





Eastland Building Materials Co., Ltd

EASTLAND External Wall Cladding & Boundary Wall (50mm and 75mm)

Version: E202307-03



ABOUT EASTLAND

Eastland Building Materials Co., Ltd is the leading supplier of EASTLAND AAC Panel in China. By investing over US\$50 million, the company own two fully automatic production lines with most advanced technology and most perfect testing means. Our production capacity is more than one million cubic meters per year. For the past 20 years, EASTLAND AAC Panel have been sold well in China and exported to USA, Norway, Russia, UAE, Qatar, Singapore, Philippines, Vietnam, India, Kenya, South Africa, Australia, New Zealand etc. with very good reputation.





EASTLAND AAC PANEL

EASTLAND AAC PANEL is also called AAC (Autoclaved Aerated Concrete) panel or ALC (Autoclaved Lightweight Concrete) panel. The raw materials of EASTLAND AAC PANEL include silicon sand, cement, lime, gypsum, water and a little expending agent. Reinforced with anti-corrosion processed steel bar, the concrete panel with many air holes was formed after high-temperature, high-pressure protection with steam.





USAGE OF EASTLAND AAC PANEL

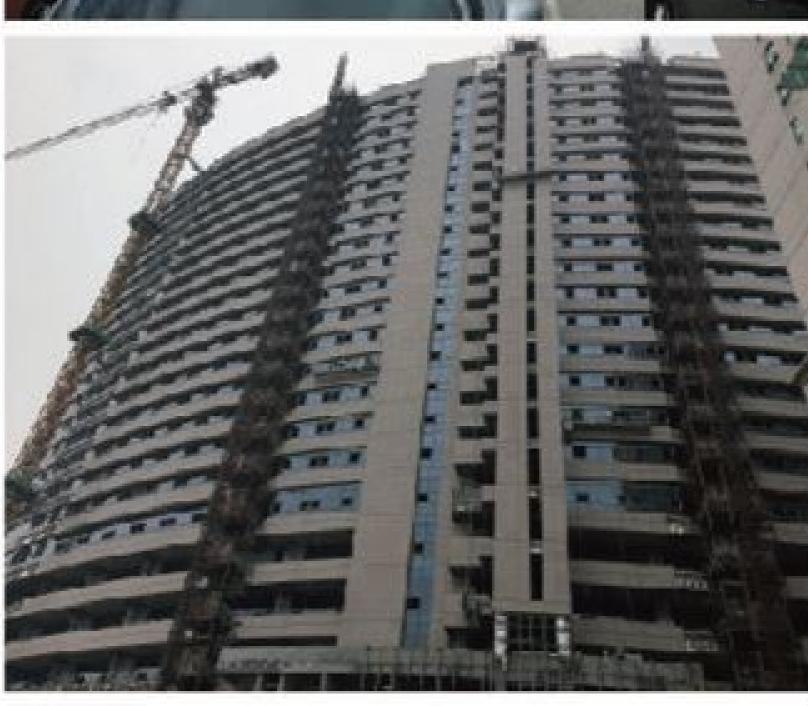
EASTLAND AAC Panel have been well used in various buildings, such as residential buildings, commercial buildings, agricultural and industrial buildings. EASTLAND AAC Panel can be well used as external wall, wall cladding, internal party wall, flooring, roofing, fence, sound barrier wall.

















ADVANTAGES OF EASTLAND AAC PANEL



Lightweight

As a masonry product, EASTLAND AAC Panel weight is only 1/3 of standard concrete masonry. Average weight of EASTLAND 50mm panel is 32kg per square meter, which can be easily installed by two men.



Sound Insulation

A lot of micro and small air holes that are inside of EASTLAND AAC Panel cause multi-function of sound insulation and assimilation. Accustic value of EASTLAND 50mm panel is 33dB and acoustic value of EASTLAND 75mm panel is 36dB.



Load-bearing

EASTLAND AAC Panel can be designed to bear wind load, snow load and dynamic load. EASTLAND AAC Panel can also be well used as structural floor for high-rise buildings or commercial buildings.



High Strength

With steel mesh or steel cage reinforced, EASTLAND AAC-Panel can achieve compressive strength up to 4.0 MPa.



Heat Insulation

The function of heat insulation and preservation of EASTLAND AAC Panel is 10 times of common concrete Thermal conductivity of EASTLAND AAC - Panel is 0.101-0.126 (W/m.K)



Fire Resistant

Fire rating of walls using

EASTLAND AAC panels typically

achieves:up to -/90/90 for 50mm AAC

panels, and up to -/120/120 for 75mm

AAC panels

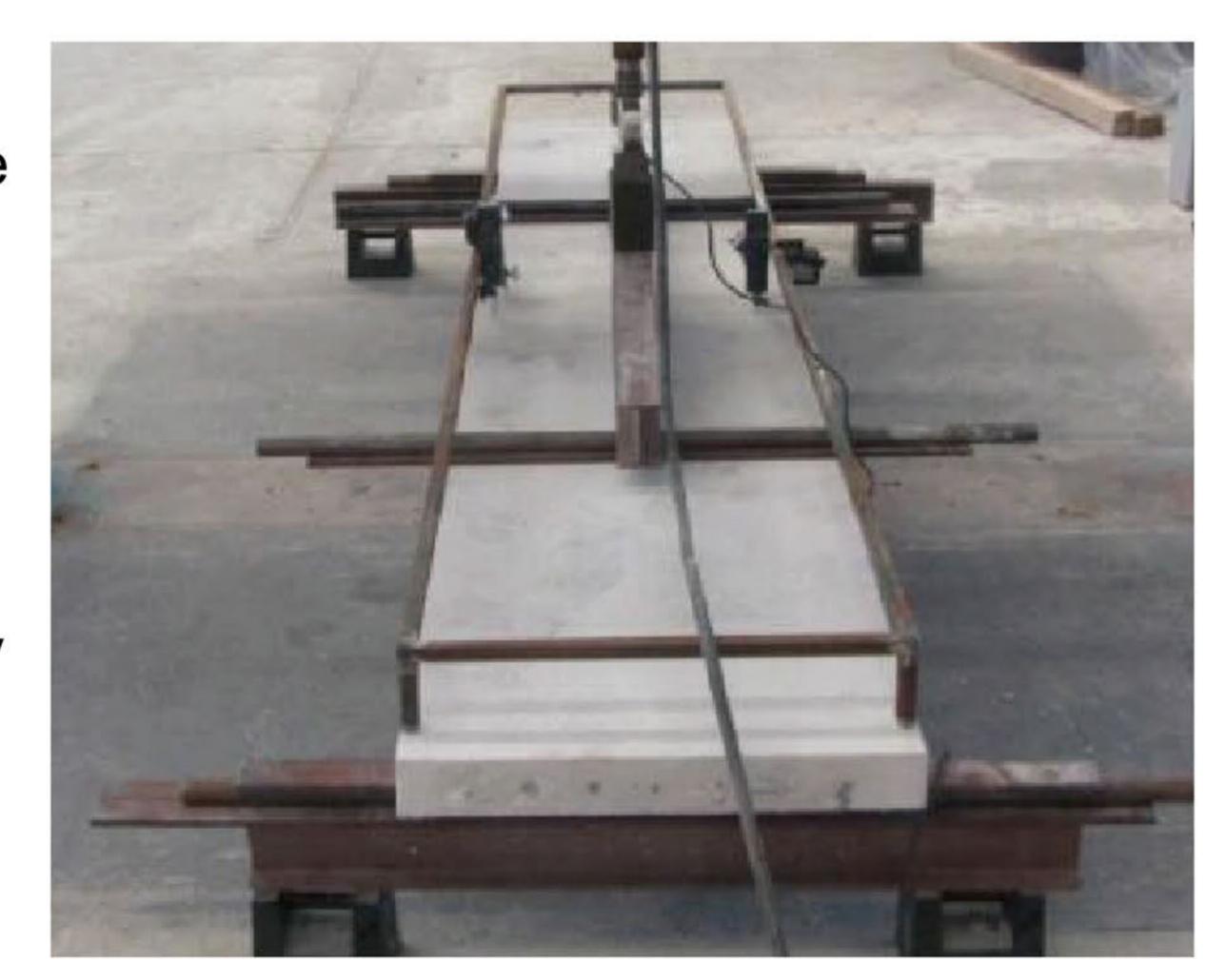


STRUCTURAL SUPPORT

Description:	EASTLAND 50mm AAC Panel
Asbestos Identification:	Not Detected
Dry Density, kg/m³:	515
Characteristic Compressive Strength,MPa:	2.5
Characteristic Flexural Strength, MPa:	0.32
Average Flexural Modulus, MPa:	1,460
Characteristic Serviceability Limit State Bending Moment Capacity, kN/m/m width:	0,176
Characteristic Ultimate Limit State Bending Moment capacity, kN/m/m width:	0,306

Description:	EASTLAND 75mm AAC Panel
Asbestos Identification:	Not Detected
Dry Density, kg/m³:	445
Characteristic Compressive Strength,MPa:	0.2
Characteristic Flexural Strength, MPa:	0.39
Average Flexural Modulus, MPa:	1,080
Characteristic Serviceability Limit State Bending Moment Capacity, kN/m/m width:	0,401
Characteristic Ultimate Limit State Bending Moment capacity, kN/m/m width:	0,547

The connections and supporting structure must have sufficient combined capacity to transmit the horizontal in-place and cut out-of-plane loads from the wall to the supports. They must also be such that the assumed action of the wall panel can be achieved. For example, if two-way action has been assumed, the connections at the top, bottom and each side much be consistent with the assumed support configuration. For top, base and sides, the connection capacities may be provided by connectors, such as proprietaryties.





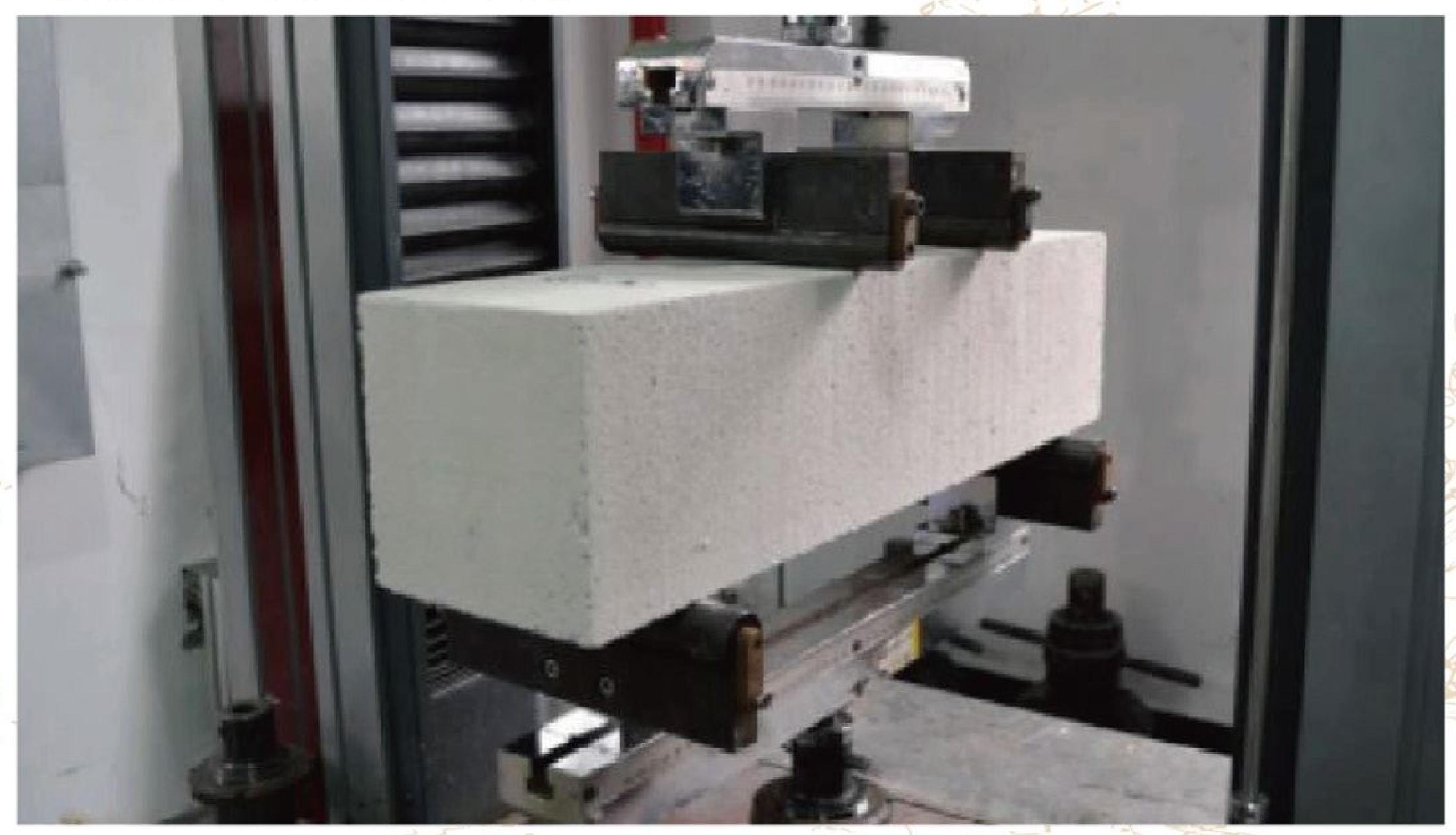
DURABILITY

Cladding must have sufficient durability to resist erosion of the panels or blocks and to prevent corrosion of any steel reinforcement, ties, connector, lintels or fittings. AS 5146 Section 5 sets out the durability requirements for masonry units, mortar (not applicable in the case of EASTLAND AAC Panel, built–in components and reinforcement.

The performance must be met throughout the design life of the structure. Table 5.1 defines the required classifications for masonry units, mortar, built-in components and cover for reinforcement or tendons for the particular environments and positions within the structure.

AS 5146Clause 5.2 defines the exposure environments for which the masonry and its components must be designed and Appendix E gives further explanation and examples of each environment. The associated clauses and standards referred from Table 5.1 are:

- AS/NZS 4456.10 provides a test and means of classifying the durability of masonry units
- AS 5146 Appendix F provides performance requirements for built-in components and deemed-to-comply corrosion resistance of galvanizing and other treatments
- Panels which may be subject to salt attach much have salt resistance, determined in accordance with AS/NZS 4456.10





WEATHER-PROOFING

Buildings must be constructed such that they are weather proof. This may be achieved by ensuring that:

EASTLAND

- The EASTLAND AAC PANEL (including its units and joints) do not permit the ingress of water
- The EASTLAND AAC PANEL does not crack, due to shrinkage, footing movement or other sources of building movement
- The EASTLAND AAC PANEL are protected by a damp-proof course from moisture and salts that otherwise would rise through the wall by capillary action
- The wall system must be constructed with a pliable wall membrane to prevent ingress of moisture
- Any moisture that penetrates the building fabric through the walls, roof, openings and the like, or builds up internally due to condensation can be easily collected by the wall membrane & flashing and directed to the outside beneath the panel base.

INGRESS OF WATER THROUGH THE EASTLAND AAC PANEL AND JOINTS

An appropriate surface coating should be applied to EASTLAND AAC Panel to prevent the ingress of water through the EASTLAND AAC Panel and its joints. Eastland recommends the application of a render system followed by of a two-coat acrylic paint coating. Prior to the application of the coating, the joints should be pointed and any control joints sealed with flexible sealing compounds.

DAMP-PROOF COURSE

AS 3700 and the Building Code of Australia Volume 2 provide rules for construction and specifications of appropriate damp-proof courses to exclude rising ground water and the accompanying salts from attacking the EASTLAND AAC Panel.

FLASHINGS

Flashings, should be constructed in accordance with AS 2904 and the Building Code of Australia 1 & 2 as appropriate. Flashing must be secured and joints sealed with flexible sealant (e.g. silicone or similar)

Weather tightness testing on Eastland AAC cladding has not included Horizontal Control Joints, Parapet or Box Gutter details, as such these details are not verified by testing. For such unverified details, please refer to the relevant details contained in AS 5146.3. When detailed and constructed in accordance with AS 5146.3 as an external wall, AAC cladding systems present a weatherproof solution.



FIRE RESISTANCE

EASTLAND AAC Panel are built in a way that they have exceptional fire resistance and are non-combustible. In the event of fire EASTLAND AAC Panel will not emit any toxic gases or vapours.

EASTLAND AAC Panel have been tested according to Australian Standard AS 1530.4

EASTLAND AAC Panel achieve following Fire Resistance:

Thickness of EASTLAND AAC Panel	50mm	75mm
Fire Resistance Level (FRL)	-/90/90	-/120/120

Note: EASTLAND AAC panels are non-structural with respect to Fire resistance, wall systems including wall structures supporting the AAC cladding panels shall be designed, specified and installed accordingly.





ENERGY EFFICIENCY

EASTLAND AAC Panel can achieve very good energy efficient levels. A lot of micro and small air holes that are inside of EASTLAND AAC Panel forms a static air layer in the material and make very low rate of heat transmission. The function of heat insulation and preservation of the EASTLAND AAC Panel is 10 times of common concrete.

EASTLAND AAC Panel achieves the following thermal values:

	250		EASTLAND 50mr	n AAC Externa	l Walls	100	196		
STRUCTURAL FRAME		TOP HAT BATTEN	SARKING / WALL	BULK	INTERNAL	INSULATION PATH R VALUE (m ² .K/W)		TOTAL WALL R VALUE (m ² .K/W)	
TYPE & SPACING	STUD SIZE	DEPTH	WRAP TYPE	R VALUE	LINING	Winter	Summer	Winter	Summer
	Timber at 90x45 24		At Stud	-	10mm Plasterboard	R1.477	R1.467	-	
			Foil Vapour Barrier	14:		R1.395	R1.285	R1.405	R1.307
Timber at		24	Vapour Permeable	=		R0.965	R0.945	R1.025	R1.006
600mm Centres		24mm	Either Vapour	R2.0		R2.795	R2.785	R2.642	R2.632
			Barrier or	R2.5	R3.295	R3.285	R3.083	R3.073	
			Permeable	R3.0		R3.795	R3.785	R3.525	R3.515
			At Stud		10mm Plasterboard				
			Foil Vapour Barrier	2		As above		R1.407	R1.311
Timber at	90x45	24mm	Vapour Permeable	12				R1.037	R1.019
450mm Centres	90X45		Either Vapour	R2.0				R2.610	R2.600
			Barrier or	R2.5			R3.040	R3.030	
		Permeable	R3.0				R3.470	R3.460	
			At Stud	-	10mm	R1.093	R1.083		17.00
Steel at 600mm			Foil Vapour Barrier	-		R1.395	R1.285	R1.360	R1.262
Centres with	ODWAENO EEDNAT		Vapour Permeable	- 24		R0.965	R0.945	R0.980	R0.962
R0.2 Thermal	92x45x0.55BMT 24mm Either Vapour R2.0	Plasterboard	R2.795	R2.785	R2.597	R2.587			
Break Tape			Barrier or	R2.5		R3.295	R3.285	R3.039	R3.029
			Permeable	R3.0		R3.795	R3.785	R3.480	R3.470
			At Stud	22		As above R1.353 R0.983 R2.556 R2.986		V/2#0	
Steel at 450mm			Foil Vapour Barrier	÷				R1.257	
Centres with	OZVAEVO EEDNAT	24mm	Vapour Permeable	-	10mm Plasterboard			R0.983	R0.965
R0.2 Thermal	92x45x0.55BMT	k0.55BMT 24mm	Either Vapour	R2.0				R2.556	R2.546
Break Tape			Barrier or	R2.5				R2.986	R2.976
			Permeable	R3.0				R3.416	R3.406

Notes:

- 1. Enclosed calculations are in accordance with AS/NZS 4859 Parts 1 & 2:2018.
- 2. The above calculations are for total overall R value of opaque wall elements (no glazing).
- 3. Wall framing elements and insulated areas taken into consideration for weighted average R values.
- 4. Winter and Summer ΔT values for Australia as defined in AS/NZS 4859.2:2018.
- 5. Batten depths varying from 16 to 50mm has no influence on wall R values as air gaps are non-reflective.
- 6. Thermal Conductivity of 50mm Eastland AAC panels (515 kg/m 3), k = 0.125 W/m.K.
- 7. Emissivity of reflective foil vapour barrier membranes assumed to be 0.05.
- 8. Emissivity of non-reflective vapour permeable membranes assumed to be 0.8.
- Insulation path R values calculated at main insulation cavity (reflective or non-reflective air spaces for no insulation options).
- 10. For U value calculation U = 1/R.



			EASTLAND 75mm	n AAC Externa	al Walls	DJ CT			
STRUCTUR	STRUCTURAL FRAME		SARKING / WALL	BULK	INTERNAL	INSULATION PATH R VALUE (m ² .K/W)		TOTAL WALL R VALUE (m ² .K/W)	
TYPE & SPACING	STUD SIZE	DEPTH	I WRAP TYPE	R VALUE	LINING	Winter	Summer	Winter	Summer
		24	At Stud			R1.778	R1.768		(#)
			Foil Vapour Barrier	55		R1.696	R1.586	R1.706	R1.60
Timber at	90x45 24mm		Vapour Permeable	=	10mm	R1.266	R1.246	R1.326	R1.30
600mm Centres		Either Vapour	R2.0	Plasterboard	R3.096	R3.086	R2.943	R2.93	
			Barrier or	R2.5		R3.596	R3.586	R3.384	R3.37
			Permeable	R3.0		R4.096	R4.086	R3.826	R3.81
		24mm	At Stud			As above		5 5 28	
			Foil Vapour Barrier		10mm			R1.708	R1.61
Timber at	90x45		Vapour Permeable					R1.338	R1.32
450mm Centres	30,43		Either Vapour	R2.0 Plasterboard	Plasterboard			R2.911	R2.90
			Barrier or Permeable	R2.5			R3.341	R3.33	
				R3.0				R3.770	R3.76
			At Stud			R1.394	R1.384	: = :	-
Steel at 600mm			Foil Vapour Barrier	=		R1.696	R1.586	R1.661	R1.56
Centres with	92x45x0.55BMT	24mm	Vapour Permeable	*	10mm	R1.266	R1.246	R1.281	R1.26
R0.2 Thermal	32A43A0.33DIVII	24111111	Either Vapour	R2.0	Plasterboard	R3.096	R3.086	R2.898	R2.88
Break Tape			Barrier or	R2.5		R3.596	R3.586	R3.340	R3.33
			Permeable	R3.0		R4.096	R4.086	R3.781	R3.77
			At Stud	~				3 2 5	(4)
Steel at 450mm			Foil Vapour Barrier	2	10mm			R1.654	R1.55
Centres with	92x45x0.55BMT	24mm	Vapour Permeable	=				R1.284	R1.26
R0.2 Thermal	32A43A0.330IVII		Either Vapour	R2.0	Plasterboard	erboard	DOVE	R2.857	R2.84
Break Tape			Barrier or	R2.5					R3.27
			Permeable	R3.0				R3.716	R3.70

Notes:

- 1. Enclosed calculations are in accordance with AS/NZS 4859 Parts 1 & 2:2018.
- 2. The above calculations are for total overall R value of opaque wall elements (no glazing).
- 3. Wall framing elements and insulated areas taken into consideration for weighted average R values.
- 4. Winter and Summer ΔT values for Australia as defined in AS/NZS 4859.2:2018.
- 5. Batten depths varying from 16 to 50mm has no influence on wall R values as air gaps are non-reflective.
- 6. Thermal Conductivity of 75mm Eastland AAC panels ($^4445 \text{ kg/m}^3$), k = 0.107 W/m.K.
- 7. Emissivity of reflective foil vapour barrier membranes assumed to be 0.05.
- 8. Emissivity of non-reflective vapour permeable membranes assumed to be 0.8.
- Insulation path R values calculated at main insulation cavity (reflective or non-reflective air spaces for no insulation options).
- 10. For U value calculation U = 1/R.



ACOUSTIC PERFORMANCE

EASTLAND AAC Panel have excellent acoustic performance. A lot of micro and small air holes that are inside of EASTLAND AAC Panel cause multi-function of sound insulation and assimilation. The high precision of panel can create a fine air keeping space to supply a silent and comfortable living environment.

EASTLAND AAC Panel achieves the following thermal values:

EASTLAND AAC Panel	50mm	75mm
Acoustic Rating	Rw(C;Ctr) = 33(-1;-3)dB	Rw(C;Ctr) = 36(-2;-3)dB





DESIGN PROCESS

Before commencing the construction process, the Builder must ensure that the design has been carried out by appropriately qualified and experienced Architects and Engineers, accounting for the properties on EASTLAND AAC Panel. The following steps are appropriate for EASTLAND AAC Panel:

- 01
- Determine the acoustic requirements (if any), and whether the EASTLAND AAC Panel (wall panels, floor panels or masonry), have sufficient sound attenuation. Consider whether this need to be augmented.
- 02
- Using the Building Code of Australia, determine the thermal insulation requirements (if any), and whether the EASTLAND AAC Panel (wall panels or floor panels) have sufficient thermal resistance. Consider whether this need to be augmented.
- 03
- Using the Building Code of Australia, determine the fire resistance requirements of structural adequacy, integrity and installation (if any), and whether the EASTLAND AAC Panel (wall panels, floor panels or masonry) have sufficient fire resistance. For Structural Adequacy the support structures must be protected from a potential fire source, the EASTLAND AAC provides no structural resistance to fire.
- 04

Carry out structural design checks







05

Determine the wind loads, using AS/NZS 1170.2 (or AS 4055 for detached dwellings). Determine the earthquake loads, using AS 1170.4. Determine all other structural loads and loading combinations, using AS/NZS 11700.0, 1 and 3.

- Check the bending, shear, compression, reinforcement–anchorage and connection strength for out–of–plane loads such as wind or earthquake on walls, or permanent and imposed loads on floors.
- Check the shear resistance and connection strength for in plane horizontal loads such as wind or earthquake on walls.
- Check the compressive capacity and resistance to concentrated loads for gravity and other vertical loads on walls. Where appropriate, check connection strength.
- Design and detail associated items, such as lintels, roof anchorages, flashings and the like
- Prepare a comprehensive materials als and construction specification.





RELEVANT STANDARDS AND DOCUMENTS

01	AS/NZS 2904 Damp-proof courses and flashings
02	AS/NZS 2699.1 Built-in components for masonry construction - wall ties
03	AS/NZS 2699.2 Built-in components for masonry construction - connectors and accessories AS/NZS 2699.3 Built-in components for masonry construction - lintels and shelf angles durability
04	AS 5146 - Reinforced Autoclaved Aerated Concrete (Parts 1, 2 & 3)
05	AS 1684 - Residential Timber Framed Construction NASH Standard - Steel Framing for Housing
06	AS 4600 - Cold Formed Steel Structures
07	AS 4100 - Steel Structures
08	AS 4200.1 - Pliable Building Membranes - Materials
09	AS 4200.2 - Pliable Building Membranes - Installation
10	AS 3600 Concrete structures
11	AS 2870 Residential slabs and footings - Construction



DESIGN PRINCIPLES

THIN-BED ADHESIVE

Thin-bed adhesive shall be mixed and applied in accordance with the manufacturer's instructions.

DAMP-PROOF COURSE

Damp-proof-courses shall be built into the wall in accordance with the Drawings, Building Code of Australia and relevant Standards. Unless stated otherwise, damp-proof-courses shall be:

- 1. Place under wall to provide a continuous damp-proof barrier around the building
- 2. Lapped not less than 150mm at joints
- 3. Projecting through the entire width of the wall and project beyond the external face
- 4. Stepped at changes of floor level
- 5. Positioned (if applicable) under the coping of any parapet more than 300mm above adjoining roof cladding
- 6. Positioned (if applicable) in chimney stacks, 150mm to 300mm above the highest junction of roof and chimney
- 7. At least 75mm above finished surface level of adjacent paved, concreted or landscaped areas that slope away from the wall
- 8. At least 50mm above finished paved or concreted areas sloping at least 50mm over the first 1m from the building and protected from the direct effects of the weather by a carport, veranda or similar
- 9. At least 150mm above the adjacent finished grounc in all other cases.



FLASHINGS

Flashings shall be built into the wall in accordance with the Drawings, Building Code of Australia and relevant Standard (AS 3700). Unless stated otherwise, flashings shall be:

- 1. Fixed with clouts to timber studs as applicable
- 2. Built into the external leaf of walls exposed to weather, extending across the cavity
- 3. Turned up 150mm and nailed to the frame
- 4. Positioned at openings (unless they are protected by an overhang), where they shall extend 100mm past the end of opening and be turned up to prevent leakage

WALL WRAP / SARKING

Wall wrap / sarking shall be installed in all external wall applications where weatherproofing is required. Wall wrap shall comply with AS 4200.1 and be installed in accordance with AS 4200.2.

SLIP JOINTS

Slip joint material shall be placed between walls and any supported concrete slab.

LINTELS AND ARCH BARS

For construction using HUILONG BLOCKS (AAC), lintels, shelf angels and arch bars shall be built in over openings in excess of 1.0meter accordance with the Drawings, Building Code of Australia and relevant Standard.

ANCHORAGES

Anchorages, including those to tie down roof structures, shall be installed at specified locations, and in accordance with the Drawings, Building Code of Australia and relevant Standard (AS 3700)

PROVISION FOR CORROSION When construction is:

- 1. Within 10 kilometers of a non-surf coast
- 2. Within 1 kilometer of a surf coast or
- 3. Exposed to rainwater

The ends or any cut surfaces of Reinforced EASTLAND AAC Panel. shall be sealed with anti-rust sealant specified by the manufacturer



DESIGN DETAIL CONSIDERATIONS

PROVISION FOR TIMBER SHRINKAGE

In EASTLAND AAC Panel veneer construction, a gap in accordance with schedule below shall be left between the timber frame and the top of the EASTLAND AAC Panel and at window sills, to accommodate timber shrinkage.

Location in timber framed buildings	Minimum Clearances (mm)		
	Unseasoned hardwood	Other timber frame	
Sil s of lower or single storey	10mm	5mm	
Roof overhangs of single storey	16mm	8mm	
Sill of second storey windows	20mm	10mm	
Roof overhands of two storey	24mm	12mm	

CONTROL JOINTS AND ARTICULATION JOINTS

Vertical control joints or articulation joints shall company with the Drawings, Building Code of Australia and relevant Standards. Unless stated otherwise, vertical control joints or articulation joints shall be built into the wall at the followings locations:





movement.

provided between the edges of the frame and the EASTLAND AAC Panel to allow for





RENDER AND PAINT SCHEDULE

The following render and paint system shall be applied to EASTLAND AAC Panel walls. Refer to Render and Paint Specification for suitable products.

Substrate	EASTLAND AAC Panel - Autoclaved Aerated Concrete (AAC)			
Finish	Acrylic-Render or Acrylic-Painted Render			
	Water-resistant and vapour-permeable decorative coating, capable of bridging up to a 1 mm substrate crack			
Surface Preparation	Clean, patch and remove and loose material. Ensure that the surface is free of all incompatible materials, such as silicone sealants. If subject to sea spay or with 1 km of a surf coast, wash with clean fresh water to remove all traces of salt			
		rdance with the specified number of standard fixings per panel nead, coarse threaded		
At least 10 gauge (4.8	3mm) for all V	Vind Classifications		
At least Class 3 wher	e further than	1km from breaking surf		
At least Class 4 wher and fully embedded	e further than	100 metres (and less than 1 km) from breaking surf		
For application within	100 metres (of breaking surf all screws and brackets shall be Grade		
304 or 316 stainless	32			
Each aluminium brack fixed to the EASTLANE by two screws, as follow	AAC Panel	Fixed such that the distance to the panel edge is not less than 20 mm or more than 150mm. Of length 10mm less than the thickness of the panel		

Timber Stud - 14g x 25mm long, Class 3 or 4, hex head screw, Type 17

All studs (both steel and timber) must be spaced at 600mm and aligned with panel joints

Brackets shall be 70x40x3.0 aluminium angle x 50mm long and 6060-T5 alloy and temper

Brackets shall be positioned within 150m of the ends of the panels



PACKING, DELIVERY, STORAGE & EASTLAND

PACKING

EASTLAND AAC Panel 50mm are flat-packed and EASTLAND AAC Panel 75mm are packed on edge. Each pack has a wet mass of approximately 900kg including timber pallets.

