Helix Panel 50/75mm AAC Houses and Low-Rise Multi-Residential External Wall System

Design & Installation Guide

HELIX

CodeMark Australia
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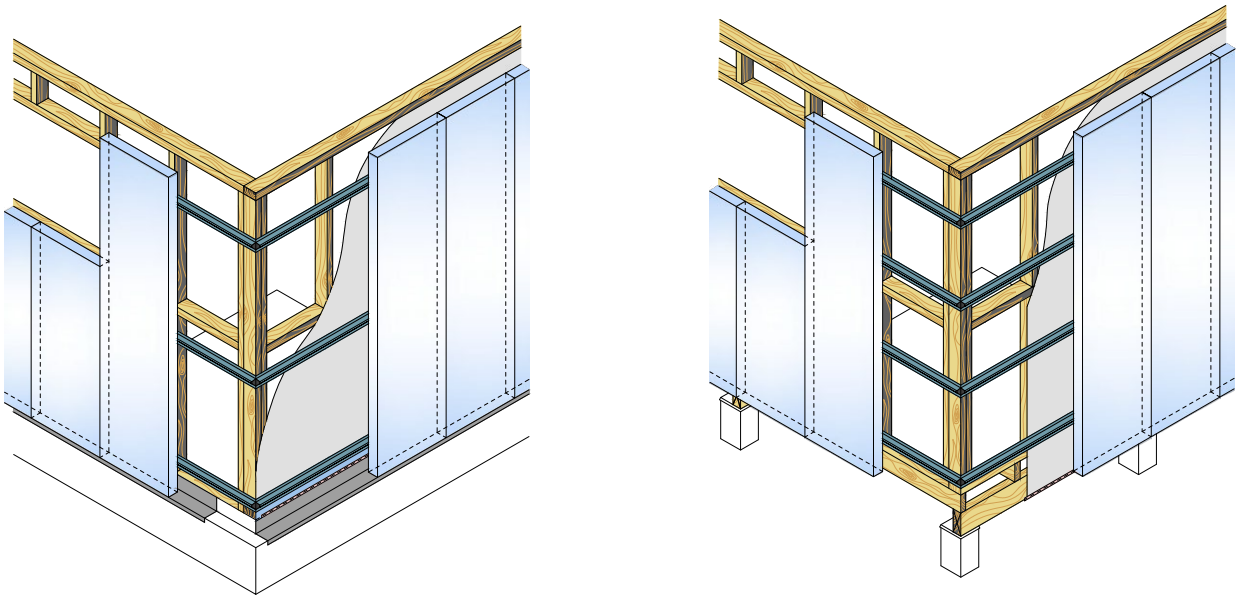
1 HELIX 50/75MM AAC LOW-RISE EXTERNAL WALL SYSTEM

This guide describes the performance, installation, and typical detailing requirements for use of the Helix 50/75mm AAC Low-Rise External Wall System for use by designers and builders.

1.1 System Description

Helix 50/75mm AAC Low-Rise External Wall System consists of 50mm or 75mm thick AAC panels screwed to either steel or timber wall framing through horizontal light-gauge steel top-hat battens & breathable wall wrap.



SINGLE STOREY CONSTRUCTION - PANELS SUPPORTED AT BASE

SINGLE STOREY CONSTRUCTION - PANELS SUSPENDED

Figure 1: Helix 50/75mm AAC Low-Rise External Wall System

It is finished on-site with layers of polymer-modified render, alkaline-resistant fiberglass mesh, texture and finish coatings.

The system is lightweight making it easy to install.

It provides an energy efficient barrier to the elements through its high thermal insulation properties.

It is versatile and designed to be able to be installed on all types of wall elements such as parapets and bulkheads to allow the architect to include multiple types of finishes on the same façade.

Helix 50/75mm AAC Low-Rise External Wall System provides the appearance of a rendered brick wall without the limitations of high mass construction.

Helix 50/75mm AAC other benefits include:

- High insulation performance for Energy Efficient construction,
- Adaptable to a wide-range of architectural designs,
- Lightweight for quick handling & construction,
- Durable to the elements & impact, and
- Detailed to proven Australian Standards for builders and renderers.

Helix 50/75mm AAC Low-Rise External Wall System is designed in Australia and is fully compliant to Australian requirements conditions. A proven successful high-performing construction system used successfully in Australia & Europe for many years. Lightweight and easy to install, adaptable to different designs, provides economy and confidence.

Product selection, and incorporation into the building design, must be made by a person who is conversant with the application and technical aspects of the product, and has ready access to the relevant technical information related to the product use.

Product installation must be carried out by a competent carpenter or other tradesman under the direction of a Builder, both of whom are conversant with the method of product installation and have access to all relevant technical information on product installation.

2 HELIX AAC PANELS

Helix panel material properties have been determined by testing and calculation in accordance with AS 5146 Parts 1 & 2 - Reinforced Autoclaved Aerated Concrete as:

Property			Value	
Panel Thickness	d	(mm)	50	75
Panel Width	w	(mm)	600	
Panel Length	L	(mm)	2200, 2400, 2550, 2700, 2850, 3000	1800, 2200, 2400, 2550, 2700, 2850, 3000
Panel Edge Profile			Square	
Declared Density Class		Class	500	
Dry Density	ρ dry	(kg/m^3)	450-500	
Ambient Density	ρ ambient	(kg/m^3)	478-531	
Density for Transport(AS 5146.2, Cl.3.2.7):	ρ trans	(kg/m^3)	670-740	
Panel Weight	m ambient	(kg/m^2)	23.9-26.5	35.6-39.8
Declared Compressive Strength Class: AAC 2.5		Class	AAC 2.5	AAC 3
Characteristic AAC Compressive Strength	f ck	(MPa)	2.7	3.0
Reinforcement Tensile Yield Stress	f yk	(MPa)	724	
Reinforcement Characteristic Weld Strength	V uk	(kN)	3.91	
Ultimate Strength Bending Capacity	ØMk	(kNm/m)	0.226	0.893
Coefficient of Thermal Expansion		($x10^{-6}$/℃)	$8x10^{-6}$	
Thermal Resistance	R50dry	(m^2K/W)	0.431	0.602
Longitudinal Steel Reinforcement	Number	(mm)	5 x Ø4.5	5 x Ø4.5
Transverse Steel Reinforcement (depending on panel length)	Number	(mm)	6-8 x Ø4.5	6-8 x Ø4.5

3 NATIONAL CONSTRUCTION CODE (NCC) 2022(AMDT.1)

Helix 50/75mm AAC Low-Rise External Wall System, provides an NCC 2022(Amdt.1) compliant Deemed-to-Satisfy Solution for houses, low-rise multi-residential, commercial and light industrial external wall cladding applications, typically not greater than 3 storeys high.

External Walls are required to comply with performance requirements, as applicable for; structure; fire; weatherproofing; dampness; bushfire; condensation and energy efficiency. Helix 50/75mm AAC Low-Rise External Wall System delivers a high performance solution that meet these requirements for external wall applications.

Helix 50/75mm AAC Low-Rise External Wall System has been tested, assessed and certified to the requirements of the Building Code of Australia for:

- Structure: B1D4(b)(ii) and H1D7(4)(a) in accordance with AS 5146.1 and AS 5146.3.
- Fire Safety: C2D2(2) and 9.2.3(2)(a) for Fire Resistance Level (FRL) up to 120/120/120.
- Non-Combustibility: C2D10(5)(e) may be used wherever a non-combustible material is required.
- Fire Hazard Properties: C2D11(3) not applicable to AAC.
- Damp-proofing: F1P4 and H2P3 in accordance with ground clearance requirements, materials and detailing.
- Weatherproofing: F3D5(1)(b) and H2D6(4) in accordance with H1D7(4)(a), AS 5146.1 & AS 5146.3;.
- Condensation Management: F8D3(1)(a) and 10.8.1(1)(a), with an AS 4200.1 & AS 4200.2 compliant pliable building membrane installation.
- Bushfire Attack Level: G5D3 and H7D4(2)(a), for BAL FZ in accordance with AS 3959, Clause 9.4.1(c) and AS 5146.3, Clause 2.7.2.
- Energy Efficiency: J4D6, H6D2(1) and 13.2.5 with high Total R-values to satisfy external wall insulation requirements, or house energy star ratings.

3.1 Structural Performance, B1D4(b)(ii) & H1D7(4)(a)

Helix 50/75mm AAC Low-Rise External Wall System has been tested in accordance with AS 5146.1 with design and construction in accordance with AS 5146.3.

In accordance with NCC 2022(Amdt.1) Volume One, B1D4(b)(ii), structural resistance of materials and forms of construction for autoclaved aerated concrete must be determined in accordance with AS 5146.1 & AS 5146.3.

In accordance with NCC 2022(Amdt.1) Volume Two, H1D7(4)(a), performance requirement H1P1 is satisfied for autoclaved aerated concrete if it is designed and constructed in accordance with AS 5146.1.

Helix 50/75mm AAC Low-Rise External Wall System is suitable for use on buildings with AS/NZS 1170.2 design wind pressures up to -4.27kPa.

This includes houses with AS 4055 Wind Classifications N1w - N5w & C1w - C3w (and excludes houses with AS 4055 Wind Classifications N6w and C4w).

The design wind pressures for external walls of buildings are site-specific, and are dependent on many factors. The Wind Classification of a building in accordance with AS/NZS 1170.2 or AS 4055 must be provided by the design professional responsible for the building.

A building may be designed in accordance with AS 4055 if;

- the distance from ground level to the underside of eaves does not exceed 6.0m, and
- the distance from ground level to the highest point of the roof (not including chimneys) does not exceed 8.5m, and
- the width including roofed verandas, excluding eaves, does not exceed 16.0m, and the length not to exceed five times the width, and
- roof pitch is not greater than 35 degrees.

Please note that Helix 50/75mm AAC Low-Rise External Wall System is not intended to act as wall bracing, all racking resistance shall be provided by the supporting structure so that in-plane racking loads are not transferred to the AAC panels. Helix panels themselves are non-load-bearing elements, control joints are required at regular intervals to accommodate any building movement.

3.2 Fire Safety Performance, C2D2(2) 9.2.3(2)(a)

The Helix 50/75mm AAC Low-Rise External Wall System as detailed, achieves:

- FRL of 90/90/90 with the 50 mm Helix Panel, and
- FRL of 120/120/120 with the 75 mm Helix Panel.

The Helix 50/75mm AAC Low-Rise External Wall System shall be attached to either timber or steel framing compliant to the relevant framing codes.

The maximum height of the wall system is 12 m. Where the total wall is to exceed 12 m in height, a control joint is to be applied with appropriate shelf angle and separation where the wall can be continued. The installation, fixing and control joint is to be reviewed and designed by an appropriately qualified structural engineer.

Control joints must be filled by a fire resisting material. The typical joint is to have a gap no greater than 10 mm wide and be filled with a fire rated mastic to at least a 10 mm depth.

As a non-combustible FRL-rated external wall system, Helix 50/75mm AAC Low-Rise External Wall System is suitable for applications including:

- Type A construction applications in Class 2, 3 or 4 parts of buildings requiring 90/90/90 or -/90/90 as specified in S5C11(3); and
- Class 1 buildings less than 900mm from an allotment boundary that require an FRL of not less than 60/60/60 as specified in 9.2.3(2)(a).

3.3 Non Combustibility, C2D10(5)(e)

Helix panels including mortar are classified non-combustible and may be used wherever a non-combustible material is required.

3.4 Fire Hazard Properties, C2D11(3)

Helix panels are classified as a concrete product, and requirements for Group Number, $SMOGRA_{RC}$, ASEA, Spread-of-Flame and Smoke-Developed Indices, "…do not apply…".

3.5 Damp-proofing Performance, F1P4 & H2P3

The damp-proofing performance of Helix 50/75mm AAC Low-Rise External Wall System to avoid unhealthy or dangerous conditions, or loss of amenity and undue dampness or deterioration of building elements is largely achieved on the basis of construction detailing with BCA ground clearance requirements of 50 mm to 150 mm in accordance with Part 7.5.7 of the ABCB Housing Provisions. Additionally, a damp proof course (not supplied by Helix) is detailed beneath the bottom plate, see Sections 4.4 & 6.5.1, per Part 5.7.4 of the ABCB Housing Provisions.

3.6 Weatherproofing Performance, F3D5(1)(b) & H2D6(4)

Helix 50/75mm AAC Low-Rise External Wall System has been tested in accordance with AS 5146.1 with design and construction in accordance with AS 5146.3.

As referenced in NCC 2022(Amdt.1) Volume One, F3D5(1)(b), weatherproofing performance for autoclaved aerated concrete external wall cladding must comply with AS 5146.3.

As required in NCC 2022(Amdt.1) Volume Two, H2D6(4), performance requirement H2P2 is satisfied for autoclaved aerated concrete if it is designed and constructed in accordance with AS 5146.1.

Helix 50/75mm AAC Low-Rise External Wall System achieves weatherproofing performance for:

- AS 4055 Wind Classifications N1w, N2w, N3w, N4w & N5w, and C1w, C2w & C3w, and
- AS/NZS 1170.2 Serviceability Limit State (SLS) Design Wind pressures up to +1.19 kPa & -1.79 kPa.

3.7 Condensation Performance, F8D3(1)(a) & 10.8.1(1)(a)

Helix 50/75mm AAC Low-Rise External Wall System features a vapour permeable wall wrap between the battens & framing, and thermal insulation batts between framing members. It satisfies these deemed-to-satisfy requirements for condensation management in external wall construction.

Please note that the likelihood of condensation within the building is the result of complex interactions between the building location, construction type and behaviour of the occupants (Ref: Condensation in Buildings, Handbook, Australian Building Codes Board, 2023). Please consult your design professional for information specific to your project.

3.8 Bushfire Performance, G5D3, H7D4(2)(a)

Helix 50/75mm AAC Low-Rise External Wall System has been assessed by an accredited testing laboratory to achieve FRL's that meet AS 3959:2018 BAL-FZ Clause 9.4.1(c) requirement for 30/30/30 when tested from the outside. This assessment is made with particular reference to requirements for joint sealing, and the detailing requirements of AS 3959:2018 Clause 3.6.1 for vents, weepholes, gaps and screening materials.

Helix 50/75mm AAC Low-Rise External Wall System achieves bushfire resistance from BAL 12.5 up to BAL FZ in accordance with AS 5146.3, Clause 2.7.1, where:

(a) Support and fixing are in accordance with Section 6 of this guide.

(b) All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed to prevent gaps greater than 3 mm.

(c) Vents and weepholes in external walls shall be screened with a mesh with a maximum aperture of 2 mm, made of corrosion-resistant steel or bronze. Note that Helix 50/75mm AAC Low-Rise External Wall System above the floor level should be a closed system with no vents or weepholes. AAC cladding below the floor level may incorporate vents and weepholes if required.

Bushfire Attack Level, and the compliance of a Class 1, 2, 3 or 10 Building with AS 3959:2018 bushfire requirements should only be determined by a suitably qualified building professional.

3.9 Thermal Performance, J4D6, H6D2(1) & 13.2.5

Helix 50/75mm AAC Low-Rise External Wall System with breathable non-reflective wall wrap, 70mm R2.0m2K/W glasswool batts and 10mm plasterboard lining has been assessed to achieve the following Total R-values in accordance with AS/NZS 4859.1:2018. These may be used to satisfy the Total R-value requirements of NCC 2022(Amdt.1), Volume Two H6D2(1)(b)(i) & Housing Provisions 13.2.5 external wall insulation requirements, where these values are higher, or as input to house energy rating software to achieve a star rating.

Helix 50/75mm AAC Exterior Wall Cladding System (with R2.0, 70mm batts)		**Total R-value (m^2.K/W)**	
		Winter (Heat flow outwards)	**Summer** (Heat flow inwards)
50 mm	**Timber Frame**	2.59 (U_T = 0.39)	2.47 (U_T = 0.41)
	Steel Frame	2.24 (U_T = 0.45)	2.15 (U_T = 0.46)
75 mm	**Timber Frame**	2.77 (U_T = 0.36)	2.66 (U_T = 0.38)
	Steel Frame	2.47 (U_T = 0.41)	2.38 (U_T = 0.42)

4 SYSTEM COMPONENTS

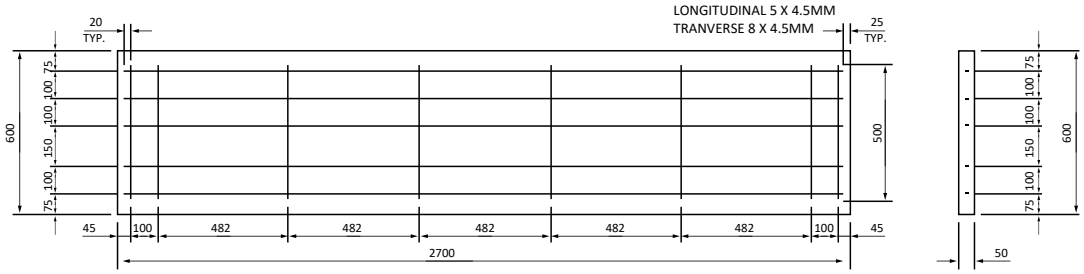
The performance of Helix 50/75mm AAC Low-Rise External Wall System relies on the use of the components as listed below. The use of other components will alter the performance of the system and is not approved by Helix.

4.1 Helix Panel

4.1.1 50mm AAC Panel

Product:	Autoclaved aerated concrete panels
Thickness:	50mm
Width:	600mm
Lengths:	2200, 2400, 2550, 2700, 2850, 3000mm
Reinforcement:	Single layer steel mesh, centrally located.
Steel bars:	5 x Ø 4.5mm longitudinal bars and 6-8 x Ø 4.5mm transverse bars depending on panel length.

