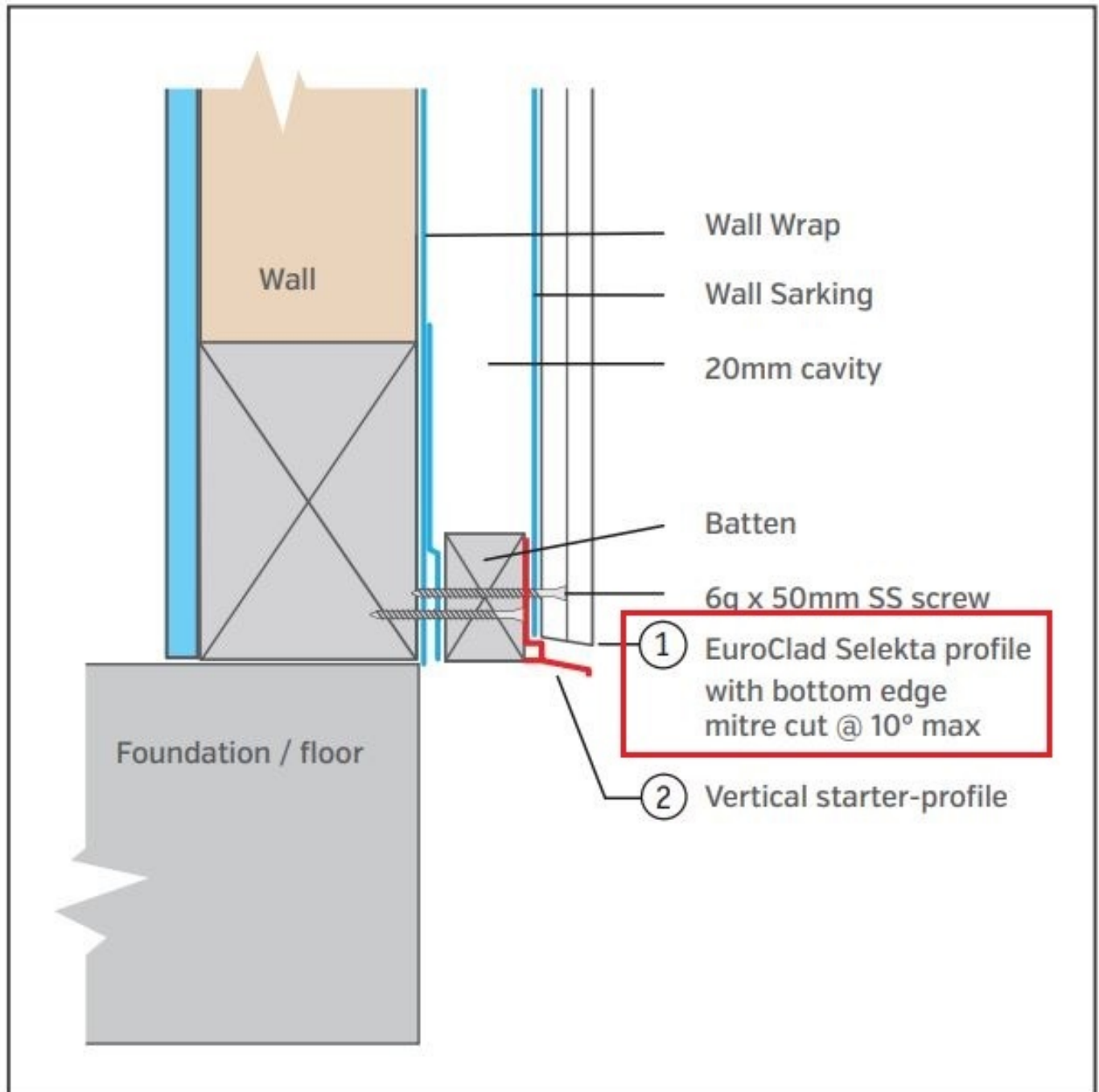
9.2.1 Front Porch Ceiling Water Damage - Associated Defects



Defective Work

LOCATION 5) WATER INGRESS/DAMAGE - FRONT PORCH AT THE CORNER OF THE CEILING

The Euroclad vertical starter profile does not have the required fall to drain water away from the cladding and adjacent eaves lining. There is no gap to the bottom of the cladding that is also required to drain water away from the cladding. The vertical starter profile is to be adjusted with the required fall and gap to prevent water ingress/damage.