DELIVERY

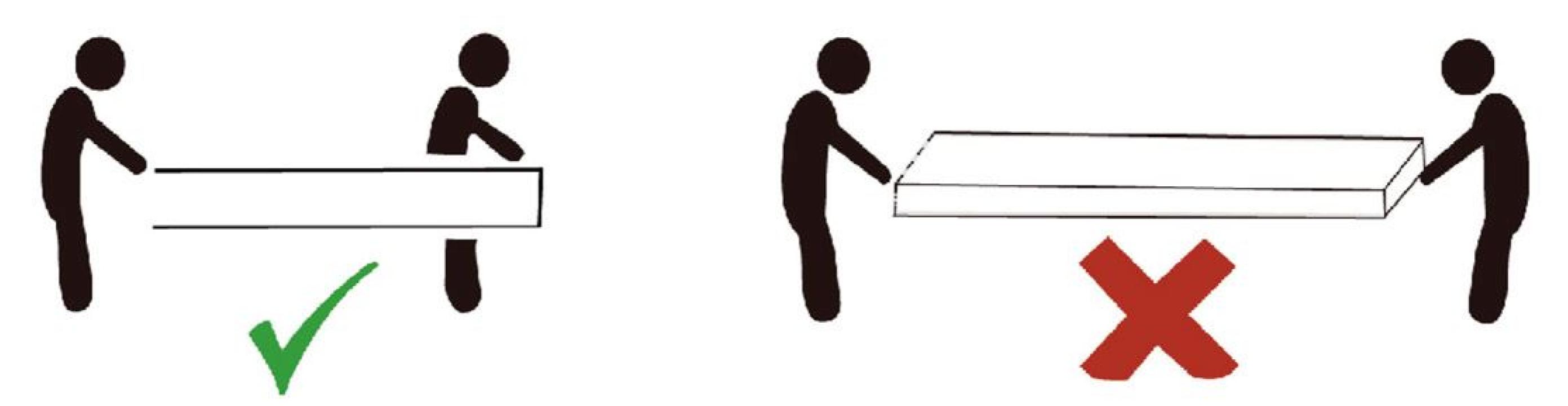
To minimize double handling and save time the packs should be unloaded as close as possible to the installation place. EASTLAND AAC Panel packs should only be stacked one pack high (on site) and properly support on level ground. Always consult the project engineer as to the adequacy of the structure to support the packs if they are to be placed on any part of the structure.

STORAGE

All EASTLAND AAC Panel should be kept dry and preferably under cover, all care should be taken to avoid damage to face, ends and edges of the panels. When the panels are stored outside they must be off the ground and protected from the weather.

HANDLING

Physical manual handling of EASTLAND AAC Panel around the job site should be kept to a minimum, always support the weight by a two man lift procedure, and where the manual Handling becomes excessive with respect to distance from the installation area. EASTLAND suggest the use of trolleys and/or other mechanical devices.



Carry on edge not recommended on Flat



HEALTH & SAFETY

OCCUPATIONAL HEATH & SAFETY (OH&S)

EASTLAND AAC Panel itself does not cause health problem but because it contains crystalline silica, just like clay and other quarry products, prolonged exposure without proper caution and protection may cause health hazards such as bronchitis, silicosis and lung cancer. Also, while cutting, drilling, sawing, routing, chasing, or any form of cracking up, some health issues night occur if proper care is not taken. Suitable eye and breathing protection must be worn when handling, cutting, drilling, chasing or demolishing AAC materials. Protective clothing should also be worn. Ensure the washing clothing are not washed together with other clothes while washing. The site should be properly cleaned every day to remove dust and when using power tools there should be tagged for use as required and be fitted with efficient and well maintained dust extraction devices.

The Engineer on site has a responsibility to inform all employees of these Health and Safety requirements under the Occupation Health and Safety Act.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

There is a set standard to follow while working with EASTLAND AAC Panel, in relations to personal protection wears.

- P1 or P2 Dust masks complying with AS/NZS 1715 and AS/NZS 1716
- Glasses /Goggles complying with AS 1336
- Ear Plugs / Ear Muffs
- Class 5 Gloves
- Long sleeve shirt and long pants to help avoid any skin nfection and skin cancer from working outdoors
- Steel Cap Boots



CUTTING

EASTLAND AAC Panel can be easily cut, drilled, routered, or chased using power or hand tools. As an added measure of containing the dust when working with AAC products, we recommend the use of dust extraction equipment. EASTLAND AAC Panel (50mm) are delivered to site flat packed, which gives flexibility to cutting as it can be used as the cutting bench as the panels are required. Any exposed reinforced during cutting must be coated with a certified Corrosion Protection Touch Up paint.

MAINTENANCE:

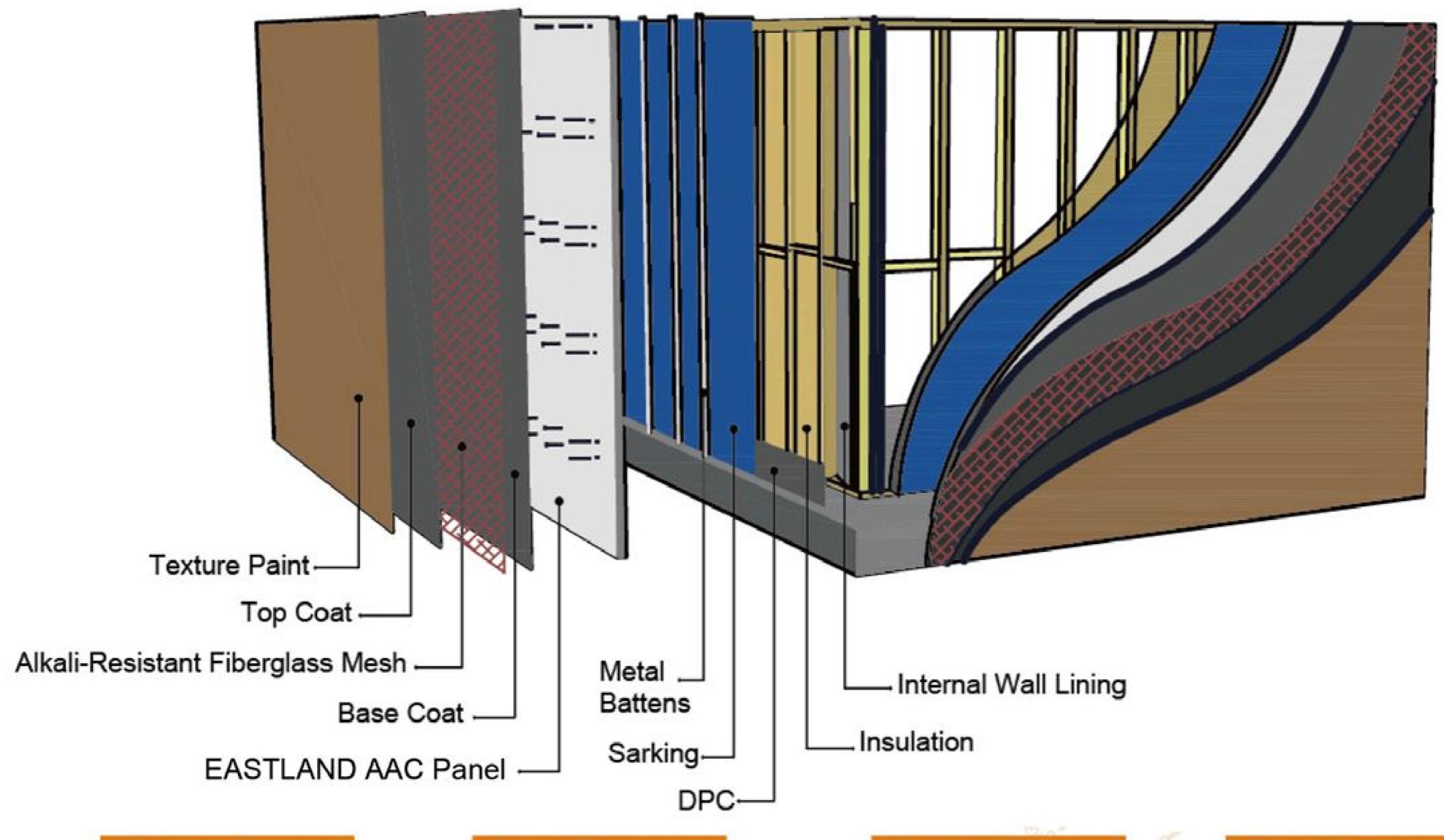
Periodic cleaning and checking of the panel is essential. It is essential to clean the joints at least once a year and also the system should be checked to ensure it is still well coated. Any damage to the coating system must be promptly repaired by an approved applicator to ensure the integrity of the coating system is maintained.





EXTERNAL WALL OVERVIEW

Panel fasteners must penetrate through the cavity battens, and into the wall frame by a minimum of 30mm for timber frames and a minimum of 15mm for metal frames.



Timber Frames

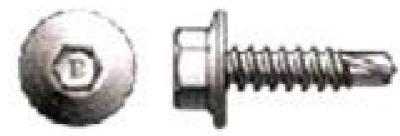
12-11 x 25mm Hex Head Type 17 Screws





Steel Frames

10-16 x 16mm Hex Head SDS Screws



Timber Frames

Bugle Batten Head SDS Type 17, Class 3 Screws



Steel Frames

Hex Head Self-Drilling Class 3 Screws



G300 Galvanised steel cavity battens have BMT of 0.42mm and are supplied up to 40mm wide and with heights of:

- * 16mm 24mm 35mm Other batten options:
- * H3 Treated pine timber
- * H grade EPS battens up to 50 mm

EASTLAND AAC Panel

EASTLAND AAC Panel are manufactured from Autoclaved Aerated Concrete (AAC), embedded with coated steel reinforcing mesh, in a standard width of 600mm and up to 3300mm length.

BATTEN SCREWS: A minimum of Class 3 fasteners must be used with the EASTLAND External Wall System AS3566 corrosion class 3 fasteners must be used in NCC defined corrosion zones I, 2, 3, and 4. Class 4 or Grade 304 stainless steel must be used in the sea spray zone.

DPC

Damp-Proof Courses must comply with AS2904, and be installed in accordance with NCC requirements.





1. COMPLETE FRAMES AND TRUSSES

2. DPC

- Fix DPC to bottom plate of frame
- Cover rebate completely
- Overlap DPC at corners

3. WALL WRAP

 Install wrap as specified by supplier ensuring that it overlaps DPC at base

4. TOP HATS

- Check control joint layouts for installation of discontinuous top hats
- Check the number of top hats and screws required

5. CUTTING PANELS

- Cut panels to size
- Ensure any exposed steel reinforcing has been coated with EASTLAND anti- corrosion paint

6. ADHESIVE

- Mix adhesive to a thick flowable consistency
- Apply EASTLAND adhesive to entireedge of panel with notched trowel
- The use of notched trowel to apply EASTLAND adhesive at the panel joints is essential to ensuresufficient adhesive is applied.
 Insufficientapplication of adhesive at the pane joints may resultin hairline cracks at the joints.

7. CONTROL JOINT

- Check control joint layout
- Install backing rod into control ioint at the required depth
- Apply suitable sealant to control joint
- Clean up any excess sealant ensurina it does not adhere to panel face

8. EASTLAND AAC Panel PANLS

 Corner EASTLAND AAC panel to be installed firstlifting into place using panel lifters



- Fix panel to top hats
- Check panel is straight and level
- Continue installation by lifting panelsinto position
- Butt panel tightly to adjoining panel, screwing off as you go
- Adhesive should slightly ooze from the joint
- Once the joint adhesive is semi hard it can be cleaned up with a pallet knifeensuring adhesive is flush with the panel face
- Patch holes and panel damage

9. FINISHWALL

- Trim off excess DPC
- Lightly sand and prepare surface
- Ready for acrylic coating

10. Basic Tools Required To Install EASTLAND AAC Panel

- Power drills and drive bits
- Cordless drills
- Power saw with diamond blade
- Vacuum
- Power planer
- Nail or Staple Gun
- Mixing Drill
- Mixing Buckets

- Stoppingblade
- Adhesive Trowel
- Hawk and Steel Trowel
- SandingFloat
- Hawk and Steel Trowel
- Rasp
- Timber Drop Saw
- Grinder
- Electric Leads and Power Box



BOUNDARY WALL INSTALLTION PROCESS

Stand Up Frame Method (EASTLAND AAC Panel fixed to existing building)
This method may only be used when builder is constructing adjoining properties consecutively or permission to fix to existing wall is granted by adjoining neighbor.

- Fix temporary batten (minimum 20mm thick) to the external face of Wall 1.
- Start the second wall construction by temporarily fixing the EASTLAND AAC Panel through the temporary batten and into the existing wall. These fixings must be removed and screw holes patched once Frame 2 is installed
- Prop the EASTLAND AAC Panel as required until Frame 2 is installed
- Oanstruct Wall 2 frame flat on the ground
- OF Prepare Frame 2 for fixing to EASTLAND AAC Panel:

If using Top Hat Method, fix the top-hat section by screwing one leg of the top hat to the stud, and the other leg of the top hat to top plate, noggin and bottom plate at maximum 600mm centers. Stand up Frame 2 against Wall 2, fix top hats to Wall 2 using 12g x 45mm Hex Head screws with 2 fasteners per panel in each top tat

If using Batten Clip Method, fix metal batten on Wall 2 at max 600mm centers using 12g x 45mm Hex Head screws. Stand up Frame 2 against metal battens, attach batten clip to battens and fix using two 12–11 x 25mm Hex Head Type 17 Screws into top plate, noggin and bottom plate

- Ensure temporary fixing holding Wall 2 to existing wall, and temporary battens are removed once Frame 2 is installed
- 07 Patch all screws holes in Wall 2
- If slab edge does not have a minimum 50mm rebate for EASTLAND AAC Panel to rest on, capping over the completed wall cavity is COMPULSORY



SLIDING PANEL METHOD (EASTLAND AAC PANEL NOT FIXED TO EXISTING BUILDING):

Construct Frame 2 to fix EASTLAND AAC Panel:

When using Top Hat Method, construct the frame flat on the ground and fix the top hat section by screwing one leg of the top hat to the stud, and the other leg of top hat to the top plate, noggin and bottom plate at maximum 600mm centers.

If using Batten Clip Method, the frame is constructed then metal battens and clips are installed at 600mm centers, Max. Ensure there is at least 50mm clearance between external panel face and existing building (min 115mm from Frame 2 to face of Wall 1).

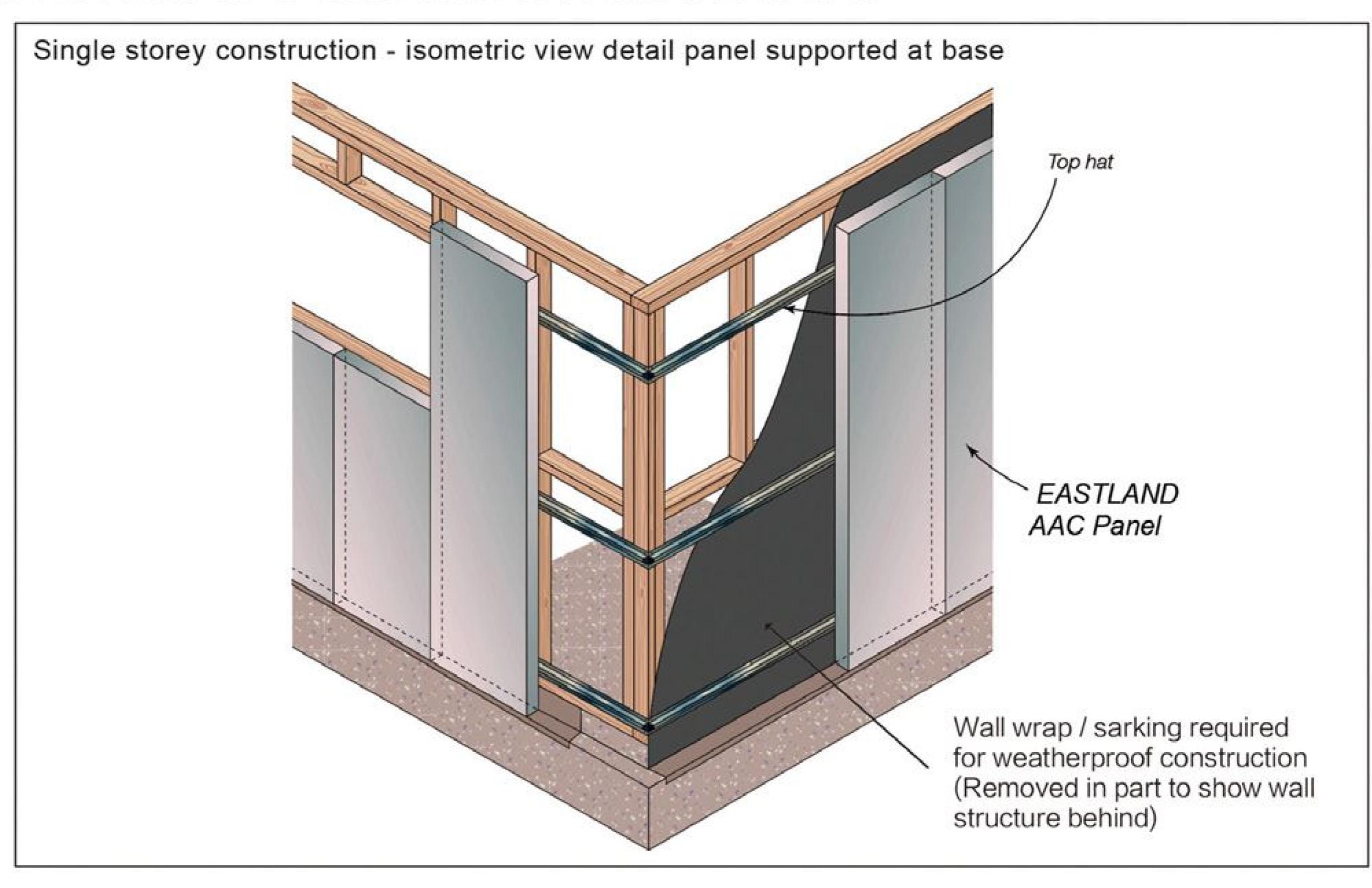
- O2 Slide EASTLAND AAC Panel into the wall cavity from one end and fix to either top hats or batten clips using 12g x 45mm Hex Head Screws.
- Panels on a boundary wall may be installed in a stacked bond configuration.
- If slab edge does not have a minimum of 50mm rebate for EASTLAND AAC Panel to rest on, capping over the wall cavity is compulsory.

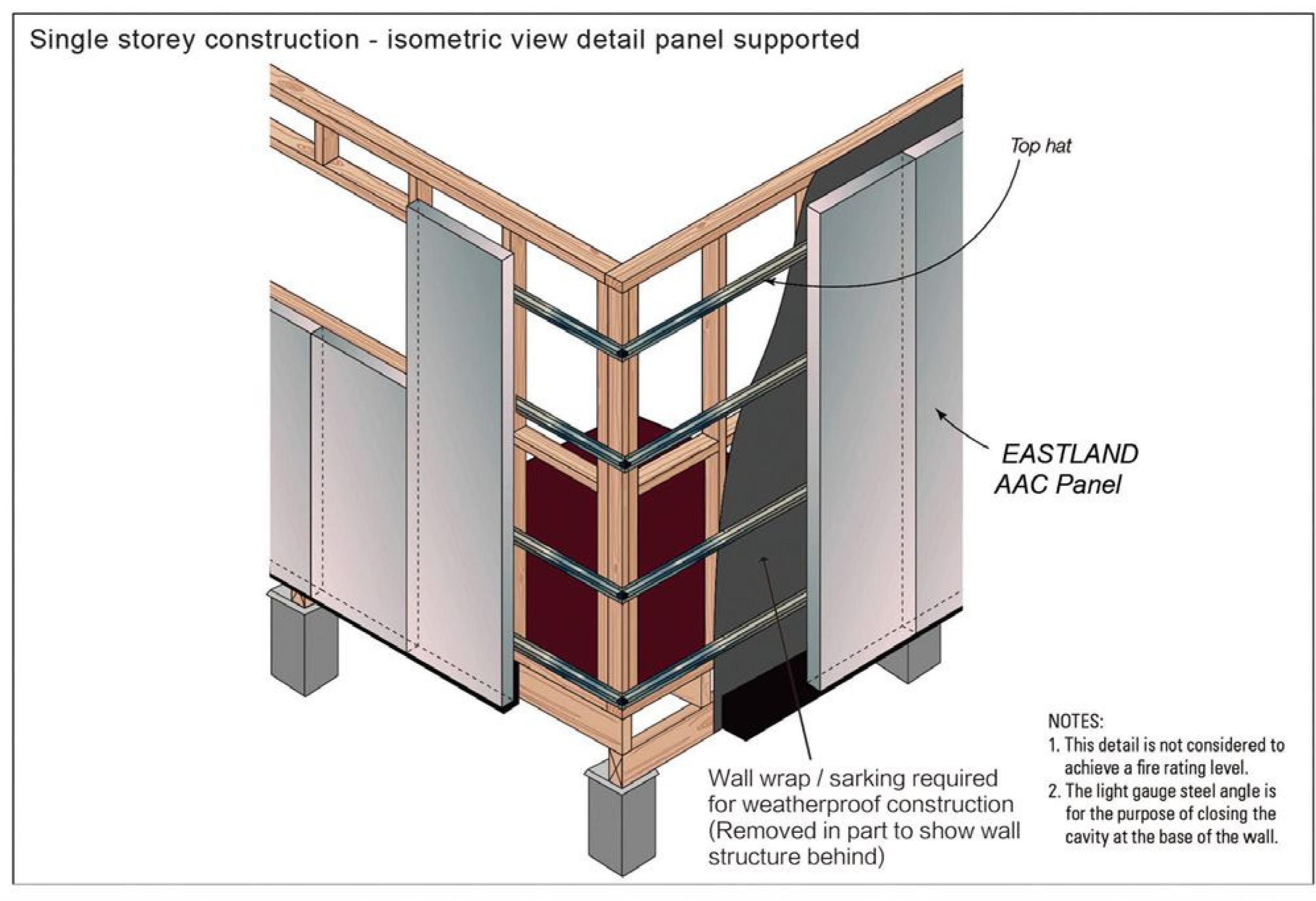




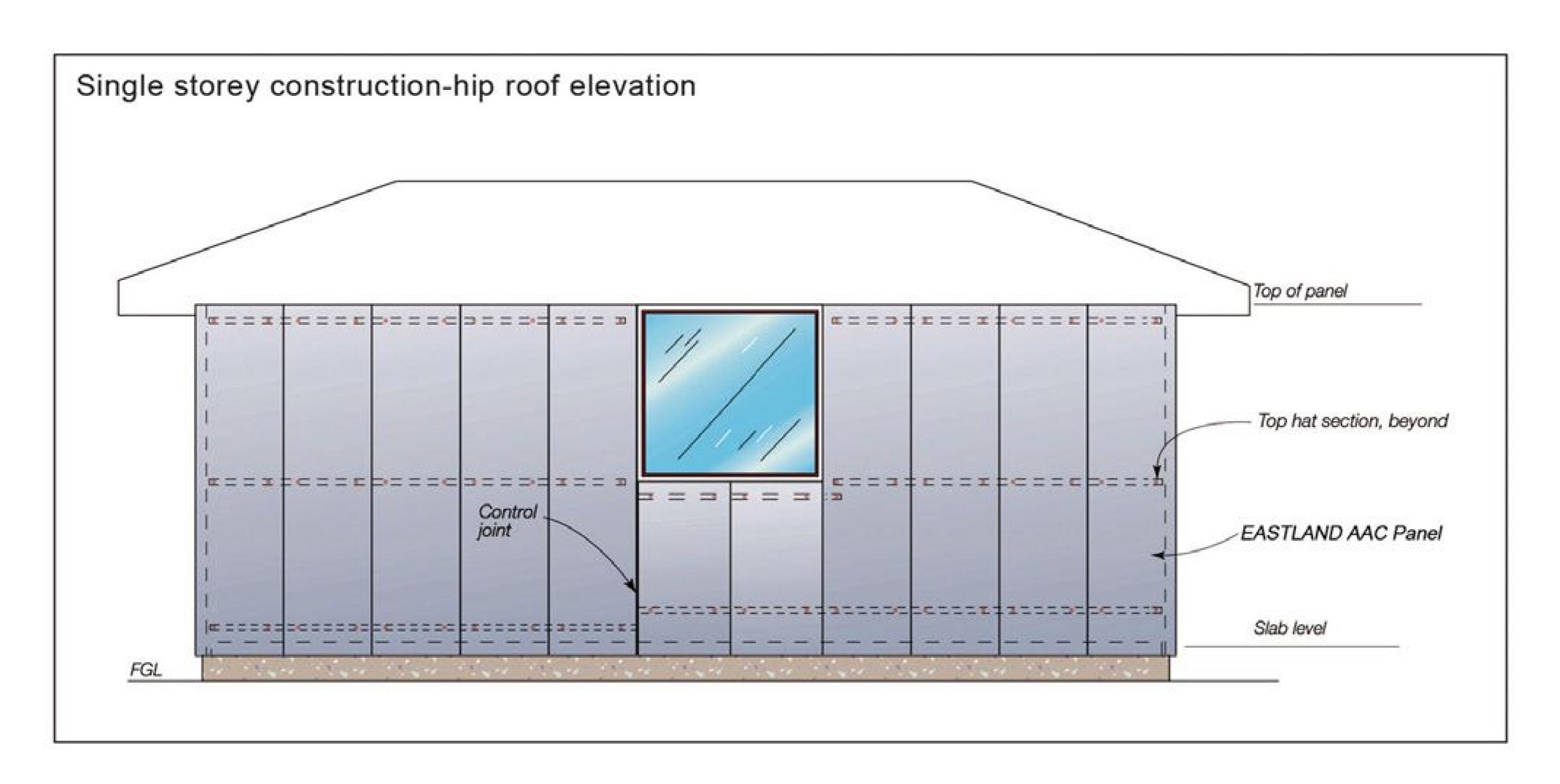
CONSTRUCTION DETAILS

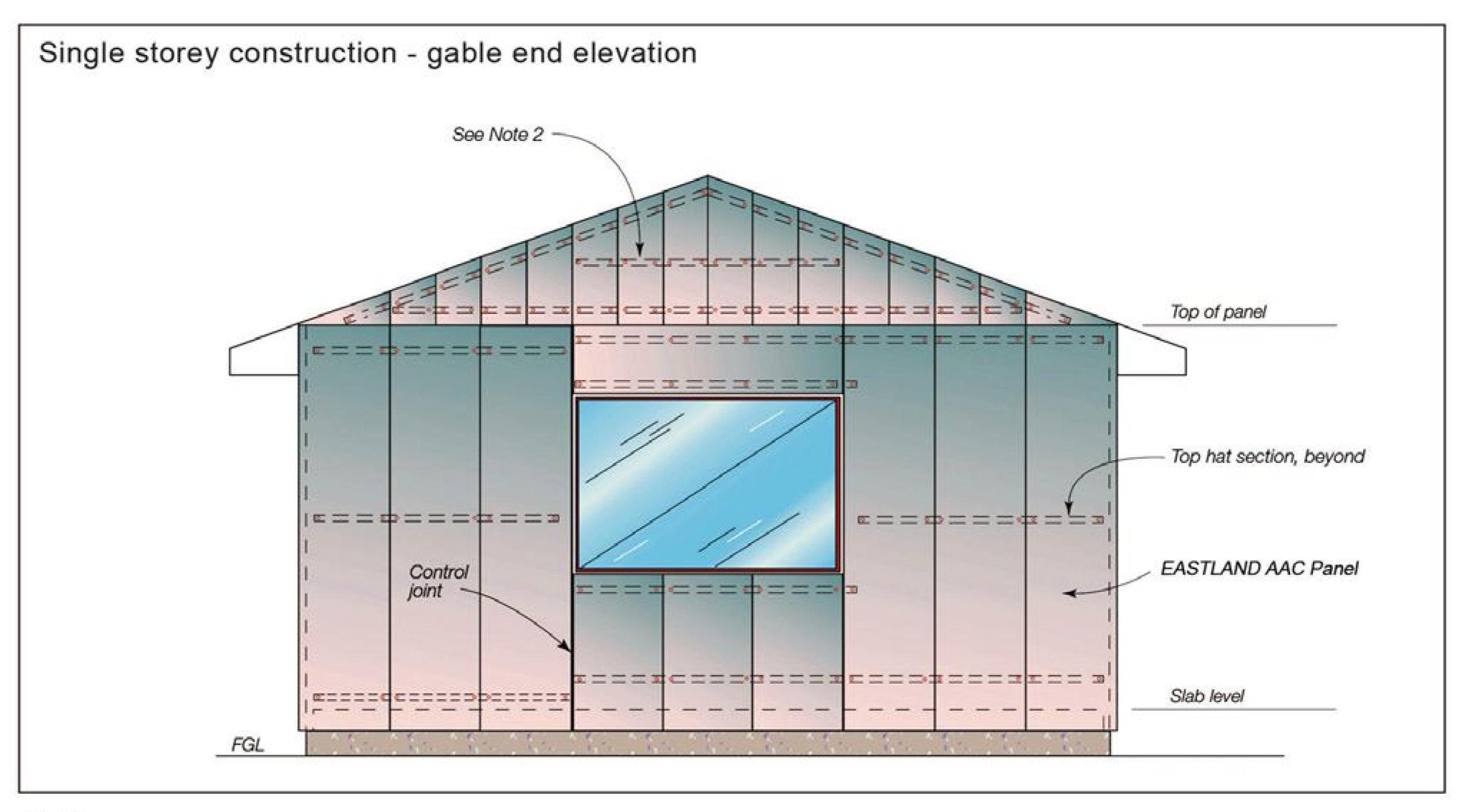
SINGLE STOREY CONSTRUCTION DETAILS







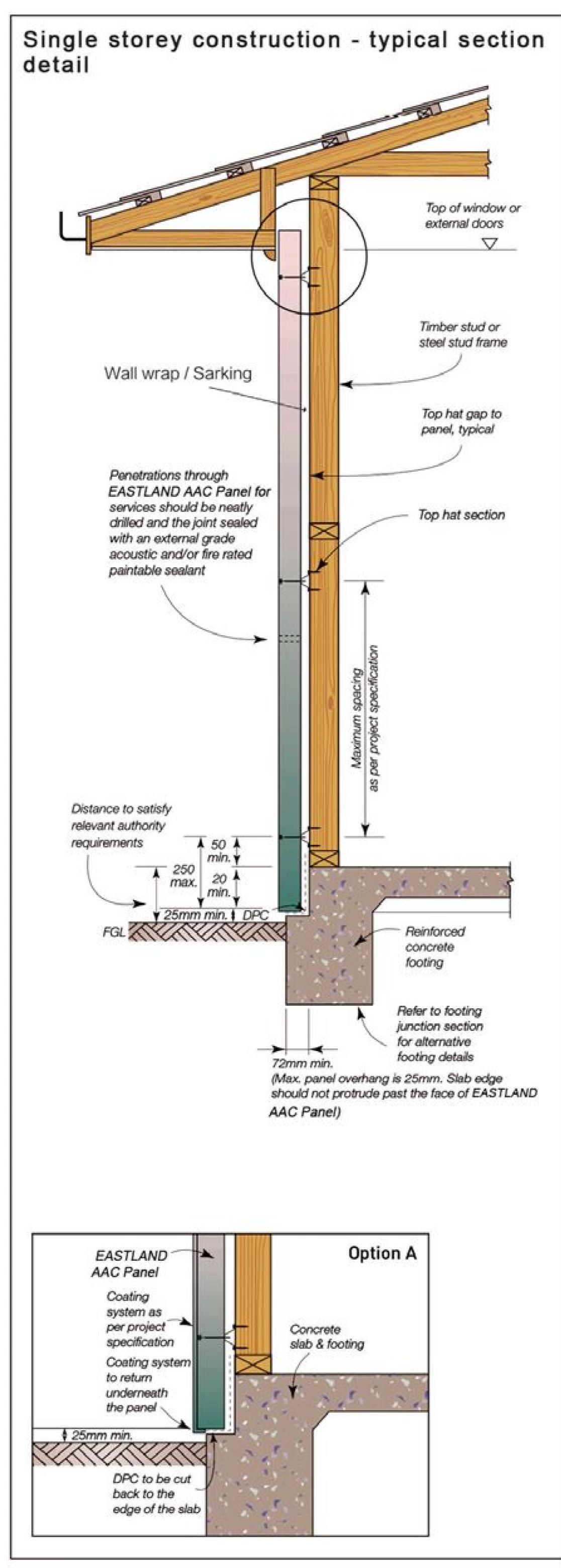


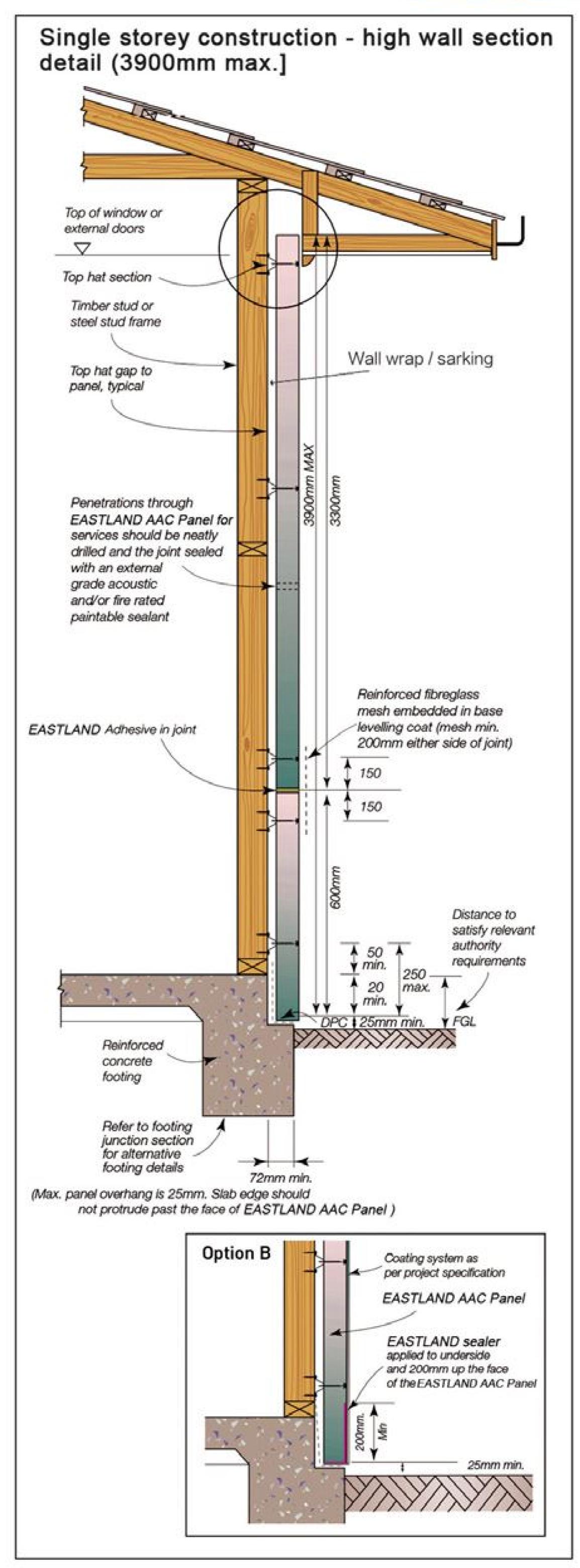


NOTES:

- 1. Number of top hats and top hat spacing to be confirmed by the building designer.
- 2. Additional top hats may be required, for suspended panels.
- 3. These details have not shown the set-out of top hats to accommodate control joint locations. This is the responsibility of the building designer.
- 4. Horizontally installed EASTLAND AAC Panel panels above openings can be installed with top hat sections running horizontally or vertically. A mimimum 3 top hat sections will be required for vertically installed top hats. All top hats to be spaced evenly, with the two outer top hats installed 250mm (maximum) from the end of the EASTLAND AAC Panel.