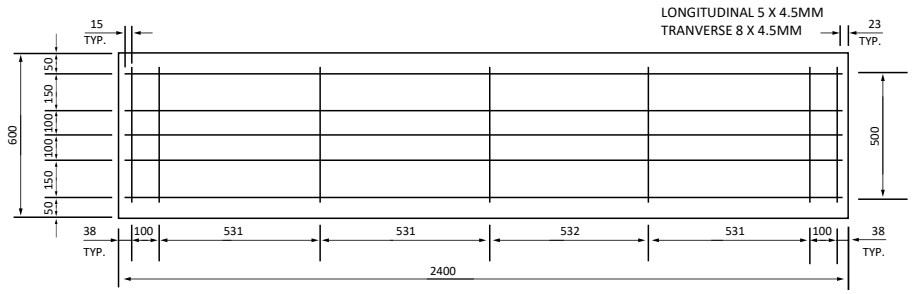
Typical steel reinforcement layout:



4.1.2 75mm AAC Panel

Product:	Autoclaved aerated concrete panels
Thickness:	75mm
Width:	600mm
Lengths:	1800, 2200, 2400, 2550, 2700, 2850, 3000 mm
Reinforcement:	Single layer steel mesh, centrally located.
Steel bars	5 x Ø 4.5mm longitudinal bars and 6-8 x Ø 4.5mm transverse bars depending on panel length.

Typical steel reinforcement layout:



4.2 Steel Top-Hat Battens

Steel top-hat battens shall be not less than 24 mm deep x 30 mm wide x 0.42 mm BMT, Grade G550 or equivalent, conforming with AS/NZS 4600. Steel top-hat battens shall be manufactured from AM150, Z275 or AZ150 galvanized steel conforming with AS 1397 including marking with base metal thickness, steel grade and coating.

4.3 Vapour Permeable Wall Wrap

Wall Wrap must meet AS 4200.1 requirements for:

- minimum Light Wall Duty Classification, and
- Water Barrier Classification, and
- be a Class 3 or 4 vapour control membrane in NCC Climate Zones 4 or 5; or a Class 4 vapour control membrane in NCC Climate Zones 6, 7 or 8.
- "Low" Flammability Index (FI) in accordance with AS 1530.2.

Wall wrap must be installed in accordance with AS 4200.2, including taping of all joins, penetrations and around the wall perimeter, see typical construction details.

4.4 Damp Proof Course

Damp proof course (DPC) must satisfy AS/NZS 2904 Section 6 and Table 2 performance criteria.

4.5 Wall Wrap Tape

Wall wrap tape must be minimum 48mm wide, wrap-compatible, pressure sensitive, installed in accordance with the Helix 50/75mm AAC Low-Rise External Wall System Typical Construction Details. It is essential that wall wrap tape effectively seals all perimeter, joins, and openings in the wall wrap.

4.6 Flashings

Flashings supplied by others must be designed and installed in general accordance with SA HB 39:2015 – Installation Code for Metal Roofing and Wall Cladding.

4.7 Panel Screws

4–10 Bugle Head or Hex Head Type 17 screw (Class 3 or 4) shall be used to fix Helix panel 50mm or 75mm AAC panel to light gauge steel top-hat battens from the outside of the building. Screw length shall be 65mm for 50mm thickness panels and 90mm for 75mm thickness panels.

14–10 Hex Head Type 17 screw (Class 3 or 4) shall be used to fix Helix panel 75mm AAC panel to light gauge steel top-hat battens from inside the building. Screw length shall be 65mm for 75mm thickness panels.

Screws shall be:

a) at least Class 3 for moderate and mild exposure environments;

b) at least Class 4 for severe marine further than 100 m from breaking surf, marine and industrial exposure environments; and

c) Class 4 stainless steel for severe marine exposure environments within 100 m of breaking surf.

4.8 Batten Screws

Screws to fix steel top-hat battens to:

- Timber Frame: 12–11 x 35 mm Hex Head Type 17 screw (Class 3 or 4), 2 per stud.

- Steel Frame: 10–16 x 16 mm Hex Head Self-drilling screw (Class 3 or 4), 2 per stud. Screws

shall be:

a) at least Class 3 for moderate and mild exposure environments;

b) at least Class 4 for severe marine further than 100 m from breaking surf, marine and industrial exposure environments; and

c) Class 4 stainless steel for severe marine exposure environments within 100 m of breaking surf.

4.9 Thin Bed Adhesive

The thin-bed adhesive shall:

- have a characteristic tensile strength equal to or greater than the characteristic tensile strength of the AAC, and

- be C1E classification in accordance with AS ISO 13007.1.

4.10 Backing Rod

The 'backing rod' shall be a minimum of 10 mm wide expanded polyethylene tube or bead.

4.11 External Coatings & Membranes

External coating systems providing weatherproofing in accordance with NCC requirements or durability in accordance with AS 5146.3 Table 2.5, shall be water-resistant; vapour-permeable; capable of bridging up to a 1 mm crack in the substrate; and, consist of a base levelling coat, and texture and finish coats.

For panels less than 75mm thickness AS 5146.3 Cl.2.8.4 requires that the coating system includes embedded fibreglass mesh reinforcing with a maximum aperture of 10 mm by 10 mm and a minimum weight of 145 g/m2.

When used to provide weatherproofing in accordance with the NCC requirements, external coating systems shall be water-proof, and be capable of bridging up to a 1 mm crack in the substrate, and consist of a base levelling coat, and texture coat, and finish coat.

5 SPECIFICATIONS

The following specification requirements are outside the scope of this guide:

a) Building design.

b) Site supervision and control.

c) Quality assurance.

d) Workplace health and safety.

e) The construction of all other building elements.

The design of the timber or steel structural frame (including all bracing), concrete slabs and footings and other building components are excluded from the scope of the Helix 50/75mm AAC Low-Rise External Wall System.

The wall framing supporting AAC wall panels shall be in accordance with AS 1684 for timber; or, NASH or AS/NZS 4600 for steel, where the steel shall have a minimum thickness of 0.55 mm BMT. Reinforced concrete slab-on-ground or reinforced concrete footings shall confirm to AS 2870 or AS 3600 requirements.

The Building Designer shall be responsible for the design and correct installation of control joints and articulation joints.

The design, supply and correct installation of windows, doors and all other penetrations are outside the scope of the Helix 50/75mm AAC Low-Rise External Wall System.

The designer and builder must ensure that the building including all drainage holes and integral flashings in all penetrations will prevent the ingress of rain water behind the Helix panel and will drain to the outside of the building.

Helix 50/75mm AAC Low-Rise External Wall System can only be installed after all exterior windows, doors and joinery have been installed.

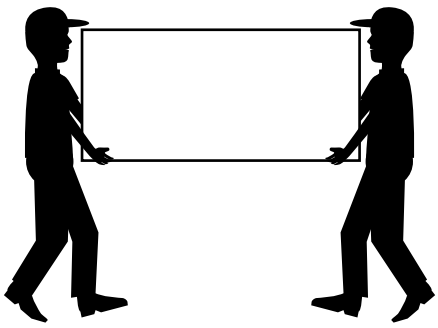
5.1 Storage and Handling

Physical damage – Ensure Helix panel remains protected from damage and surface contamination prior to installation. Weather protection –

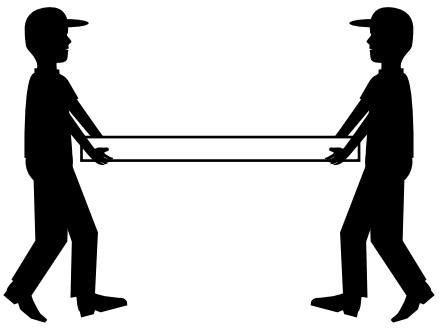
Ensure the top surface of Helix panel is always covered to prevent the absorption of rainwater.

Do not stack packs of panels on top of each other. Packs must be properly supported on a level surface. Only place packs in areas that have been verified as being able to support their weight.

Manual handling of Helix panel should be kept to a minimum, ensure the panel is only handled “on-edge”.



Always carry Helix panel ‘on-edge’



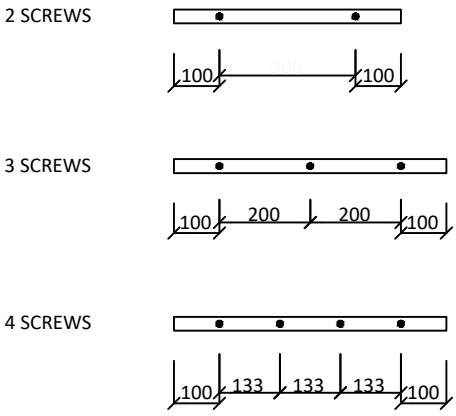
Never carry Helix panel flat

Cutting of cement based products may cause dust, which contains respirable crystalline silica. Always wear a P1 or P2 respirator and eye & ear protection, and use dust extraction equipment that complies with AS/NZS 60335.2.69 class M or H requirements when cutting AAC products. Wet cutting may be mandatory in certain States and/or Territories, confirm with local work safe authority on cutting requirement for AAC products. Always refer to the Safety Data Sheet for information.

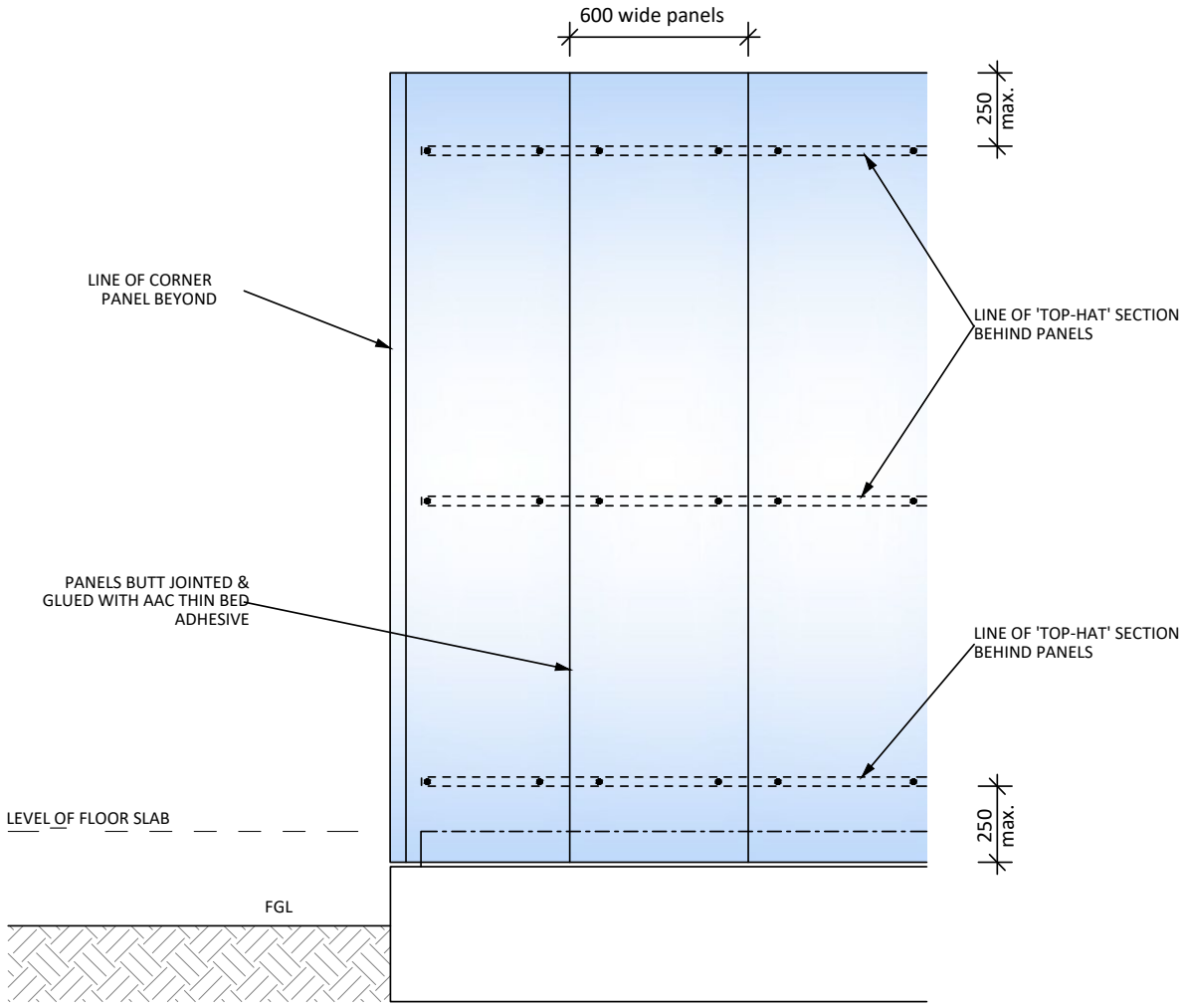
All steel reinforcement exposed during cutting the panel must be painted with anti-corrosion protection paint.

6 INSTALLATION

Helix 50/75mm AAC Low-Rise External Wall System shall only be installed by qualified and experienced tradesmen under the direction of a builder who understand the installation techniques described in this guide, the Australian Standard AS 5146.3, and the NCC 2022(Amdt.1).



FIXING SCREW LAYOUT



NOTES:

For number of top hats and screws, see fixing tables.

Additional top hats may be required. For suspended panels, see fixing tables.

PANEL AND FIXING SET-OUT ELEVATION

6.1 50mm Panels

6.1.1 Panels - Supported at Base

The following tables are applicable when panels are supported at their base such as a slab edge or shelf angle.

TABLE 1: 50mm Panel Spans - when Supported at Base (e.g. slab edge or shelf angle)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Maximum Panel Span (mm)			
				Panel Location			
				Typical		Corner	
	Over 1200mm from corners	Within 1200mm of corners		Span	Cant.	Span	Cant.
N1, N2	+0.67, -0.62	-1.25	600	1200	250	1200	250
N3	+1.05, -0.98	-1.95	600	1200	250	1000	250
N3, C1	+1.05, -0.98	-1.95	450	1200	250	1000	250
N4, C2	+1.56, -1.45	-2.90	450	1050	250	750	150
N5, C3	+2.30, -2.14	-4.27	450	850	250	600	150

NOTES:

1. All battens shall be spaced evenly, with end battens installed the lesser of 150 mm (typical) and the panel cantilever span from the ends of the Reinforced AAC panels.
2. If a Reinforced AAC panel or sill block is to be installed above or below window openings, additional top hat battens shall be used in these locations.
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

Table 2: Number of Screws per 50mm Panel at Each Batten Location - when Supported at Base (e.g. slab edge or shelf angle)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from outside the building	
	Over 1200mm from corners	Within 1200mm of corners		Panel Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	2
N3	+1.05, -0.98	-1.95	600	3	3
N3, C1	+1.05, -0.98	-1.95	450	3	3
N4, C2	+1.56, -1.45	-2.90	450	3	4
N5, C3	+2.30, -2.14	-4.27	450	3	4

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from outside the building	
	Over 1200mm from corners	Within 1200mm of corners		Panel Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	3	6
N3	+1.05, -0.98	-1.95	600	5	7
N3, C1	+1.05, -0.98	-1.95	450	5	7
N4, C2	+1.56, -1.45	-2.90	450	Not suitable	Not suitable
N5, C3	+2.30, -2.14	-4.27	450	Not suitable	Not suitable

NOTES:

1. For fire-rated construction, a minimum of 3 screws per batten is required.
2. Type of screw used is the 14-10 Hex head Type 17 screw, fixed from inside the building (10mm shorter than panel thickness), or 14-10 MP Bugle Head Batten screw, fixed from outside the building (15mm longer than panel thickness).
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

6.1.2 Panels – Suspended at Gable Ends

The following tables are applicable when panels are suspended such as a gable end.

Table 3: 50mm Panel Spans - when Suspended at Gable Ends

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Maximum Panel Span (mm)			
				Panel Location			
				Typical		Corner	
	Over 1200mm from corners	Within 1200mm of corners		Span	Cant.	Span	Cant.
N1, N2	+0.67, -0.62	-1.25	600	800	150	750	150
N3	+1.05, -0.98	-1.95	600	800	150	600	150
N3, C1	+1.05, -0.98	-1.95	450	800	150	650	150
N4, C2	+1.56, -1.45	-2.90	450	800	150	450	100
N5, C3	+2.30, -2.14	-4.27	450	600	150	350	100

NOTES:

1. All battens shall be spaced evenly, with end battens installed the lesser of 150 mm (typical) and the panel cantilever span from the ends of the Reinforced AAC panels.
2. If a Reinforced AAC panel or sill block is to be installed above or below window openings, additional top hat battens shall be used in these locations.
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

Table 4: Number of Screws per 50mm Panel at Each Batten Location - when Suspended at Gable Ends

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from outside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	3
N3	+1.05, -0.98	-1.95	600	3	4
N3, C1	+1.05, -0.98	-1.95	450	3	4
N4, C2	+1.56, -1.45	-2.90	450	4	4
N5, C3	+2.30, -2.14	-4.27	450	4	4

NOTES:

1. Battens shall be installed horizontally with panels to span vertically. Number of screw per panel per batten information is not suitable for soffits or any other areas where the panel is not vertical.
2. Type of screw used is the 14-10 MP Bugle Head Batten screw, fixed from outside the building (15mm longer than panel thickness).
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

6.1.3 Panels – Suspended from Framing (2nd & 3rd storey construction)

The following tables are applicable when panels are suspended such as second and third storey constructions.