Source:

Euroclad Seleкта Installation Manual



Visible water damage



MDF used for external trim, is swollen due to moisture and needs replacing.



Euroclad Vertical Started Profile is not falling away from the ceiling. It is falling towards the ceiling



Left side of flashing has the required fall, the right side does not



No gap left to bottom to drain water away.

9.3.1 3 x Leaks Above Garage Panel Lift Door - Associated Defects

LOCATION 6,7,8) 3 X LEAKS/DAMAGE- ABOVE GARAGE PANEL LIFT DOOR AT 3 X CORNERS OF THE CEILING



There are 3 leaks above the garage panel lift door section. The defects associated with these leaks are:

- a) Numerous holes to cladding which were not sealed properly at the construction stage.
- b) Render crack to the internal corner junction which is allowing water ingress.
- c) There is a horizontal surface on top of the EPS Cladding which is ponding water and allowing water ingress. A metal capping should have been installed at the construction stage to prevent water ingress to this area.
- d) Numerous gaps and holes to the matrix cladding. As stated previously, this is part of normal Homeowners Maintenance.
- e) The bottom edge of the matrix cladding has been fully sealed, which is not as per the installation instructions. This needs to be removed to prevent water ingress.

9.08 Cracking in applied finishes used over lightweight substrate

Cracks or open joints in finishes applied to lightweight substrate are defective if they exist at handover or exceed 1 mm in width within the first 24 months and can be seen from a normal viewing position².

Cracks or open joints in finishes applied to lightweight sheet substrate are defective if they allow the ingress of water.

5.01 Leaks in wall cladding

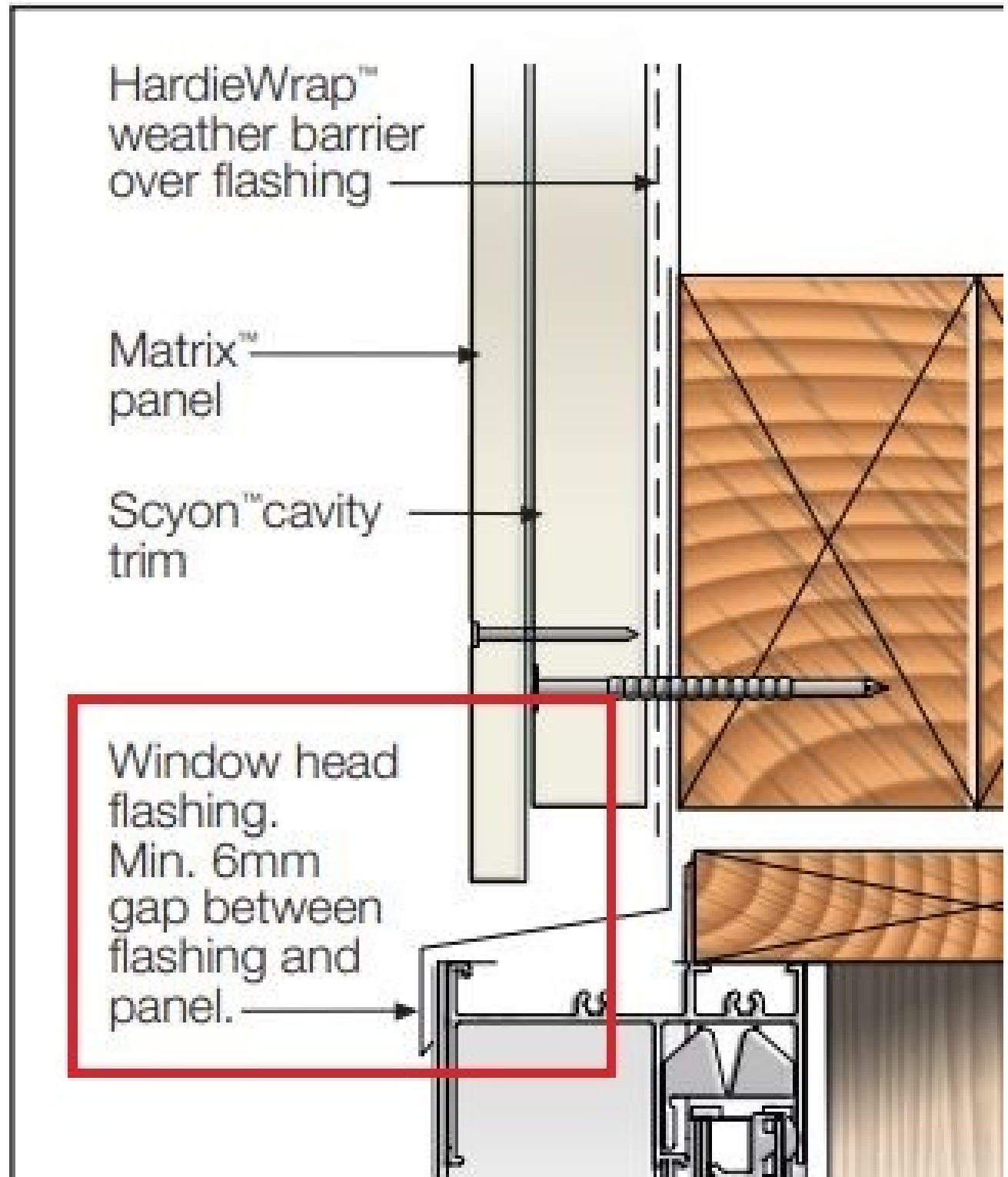
Completed wall cladding and accessories are defective if they leak under normal weather conditions and are due to the builder's workmanship, cause unhealthy or dangerous conditions, loss of amenity for occupants, undue dampness or deterioration of building elements.