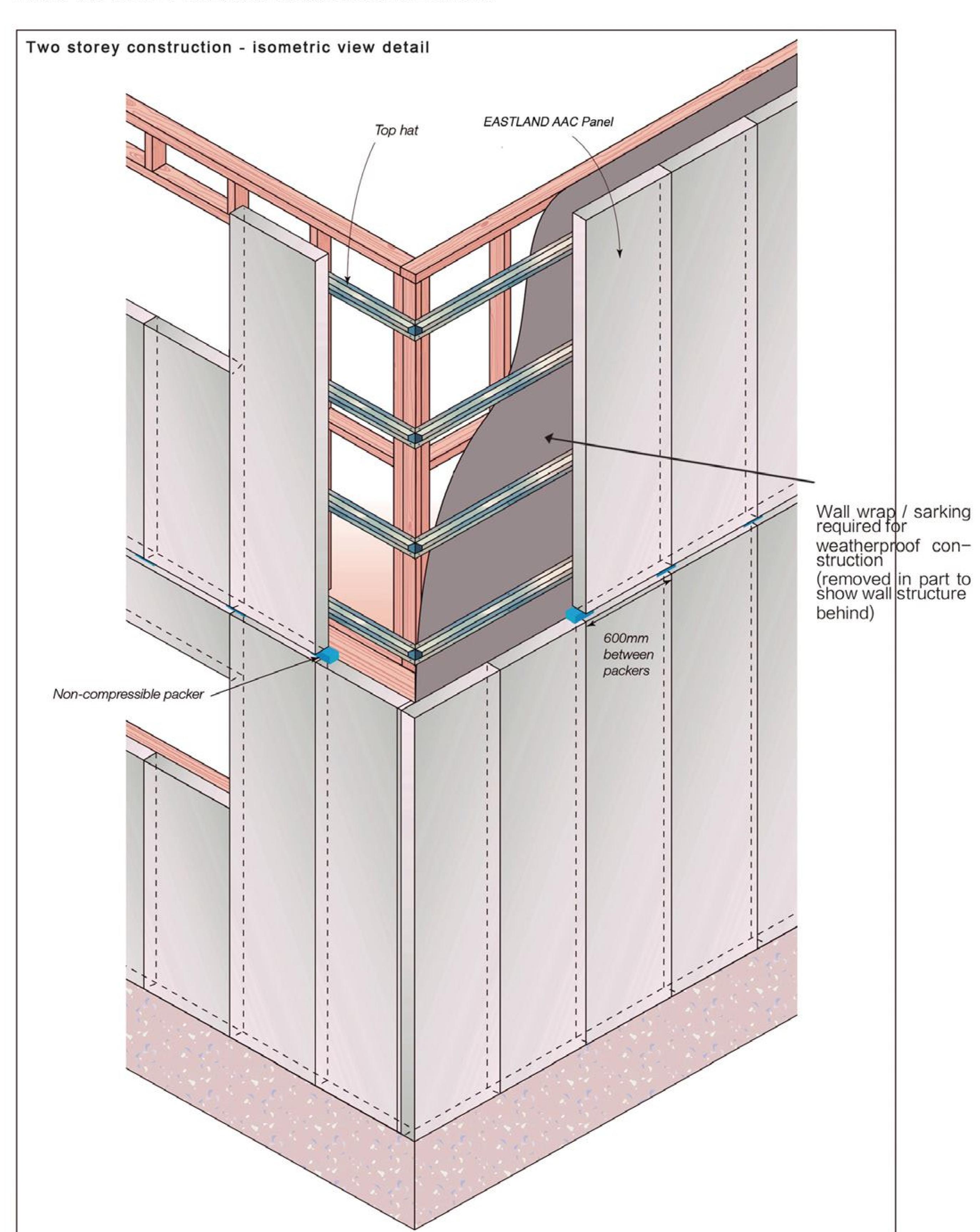


NOTES:

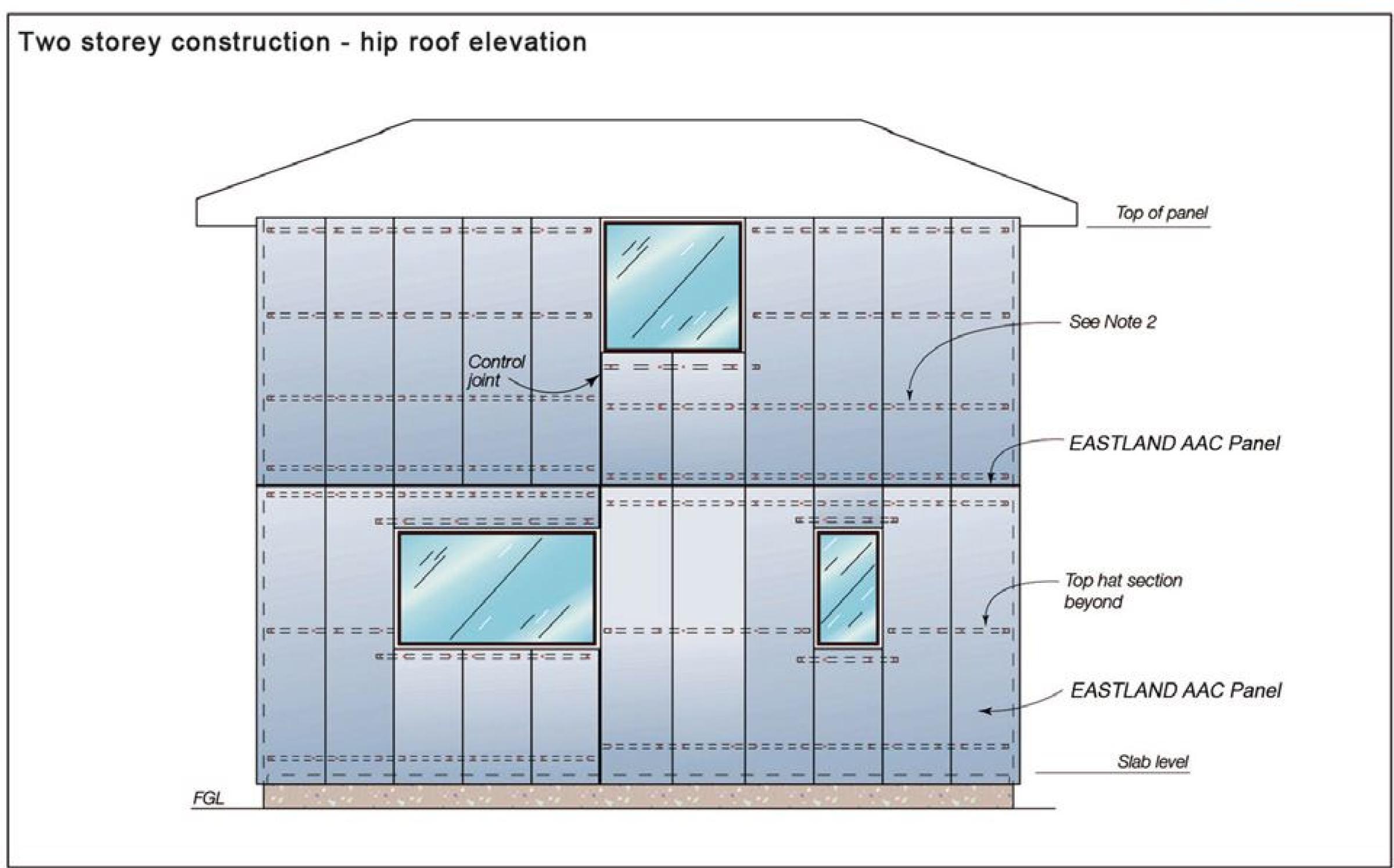
- 1. slab edge details do not comply with the termite visible inspection zone requirements. Alternate termite management systems must be used when selecting these details. It is the responsibility of the builder to provide a suitable physical or chemical barrier in accordance with AS 3660.
- 2. EASTLAND AAC Panel panels are supported at the base on concrete slab edge.
- 3. The distance from the underside of the EASTLAND AAC Panel I panel to Finished Ground Level (FGL) maybe 25mm min. or as per relevant authority requirements, see option A and B. Ensure soil is cut away at the slab edge to provide enough room to accommodate the coating of the underside of the panel (applies to option A only). For more details please contact EASTLAND Technical Services to obtain a copy of EASTLAND Technical Update TU-033
- 4. Where the slab edge is rendered on sites that contain saline soils, please refer to page 10 of the guide for further details.

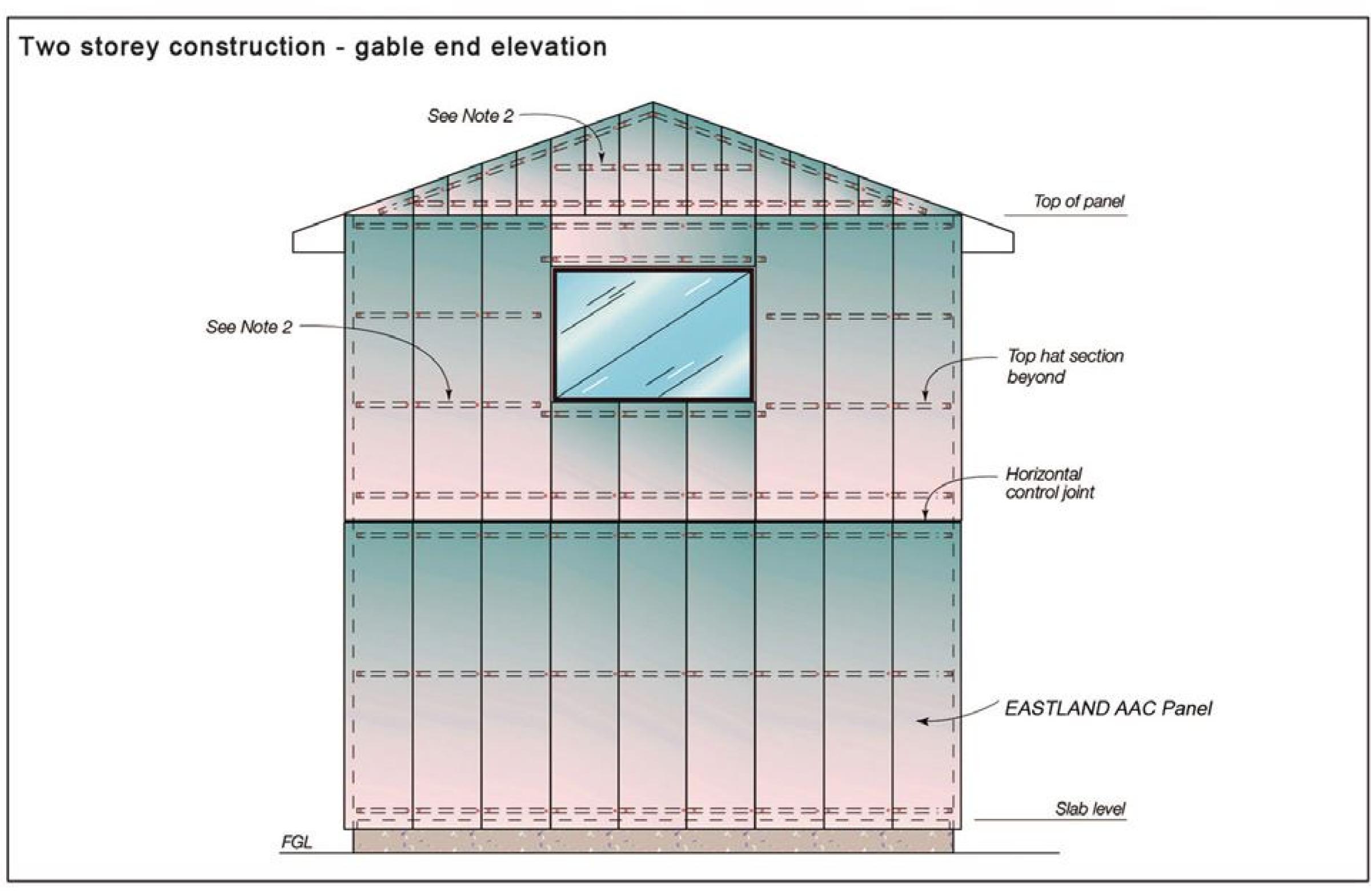


TWO STOREY CONSTRUCTION DETAILS





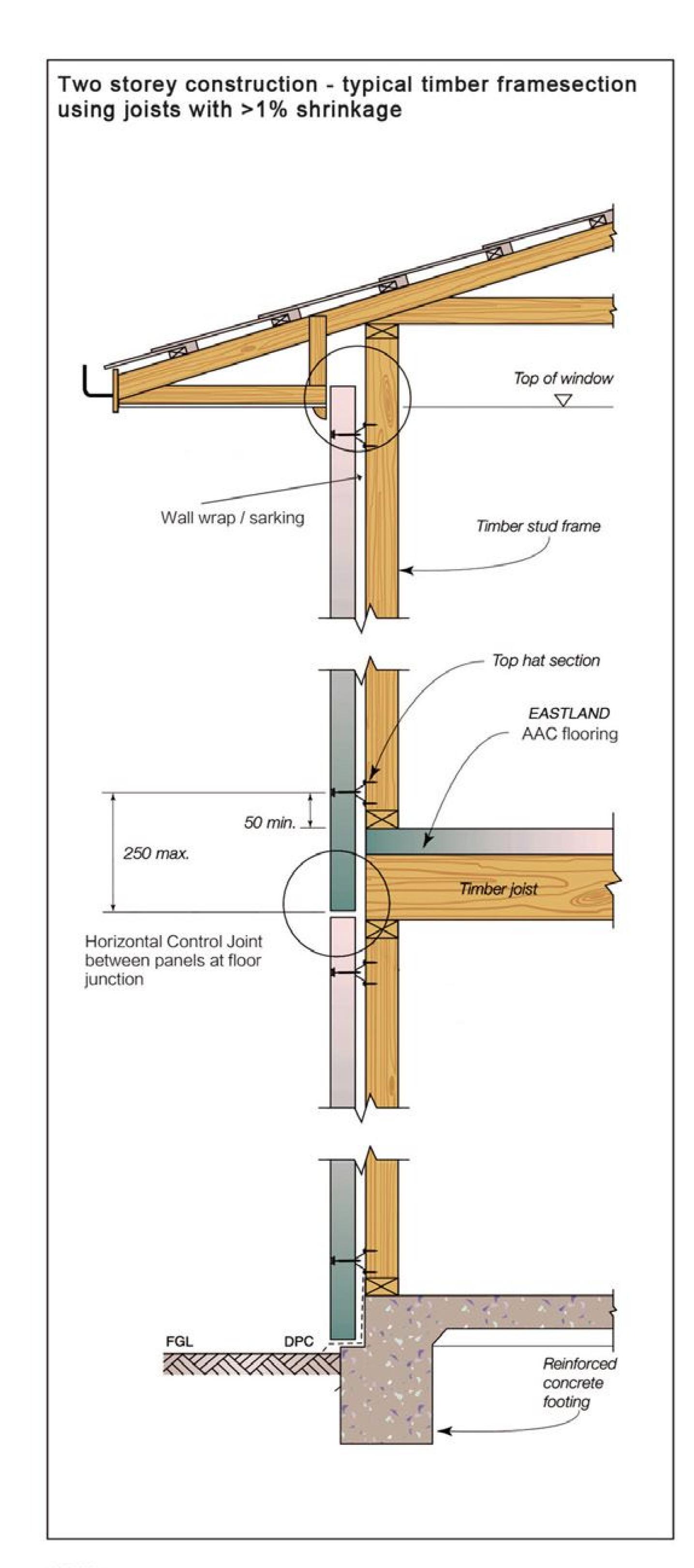


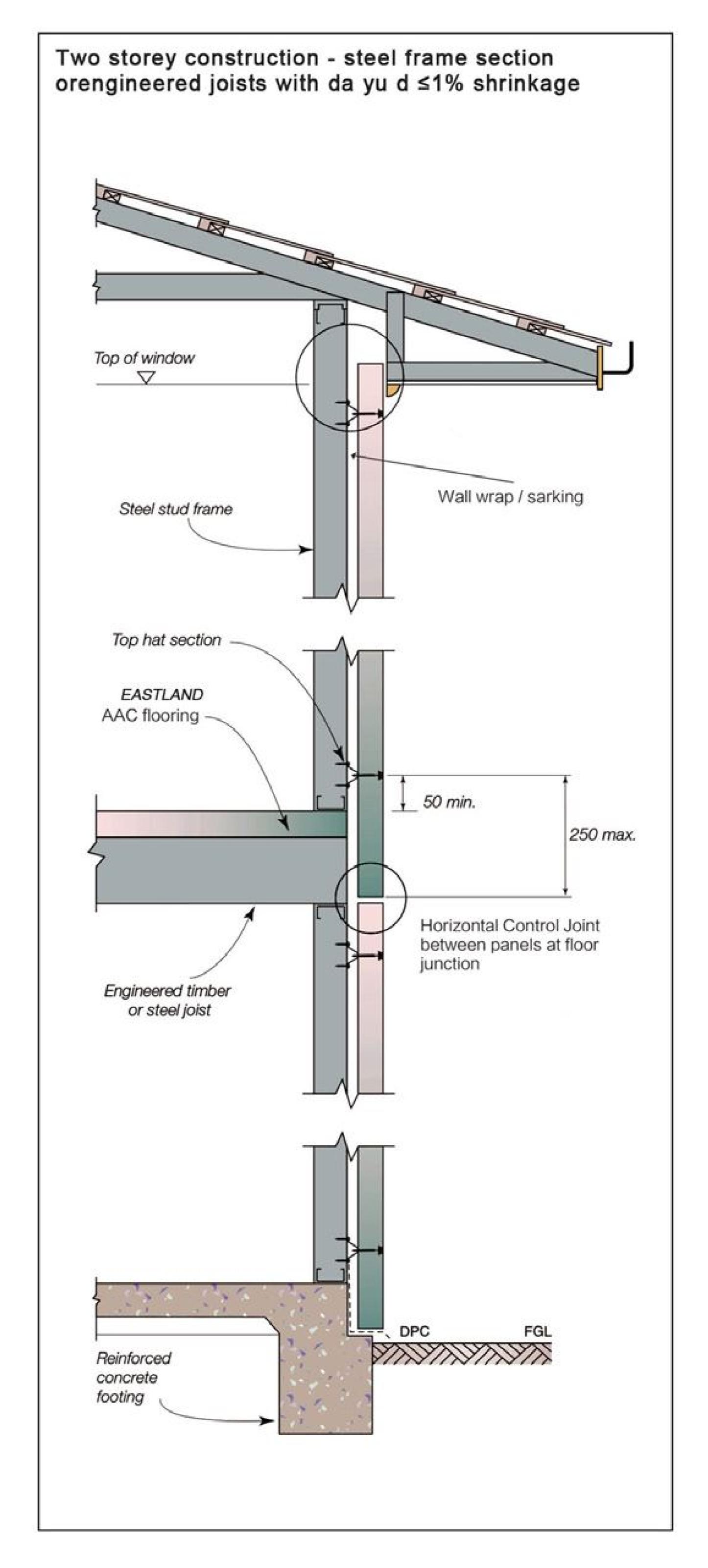


NOTES:

- 1. Number of top hats and top hat spacing to be confirmed by the building designer.
- 2. Additional top hats may be required, for suspended panels.
- 3. These details have not shown set-out of top hats to accommodate control joint locations. This is the responsibility of the building designer.
- 4. Frame design of lower floor to allow for extra load on wall from upper floor EASTLAND AAC Panel panels.
- 5. Minimum four horizontal top hats required for upper floor EASTLAND AAC Panel panels.
- 6. Horizontally installed EASTLAND AAC Panelpanels above openings can be installed with top hat sections running horizontally or vertically. A mimimum 3 top hat sections will be required for vertically installed top hats. All top hats to be spaced evenly, with the two outer top hats installed 250mm (maximum) from the end of the EASTLAND AAC Panel.





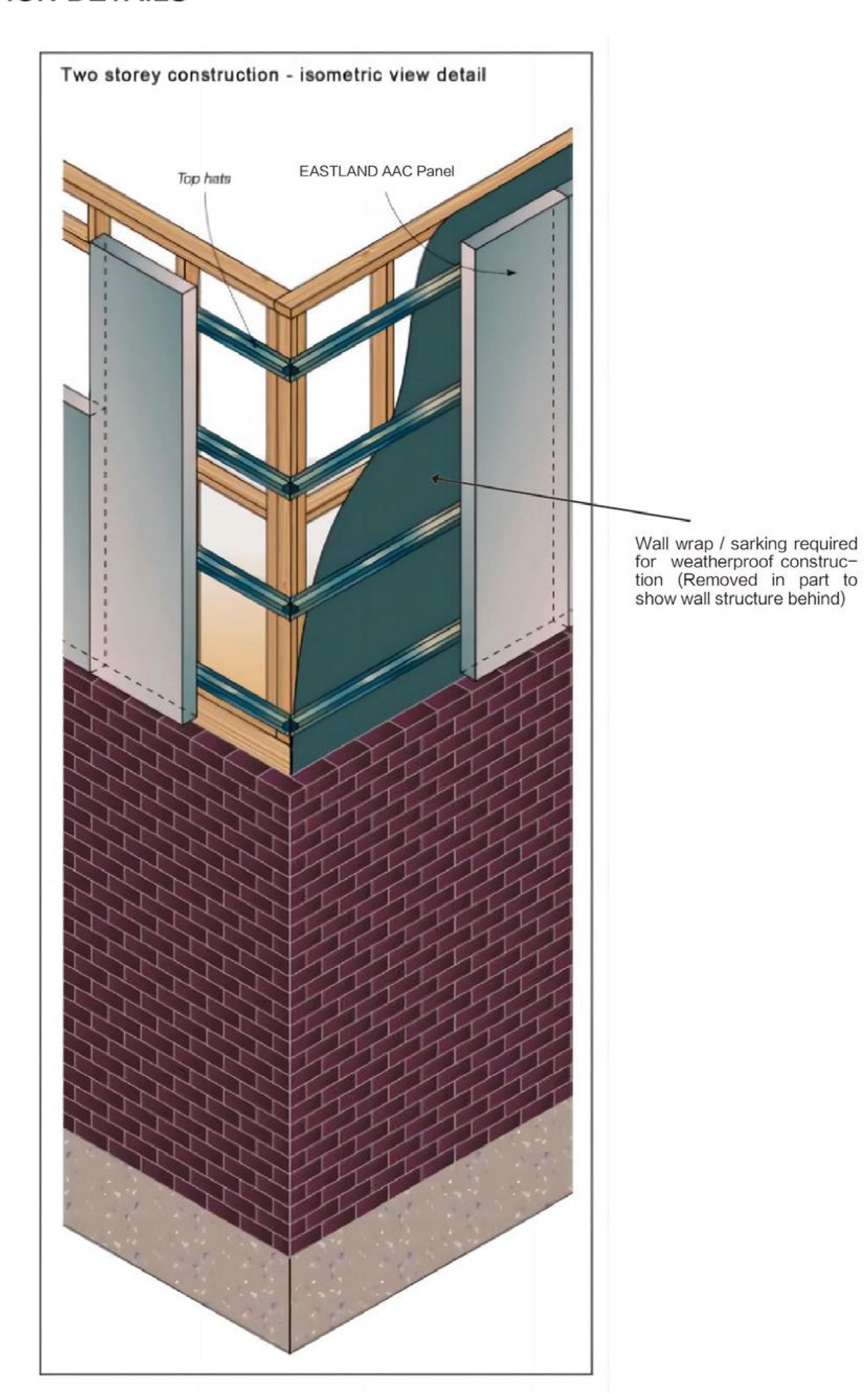


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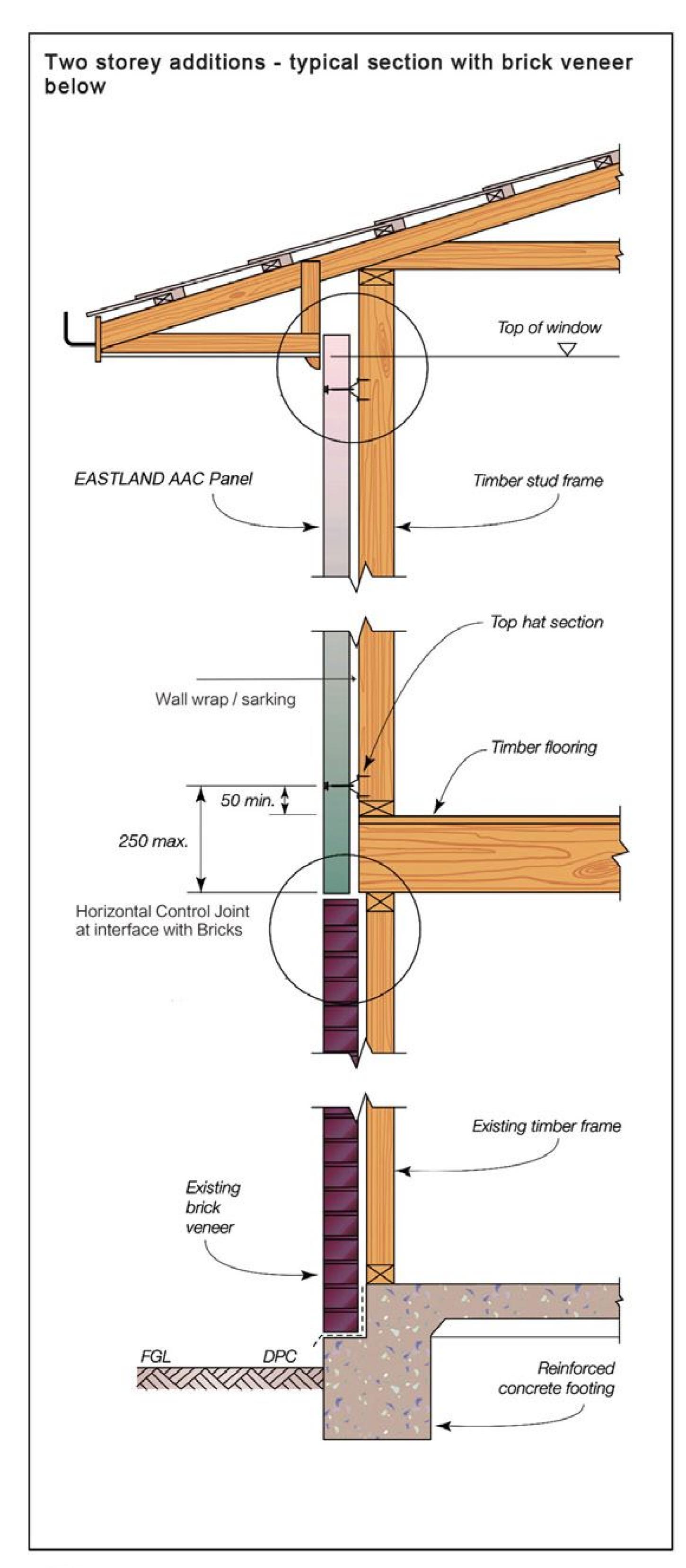
1. Lower storey EASTLAND AAC Panel Panels are supported at the base on concrete slab edge.