Table 5: 50mm Panel Spans - when Suspended from Framing (e.g. 2nd & 3rd Storey Construction)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Maximum Panel Span (mm)			
	Over 1200mm from corners	Within 1200mm of corners		Panel Location			
				Typical		Corner	
				Span	Cant.	Span	Cant.
N1, N2	+0.67, -0.62	-1.25	600	1000	250	1000	250
N3	+1.05, -0.98	-1.95	600	1000	250	950	150
N3, C1	+1.05, -0.98	-1.95	450	1000	250	950	150
N4, C2	+1.56, -1.45	-2.90	450	1000	250	750	150
N5, C3	+2.30, -2.14	-4.27	450	750	150	600	150

NOTES:

1. All battens shall be spaced evenly, with end battens installed the lesser of 150 mm (typical) and the panel cantilever span from the ends of the Reinforced AAC panels.
2. If a Reinforced AAC panel or sill block is to be installed above or below window openings, additional top hat battens shall be used in these locations.
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

Table 6: Number of Screws per 50mm Panel at Each Batten Location - when Suspended from Framing (e.g. 2nd and 3rd storey construction)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from outside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	3
N3	+1.05, -0.98	-1.95	600	3	4
N3, C1	+1.05, -0.98	-1.95	450	3	4
N4, C2	+1.56, -1.45	-2.90	450	4	4
N5, C3	+2.30, -2.14	-4.27	450	4	4

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from inside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	Not suitable	Not suitable
N3	+1.05, -0.98	-1.95	600	Not suitable	Not suitable
N3, C1	+1.05, -0.98	-1.95	450	Not suitable	Not suitable
N4, C2	+1.56, -1.45	-2.90	450	Not suitable	Not suitable
N5, C3	+2.30, -2.14	-4.27	450	Not suitable	Not suitable

NOTES:

1. For fire-rated construction, a minimum of 3 screws per batten is required.
2. Type of screw used is the 14-10 Hex head Type 17 screw, fixed from inside the building (10mm shorter than panel thickness), or 14-10 MP Bugle Head Batten screw, fixed from outside the building (15mm longer than panel thickness).
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

6.2 75mm Panels

6.2.1 Panels - Supported at Base

The following tables are applicable when panels are supported at their base such as a slab edge or shelf angle.

TABLE 7: 75mm Panel Spans - when Supported at Base (e.g. slab edge or shelf angle)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Maximum Panel Span (mm)			
				Panel Location			
				Typical		Corner	
	Over 1200mm from corners	Within 1200mm of corners		Span	Cant.	Span	Cant.
N1, N2	+0.67, -0.62	-1.25	600	1200	250	1200	250
N3	+1.05, -0.98	-1.95	600	1200	250	1000	250
N3, C1	+1.05, -0.98	-1.95	450	1200	250	1000	250
N4, C2	+1.56, -1.45	-2.90	450	1200	250	900	150
N5, C3	+2.30, -2.14	-4.27	450	1200	250	600	150

NOTES:

1. All battens shall be spaced evenly, with end battens installed the lesser of 150 mm (typical) and the panel cantilever span from the ends of the Reinforced AAC panels.
2. If a Reinforced AAC panel or sill block is to be installed above or below window openings, additional top hat battens shall be used in these locations.
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

Table 8: Number of Screws per 75mm Panel at Each Batten Location - when Supported at Base (e.g. slab edge or shelf angle)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from outside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	2
N3	+1.05, -0.98	-1.95	600	3	3
N3, C1	+1.05, -0.98	-1.95	450	3	3
N4, C2	+1.56, -1.45	-2.90	450	3	4
N5, C3	+2.30, -2.14	-4.27	450	3	4

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from inside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	2
N3	+1.05, -0.98	-1.95	600	3	3
N3, C1	+1.05, -0.98	-1.95	450	3	3
N4, C2	+1.56, -1.45	-2.90	450	3	4
N5, C3	+2.30, -2.14	-4.27	450	4	5

NOTES:

1. For fire-rated construction, a minimum of 3 screws per batten is required.
2. Type of screw used is the 14-10 Hex head Type 17 screw, fixed from inside the building (10mm shorter than panel thickness), or 14-10 MP Bugle Head Batten screw, fixed from outside the building (15mm longer than panel thickness).
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

6.2.2 Panels – Suspended at Gable Ends

The following tables are applicable when panels are suspended such as a gable end.

Table 9: 75mm Panel Spans - when Suspended at Gable Ends

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Maximum Panel Span (mm)			
				Panel Location			
				Typical		Corner	
	Over 1200mm from corners	Within 1200mm of corners		Span	Cant.	Span	Cant.
N1, N2	+0.67, -0.62	-1.25	600	800	150	750	150
N3	+1.05, -0.98	-1.95	600	800	150	600	150
N3, C1	+1.05, -0.98	-1.95	450	800	150	650	150
N4, C2	+1.56, -1.45	-2.90	450	800	150	450	100
N5, C3	+2.30, -2.14	-4.27	450	600	150	350	100

NOTES:

1. All battens shall be spaced evenly, with end battens installed the lesser of 150 mm (typical) and the panel cantilever span from the ends of the Reinforced AAC panels.
2. If a Reinforced AAC panel or sill block is to be installed above or below window openings, additional top hat battens shall be used in these locations.
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

Table 10: Number of Screws per 75mm Panel at Each Batten Location - when Suspended at Gable Ends

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from outside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	3
N3	+1.05, -0.98	-1.95	600	3	4
N3, C1	+1.05, -0.98	-1.95	450	3	4
N4, C2	+1.56, -1.45	-2.90	450	4	4
N5, C3	+2.30, -2.14	-4.27	450	4	4

NOTES:

1. Battens shall be installed horizontally with panels to span vertically. Number of screw per panel per batten information is not suitable for soffits or any other areas where the panel is not vertical.
2. Type of screw used is the 14-10 MP Bugle Head Batten screw, fixed from outside the building. Screw length 15mm longer than panel thickness.
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

6.2.3 Panels – Suspended from Framing (2nd & 3rd storey construction)

The following tables are applicable when panels are suspended such as second and third storey constructions.

Table 11: 75mm Panel Spans - when Suspended from Framing (e.g. 2nd & 3rd Storey Construction)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Maximum Panel Span (mm)			
	Over 1200mm from corners	Within 1200mm of corners		Panel Location			
				Typical		Corner	
				Span	Cant.	Span	Cant.
N1, N2	+0.67, -0.62	-1.25	600	1000	250	1000	250
N3	+1.05, -0.98	-1.95	600	1000	250	1000	250
N3, C1	+1.05, -0.98	-1.95	450	1000	250	1000	250
N4, C2	+1.56, -1.45	-2.90	450	1000	250	750	150
N5, C3	+2.30, -2.14	-4.27	450	750	150	600	150

NOTES:

1. All battens shall be spaced evenly, with end battens installed the lesser of 150 mm (typical) and the panel cantilever span from the ends of the Reinforced AAC panels.
2. If a Reinforced AAC panel or sill block is to be installed above or below window openings, additional top hat battens shall be used in these locations.
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

Table 12: Number of Screws per 75mm Panel at Each Batten Location - when Suspended from Framing (e.g. 2nd and 3rd storey construction)

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from outside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	3
N3	+1.05, -0.98	-1.95	600	3	4
N3, C1	+1.05, -0.98	-1.95	450	3	4
N4, C2	+1.56, -1.45	-2.90	450	4	4
N5, C3	+2.30, -2.14	-4.27	450	4	4

AS 4055 Wind Category	Maximum ultimate wind pressure / suction (kPa)		Maximum Stud Spacing (mm)	Number of screws per panel per batten fixed from inside the building	
	Over 1200mm from corners	Within 1200mm of corners		Batten Location	
				Typical	Corner
N1, N2	+0.67, -0.62	-1.25	600	2	3
N3	+1.05, -0.98	-1.95	600	3	4
N3, C1	+1.05, -0.98	-1.95	450	3	4
N4, C2	+1.56, -1.45	-2.90	450	4	4
N5, C3	+2.30, -2.14	-4.27	450	Not suitable	Not suitable

NOTES:

1. For fire-rated construction, a minimum of 3 screws per batten is required.
2. Type of screw used is the 14-10 Hex head Type 17 screw, fixed from inside the building (10mm shorter than panel thickness), or 14-10 MP Bugle Head Batten screw, fixed from outside the building (15mm longer than panel thickness).
3. Local suctions within 1200 mm of the corners of a building necessitate additional battens.
4. The wind resistance of external walls is applicable only to buildings that incorporate a lining capable of resisting wind pressure exerted from inside the building, where the cavity between the lining and the cladding is sealed and where windows and doors in the external walls incorporated seals.

6.3 Control Joints and Articulation Joints

Requirements for control and articulation joints vary from building to building.
The designer and builder are responsible for ensuring Helix 50/75mm AAC Low-Rise External Wall System is suitable for their application.
AS 5146.3 provides general guidance for control and articulation joints as follows.

At minimum, vertical control or articulation joints shall be built into a wall at:

a) Spacings not exceeding 6.0 m.

b) For external walls of houses and low-rise multi-residential buildings, at spacings not more than the values given in AS 5146.3 Table 2.9.1.

c) Any position where a wall height changes by more than 20%.

d) A change in thickness of a wall.

e) Control joints or construction joints in supporting concrete slabs.

f) Wall junctions between different materials.

g) Corners, as measured from the inside edge, as follows:

a. At the corner of itself.

b. At a maximum of 1.2 m one side of a corner, or

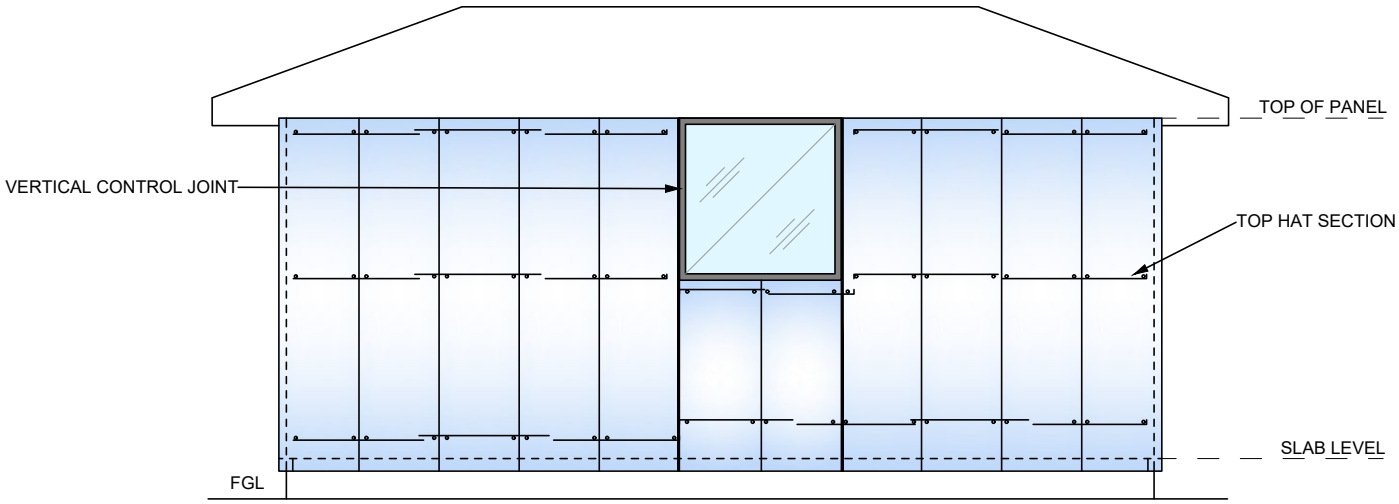
c. At a maximum of 2.4 m on each side of a corner.

At minimum, horizontal control joints shall be built into a wall at the position where the:

a) Reinforced AAC members continue vertically past a suspended floor.

b) Ends of two or more adjacent panels are aligned.

6.4 Typical Panel Layout for Max. 600mm Stud Wall Detail

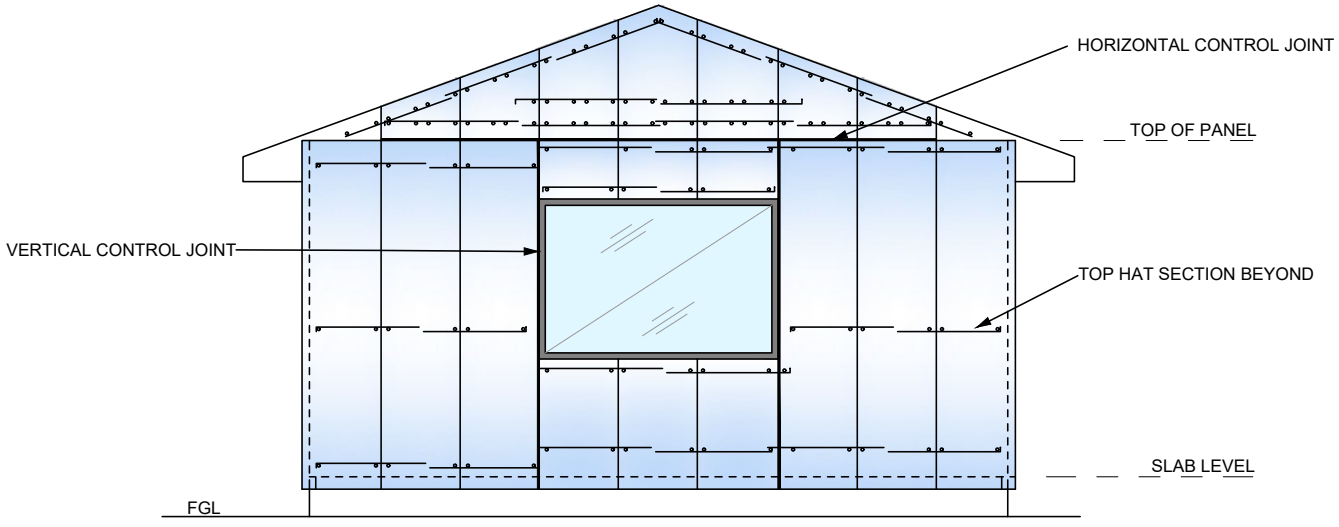


NOTES:

For number of top hats and screws, see fixing tables.

These details have not shown the set-out of the top hats to accommodate control joint locations.

SINGLE STOREY CONSTRUCTION - HIP ROOF ELEVATION

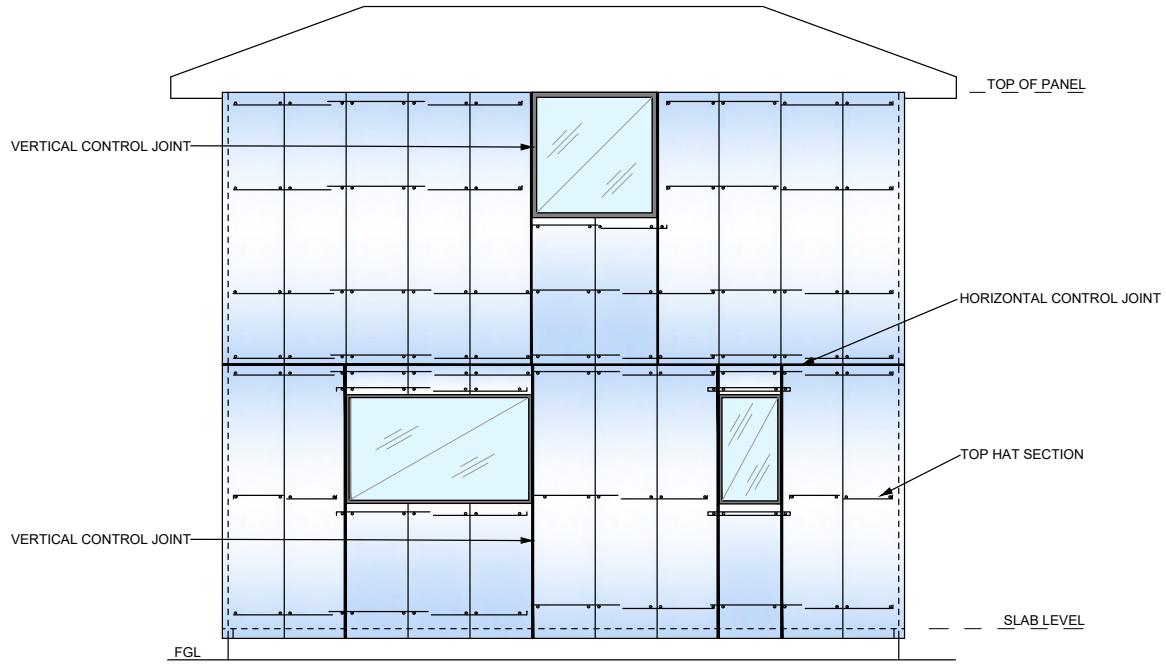


NOTES:

For number of top hats and screws, see fixing tables.