Sources:

VBA Guide to Standards and Tolerances 2015

James Hardies Scyon Matrix Cladding Installation Manual

WINDOWS/ PARAPETS





Leak No.1



Leak No.2



Leak 3



Holes not selaed



Holes to matrix cladding



Holes to cladding



Render crack to be repaired watertight



Ponding water. No flashing installed



Sealing to matrix/flashing connection to be removed as per installation manual



Matrix to be fully resealed to front facade

10: NEXT STAGES

		D	W	M	S	SP	O	MD
10.1	Stage 3							
10.2	Stage 4							

D = Defective Design W = Defective or faulty workmanship M = Defective Material S = Safety SP = Structural Performance
O = Other Major Defects MD = MAJOR DEFECT

Observations

10.1.1 Stage 3

 Information Only

DAMAGE REPAIR COST ESTIMATE AND SCOTT SCHEDULE

If the client requires a damage repair cost estimate and Scott Schedule, we can provide this service as part of our Stage 3 inspection report. This service is included in the initial quotation and will be provided upon request. However, the cost of this service will depend on a number of factors, including the number of defects, the complexity of the repair work required, and other relevant factors.

The Scott Schedule is a tool used to help calculate the cost of repairs for building defects. It is named after the legal case Scott v. Avery, which established the use of a schedule of rates for calculating damages in court cases. A Scott Schedule provides a detailed breakdown of the repair work required, along with an estimate of the costs associated with each item. It is an essential component of any expert witness inspection report where damage repair cost estimation is required.

The Scott Schedule is particularly useful when dealing with complex repair work, as it allows for a more accurate assessment of the costs involved. By breaking down the repair work into individual components, the schedule enables the client to see exactly what work is required and how much it is likely to cost. This information can be used to inform decisions about whether to proceed with the repairs and how best to prioritise the work. It is designed to provide parties with a clear and accurate assessment of the repair work required, along with an estimate of the costs involved. The Scott Schedule is an essential tool for calculating the costs of complex repair work and is an important component of any expert witness inspection report.

10.2.1 Stage 4

 Information Only

EXPERT WITNESS SERVICES FOR CONCLAVE

Our expert witness can attend the conclave and provide valuable insights and recommendations to help facilitate a resolution. Here's what you need to know:

What is a conclave?

A conclave is a process where parties involved in a dispute come together to try and resolve the issue outside of court. This can be a more cost-effective and efficient way to resolve disputes and can help to avoid the need for a lengthy and costly court process.

Benefits of using our services:

Our expert witness has specialised knowledge and expertise in their respective fields and can provide valuable insights and recommendations to help facilitate a resolution. By engaging our services, you can benefit from:

- Professionalism and commitment to providing the highest quality of service
- Highly trained and experienced expert witnesses
- Assistance in achieving agreement on all of most of the defects and the repair costs before the hearing