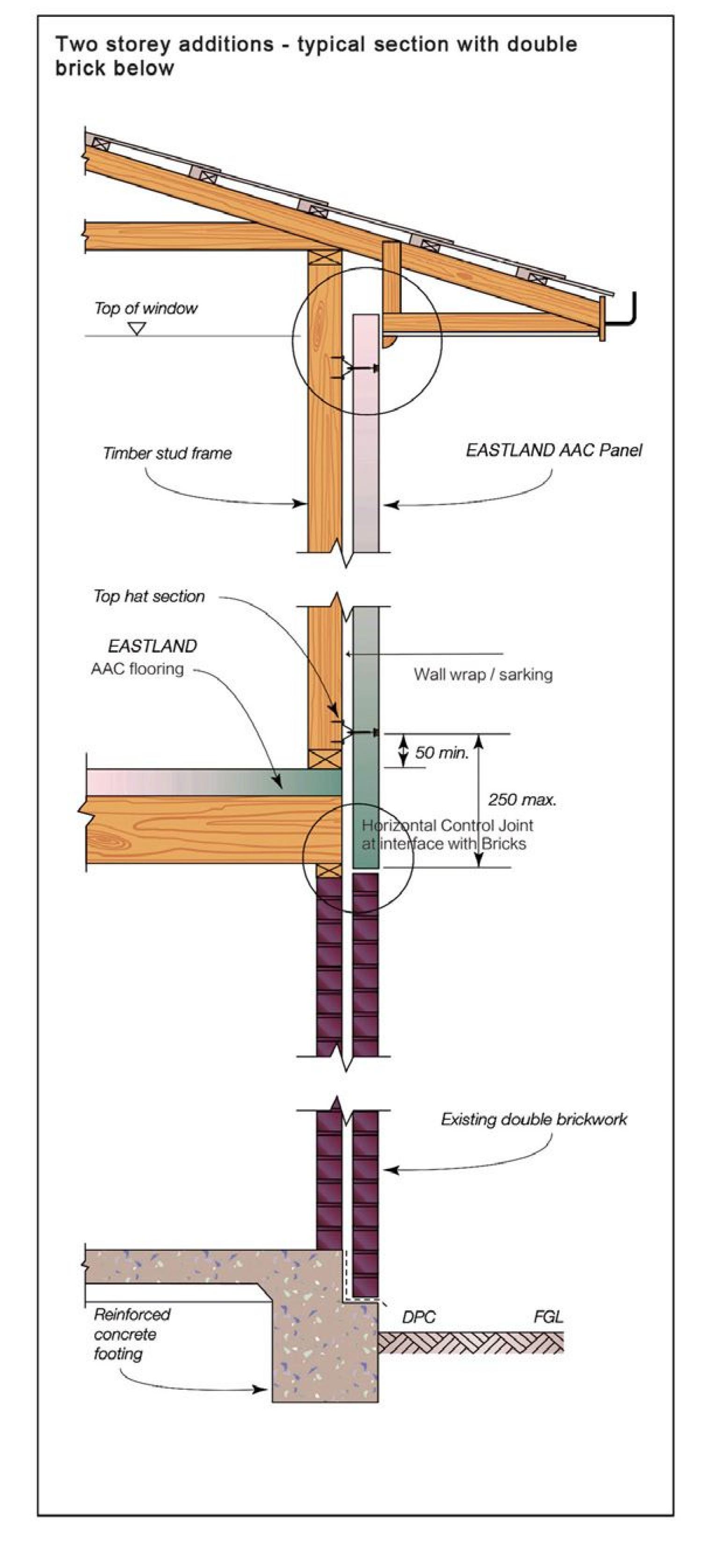


TWO STOREY ADDITION DETAILS



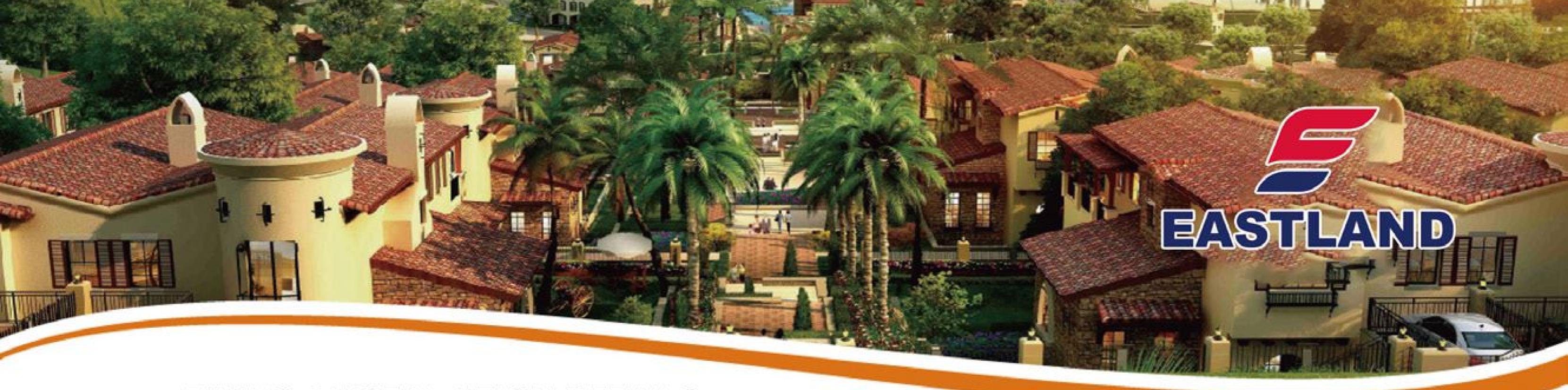




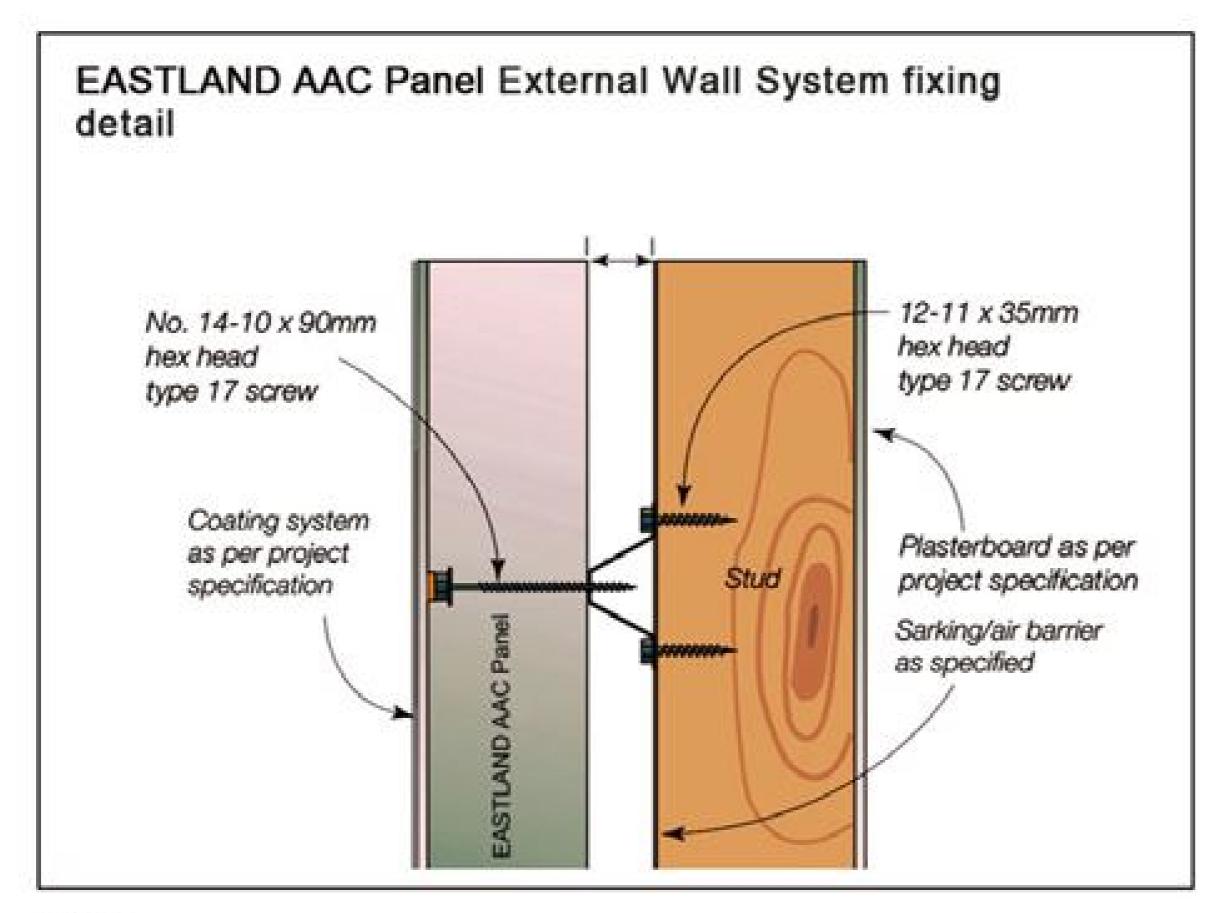


NOTES:

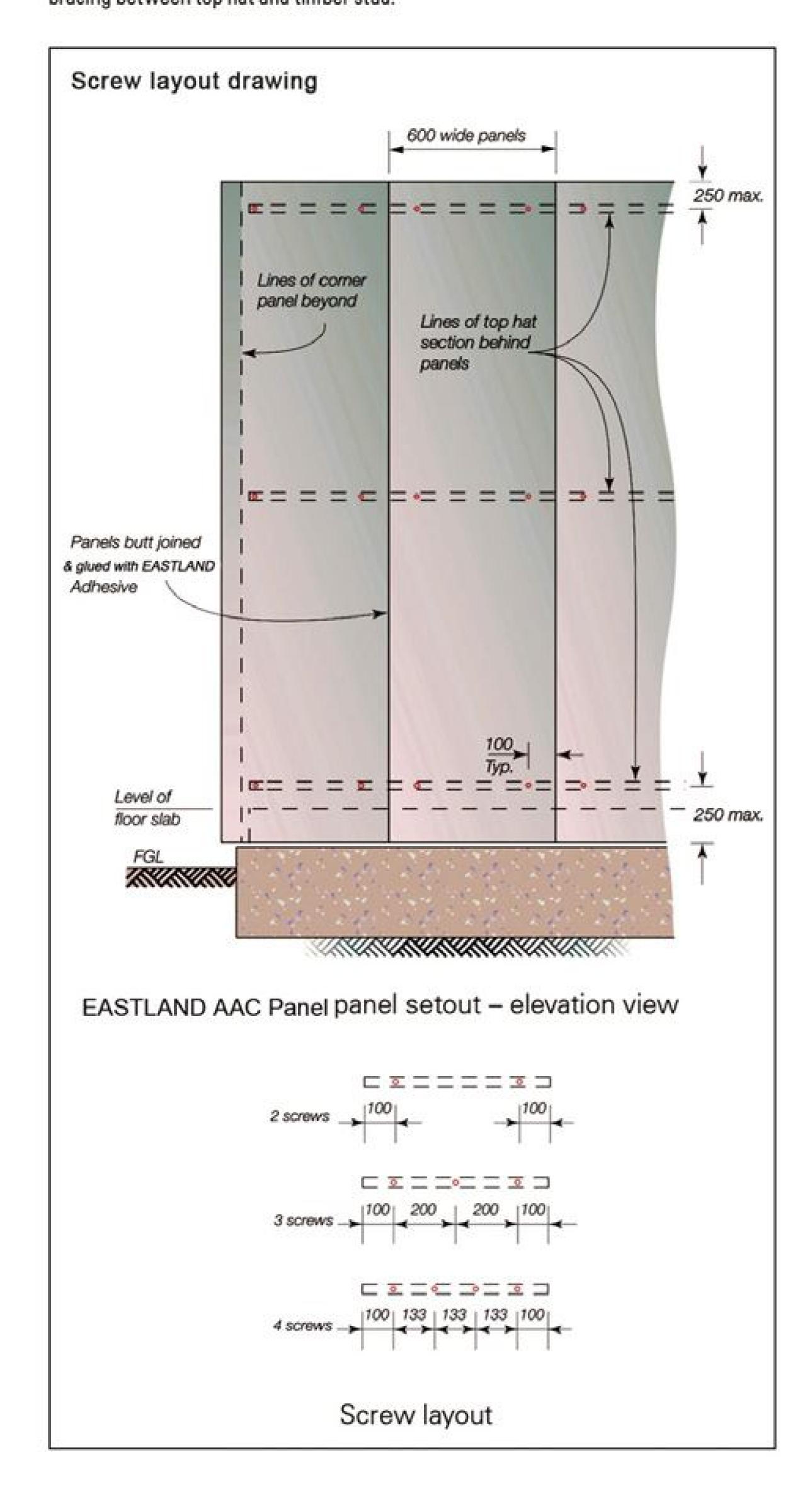
Minimum 4 top hats required for panels that are suspended off the frame.

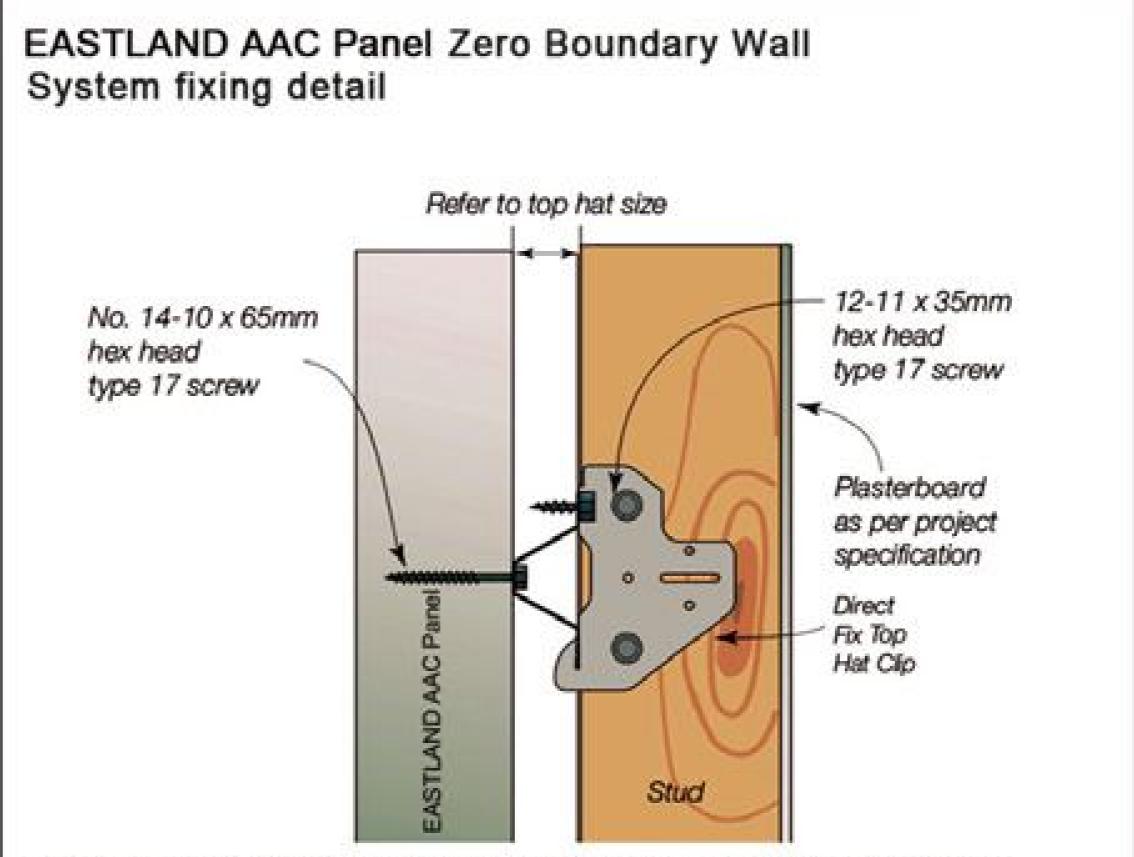


FIXING &INSTAL ATION DETAILS



NOTE: When positioning the stud frames allow 5-7mm extra cavity width for the sheet bracing between top hat and timber stud.

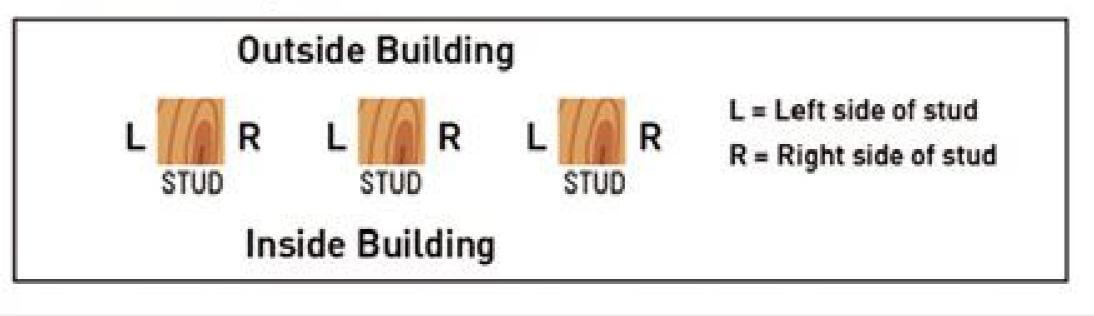


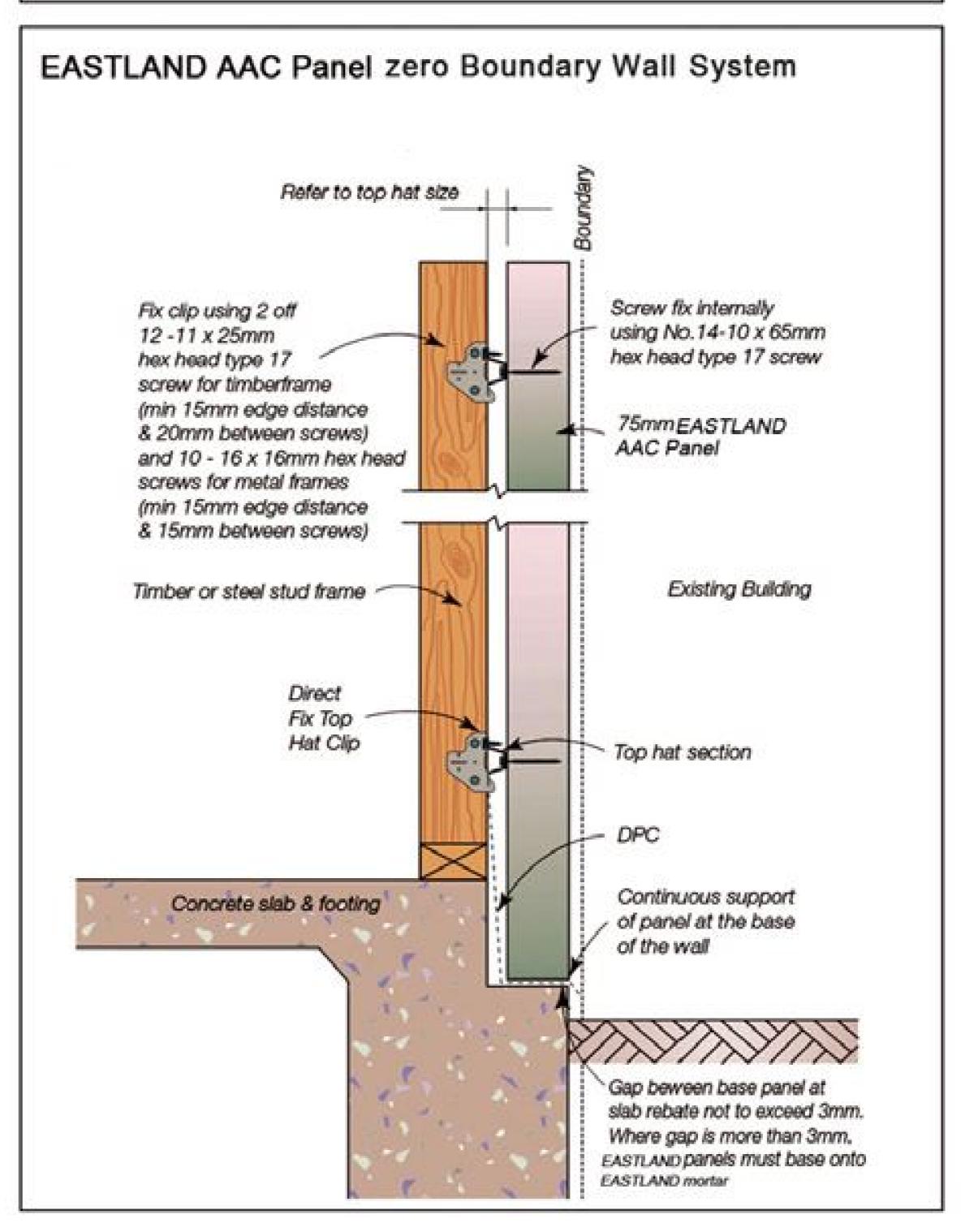


IMPORTANT: Top hat clip is fixed on the left hand side of the stud (when looking from inside to the outside of the building) except at the last stud, only, when the clip may be installed upside down.

Installing the clip upside down i.e where the screw fixing from the clip to the top hat is at the bottom flange of the top hat, will be acceptable provided that:

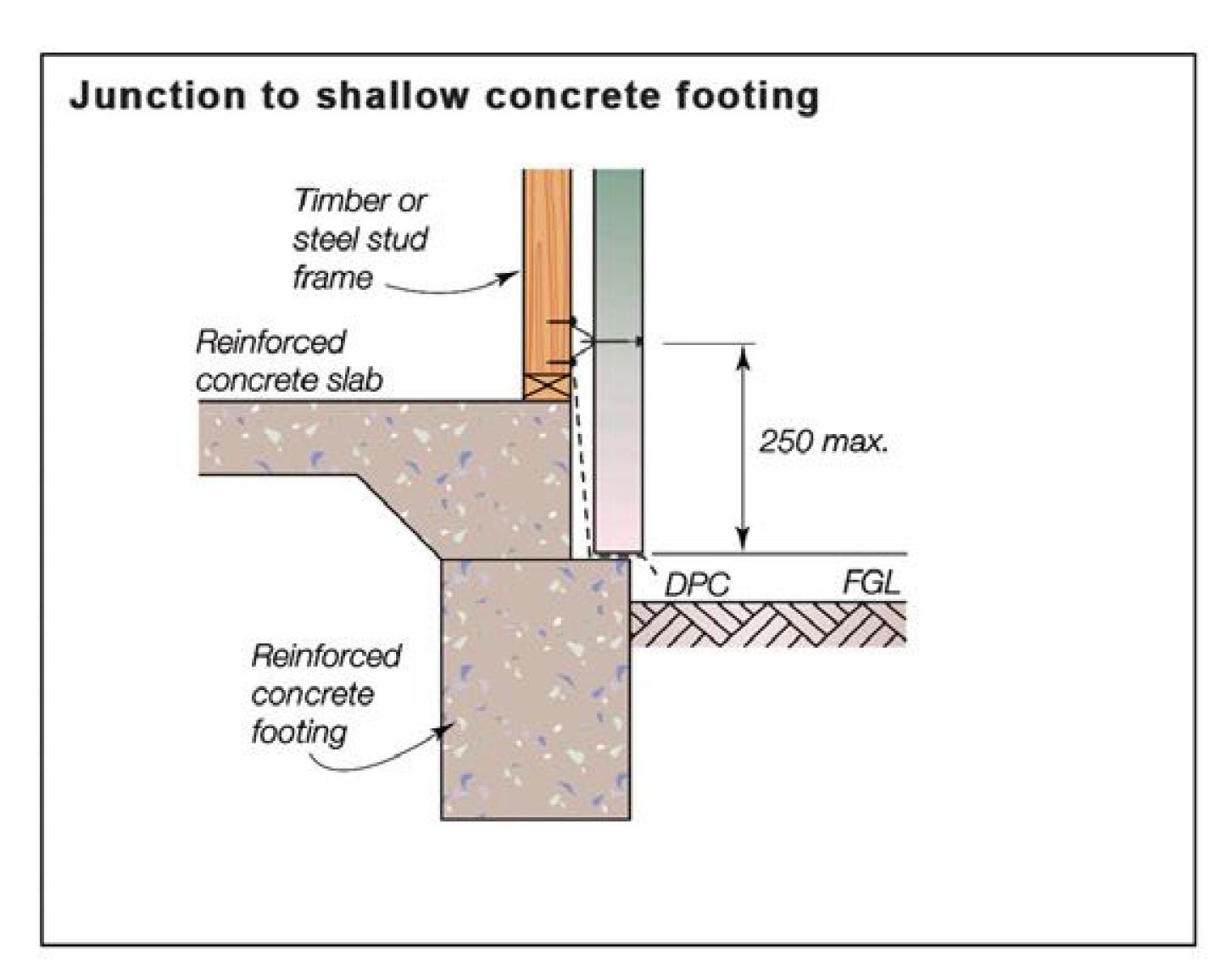
- A: The upside down clip is fixed on the right hand side of the stud (when looking from the inside to the outside of the building)
- B: The upside down clip installation is to the last stud of a wall run (only), such that the spacing between the last and second last studs is no greater than 600mm,
- C: The top hat is continuous in this region for a minimum of two spans i.e top hat extends across two stud spacings,
- D: In all other locations, clips are to be installed to the left hand side of the stud with the screw fixing to the top side of the clip i.e into the top flange of the horizontal top hat.

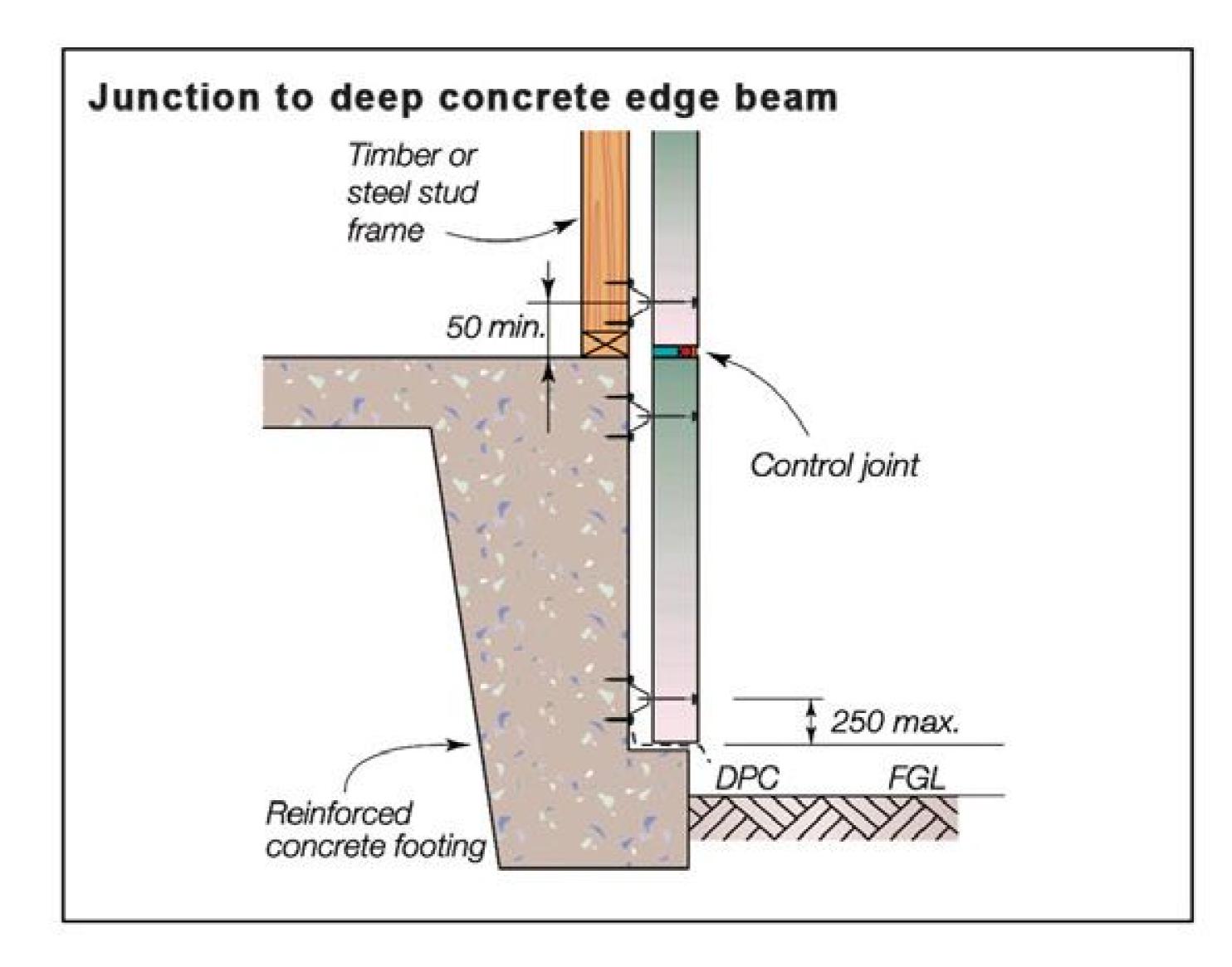


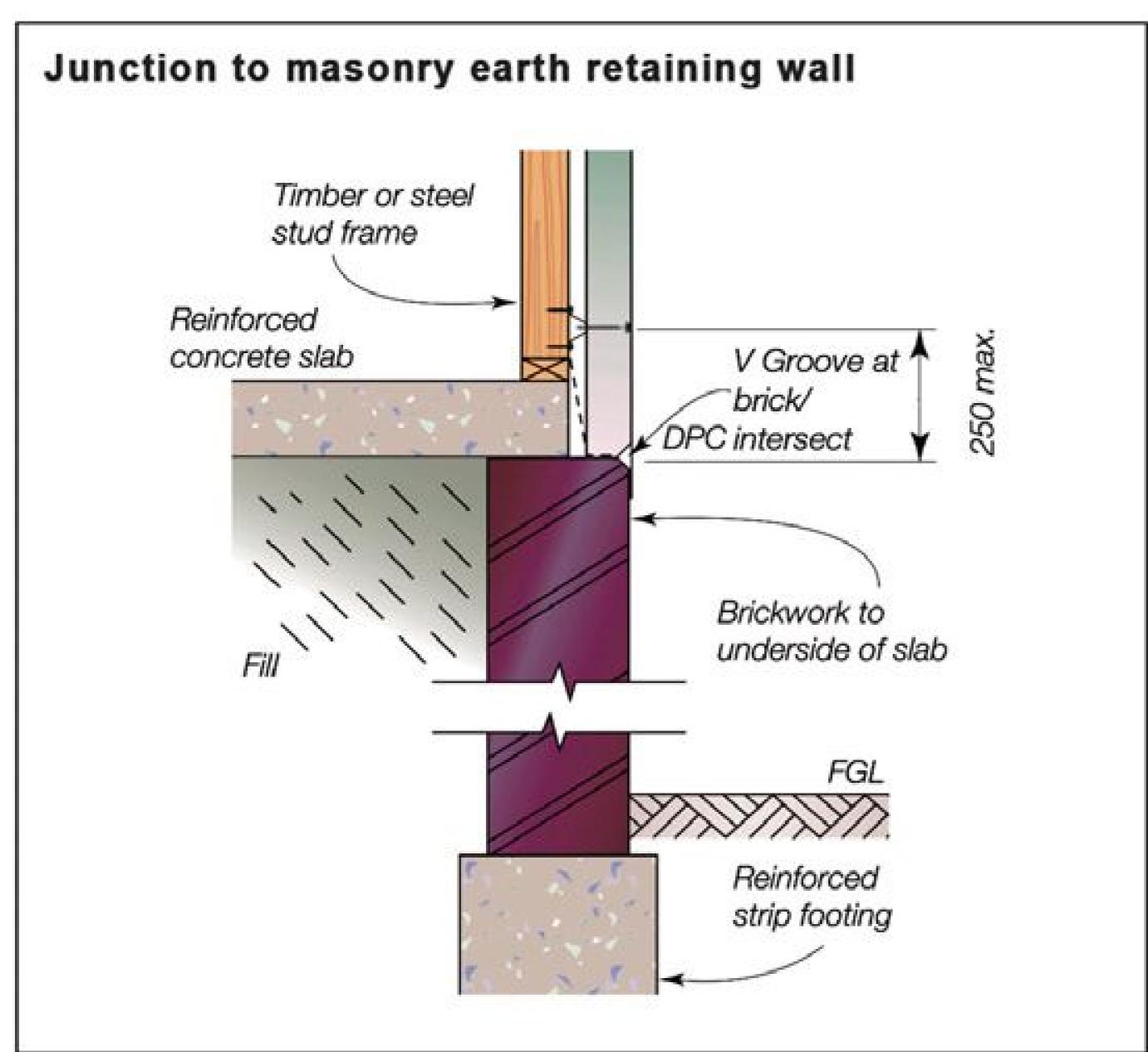


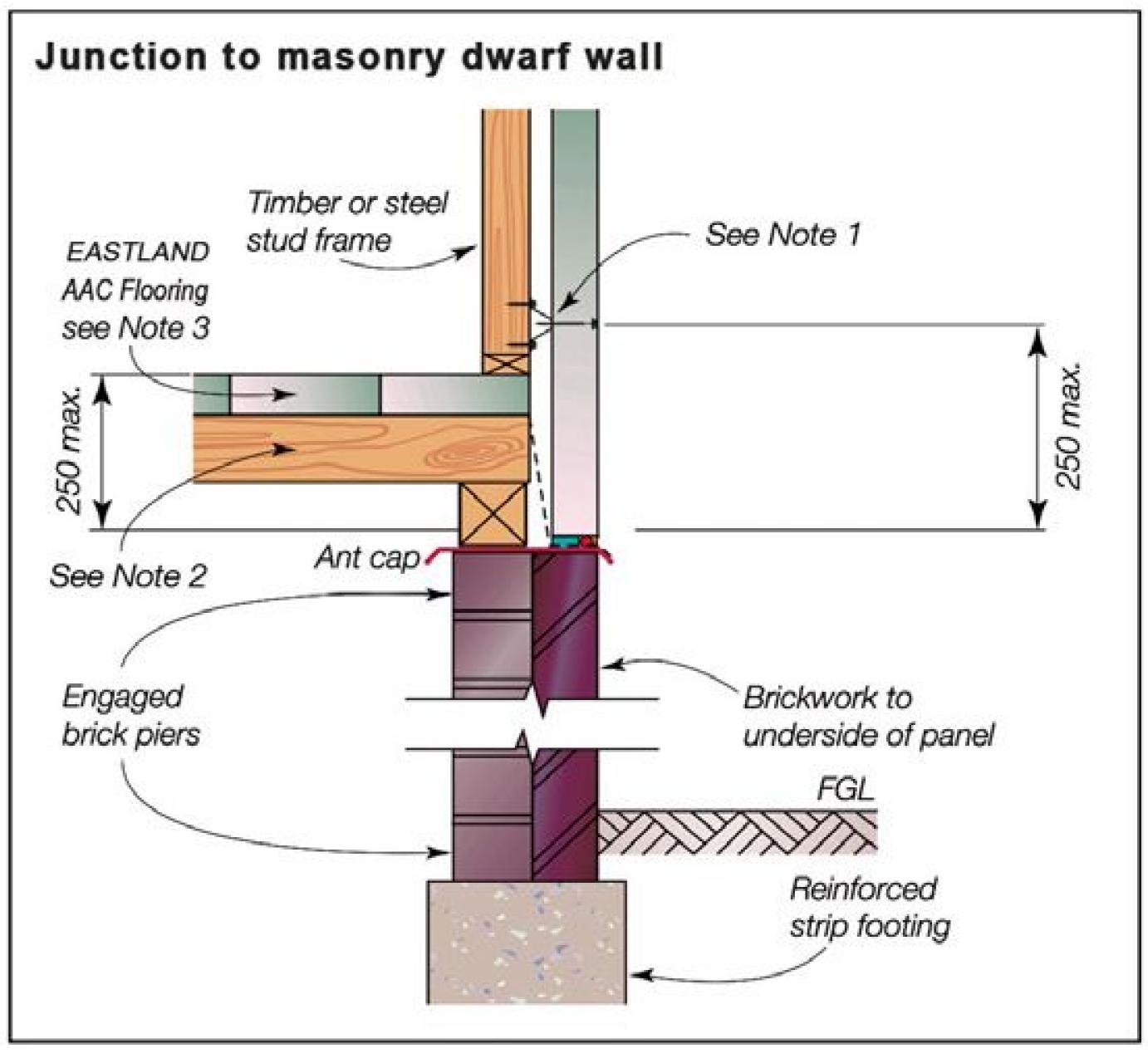


FOOTING JUNCTION DETAILS









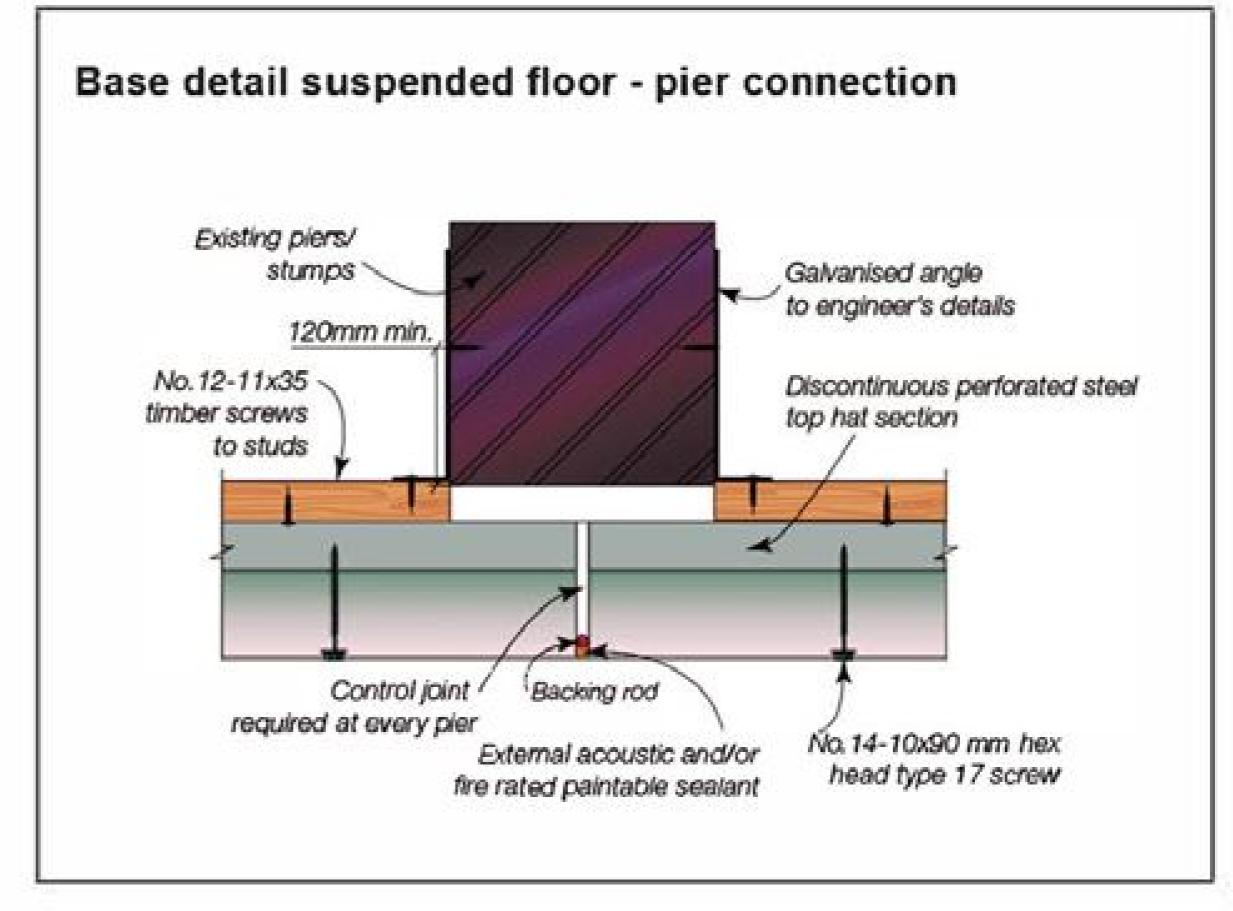
- 1. Do not fix top hat to floor joists.
- 2. If non-shrink floor joists are used, gap may be reduced or eliminated. Seek further technical advice from the framing manufacturer.
- 3. When fixing top hats to concrete, contact the fixing manufacturer for details.