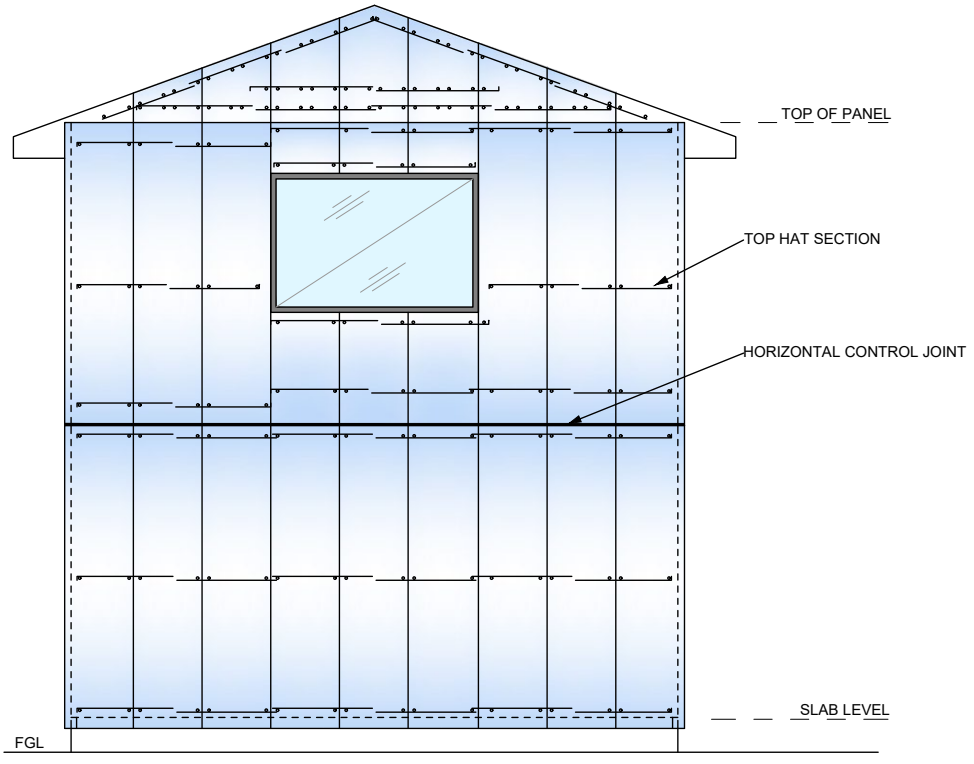
These details have not shown the set-out of the top hats to accomodate control joint locations.

SINGLE STOREY CONSTRUCTION - GABLE ROOF ELEVATION



NOTES:
For number of top hats and screws see fixing tables.

TWO STOREY CONSTRUCTION - HIP ROOF ELEVATION



NOTES:
For number of top hats and screws, see fixing tables.

TWO STOREY CONSTRUCTION - GABLE ROOF ELEVATION

6.5 Installation Steps

6.5.1 Accessories:

1. Damp-proof Course (DPC) and Flashings – are to be installed in accordance with Helix 50/75mm AAC Low-Rise External Wall System Typical Construction Details, NCC requirements (e.g. NCC 2022(Amdt.1) Volume Two, 5.7.4), and as follows. The surface on which a damp-proof barrier or flashing is to be laid shall be as smooth as necessary to prevent puncturing and to prevent keying of supported Reinforced AAC members if they are required to be able of moving on the surface.
   Where joints in damp-proof barriers or flashings cannot be avoided, they shall be lapped not less than 150mm, or sealed against moisture penetration.
   Damp-proof barriers and flashings shall not be breached or punctured during construction.
   Damp-proof barriers shall be installed to project from both faces of the wall. After panel installation, DPC projections shall be either cut off flush with the external face of the finished wall or turned down.
   Flashings, including over-flashings, shall be built-in with projections that are of a size and orientation to direct the moisture from the reinforced AAC in the required manner and fixed to the wall frames at not less than 600 mm spacing.
   Over-flashings shall overlap under-flashings by at least 50 mm.
   Any render finish subsequently applied to the surface shall not be allowed to bridge a damp-proof barrier or make ineffective any other moisture protection measures.
2. Breathable Wall Wrap - Fix over the studs, and cut around penetrations and openings (e.g. doors, windows) in accordance with AS 4200.2:2017.
3. Install Flashing Tape to seal the breathable wall wrap at all joins, openings and around the perimeter of the wall frame. Flashing Tape must always be applied in accordance with the manufacturers' instructions ensuring:
   - all surfaces are clean and dry, and
   - pressure is applied to the tape so the adhesive is firm contact with the substrate.

   Flashing Tape is not a mechanical joining device, ensure that the materials being are joined mechanically secured.
4. Battens must be fixed to every stud, with maximum spacings as described in the Sections 6.1, 6.2 or 6.3 as applicable.

6.5.2 Panels:

1. Holes and chases shall not be made in Reinforced AAC, except at positions specified in the design documents.
2. Reinforced AAC members shall not be cut during construction, except at positions specified in the design documents. Panels typically should not be less than 270mm wide, and in all cases must achieve the specified minimum support and fixing requirements.
3. Allow gaps between Helix panel and any openings for beading and sealing. Guidance on gap sizes is provided in AS 5146.3, Table 2.10.7.
4. Thin bed adhesive shall be applied to the entire edge surface of all joints between Reinforced AAC panels, other than control or articulation joints. The joint shall be 2–3 mm wide.
5. The Backing Rod is a closed-cell polyethylene foam. This used as back-blocking for sealant placed in joints.
6. Horizontal Control Joints - Provide horizontal control joints at all locations as specified in the design documents. Horizontal control joints consist of a 10 mm gap with backing rod for the sealant to be placed in the joint. Note that as a minimum, horizontal control joints must be made at vertical spacing not greater than 3.0 m, typically corresponding to a storey height. In all cases horizontal control joints must be made at all construction joints and at the junctions of dissimilar substrates where the potential for differential movement exists.

7. Vertical Control Joints – Provide vertical control joints, at all locations as specified in the design documents. Vertical control joints consist of a 10 mm gap with backing rod for the sealant to be placed in the joint. Note that as a minimum, vertical control joints must be made at horizontal spacing not greater than 9m, and should typically coincide with penetrations such as doors, windows etc. In all cases vertical control joints must be made at all construction joints and at the junctions of dissimilar substrates where the potential for differential movement exists.

6.5.3 External Coating or Membrane Installation

OPTION 1: External Coating System:

The following external coating system conforms with the durability requirements of AS 5146.3 Table 2.5, except in exposure environments where 'special protection' is required:

(i) Surface preparation - Clean, patch and remove any dags. Remove all surface contaminants such as oil, grease, dust (including salt residue in coastal areas) by hosing down with fresh potable water before application of the coating system. AAC substrate shall be allowed to reach equilibrium moisture content prior to application of the coating.

(ii) Base levelling coat - Temper dry the AAC substrate with a light spray to reduce excessive suction. Apply the base-levelling coat with a hawk and stainless steel trowel evenly over the surface to a thickness not less than 2 mm and up to 6 mm to level irregularities. Render shall not cover control joints. Follow up with a poly float to level out the product. Dry for at least 6 h to 8 h before the application of the first coat. NOTE: The base levelling coat may be omitted in circumstances when aesthetic considerations do not demand a smooth surface.

(iii) First (texture) coat Apply with either a roller or trowel over the surface ensuring a wet edge is maintained over the application area. Protect from rain in first 24 h.

(iv) Second (finish) coat Apply with a 12 mm nap roller over the surface ensuring a wet edge is maintained over the application area. Protect from rain in first 24 h. Ensure adequate batch tint lots to achieve coverage over single elevations to ensure colour consistency.

OPTION 2: External Membrane System:

The following external membrane system conforms with the durability requirements of AS 5146.3 Table 2.5, except in exposure environments where 'special protection' is required:

(i) Surface preparation Clean, patch and remove any dags. Remove all surface contaminants such as oil, grease, dust (including salt residue in coastal areas) by hosing down with fresh potable water before application of the membrane system. AAC substrate shall be allowed to reach equilibrium moisture content prior to application of the membrane.

(ii) Base levelling coat Temper dry the AAC substrate with a light spray to reduce excessive suction. Apply the base-levelling coat with a hawk and stainless steel trowel evenly over the surface to a thickness not less than 2 mm and up to 6 mm to level irregularities. Render shall not cover control joints. Follow up with a poly float to level out the product. Dry for at least 6 h to 8 h before the application of the first coat.

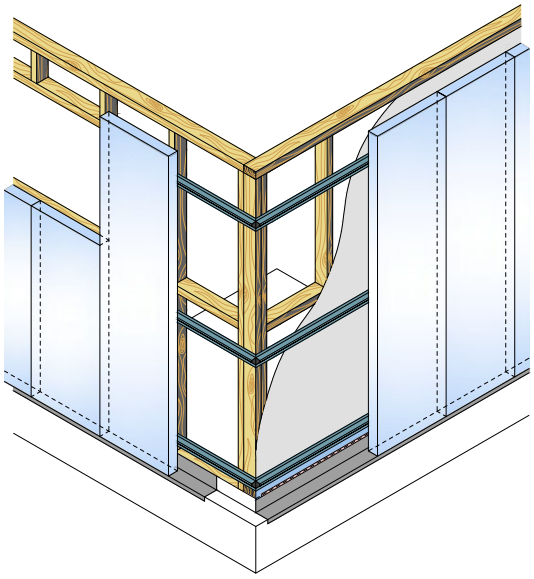
(iii) External membranes shall conform with AS 4654.1 and be installed in accordance with AS 4654.2.

7 CONSTRUCTION DETAILS

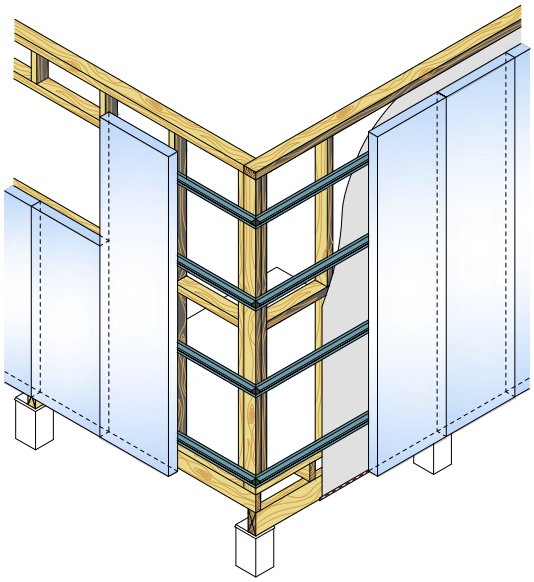
Helix 50/75mm AAC Low-Rise External Wall System must be installed in accordance with this Design and Installation Guide and comply with all relevant building codes and local government regulations.

These typical construction details are provided as a guide for construction industry professionals, they do not constitute a project specification, and should only be used within the context of a project specification.

7.1 Typical Details

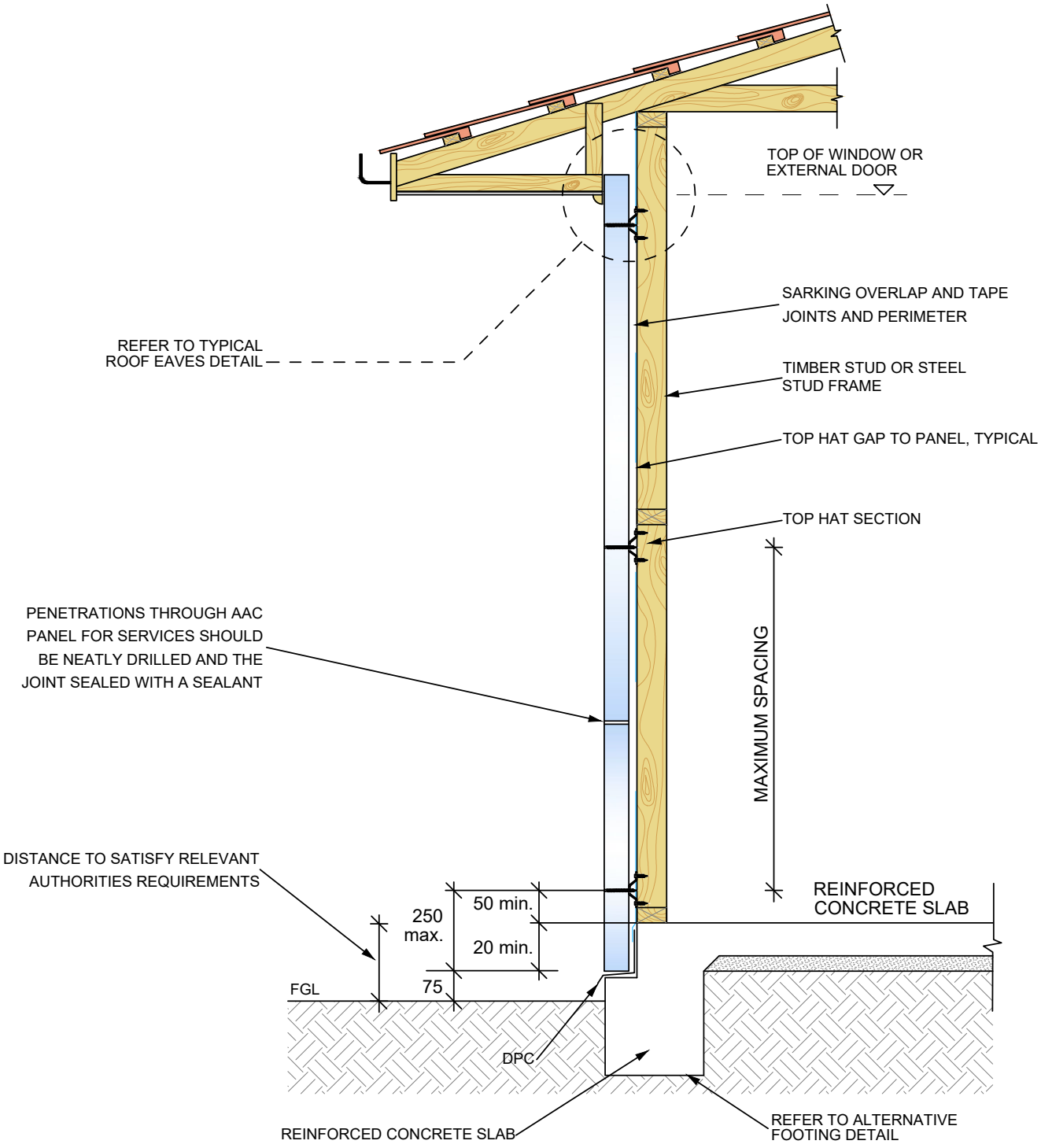


SINGLE STOREY CONSTRUCTION
- PANELS SUPPORTED AT BASE



SINGLE STOREY CONSTRUCTION
- PANELS SUSPENDED

7.1.1 SECTION THROUGH SINGLE STOREY CONSTRUCTION

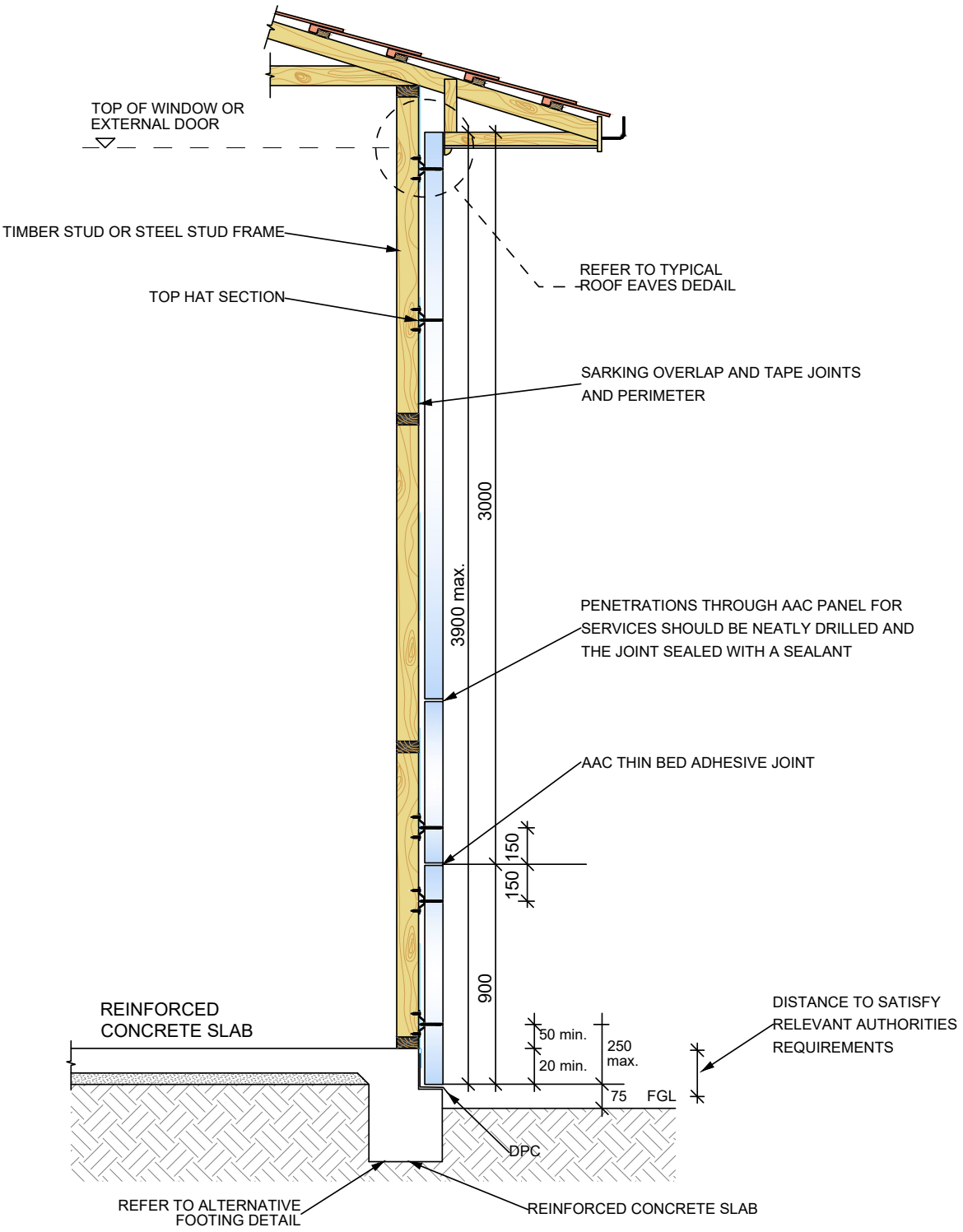


NOTES:

For number of top hats and screws, see fixing tables.

The maximum that the panel shall overhang the slab edge is ⅓ of the panel thickness.

7.1.2 SECTION THROUGH SINGLE STOREY CONSTRUCTION - WALL UP TO 3900mm HIGH

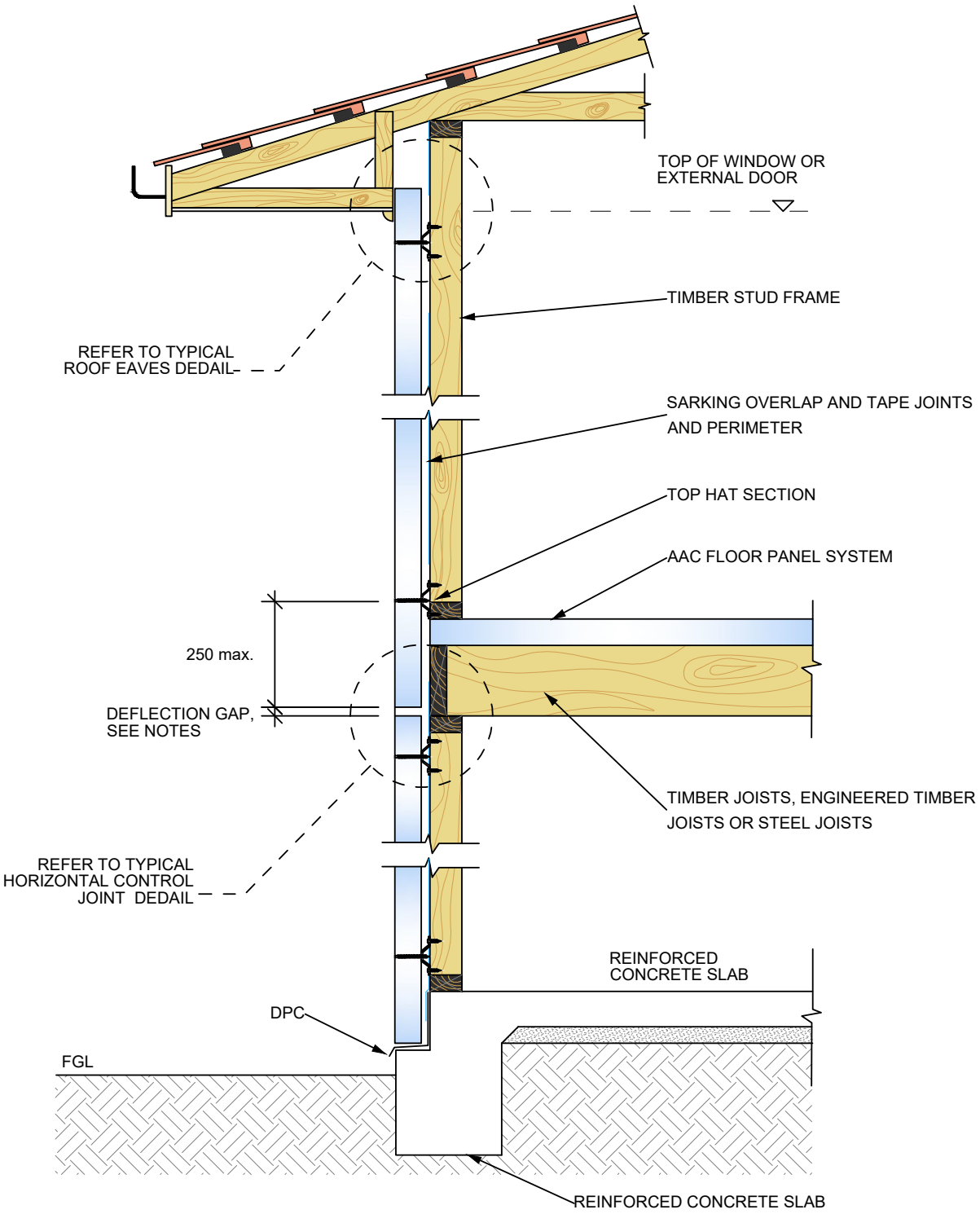


NOTES:

For number of top hats and screws, see fixing tables.

The maximum that the panel shall overhang the slab edge is ⅓ of the panel thickness.

7.1.3 TWO STOREY CONSTRUCTION - HORIZONTAL CONTROL JOINT

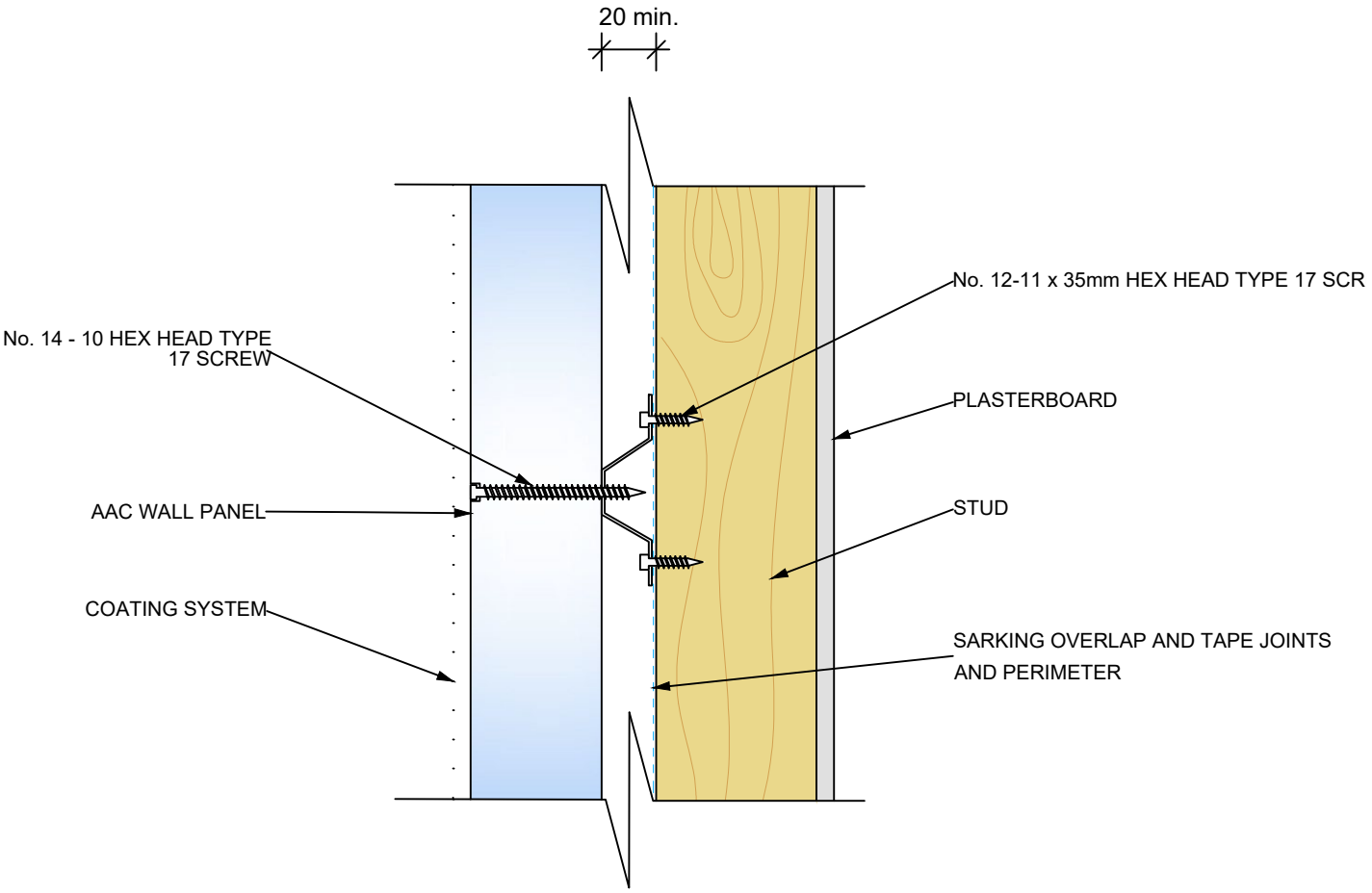


NOTES:

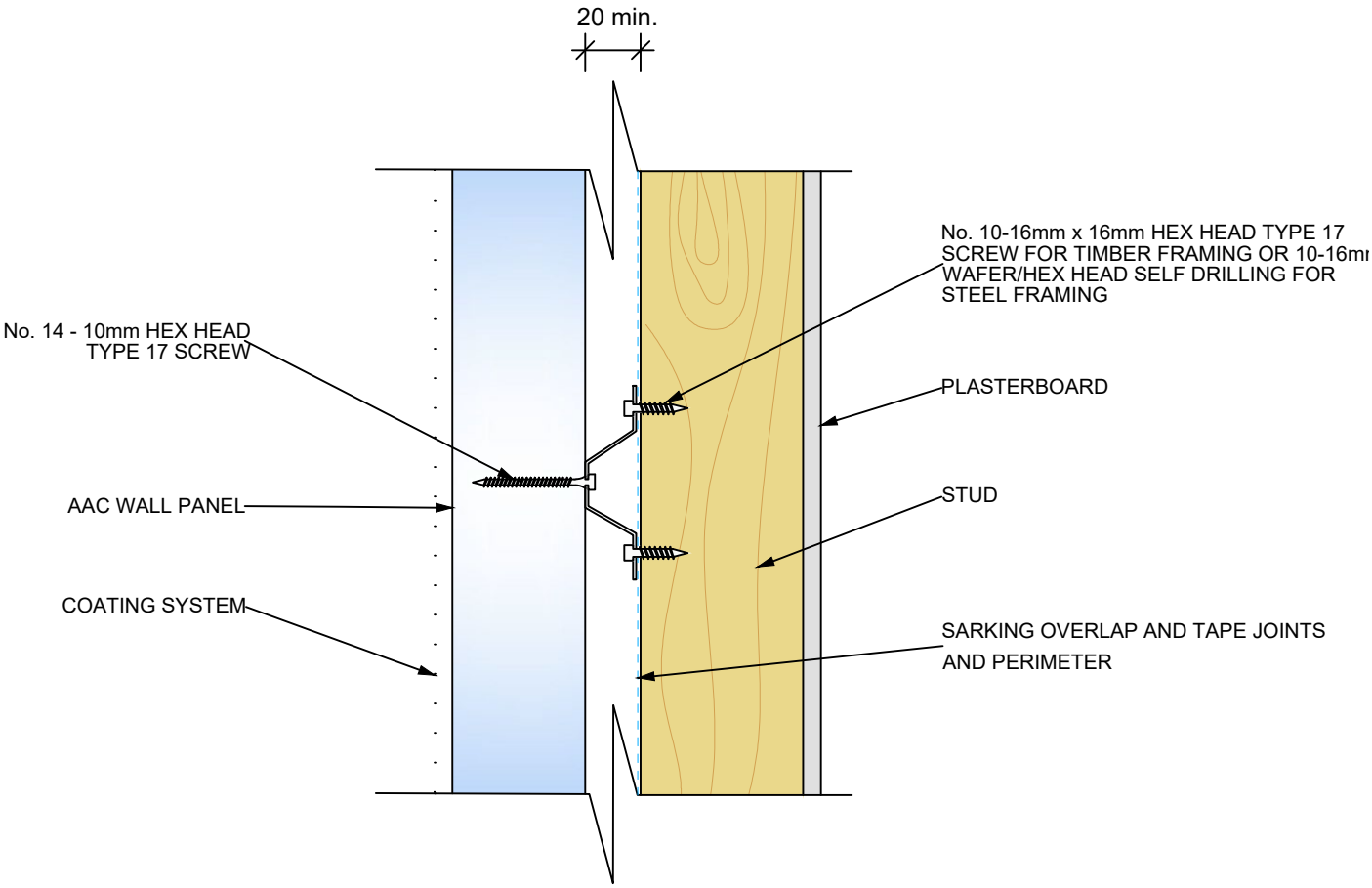
The gap widths may be reduced for low-shrinkage floor systems. For guidance on acceptable gap width, see joint manufacturers specifications.

The maximum that the panel shall overhang the slab edge is ⅓ of the panel thickness.

7.1.4 EXTERNAL FIXING DETAIL



7.1.5 INTERNAL FIXING DETAIL FOR BOUNDARY WALLS

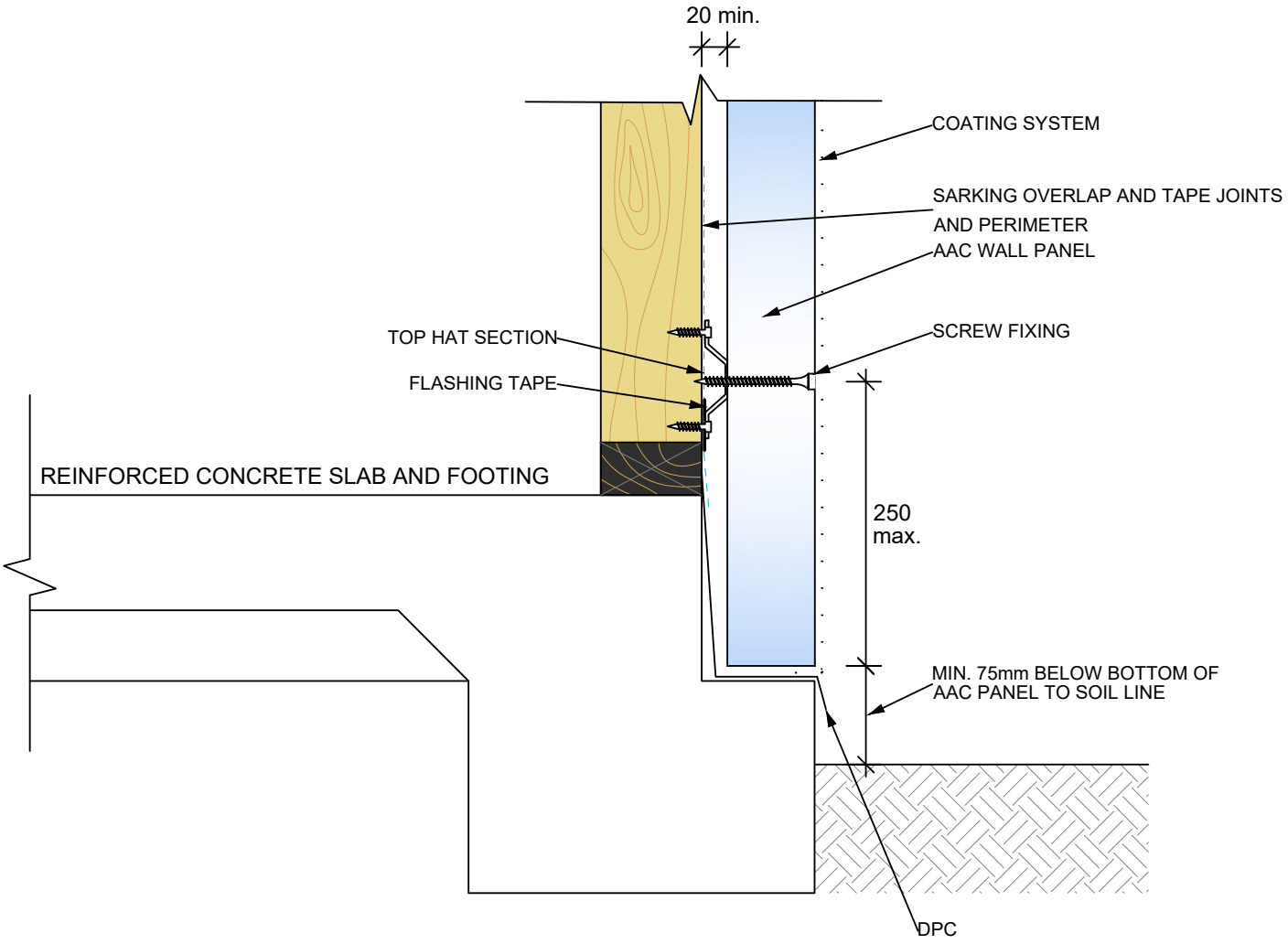


NOTES:

When limited access dictates that the panels shall be fixed from the inside of the building, an additional 14-10 Hex Head Type 17 screw per panel per top-hat batten shall be installed.

When the sarking is penetrated by screw fixing, tape to seal wall wrap.