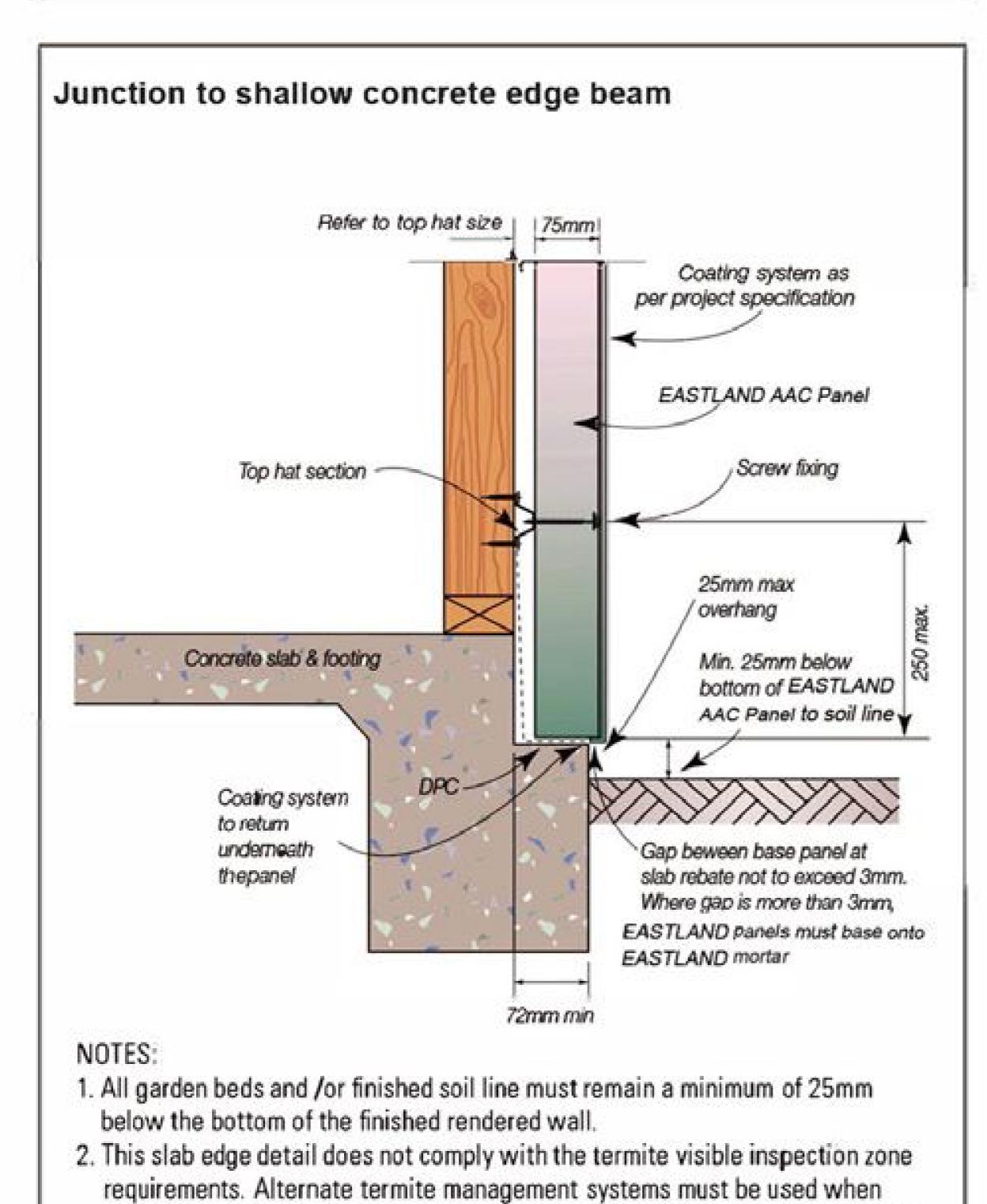


Junction to existing piers/stumps EASTLAND AAC Panel makeover Existing structure Existing clad timber Coating system as per framed external walls project specification No.14-10x90 hex head type 17 screw Existing cladding 75mm EASTLAND AAC Panel External acoustic and/or fire rated paintable sealant Nominal 10mm 10mm Ableflex or backing rod -Control joint New load bearing beam or frame supported off existing piers by . structural engineer (face to Existing align with existing facade) piers/stumps Angle structure to suit engineer's requirement

NOTES:

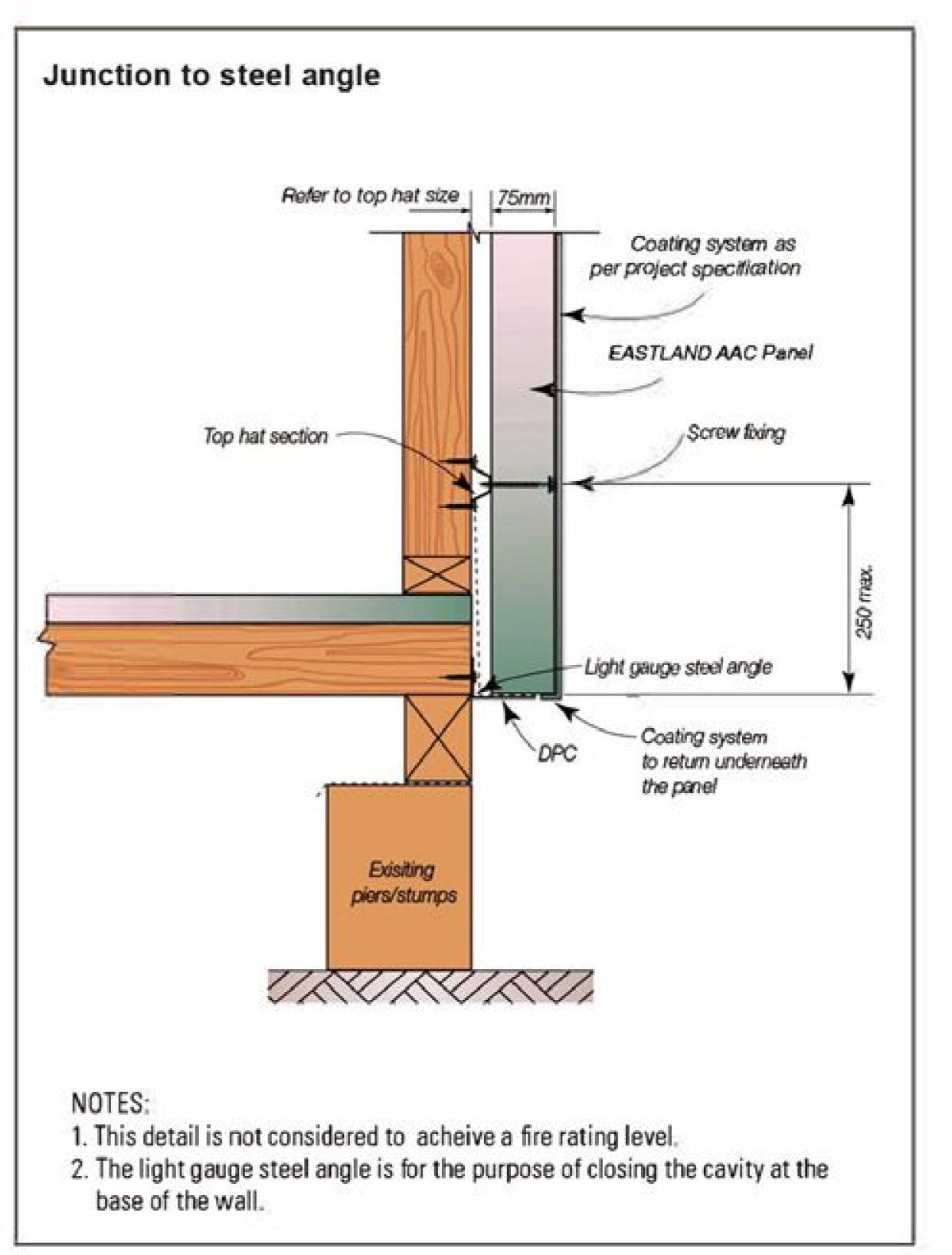
- This detail is not considered to achieve a fire rating level
- This slab edge detail does not comply with the termite visible inspection zone requirements. Alternate termite management systems must be used when selection this detail. It is the responsibility of the builder to provide a suitable physical or chemical barrier in accordance with AS 3660.



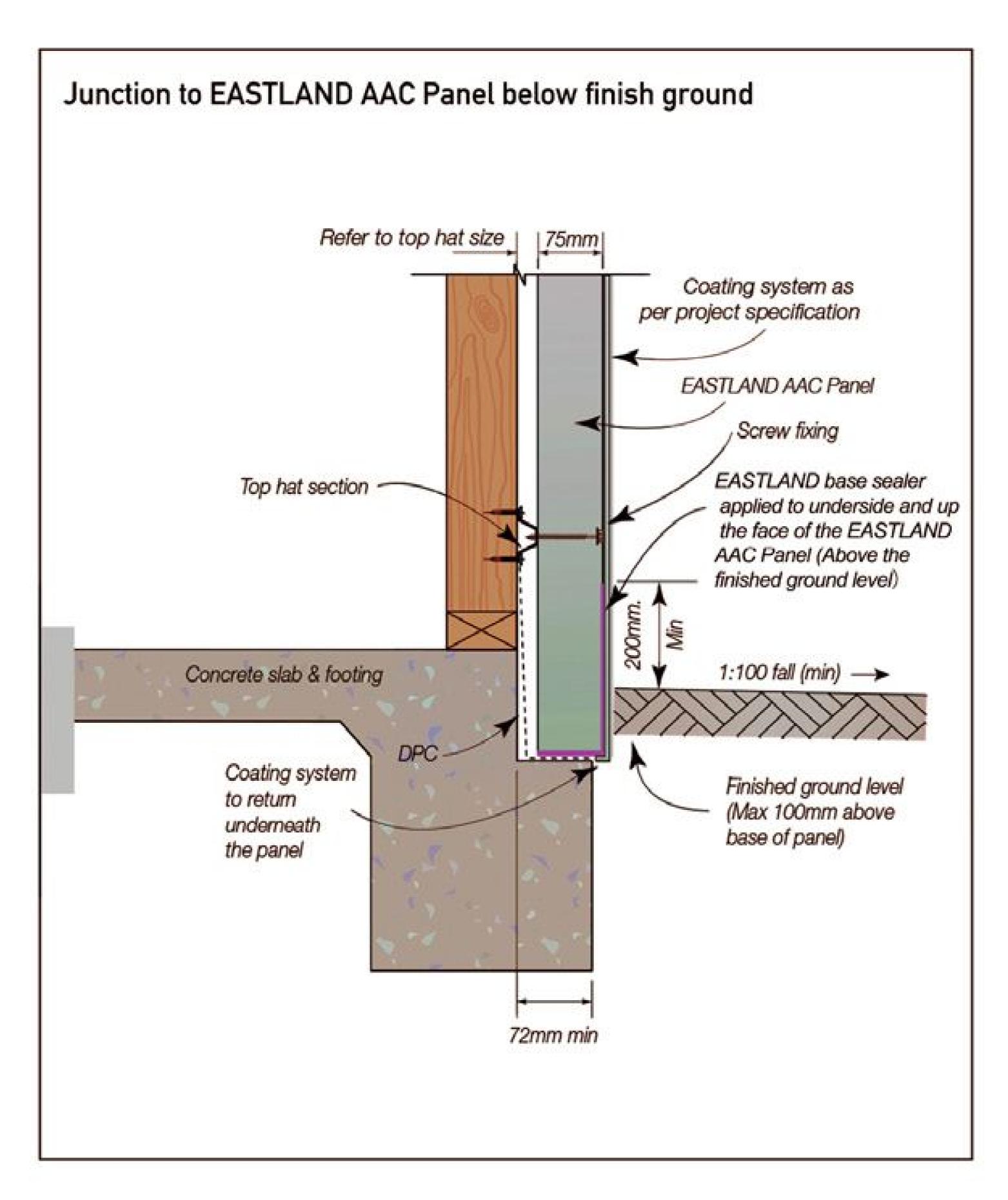


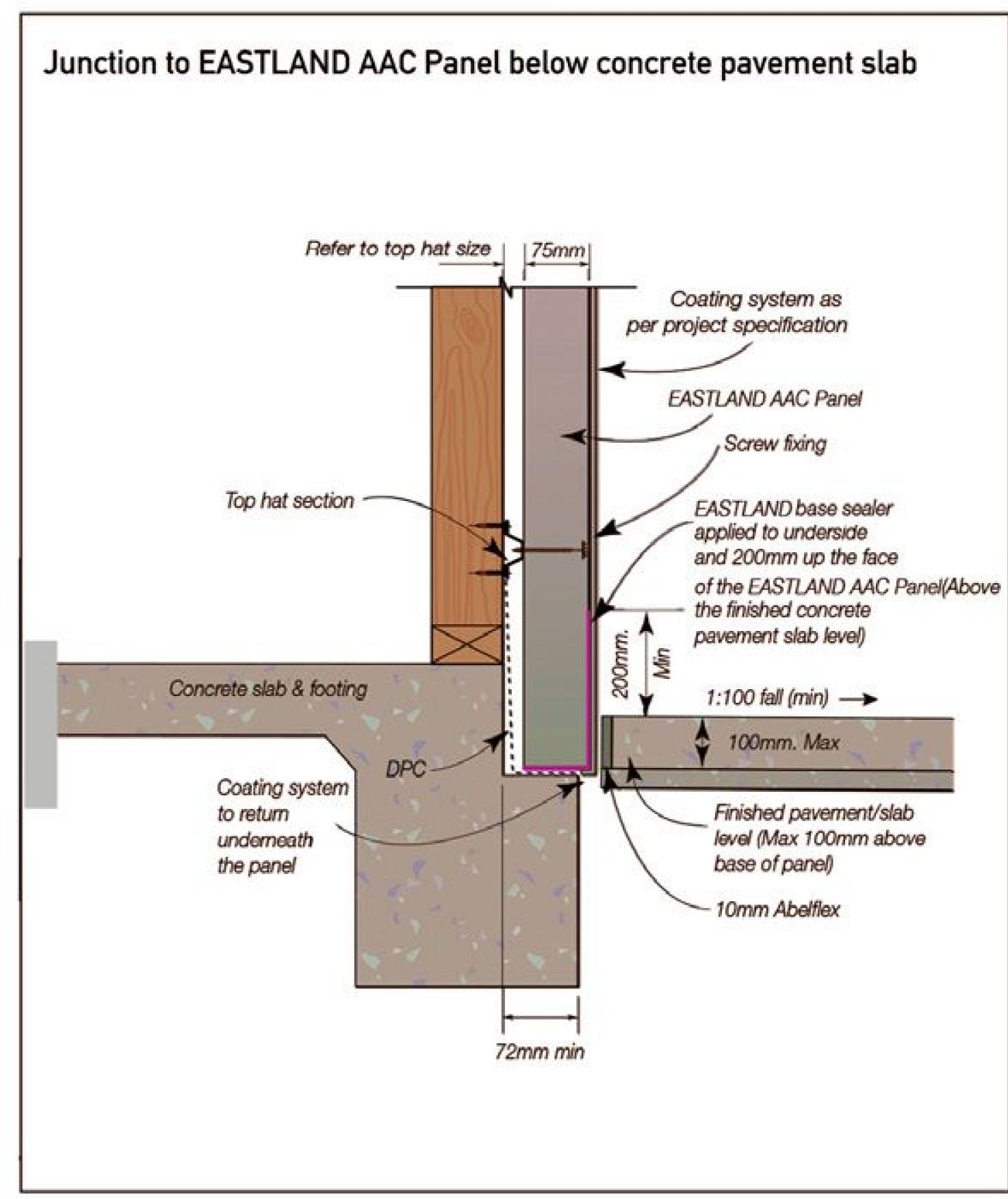
selection this detail. It is the responsibility of the builder to provide a suitable

physical or chemical barrier in accordance with AS 3660.

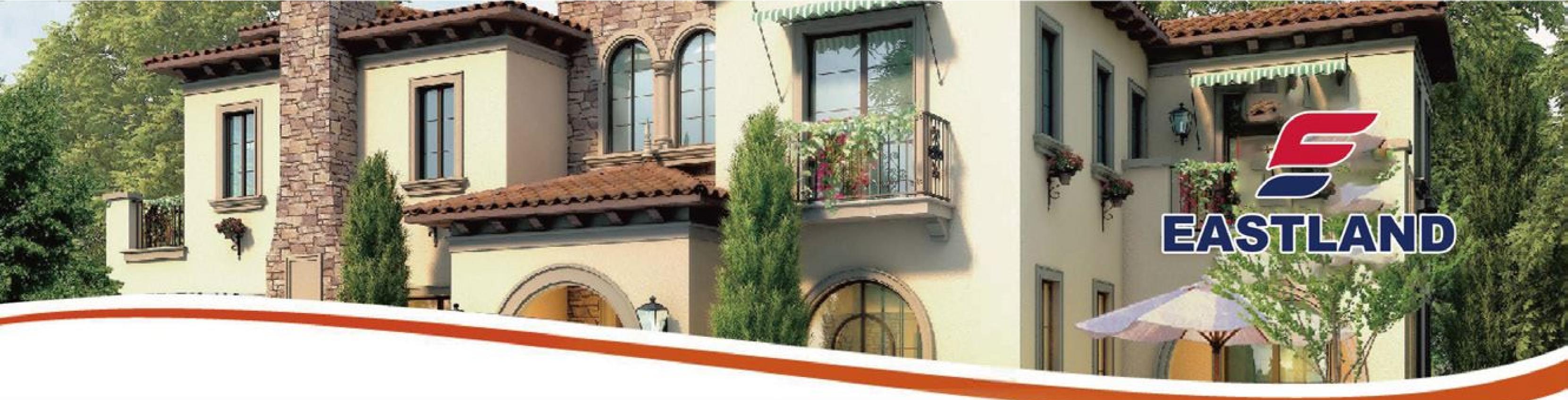




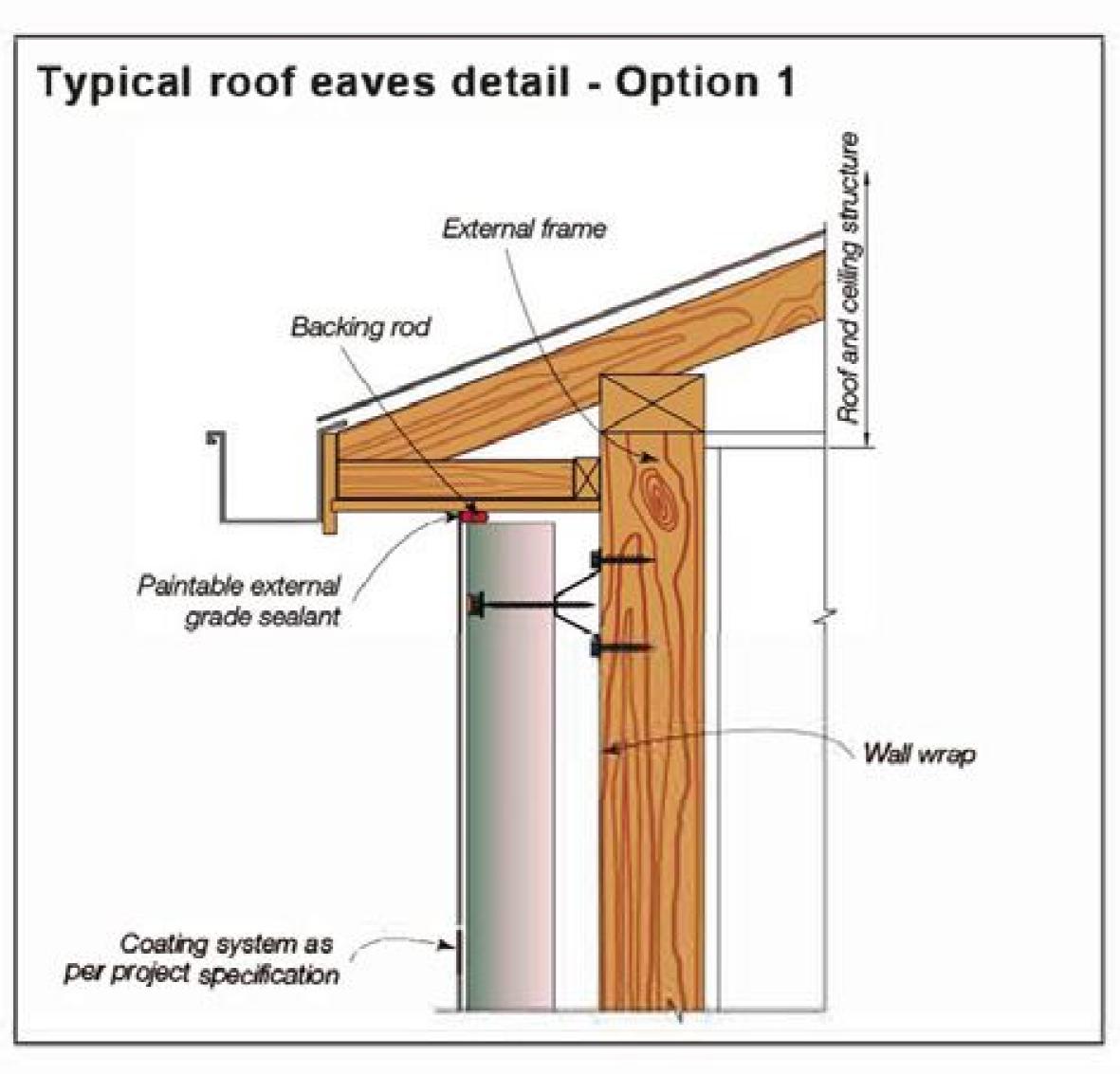


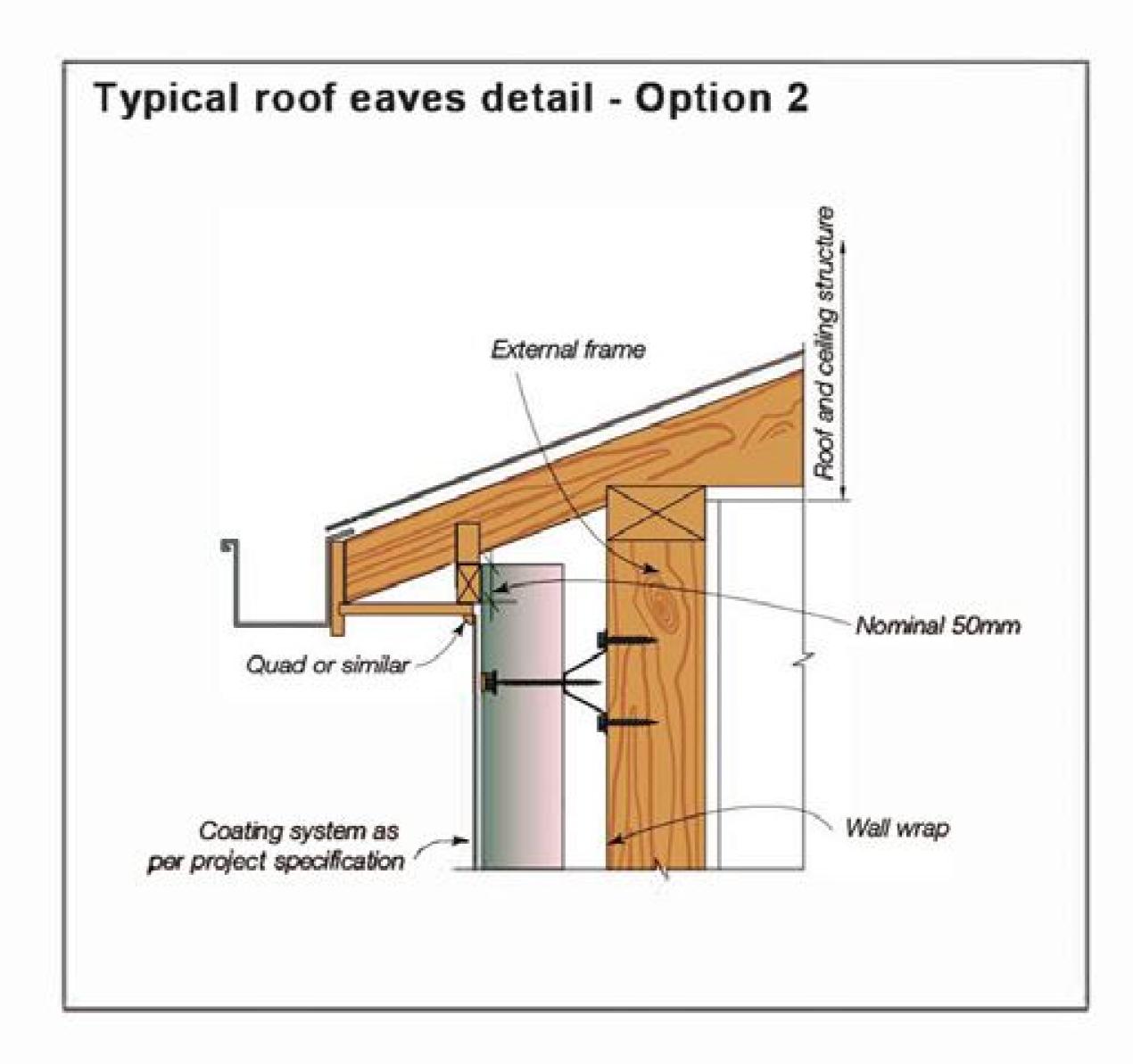


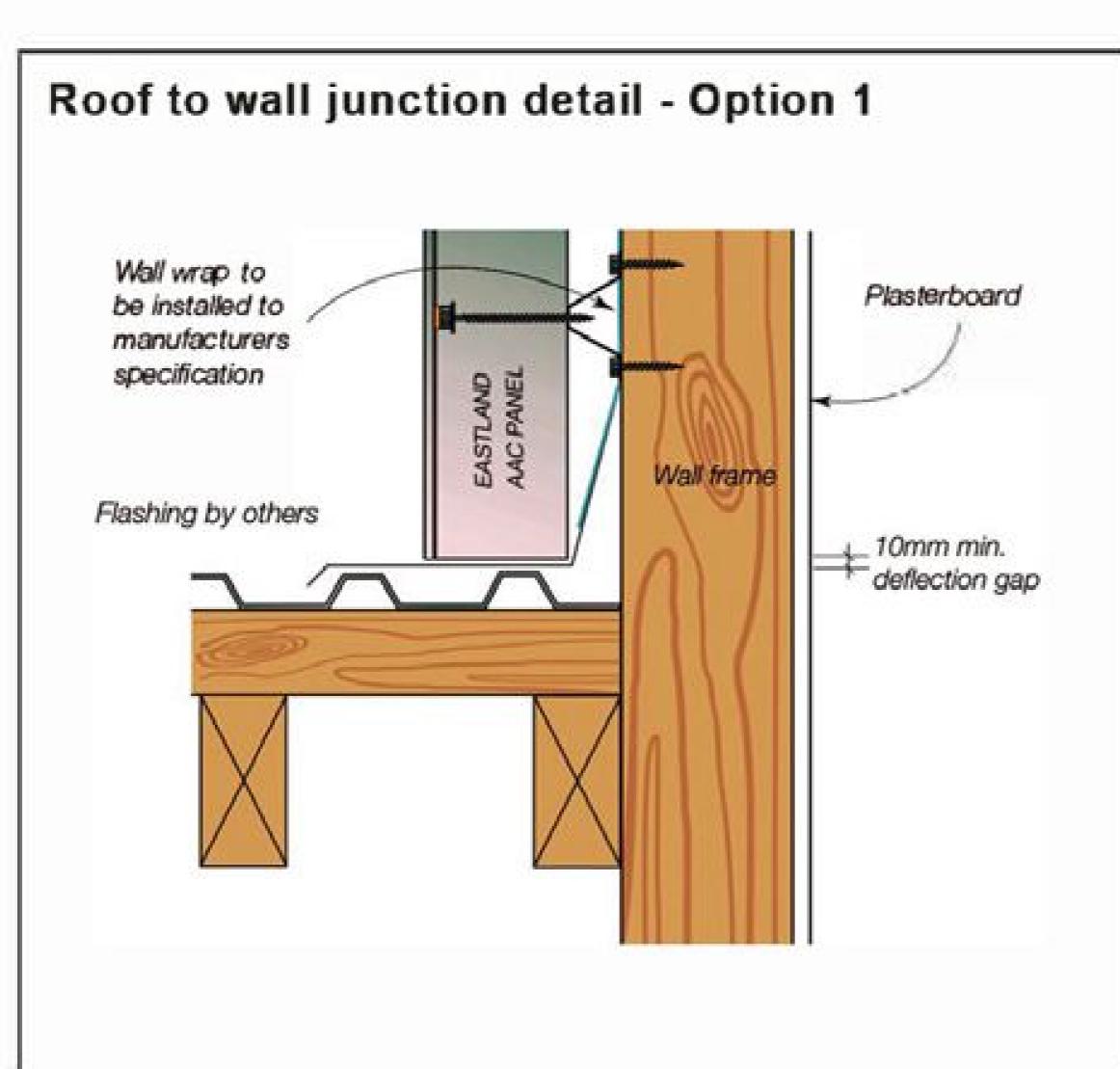
- 1. This slab edge detail does not comply with the termite visible inspection zone requirements. It is the responsibility of the builder to ensure chemical barrier in accordance with AS3660 is installed or other suitable temite protection system is adopted.
- 2. EASTLAND AAC Panel base must be coated with EASTLAND Base Sealer prior to installation.
- 3. EASTLAND Base Sealer to be applied min. 200mm above inished ground level.

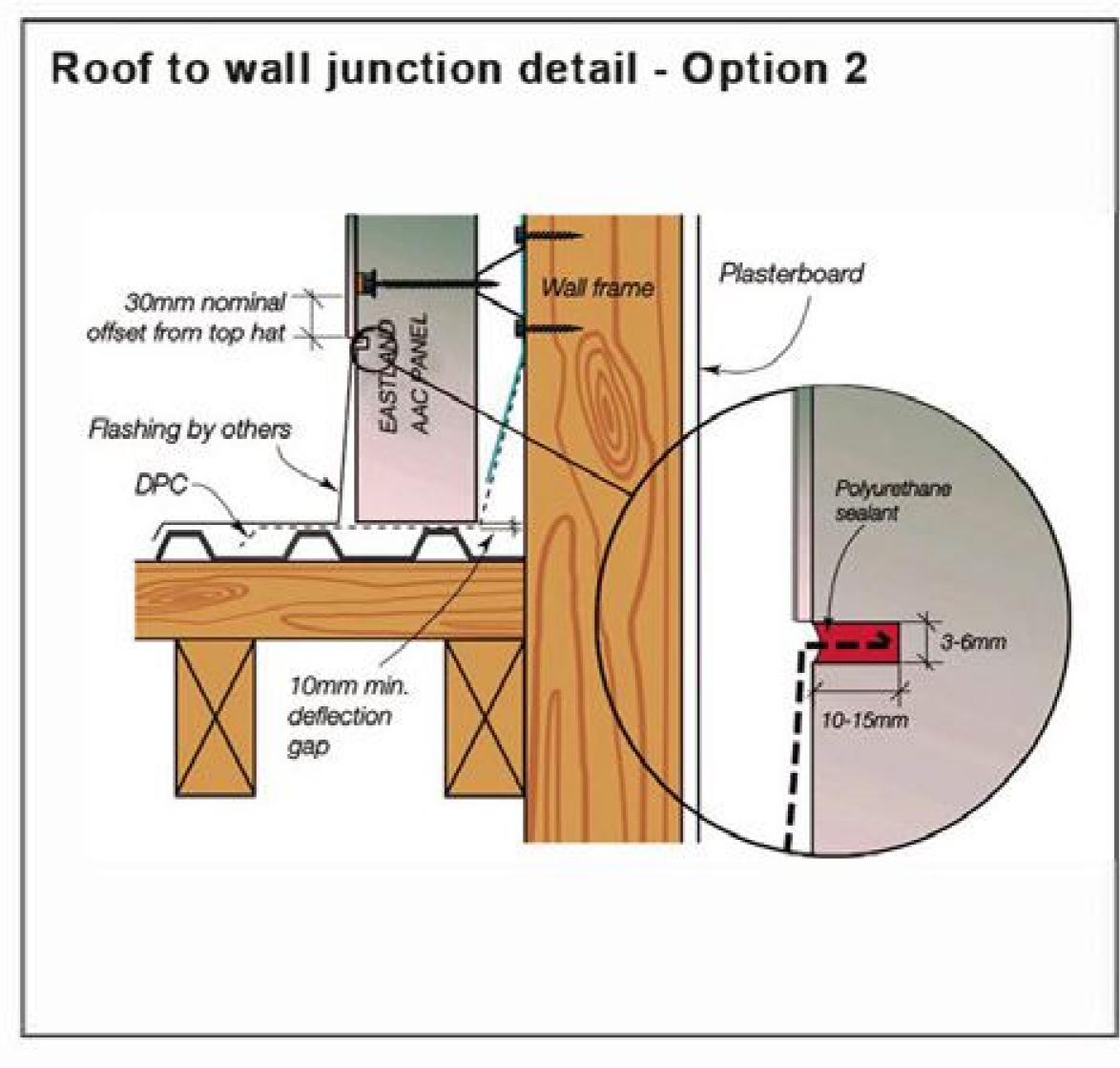


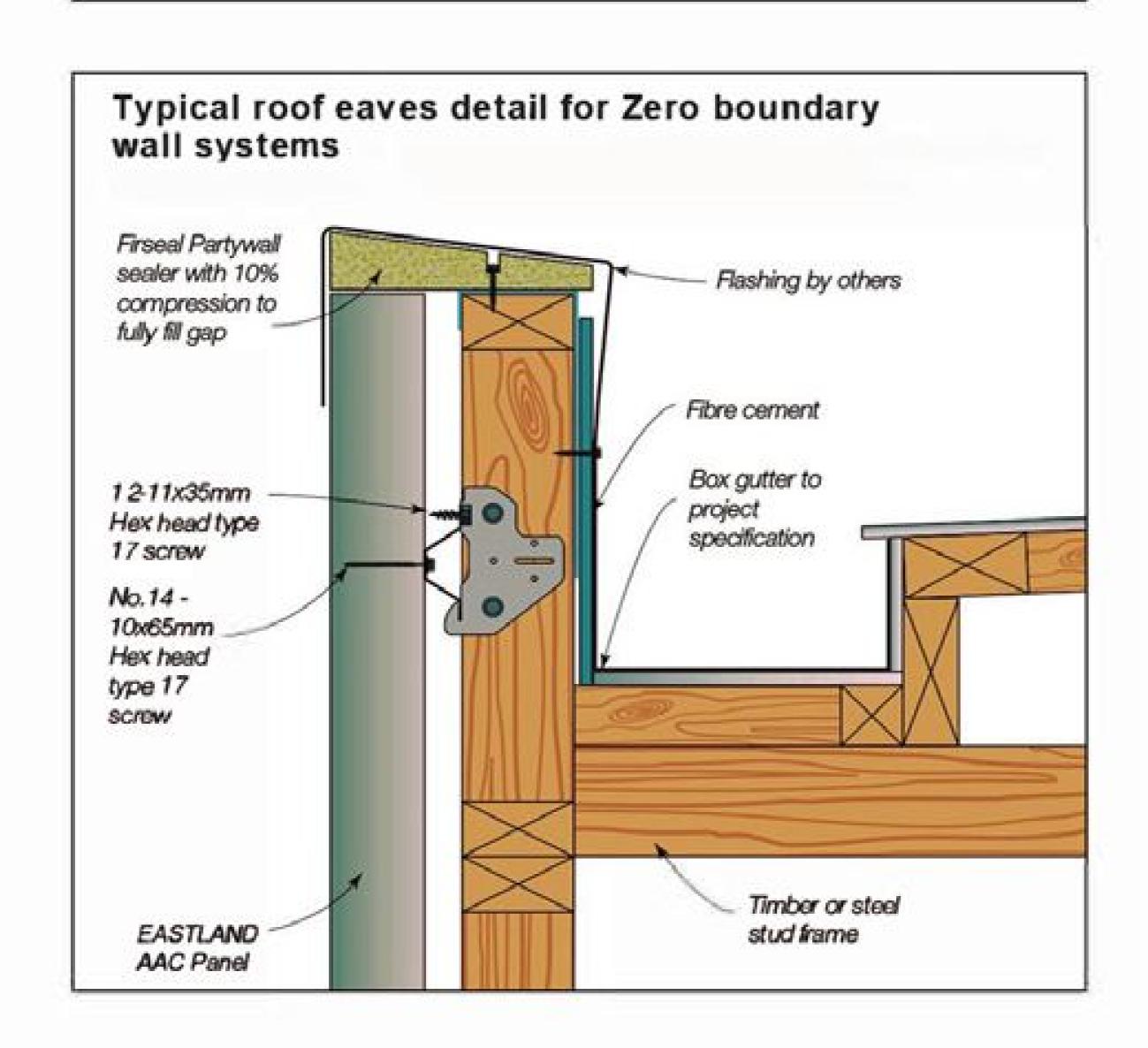
WALL JUNCTION DETAILS & SECTIONS

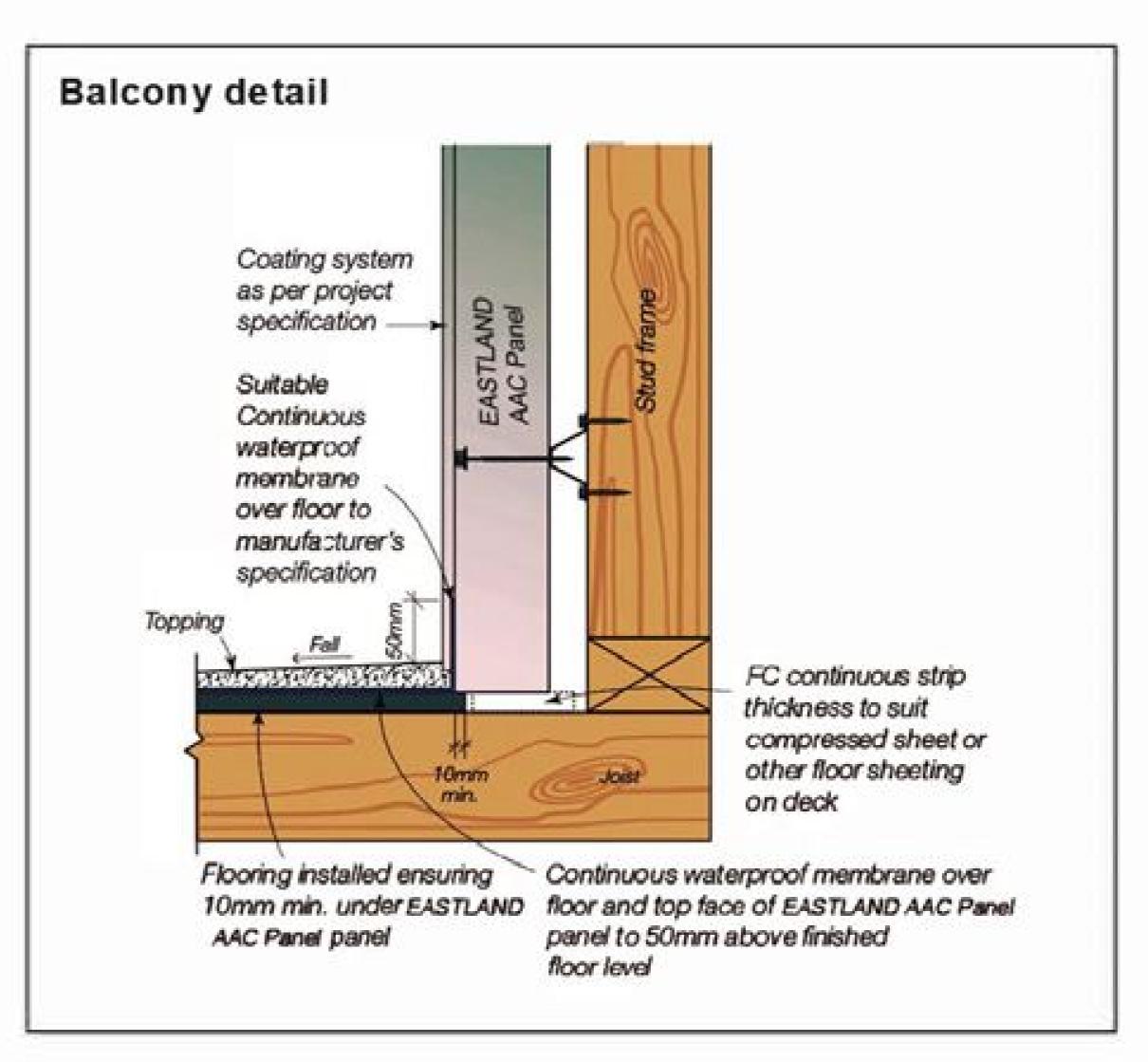




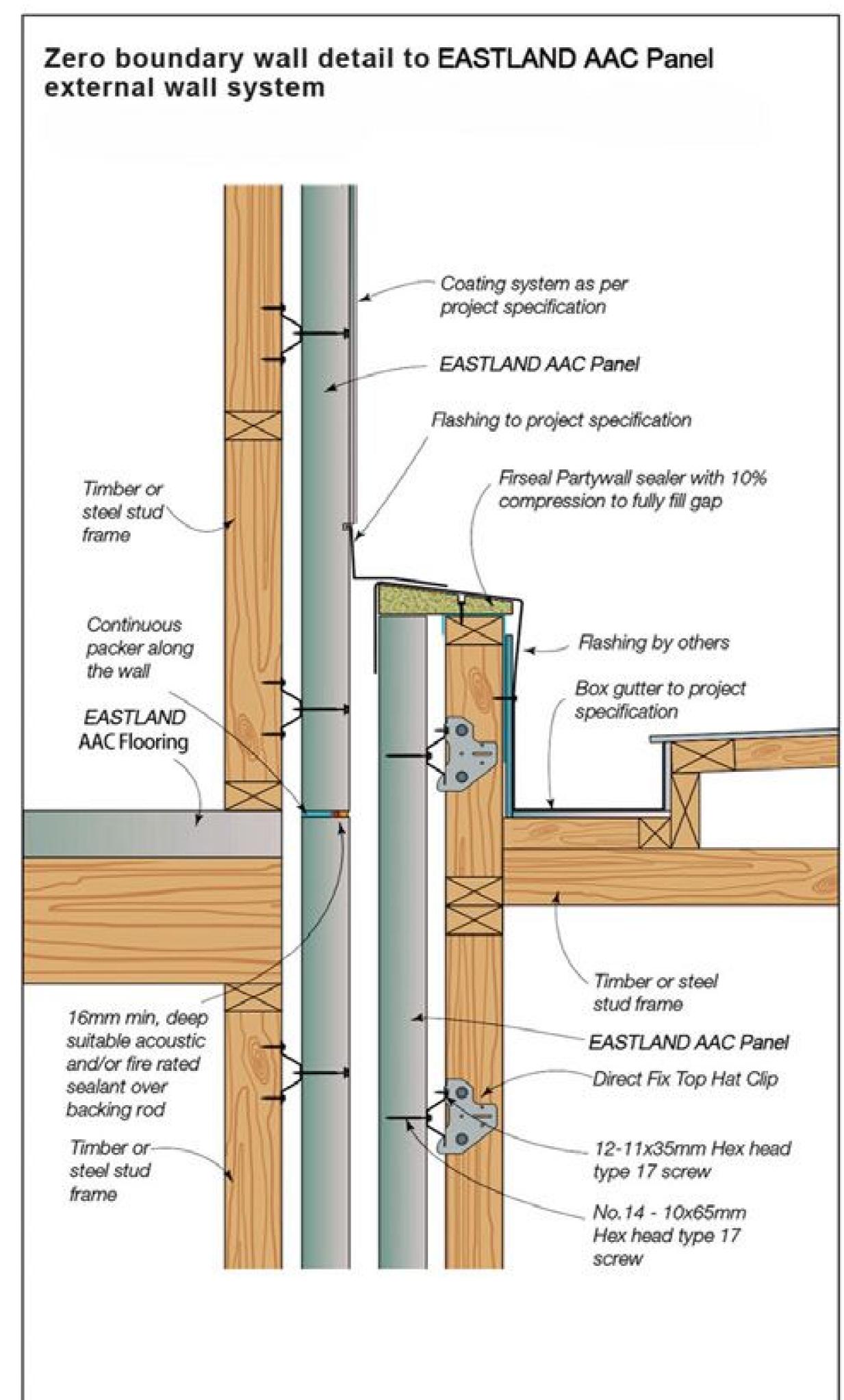


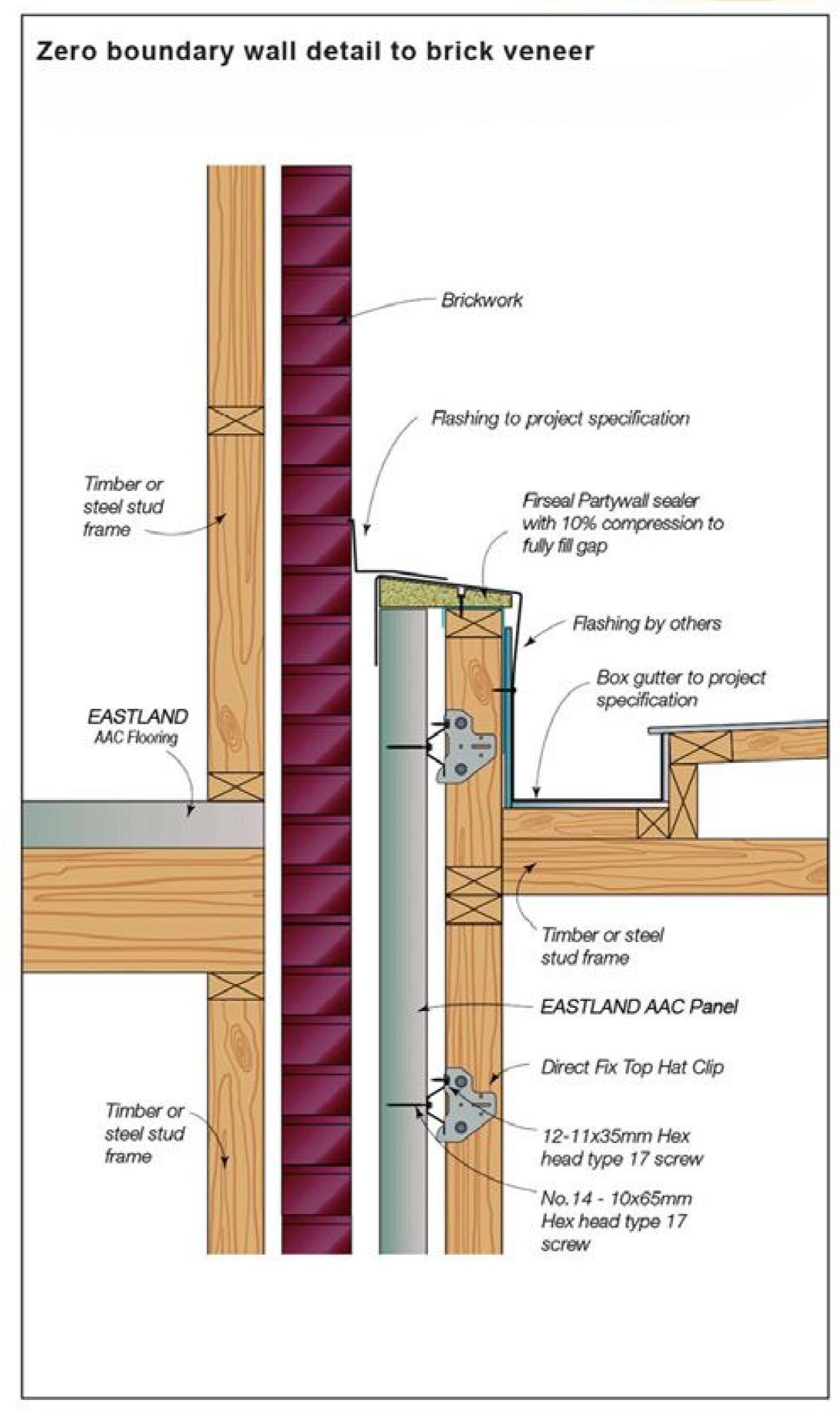


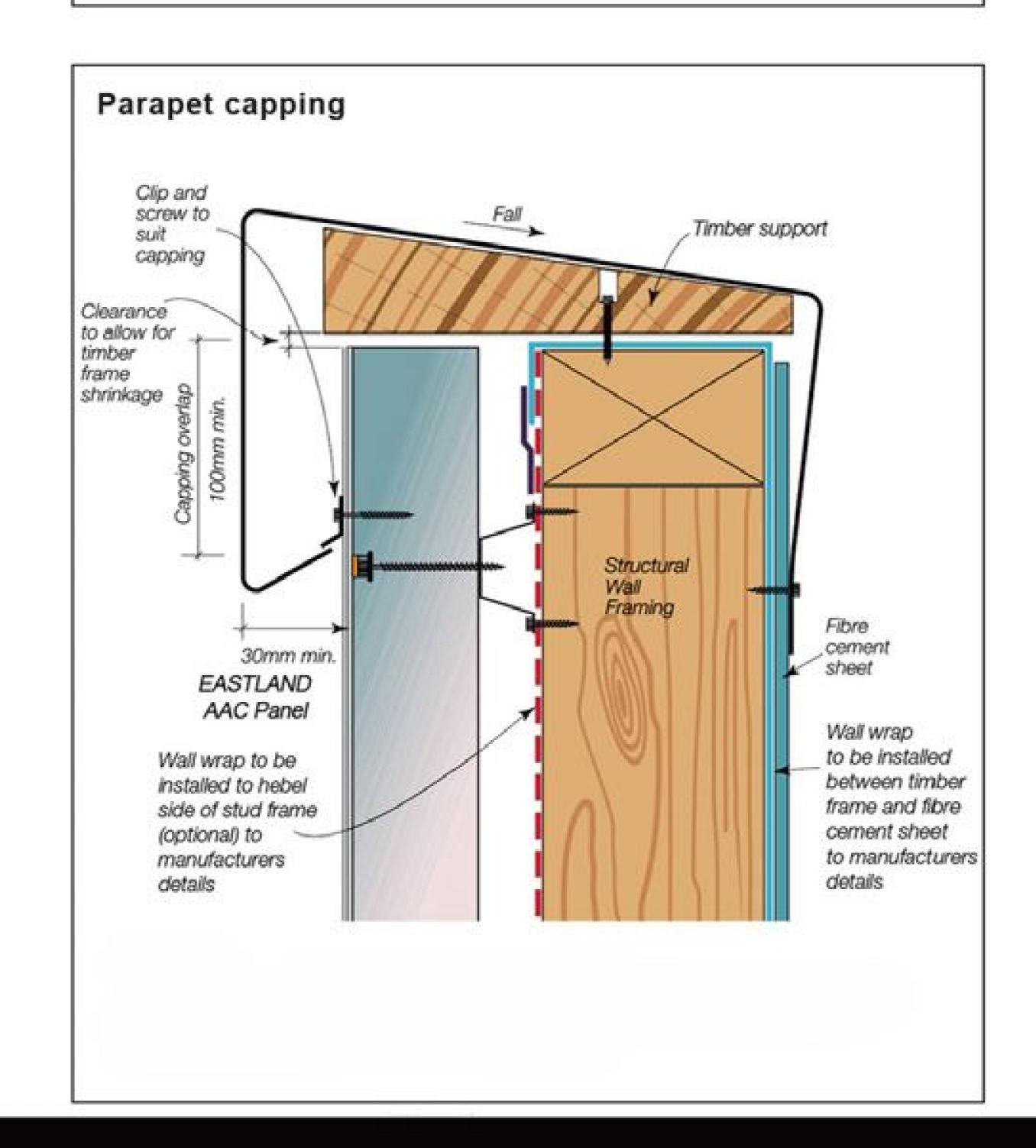


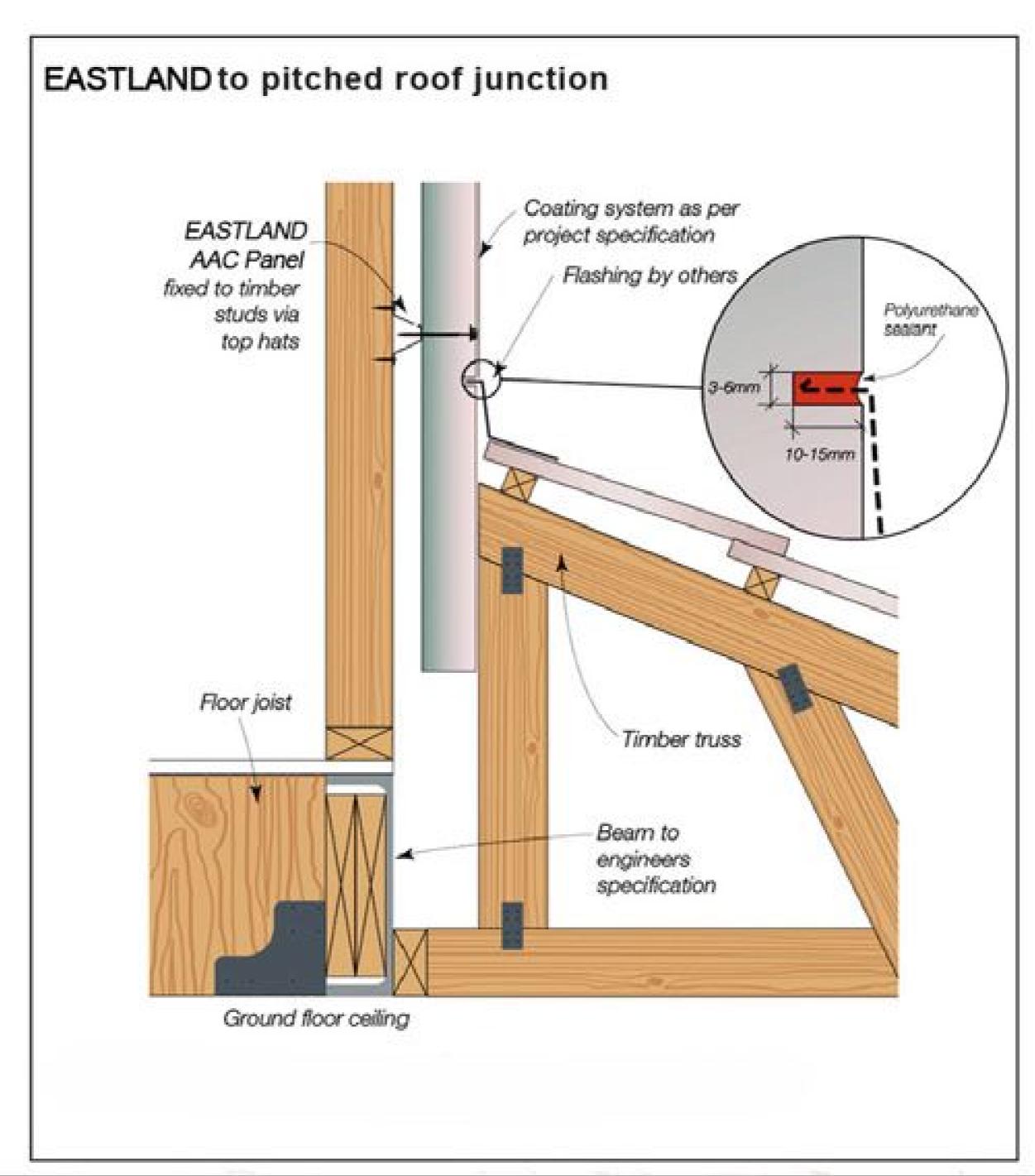




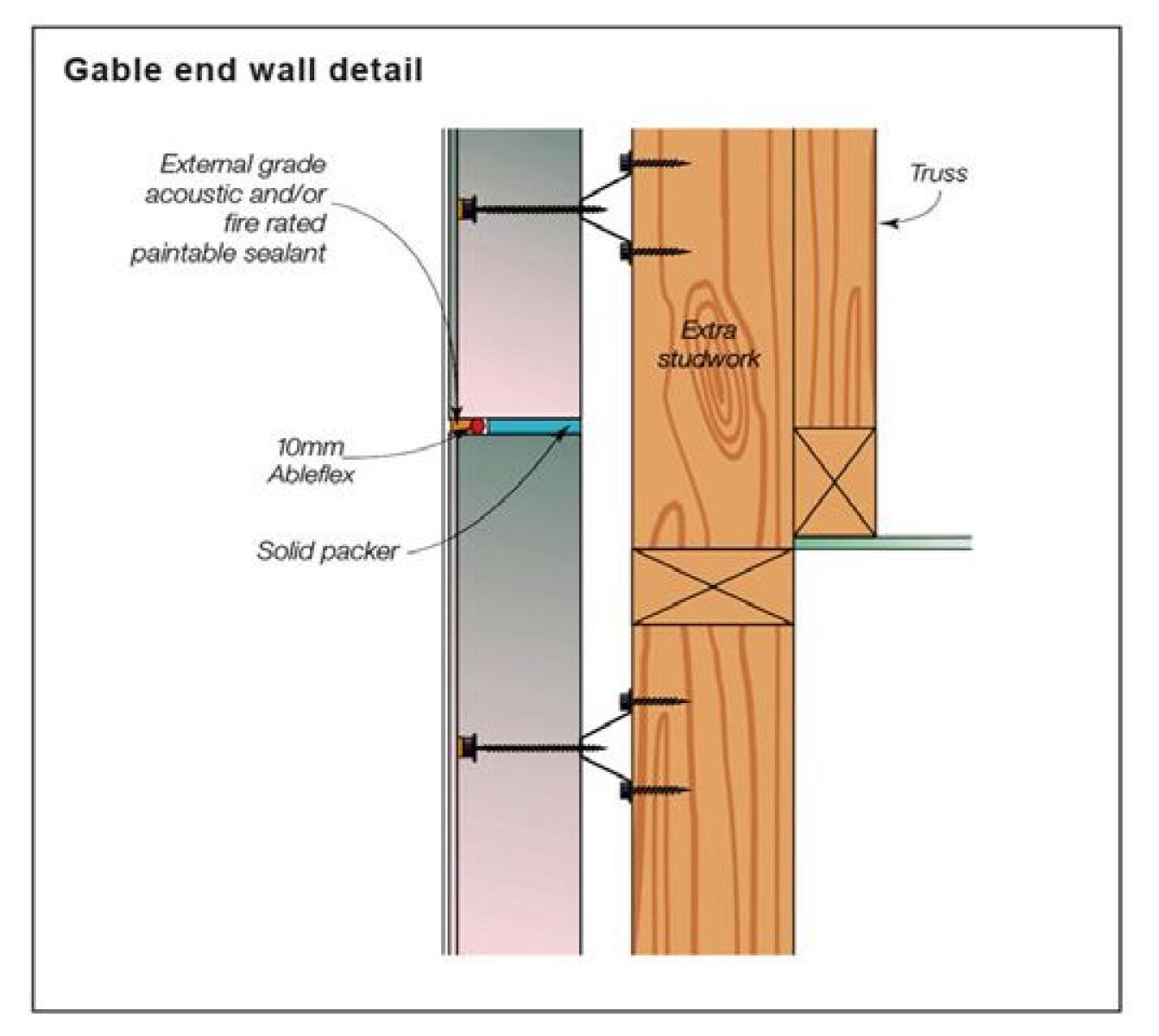


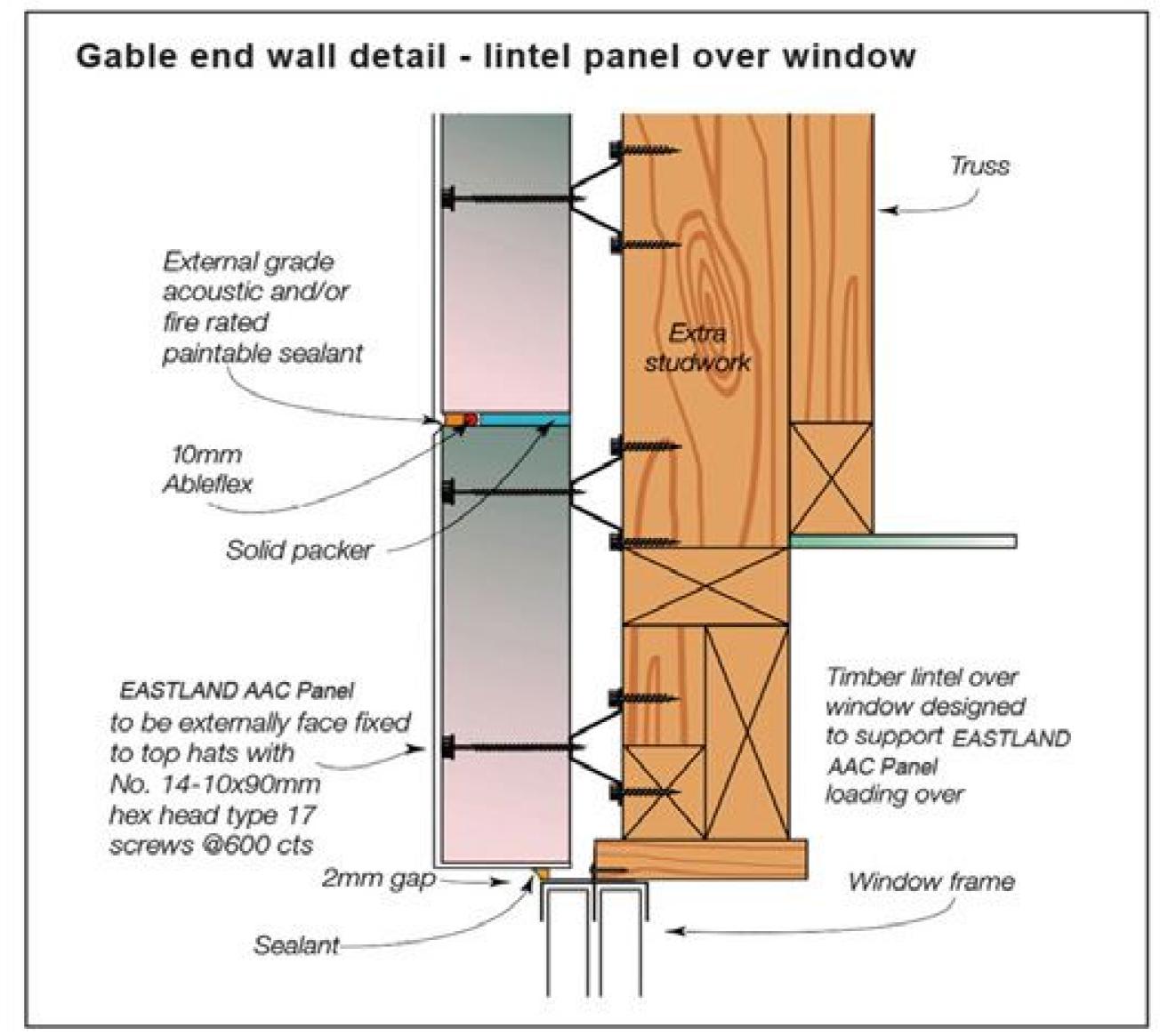


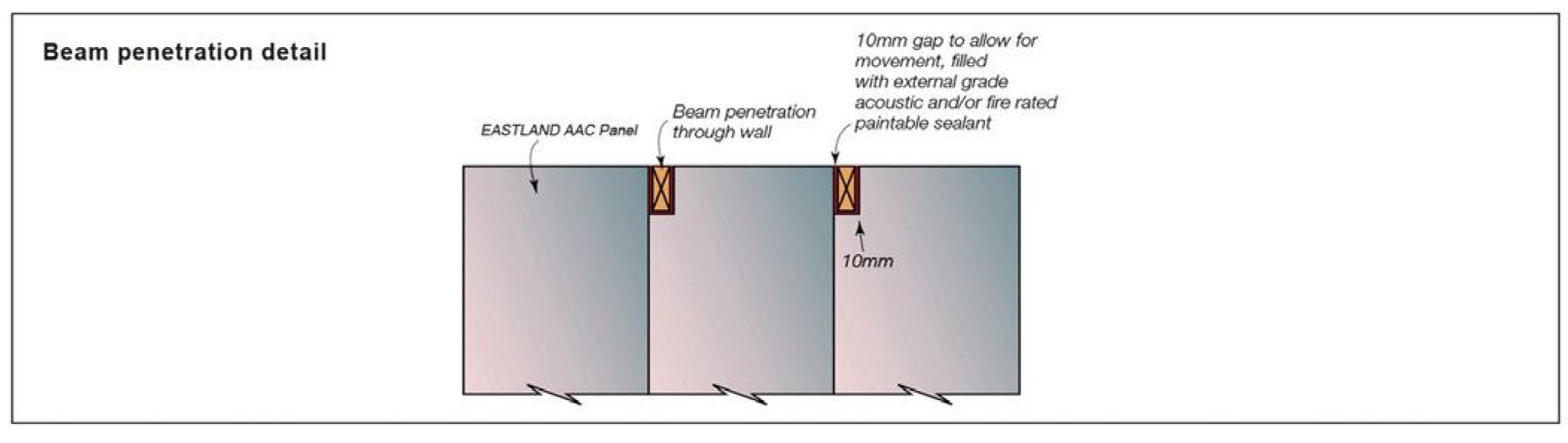


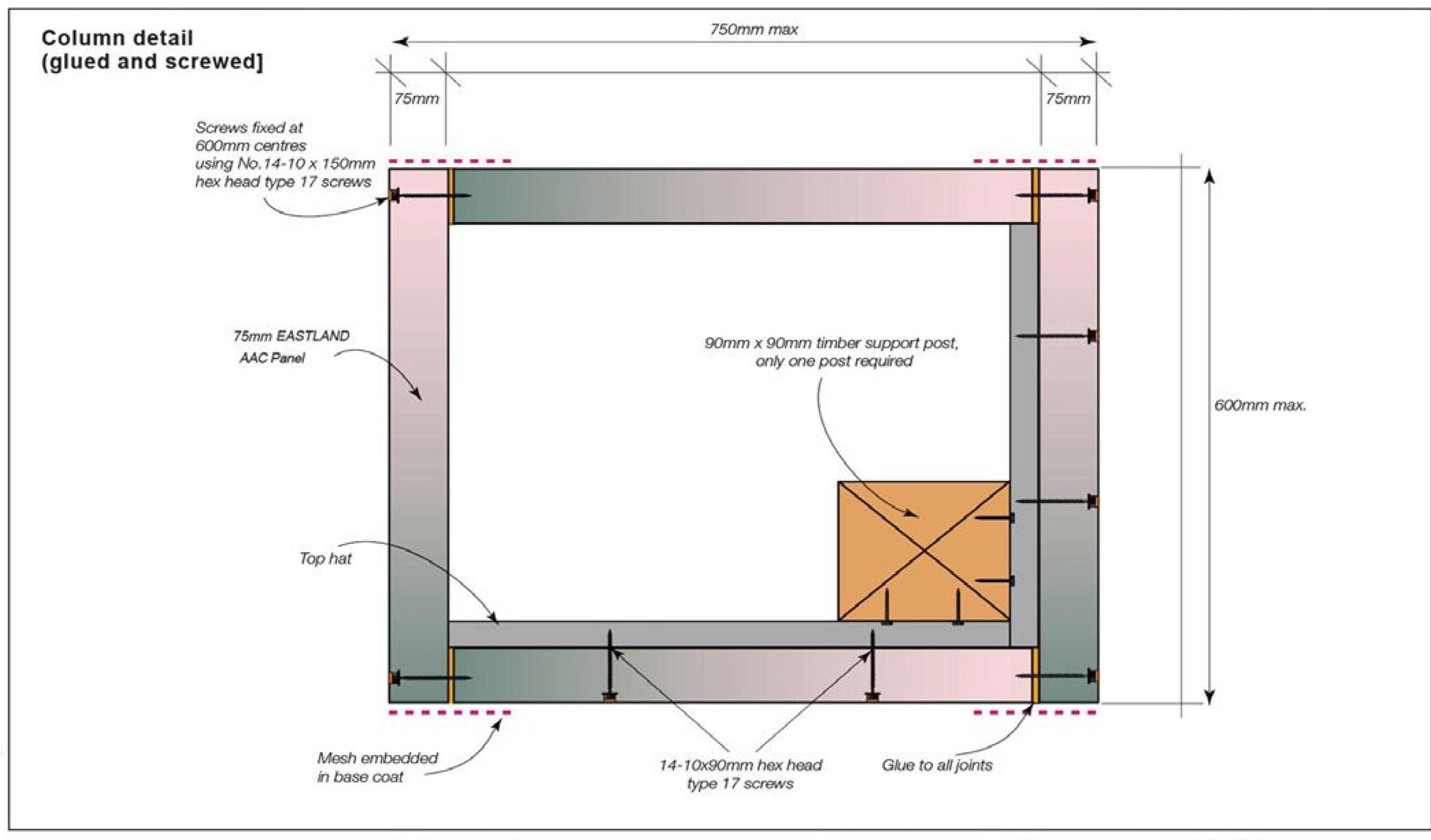














CONTROL JOINTS

The following information provides the necessary rules for control jointing when installing the EASTLAND AAC Panel External Wall System:

- Vertical control joints required at external and internal corners
- Vertical control joints required above and below all windows and doors, including sliding and garage doors
- Vertical control joints required at the position where a s, wall changes height by more than 20%
- e.g a vertical control joint is required when wall height changes from 2700mm to ≥ 3240mm.
- Horizontal control joints required at every horizontal floor junction
- Horizontal control joints required at a maximum height of 3.9m.

For openings < 900 mm in width

Control joint not required. If the straight joint that extends above or below the window jamb is less than 600mm long, a control joint or a glued and meshed joint is required.