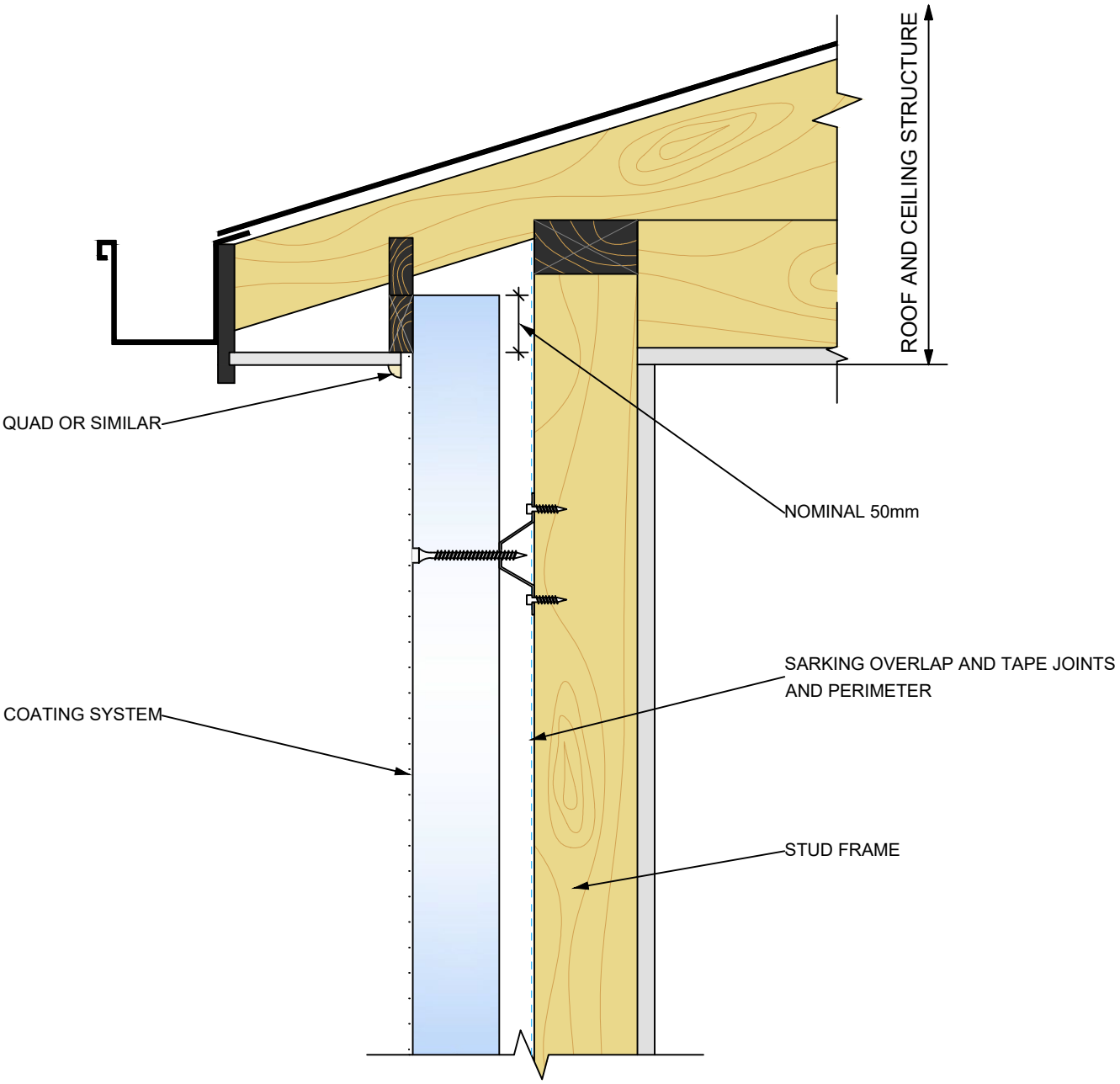
7.1.6 TYPICAL BOTTOM EDGE DETAIL



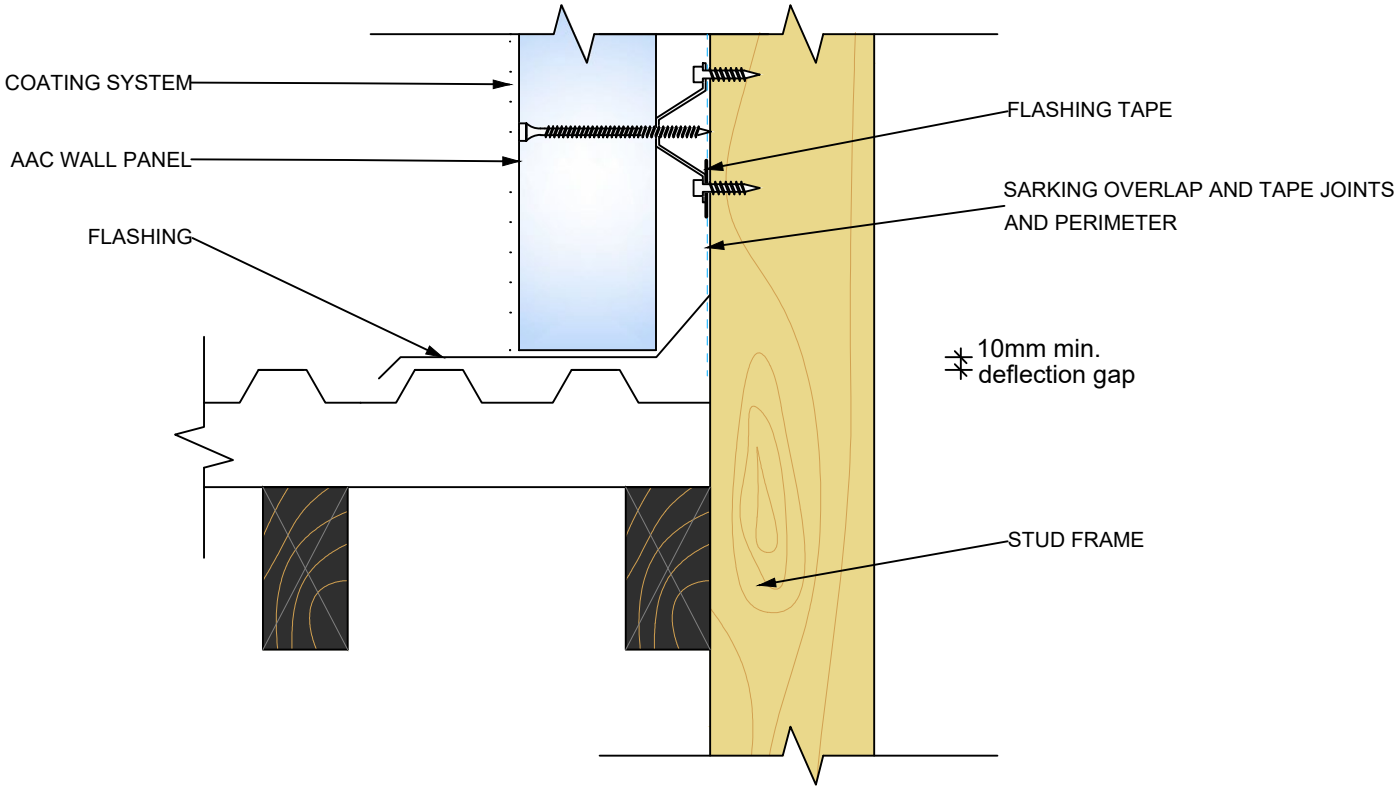
NOTES:

The maximum that the panel shall overhang the slab edge is ⅓ of the panel thickness.

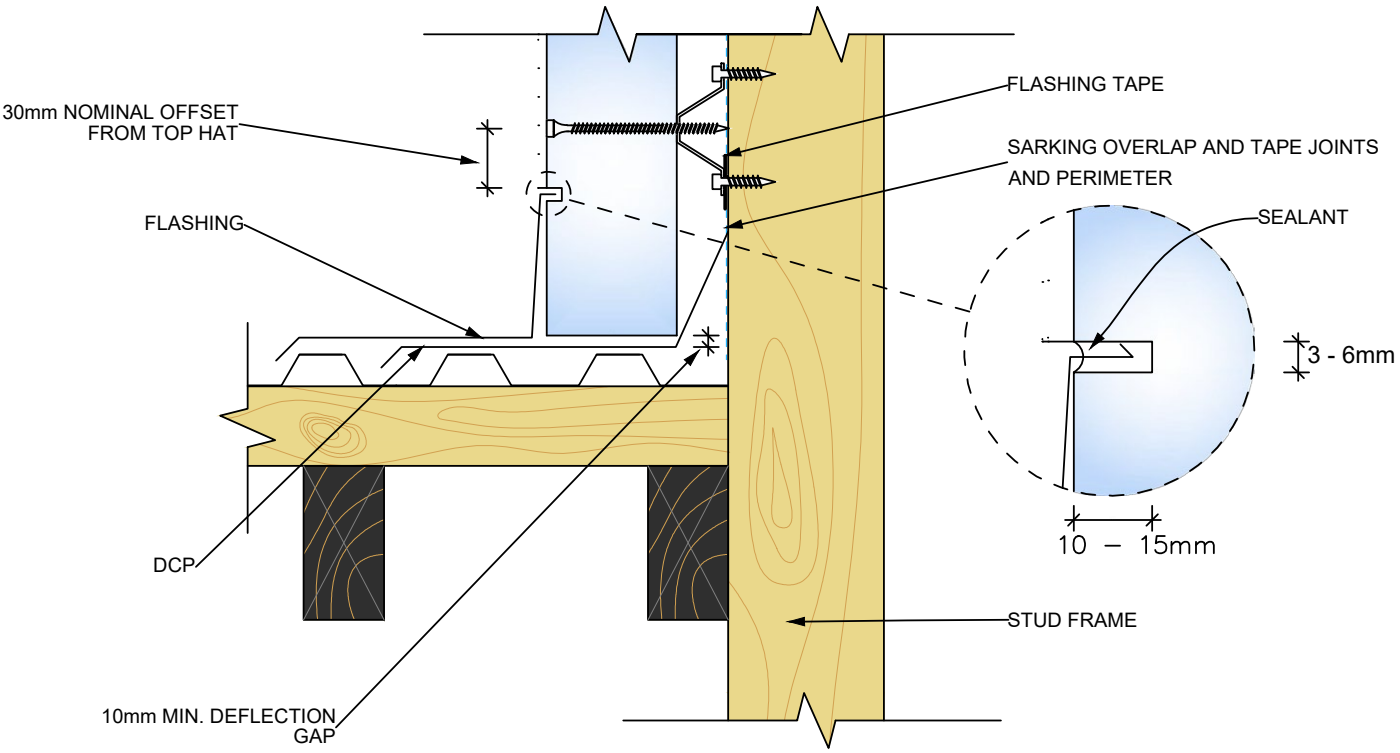
7.1.7 TYPICAL EAVES DETAIL WITH AAC PANEL FINISHING ABOVE SOFFIT



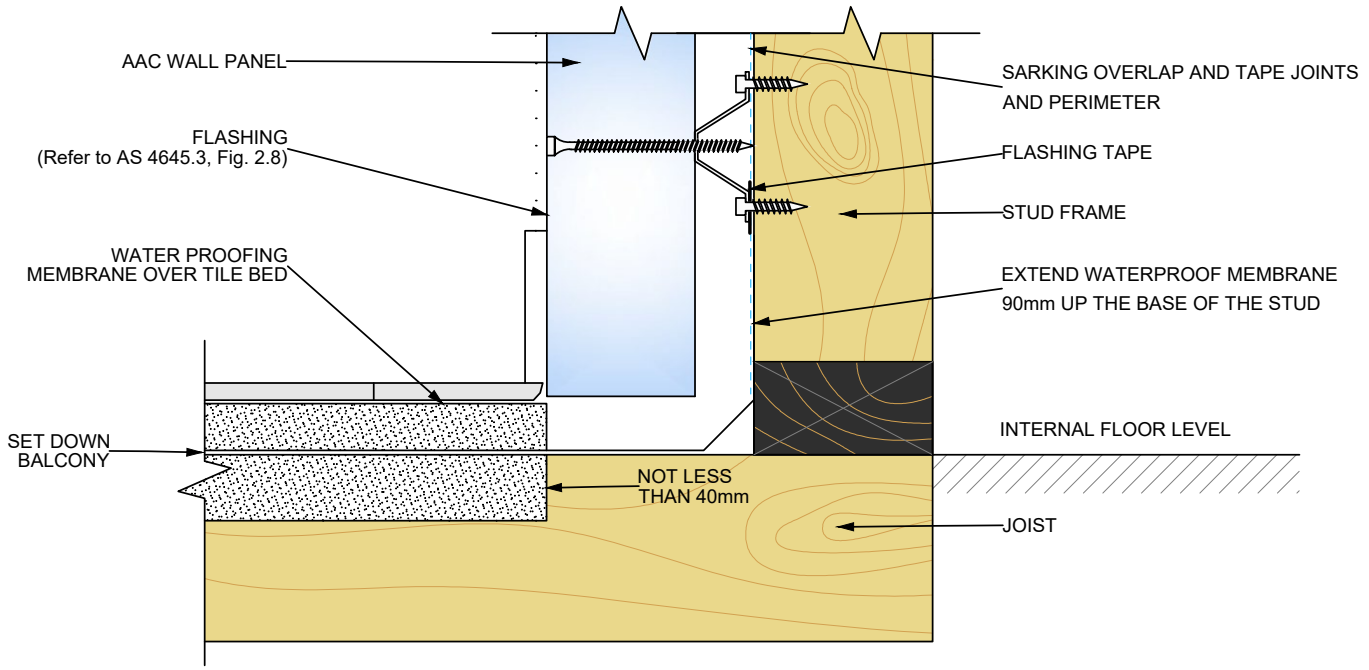
7.1.8 ROOF DETAIL WITH FLASHING UNDER PANEL



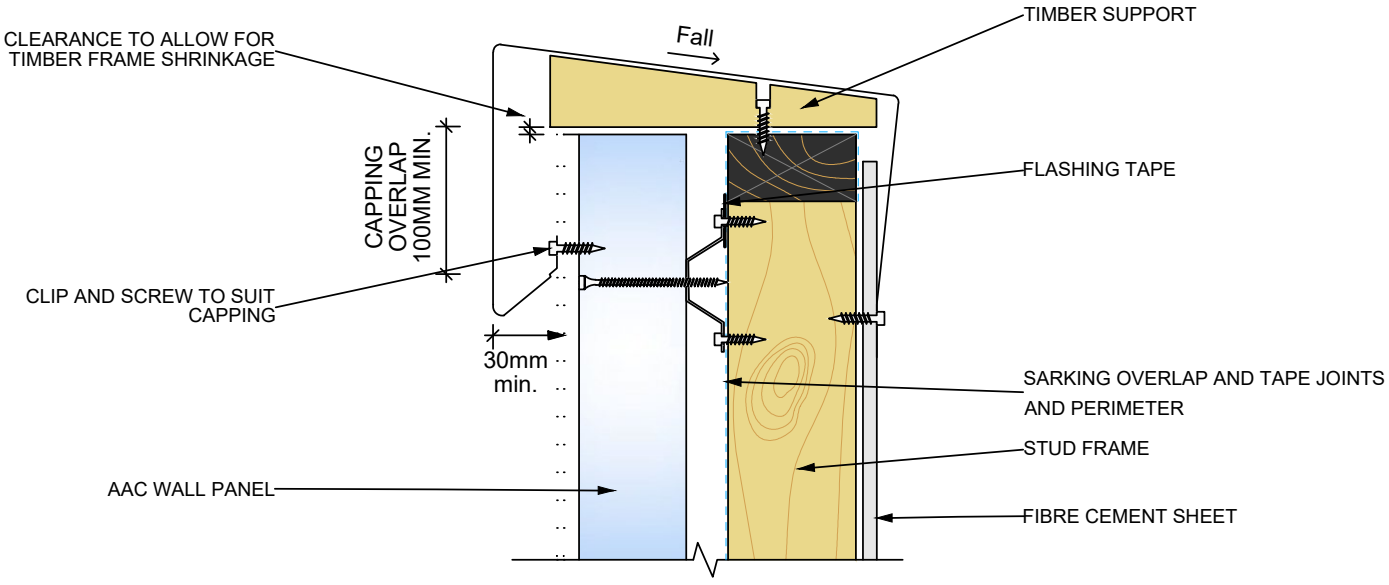
7.1.9 ROOF DETAIL WITH FLASHING SET INTO AAC PANEL