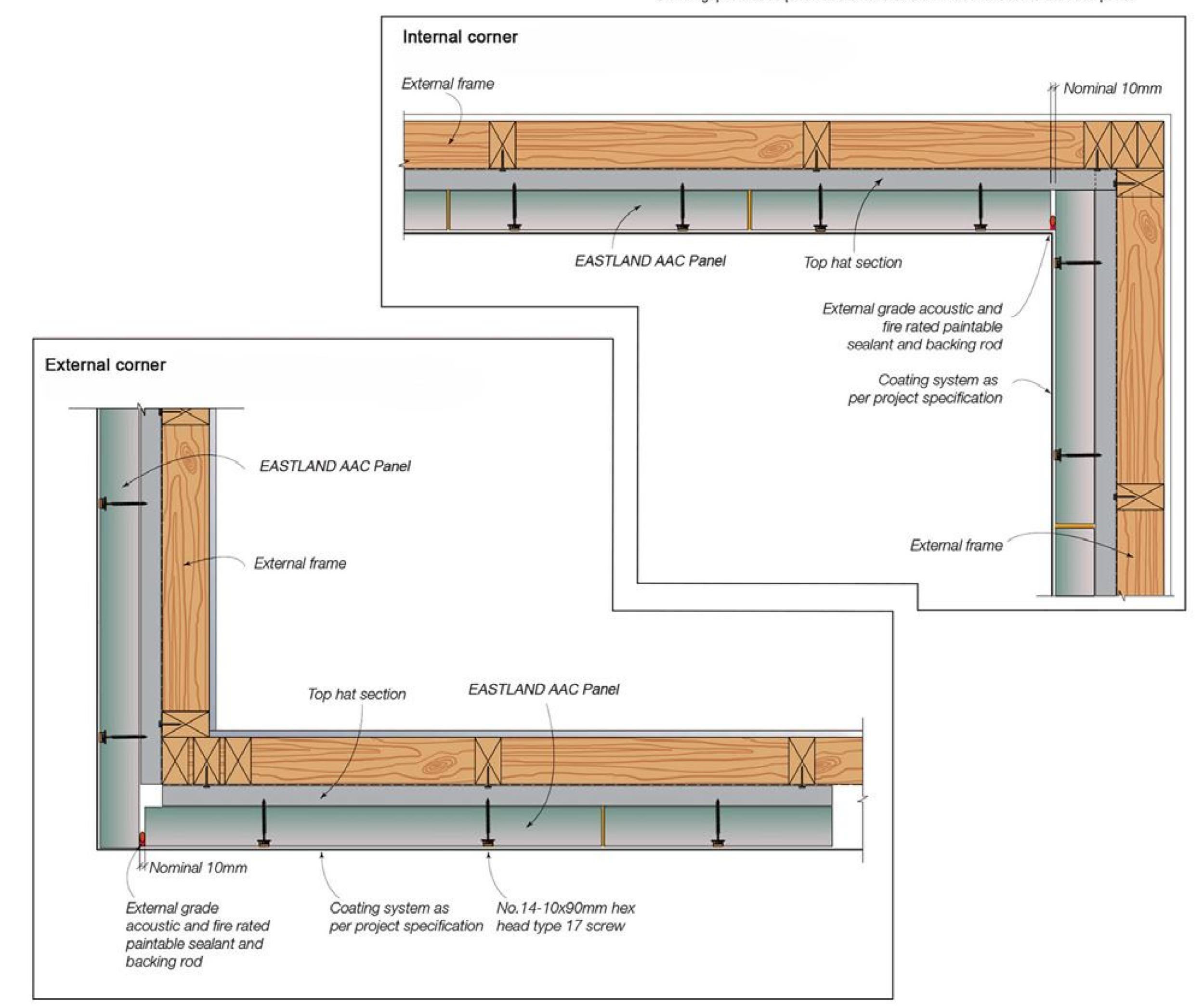
For openings ≥ 900 mm and <2400mm wide

Control joint required to at least one side of the opening (i.e. above and below the opening). If the straight joint that extends above or below the window jamb is less than 600mm long a control joint or a glued and meshed joint is required to the opposite side of the opening.

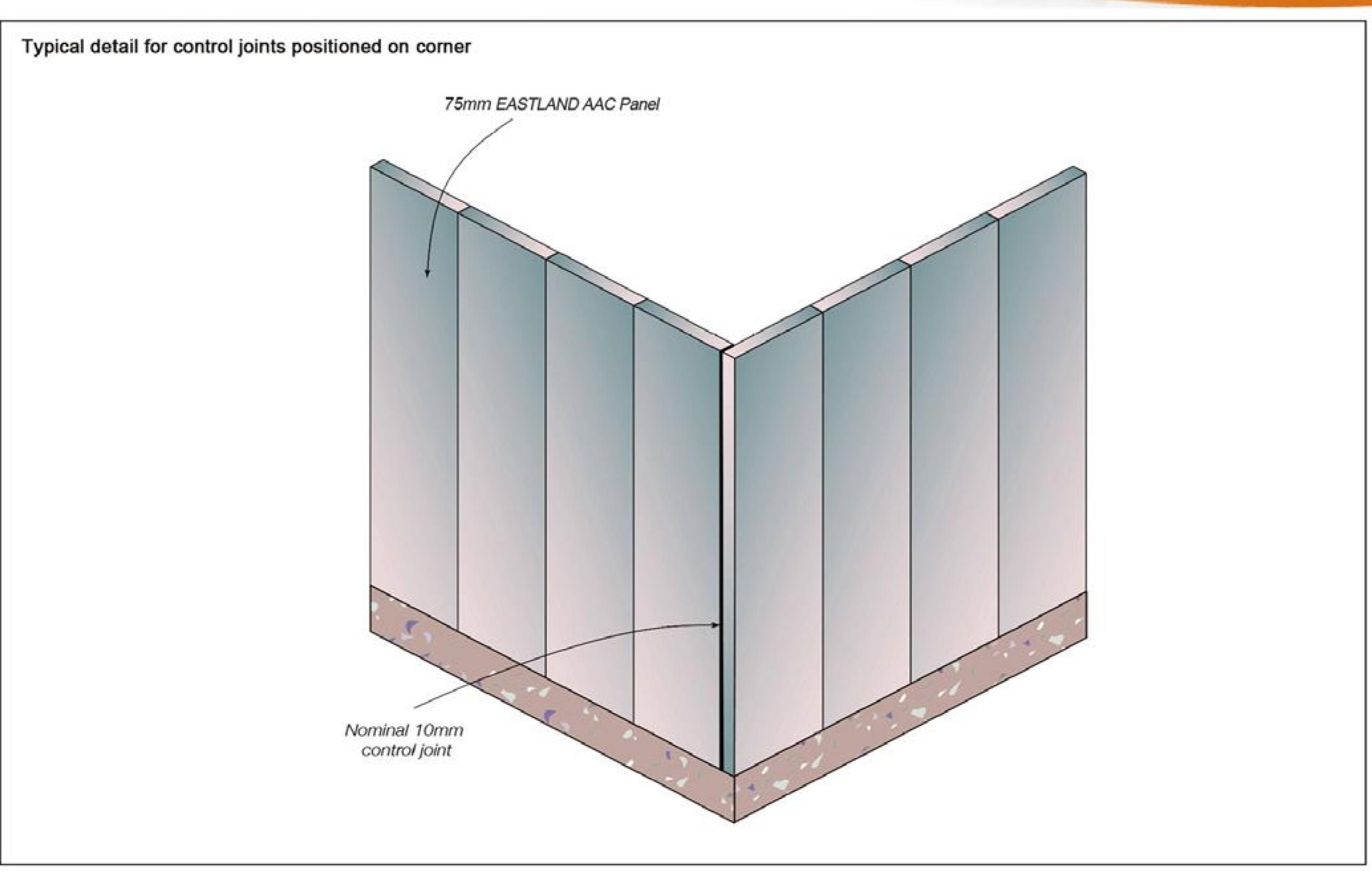
For openings ≥2400mm in width

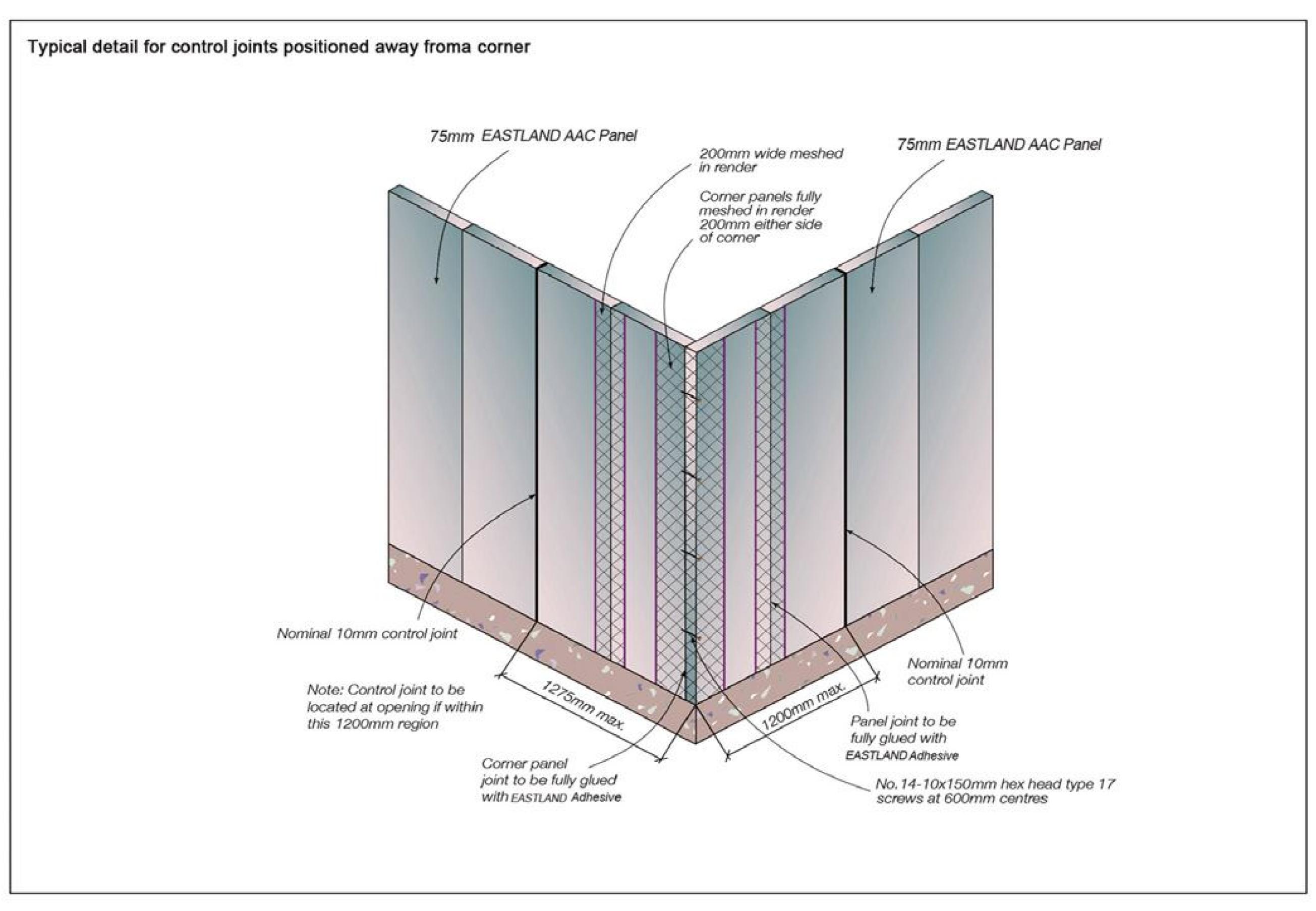
Control joint required to both sides of the opening (i.e. above and below the opening).

- 1. The minimum lintel panel height above windows is 270mm.
- 2. Footing and slab design to comply with AS 2870.
- Vertical control joints are not required to align between storeys of the building and can be terminated at the horizontal control joint located within the upper storey floor framing structure zone/depth.
- 4. The EASTLAND AAC Panel panels can be installed directly beside window or door openings (retaining a minimum 2-3mm gap between window jamb and panel) such that the control joint is only installed above and below the opening to the required width, negating the need to provide the width of the control joint directly beside the window or door. The 2-3mm gap is also required at the head of the window or door to the head panel.