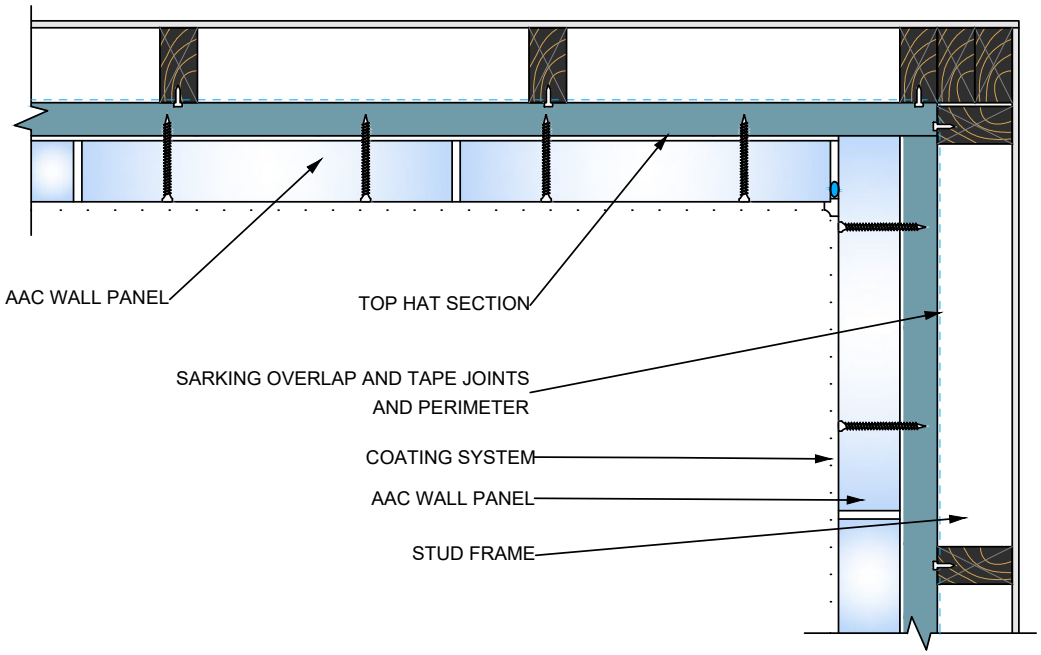
7.1.10 TYPICAL BALCONY DETAIL



7.1.11 TYPICAL PARAPET CAPPING

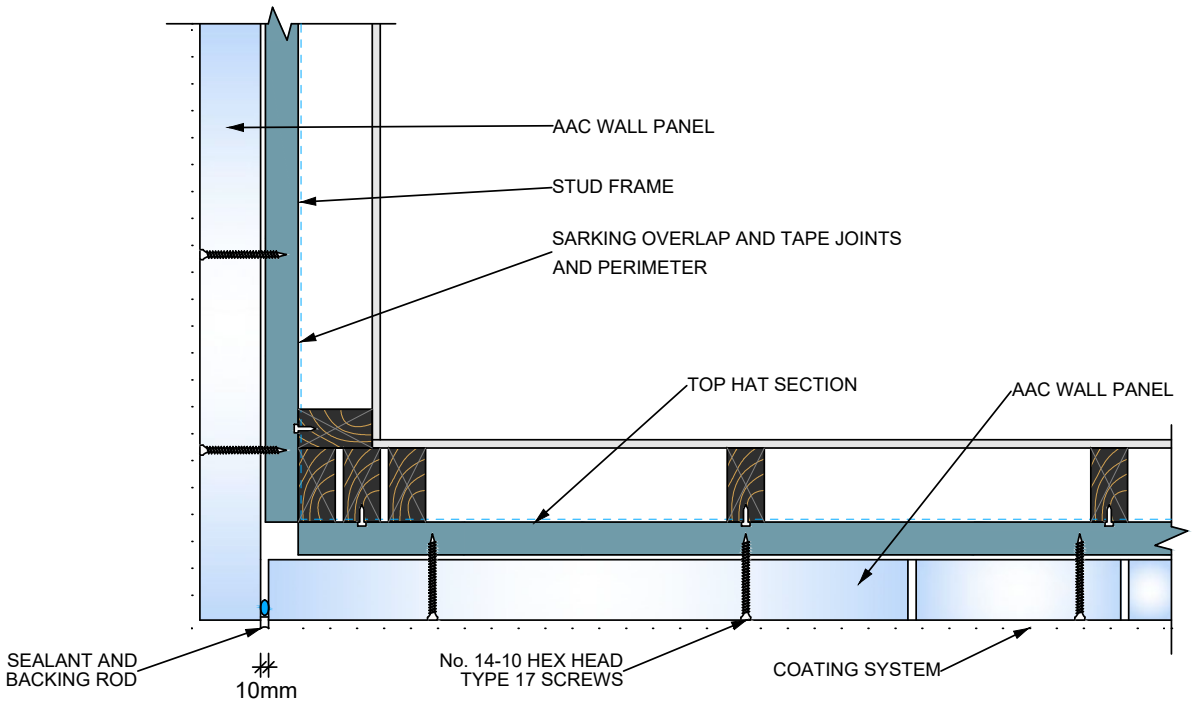


7.1.12 VERTICAL CONTROL JOINT AT INTERNAL CORNER



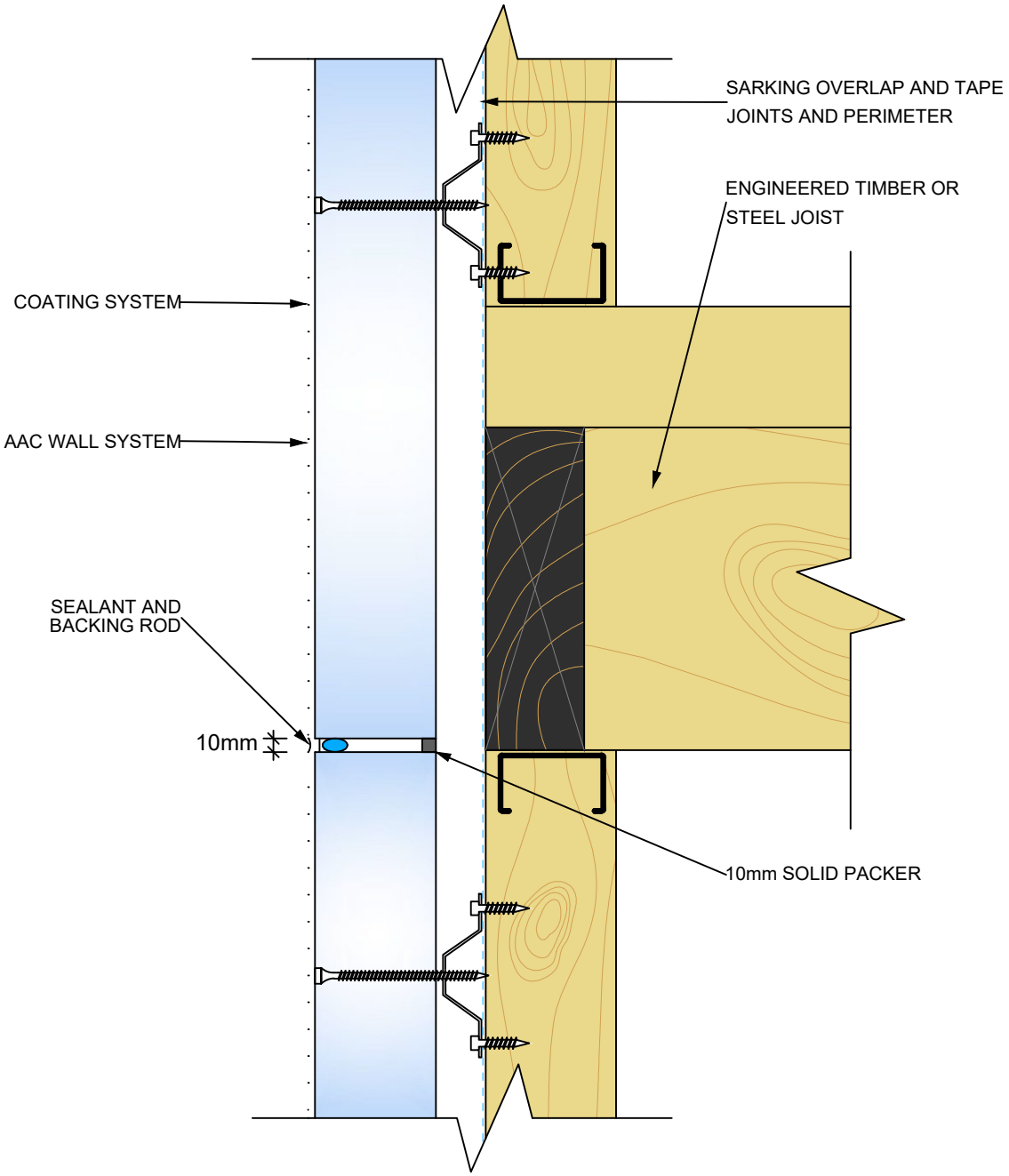
NOTES:
For number of top hats and screws, see fixing tables.

7.1.13 VERTICAL CONTROL JOINT AT EXTERNAL CORNER



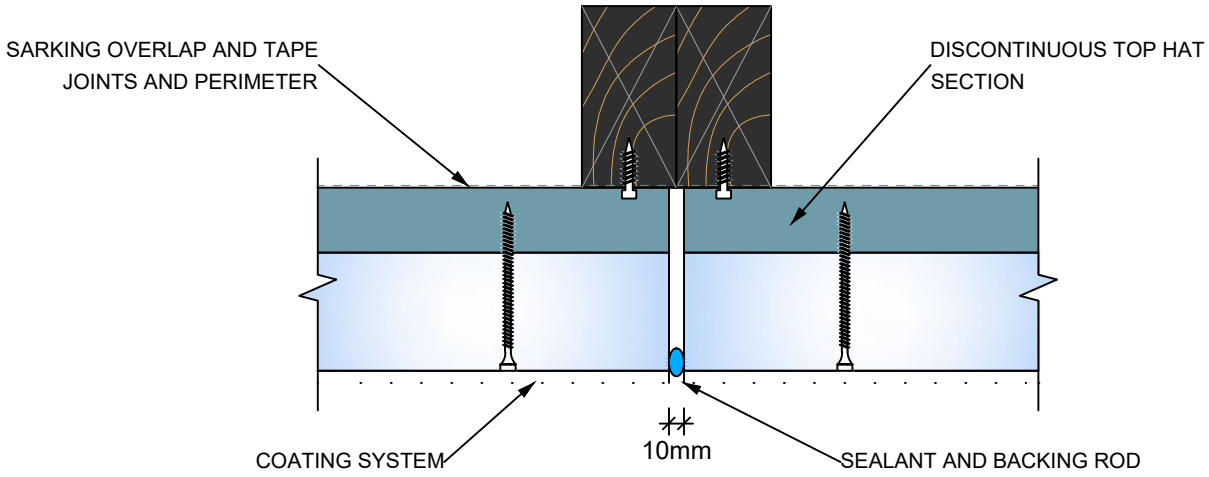
NOTES:
For number of top hats and screws, see fixing tables.

7.1.14 TYPICAL HORIZONTAL CONTROL JOINT

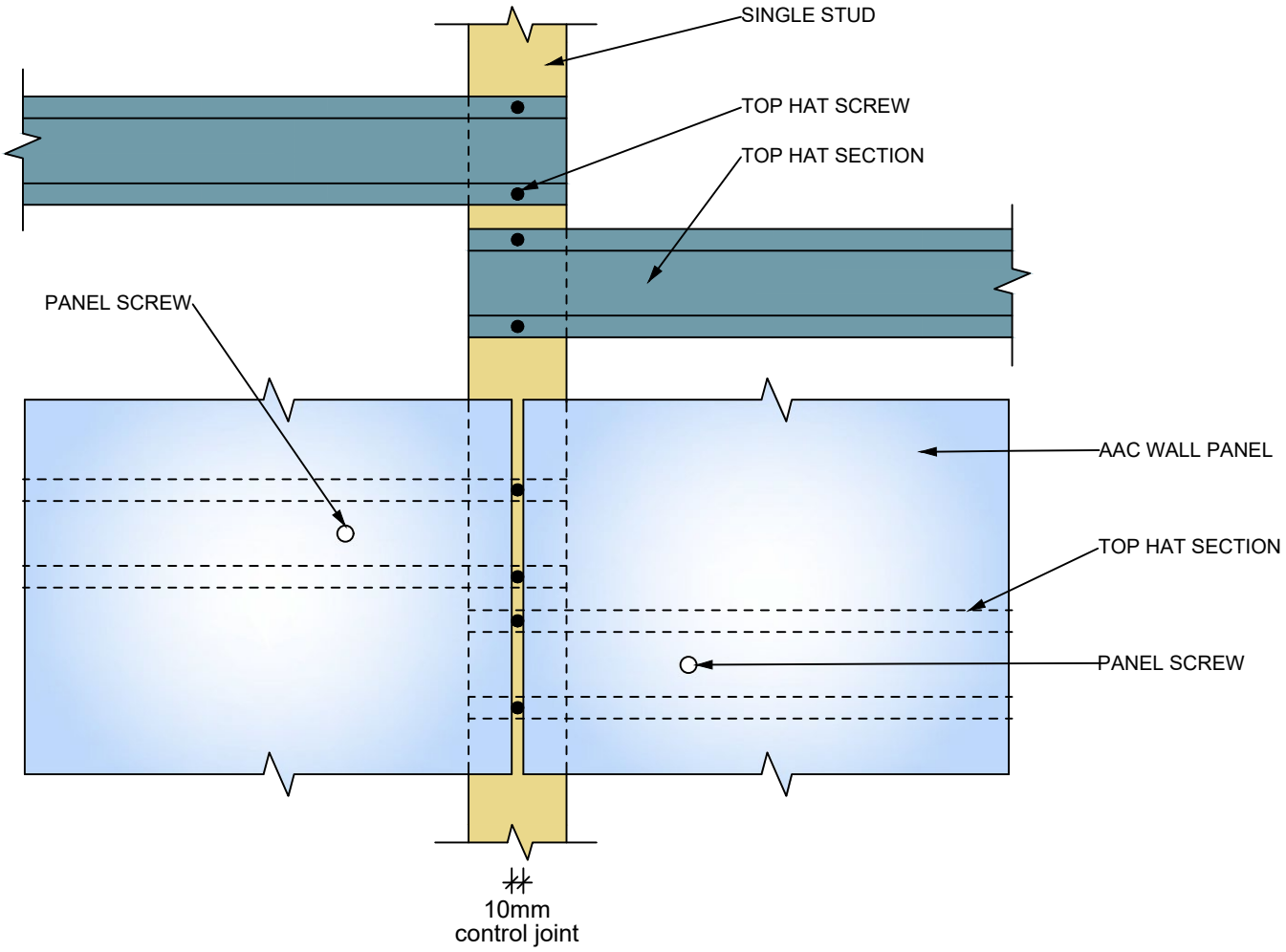


TYPICAL HORIZONTAL CONTROL JOINT

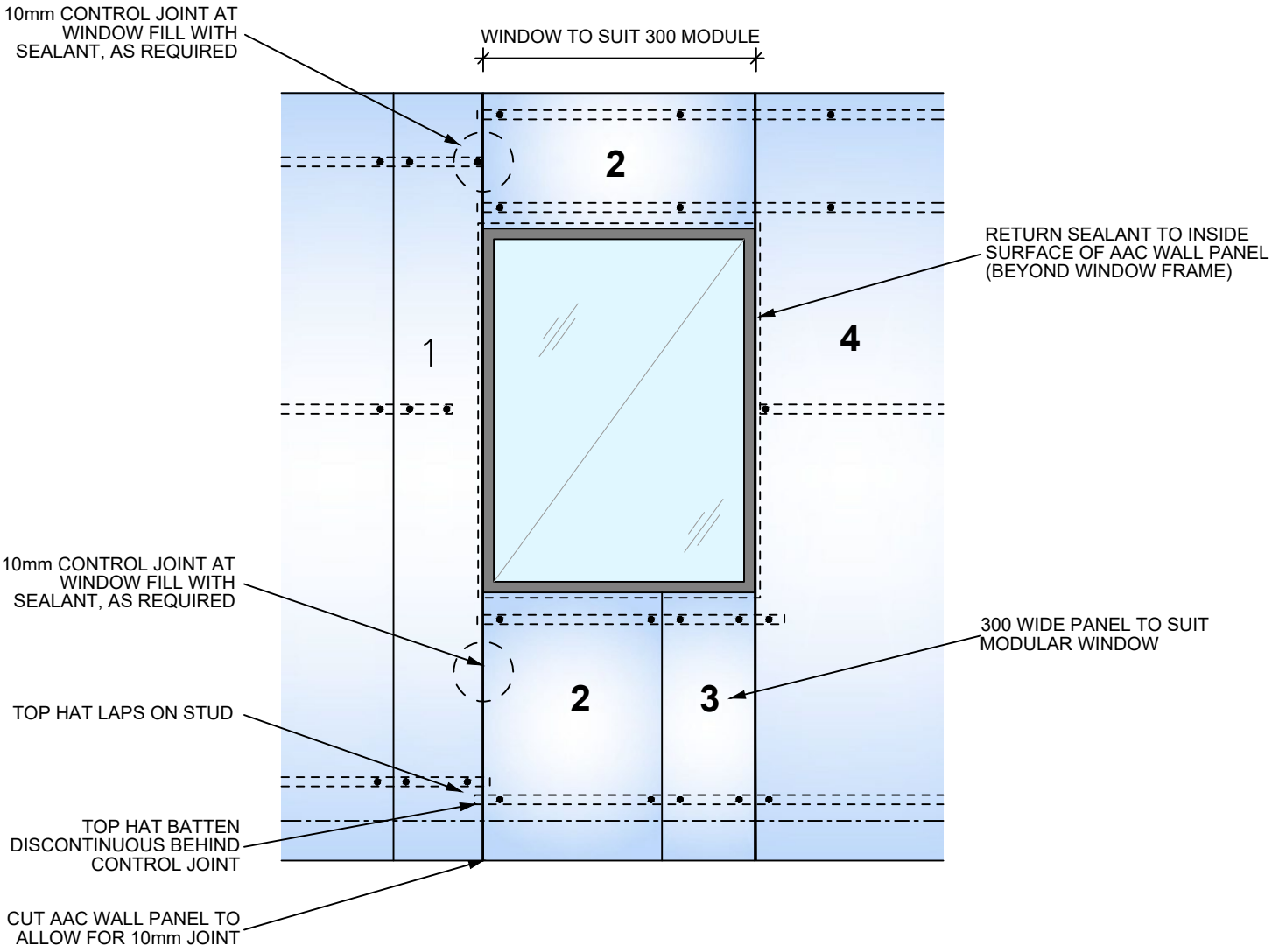
7.1.15 TYPICAL VERTICAL CONTROL JOINT WITH DOUBLE STUDS



7.1.16 VERTICAL CONTROL JOINT WITH SINGLE STUDS



7.1.17 VERTICAL WINDOW CONTROL JOINT WITH LINTEL OVER



NOTES:

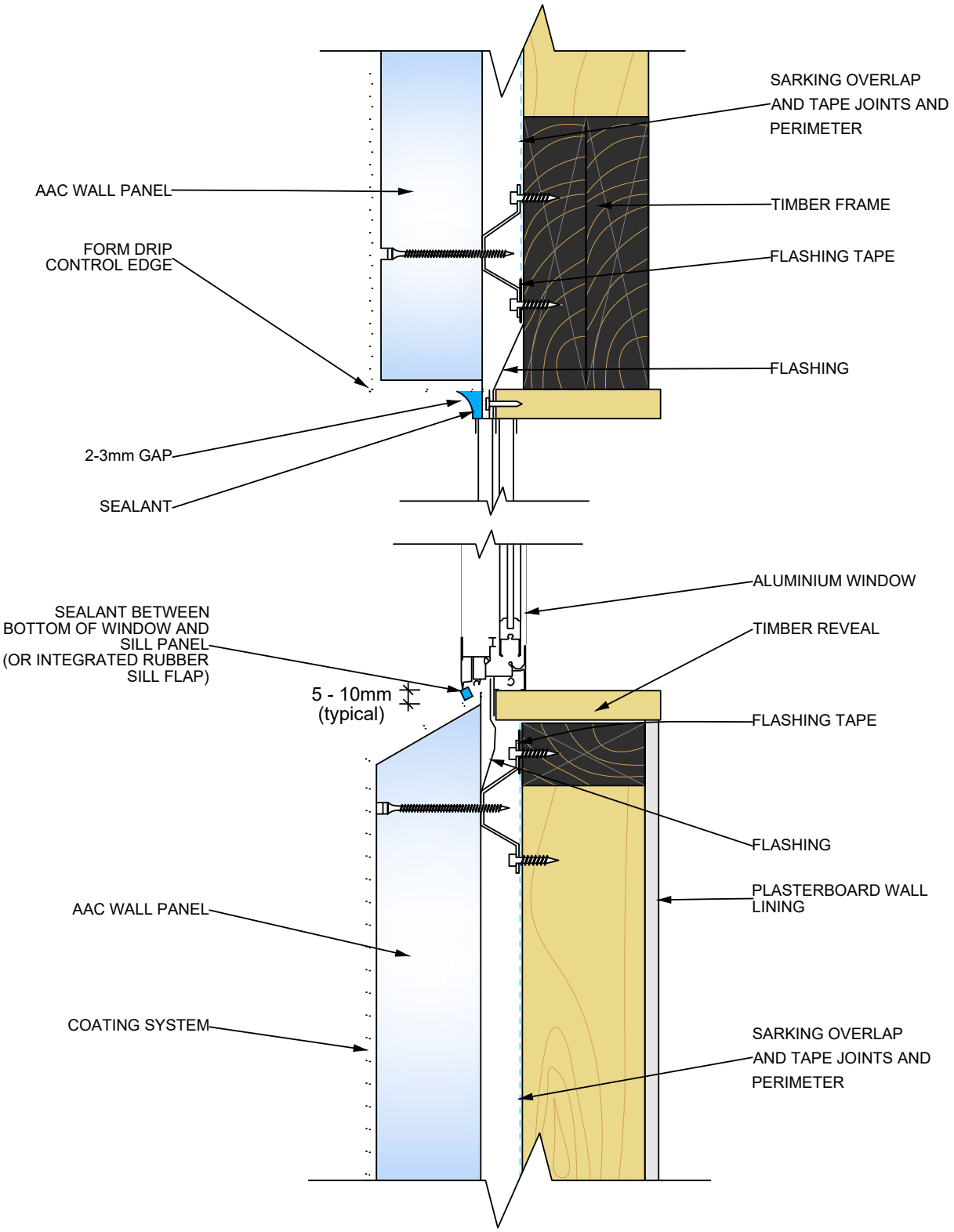
For number of top hats and screws, see fixing tables.

Additional top hats may be required. For suspended panels, see fixing tables.

The installation sequence of the AAC panels around the openings should be followed as numbered if there is no control joint at the opening, to maintain glue thickness on the edge of the panel.

VERTICAL WINDOW CONTROL JOINT WITH LINTEL OVER

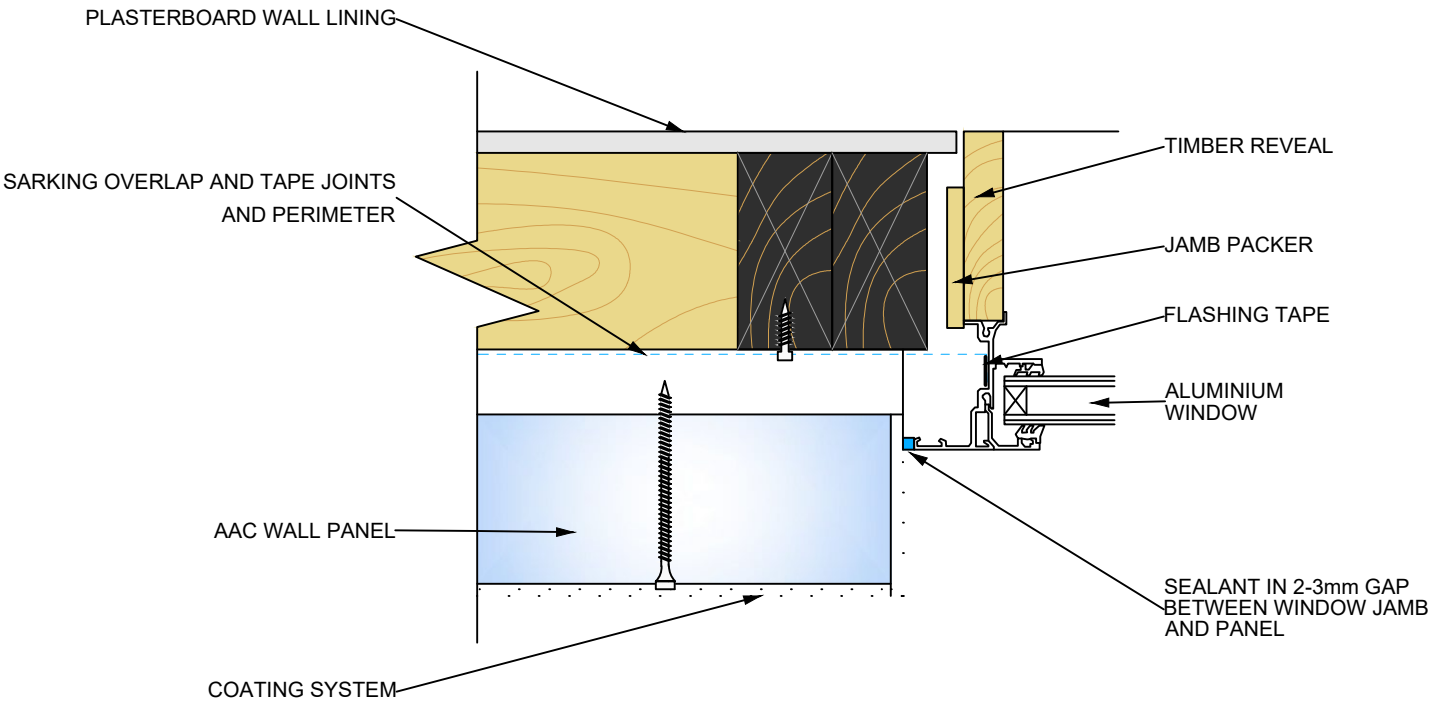
7.1.18 HEAD AND SILL DETAIL FOR SLIDING ALUMINIUM WINDOWS



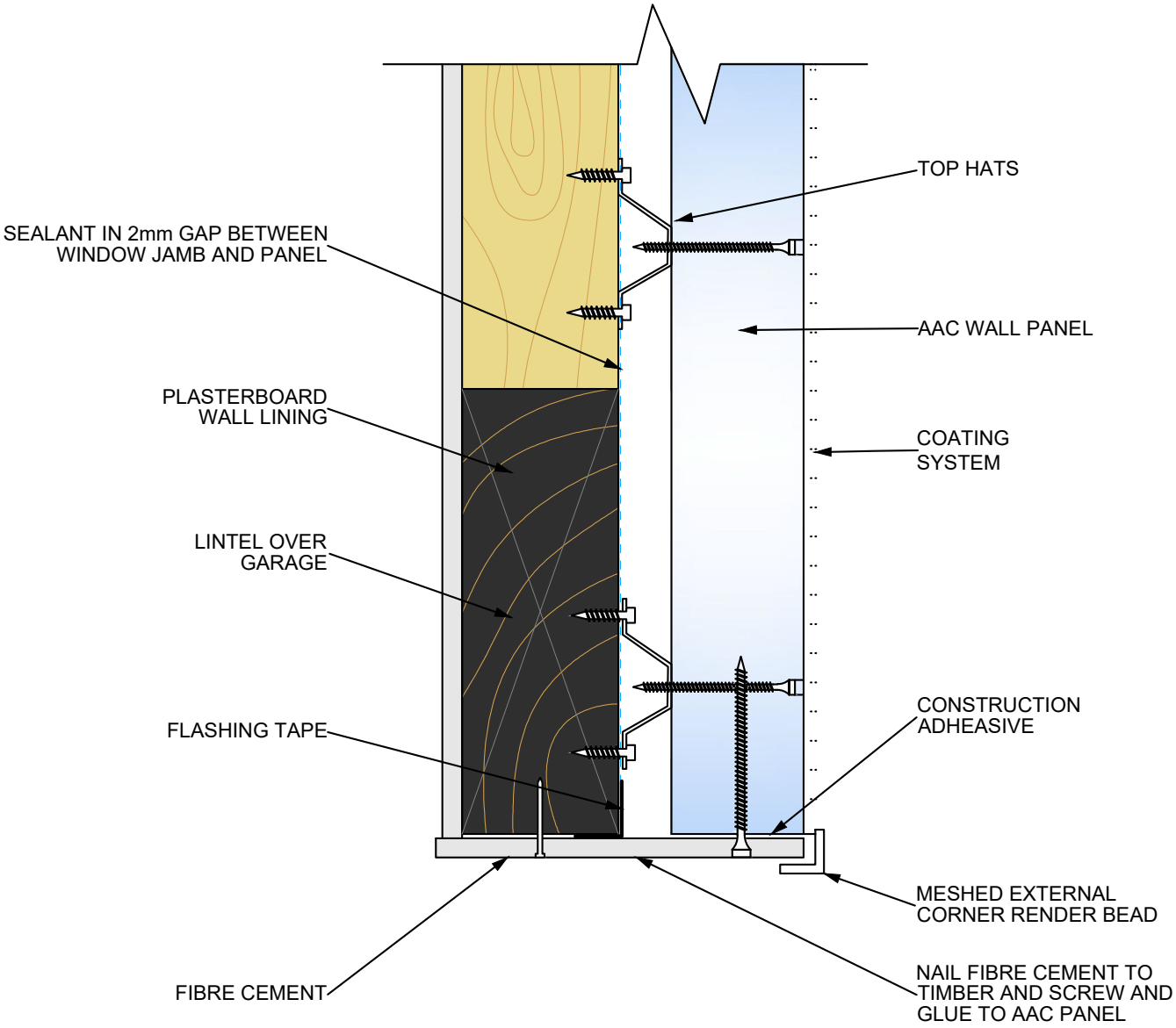
NOTES:

The drainage of windows and doors, with either aluminium or timber frames, shall be directed to the outside of the building on the top of the sill.

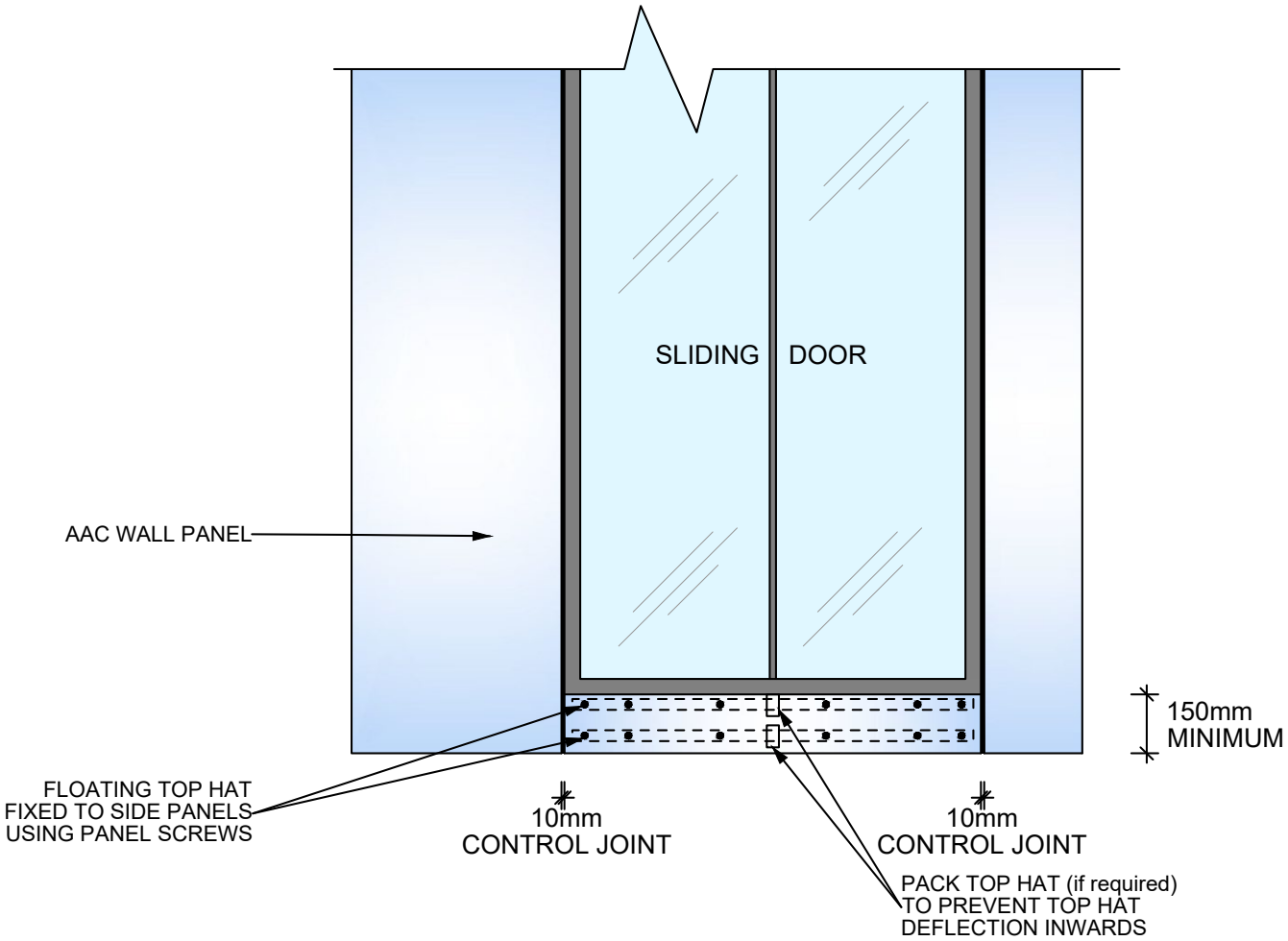
7.1.19 JAMB DETAIL FOR SLIDING ALUMINIUM WINDOWS



7.1.20 GARAGE DOOR HEAD DETAIL



7.1.21 SLIDING DOOR SILL 150mm TO 270mm



8 WARRANTY COVERAGE

Helix warrants that, for a period of twenty (20) years from the date of purchase, its 50mm and 75mm AAC panels will be free from defects caused by faulty manufacturing or materials. Under proper conditions and use, the product will be resistant to cracking, rotting, and termite damage, in accordance with the terms outlined below.

This warranty does not override any statutory rights the customer may have under the Australian Consumer Law or other applicable legislation.

Warranty Conditions

To claim this warranty, the following conditions must be met:

1. Proof of Purchase

The customer must provide reasonable supporting documents, including full payment proof.

2. Timely Notification

Helix must be notified within 12 weeks of the defect being discovered or when it ought to have been discovered, and no later than the expiry of the warranty period.

3. Inspection Opportunity

Helix must be given a reasonable opportunity to inspect the product on-site prior to removal, repair, or replacement. If testing or investigation is required, costs are to be initially borne by the claimant and will be reimbursed if the defect is found to be covered by this warranty.

4. Proper Handling and Installation

The product must be transported, installed, and maintained in accordance with Helix's official technical literature at the time of purchase.

5. Approved Components

All components used in the system must be specified and supplied by Helix.

6. Compliance with Construction Standards

The installation must comply with Helix's specifications, the National Construction Code (NCC), relevant Australian Standards, and applicable laws and regulations.

Exclusions from Warranty

This warranty does not apply to defects or damage resulting from:

1. External Factors: Including but not limited to building movement, corrosion, pollution, mechanical impact, hydrostatic pressure, fire, natural disasters, adverse weather conditions, vandalism, and other uncontrollable events.
2. Improper Construction Practices: Any work done before, during, or after installation that causes damage to the product or system.
3. Incorrect Handling: Damage from failure to follow handling instructions provided by Helix.
4. Third-Party Design Faults: Defects caused or contributed to by the design of the structure, foundations, or frames by third parties.
5. Non-Helix Materials: Any issues caused or contributed to by accessories or materials not supplied by Helix.
6. Coating or Sealant Failure: Cracks or deterioration in coatings or sealants applied over the panels.

Note: It is the purchaser's responsibility to consult with the coating/sealant manufacturer to ensure suitability for AAC substrates and confirm elasticity and waterproofing meet Helix's requirements.

Disclaimer

- This warranty only covers the product itself and does not include consequential or indirect losses.
- Helix does not verify whether its products are solely used in any specific project or whether the installation meets warranty conditions.
- Suitability of the product for a specific application is the responsibility of the purchaser.
- Site visits by Helix do not constitute inspections or installation approvals.

For warranty claims, please contact Helix's customer service team with proof of purchase, relevant photos, and installation documentation.

Information on Helix 50/75mm AAC Low-Rise External Wall System can be found at: www.helix.net.au

Helix AAC Pty Ltd, 497 Blackburn Road, Mount Waverley, Vic. 3149

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