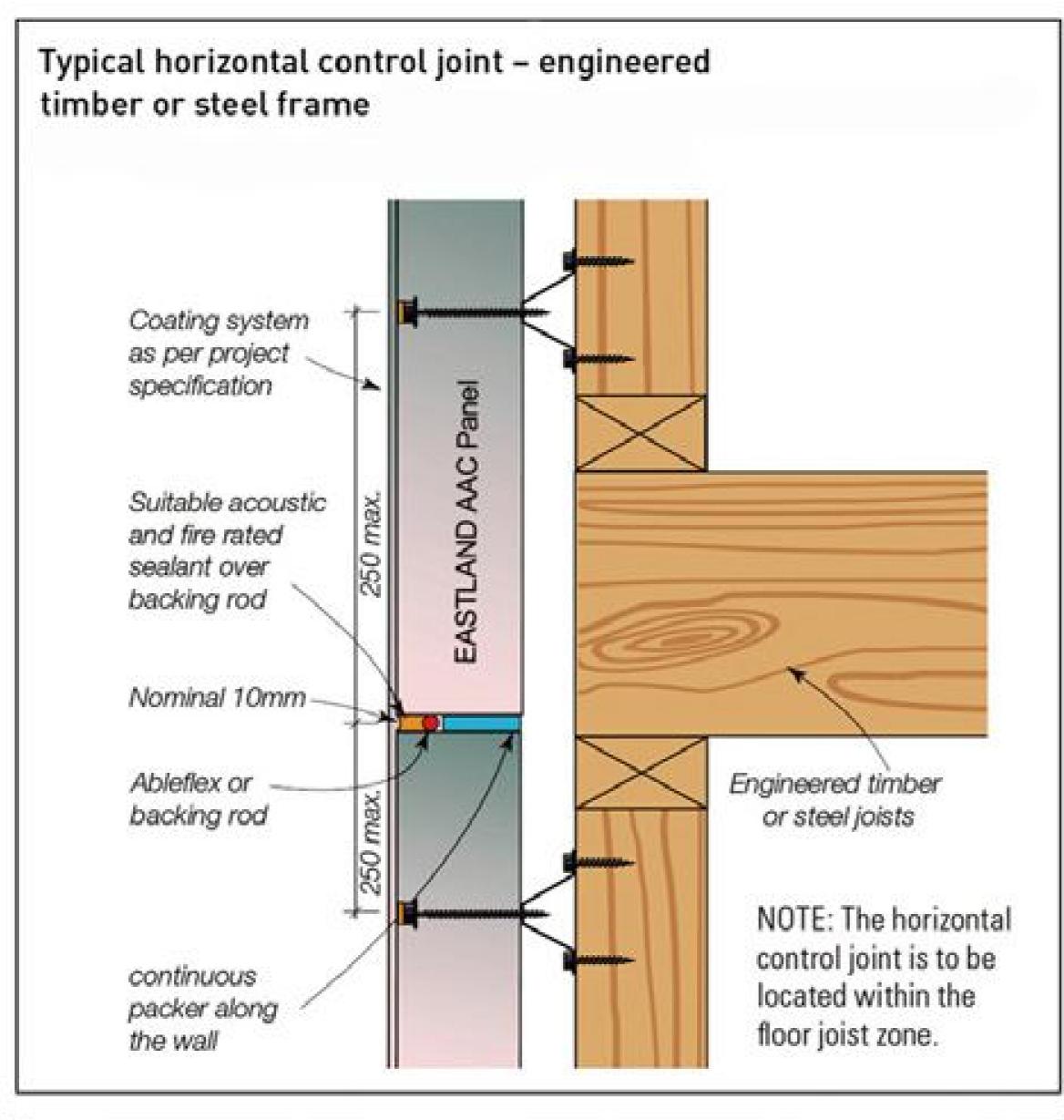


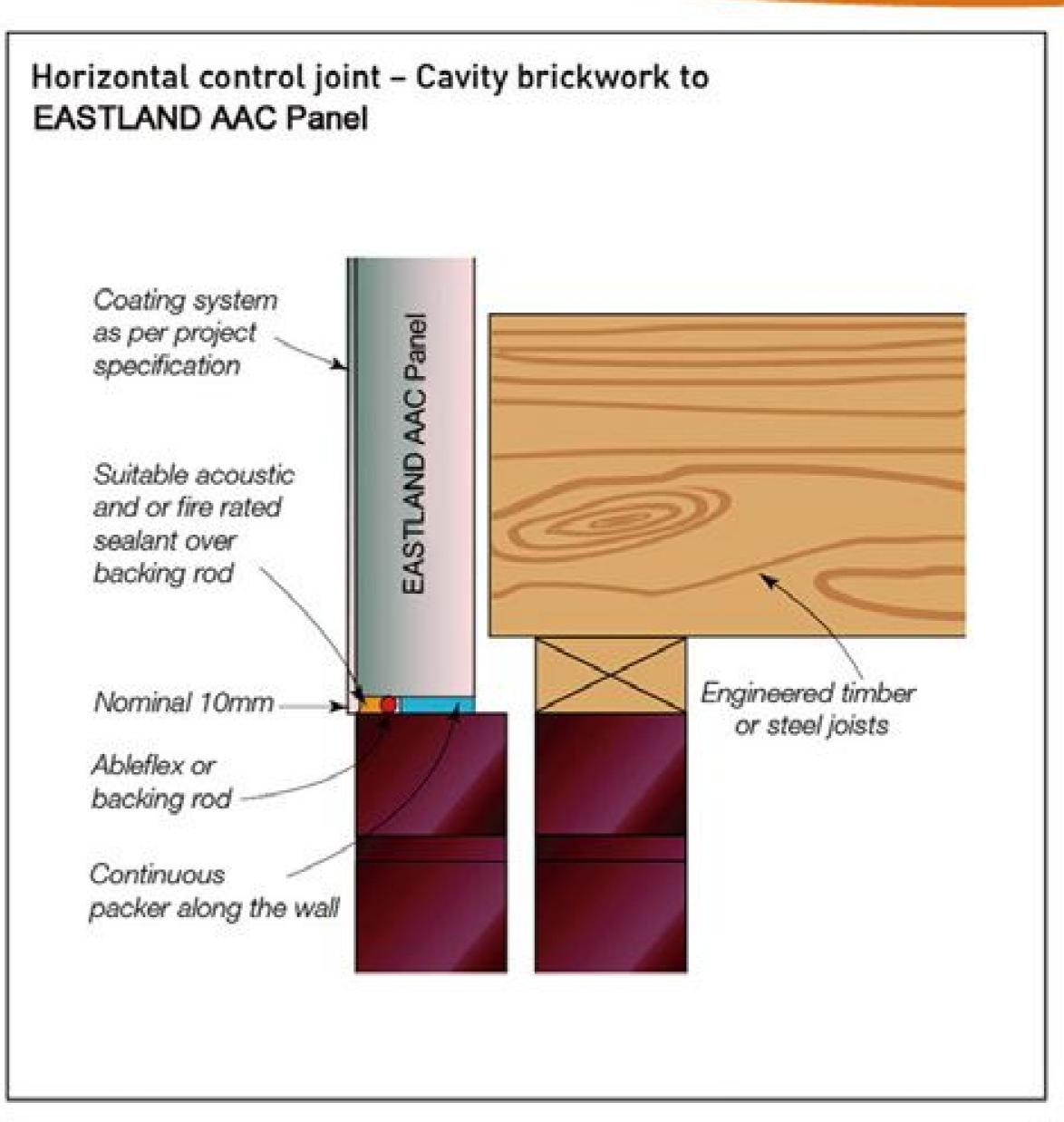


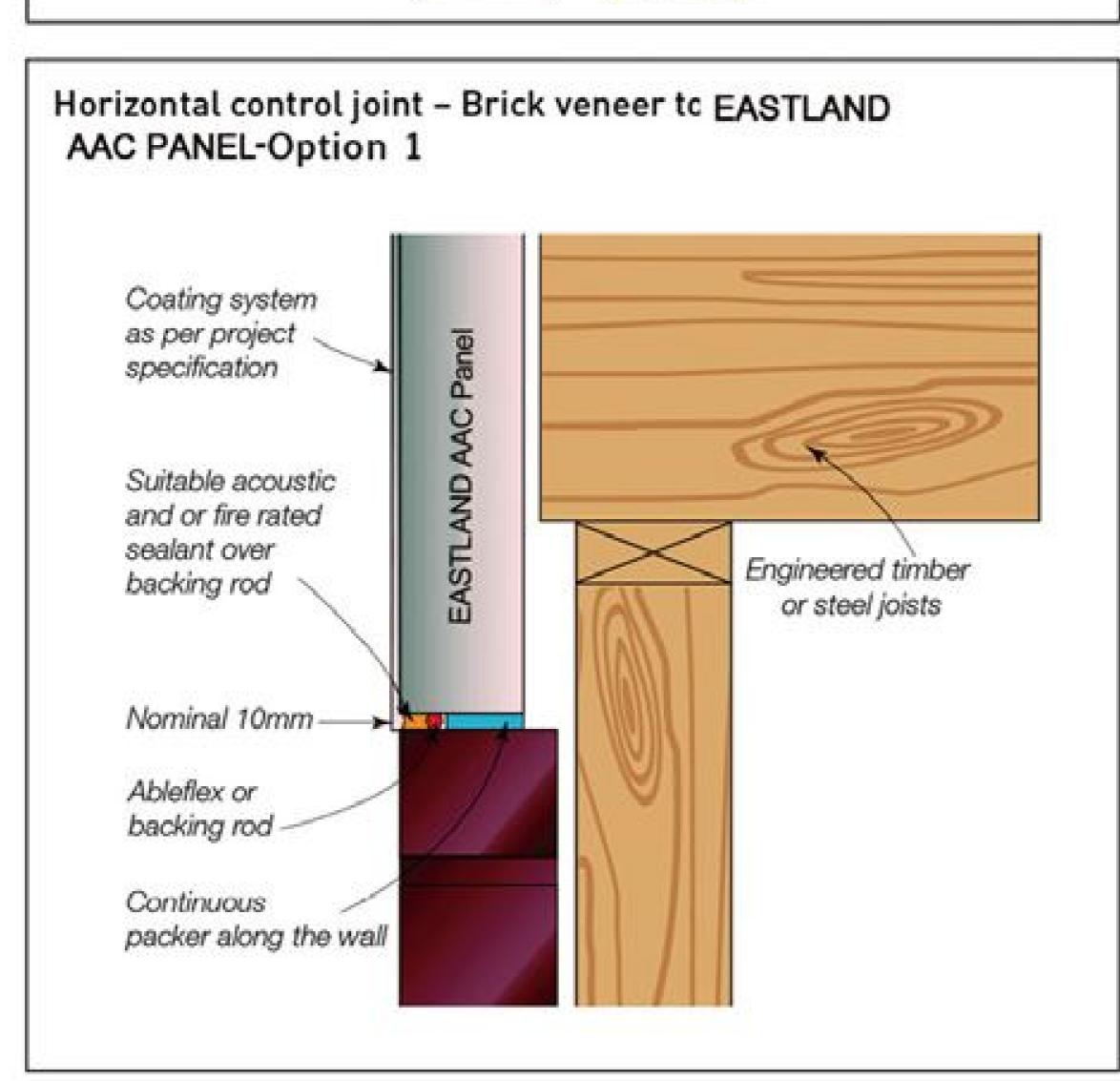


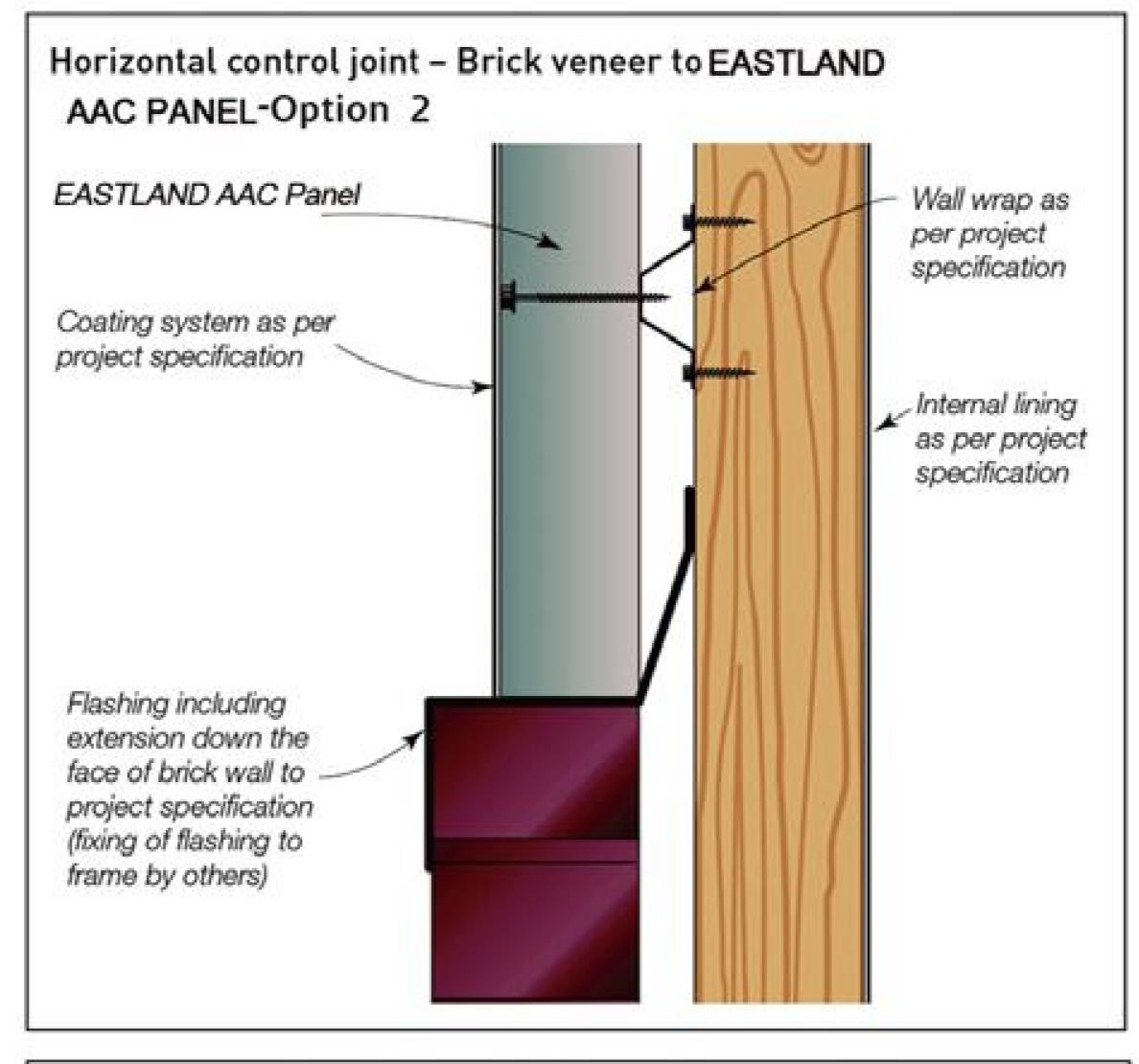


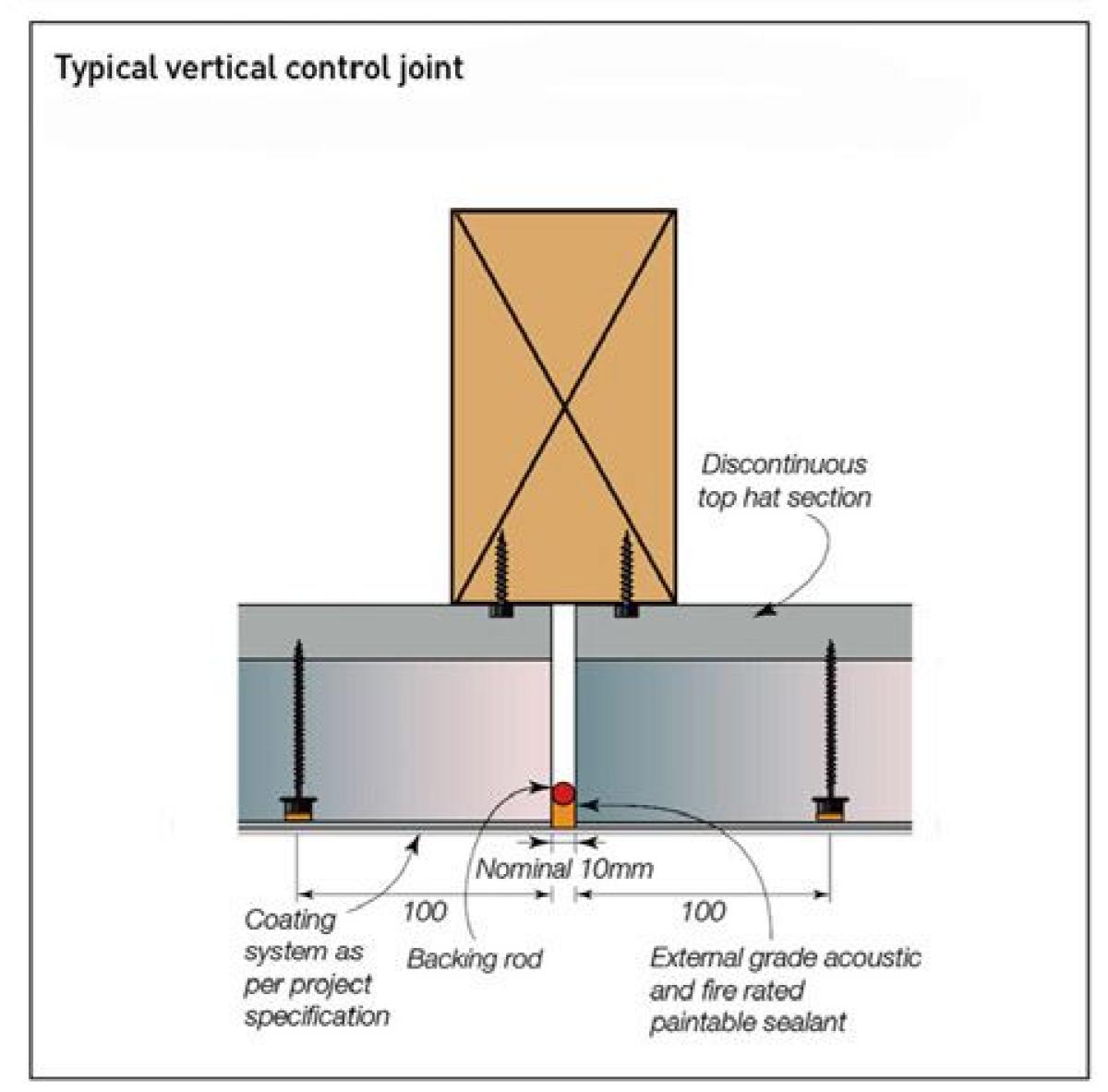


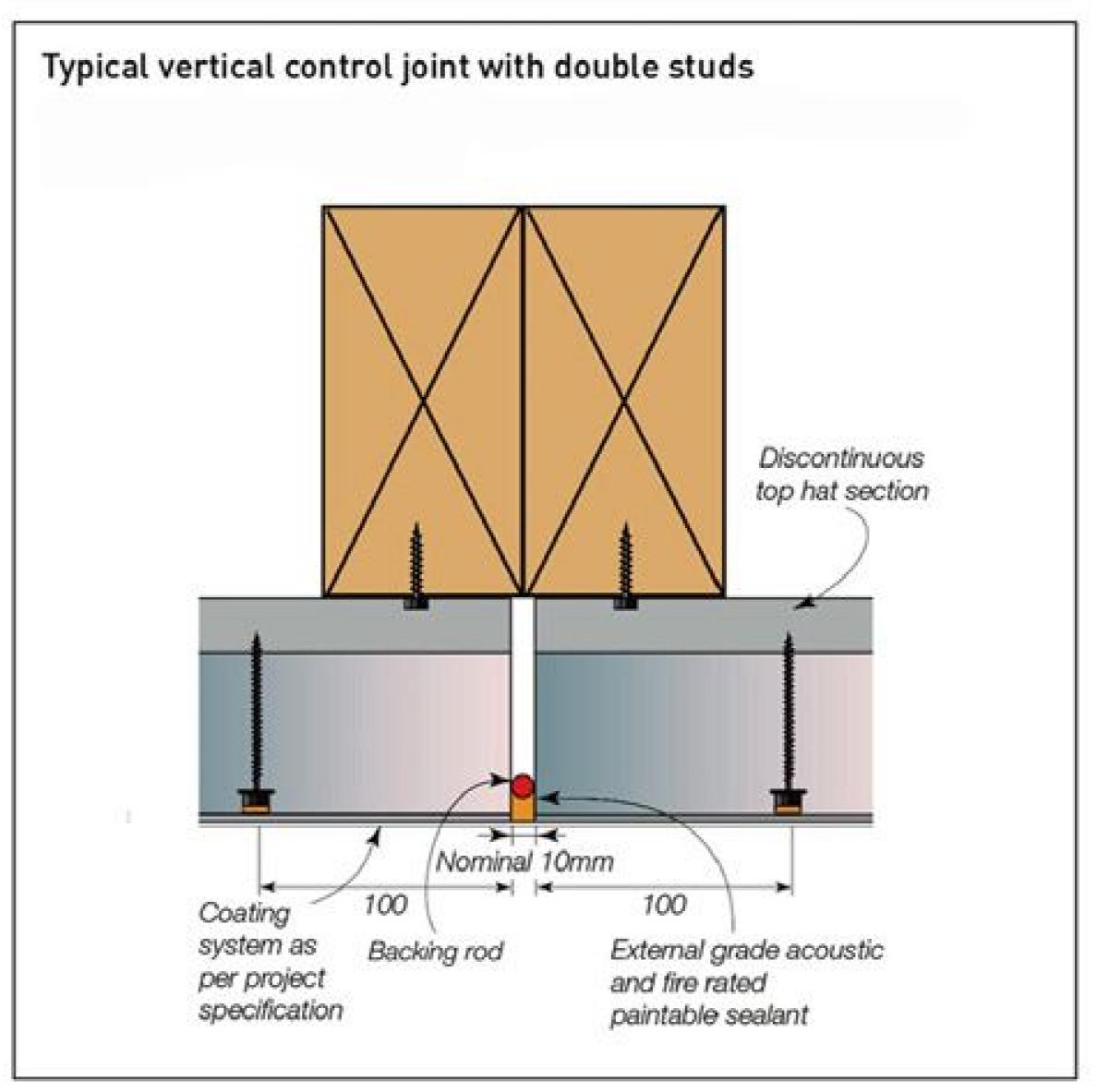




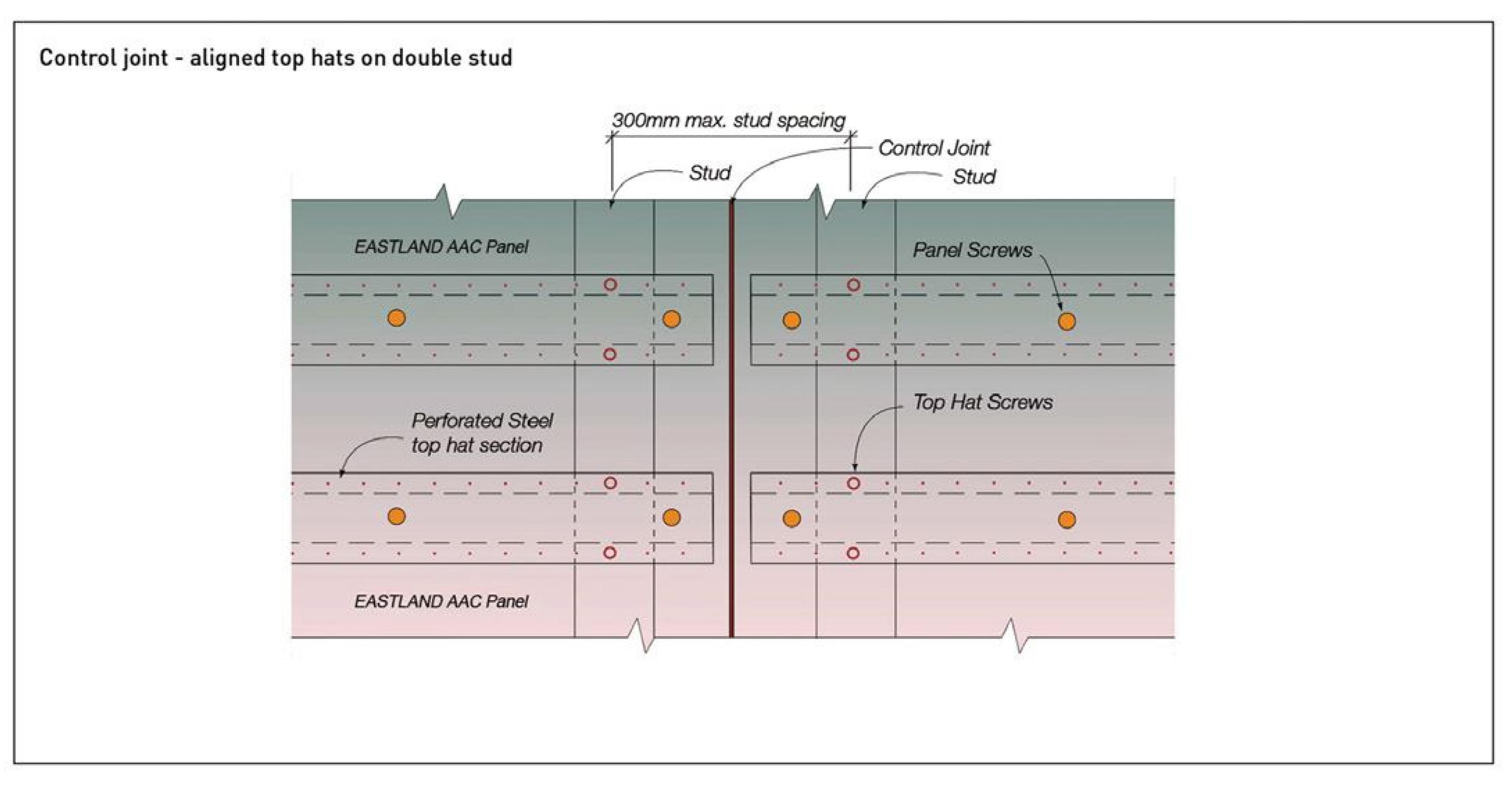


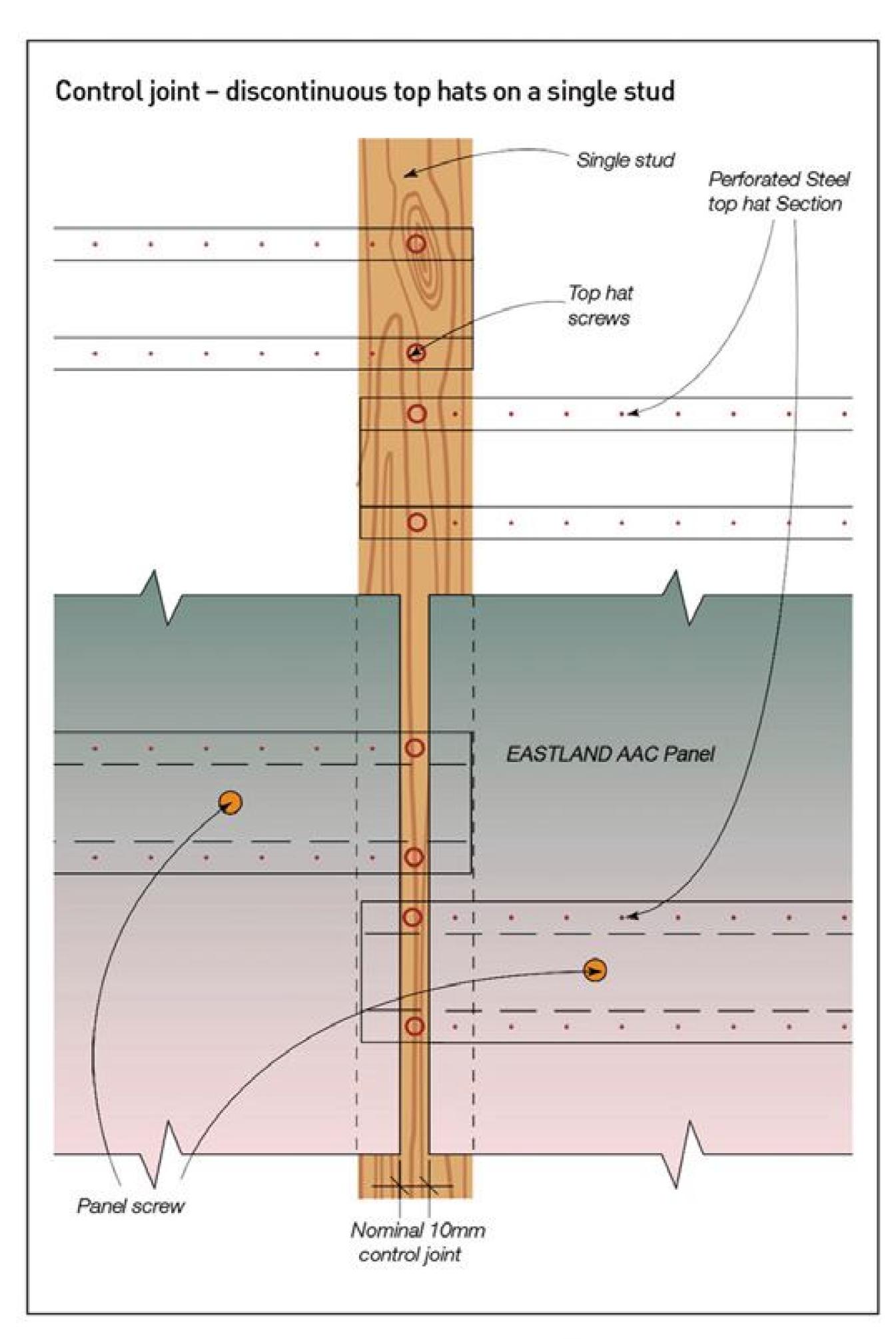


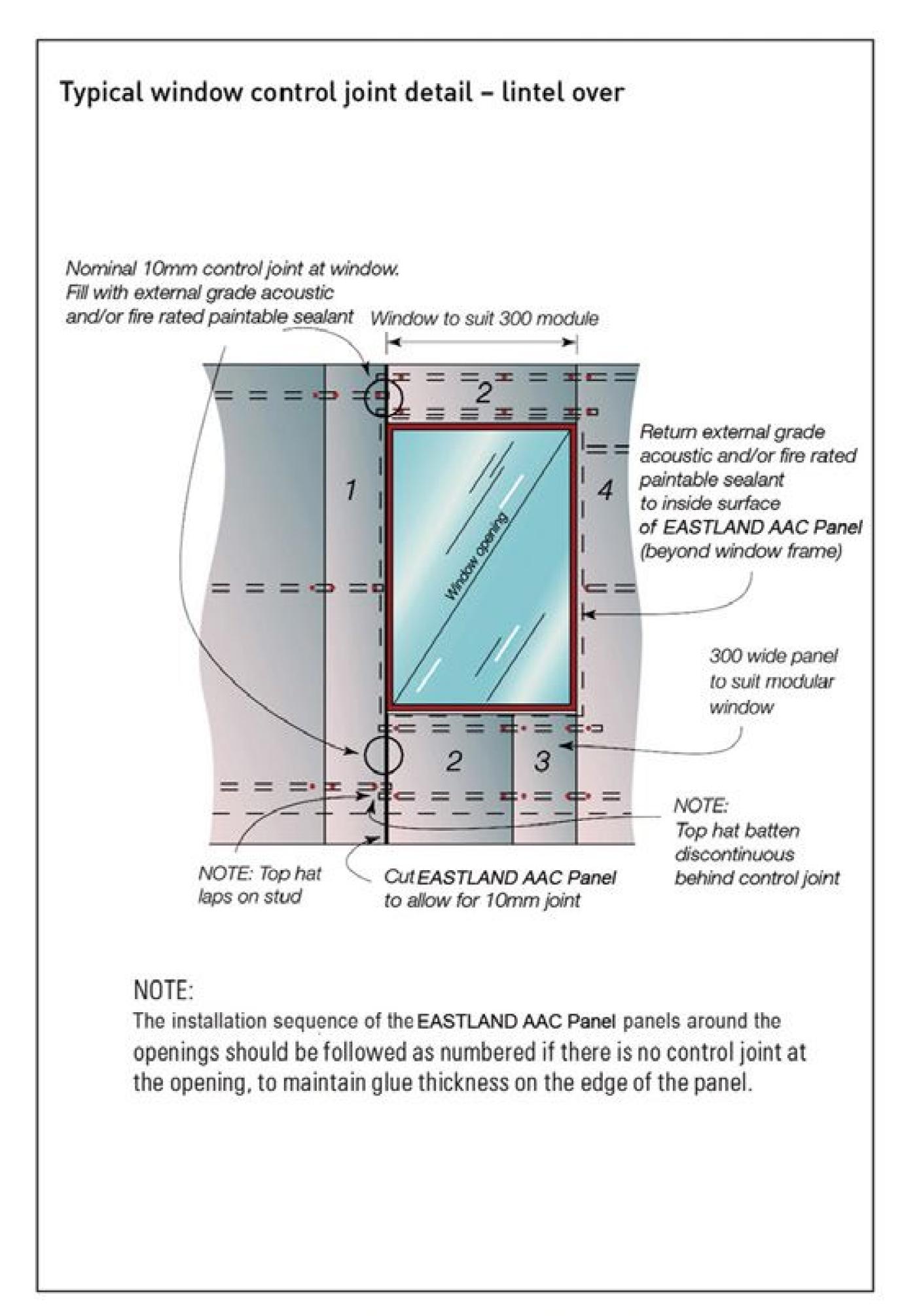






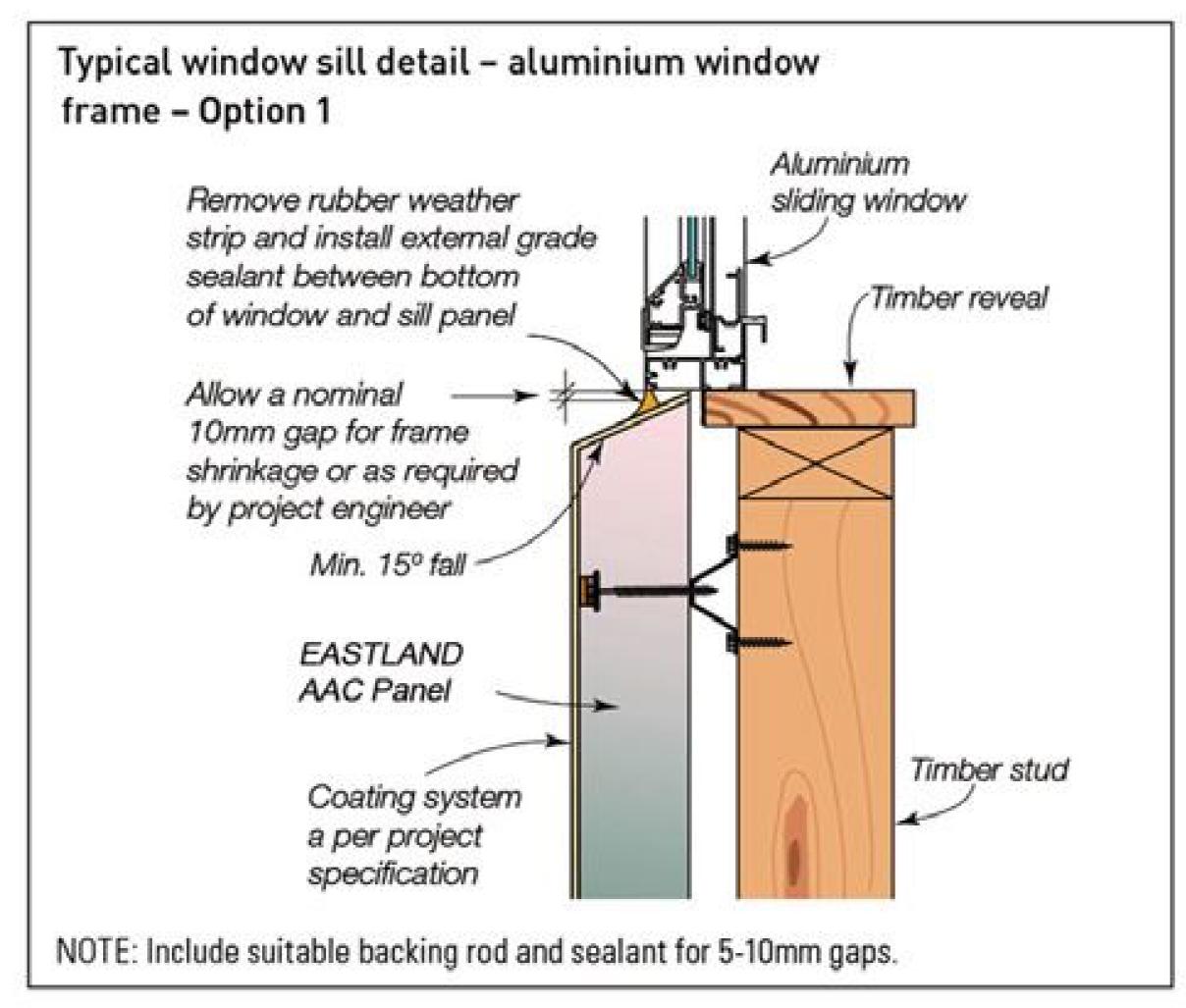


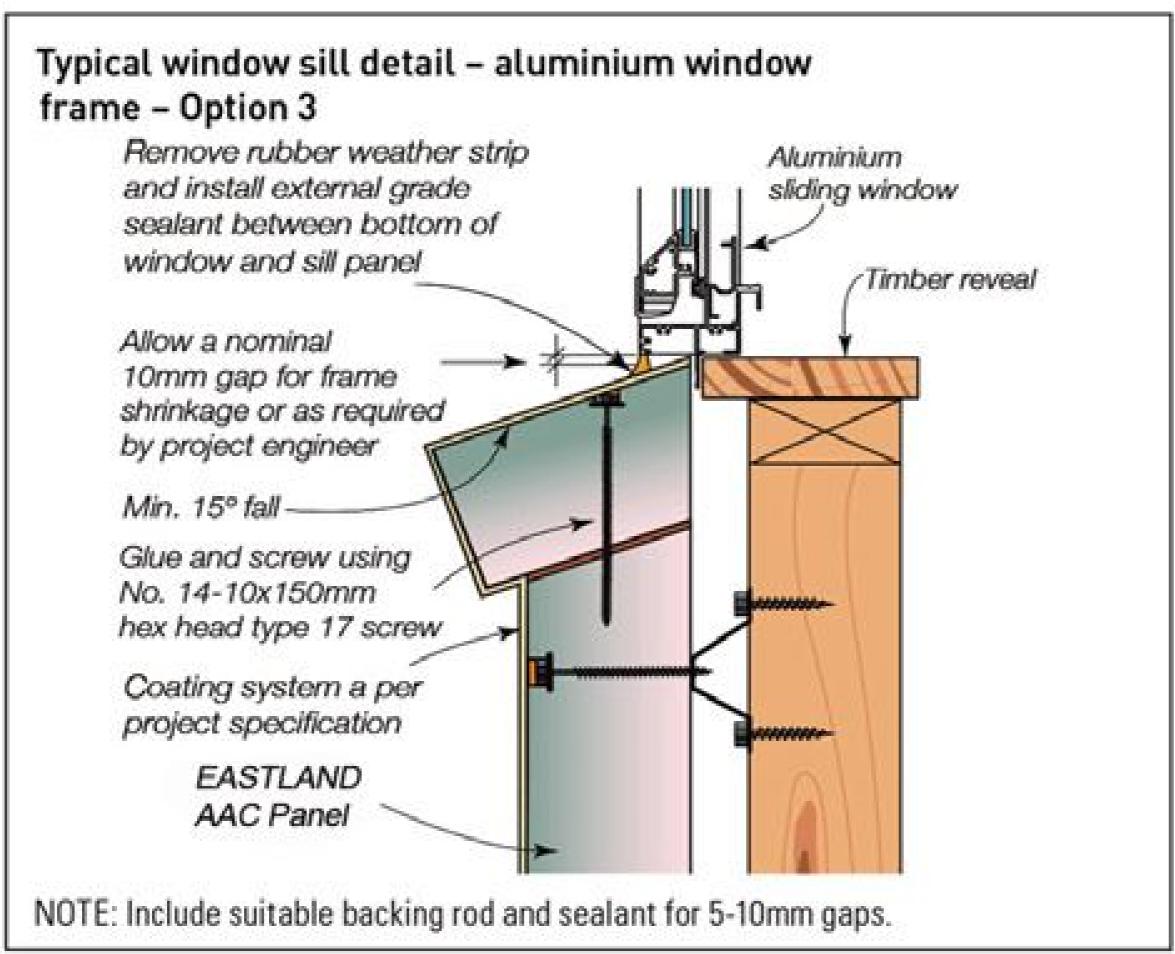




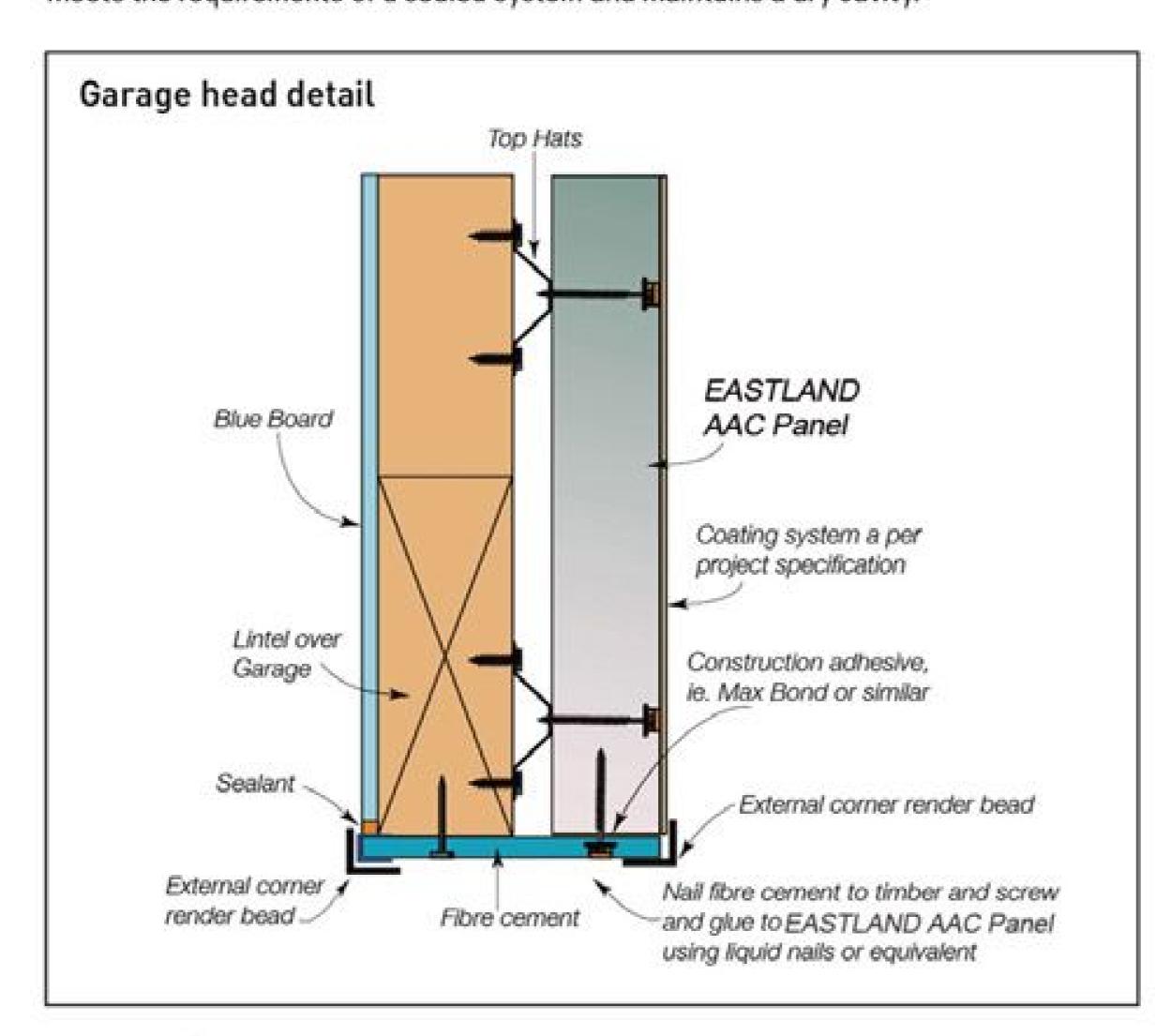


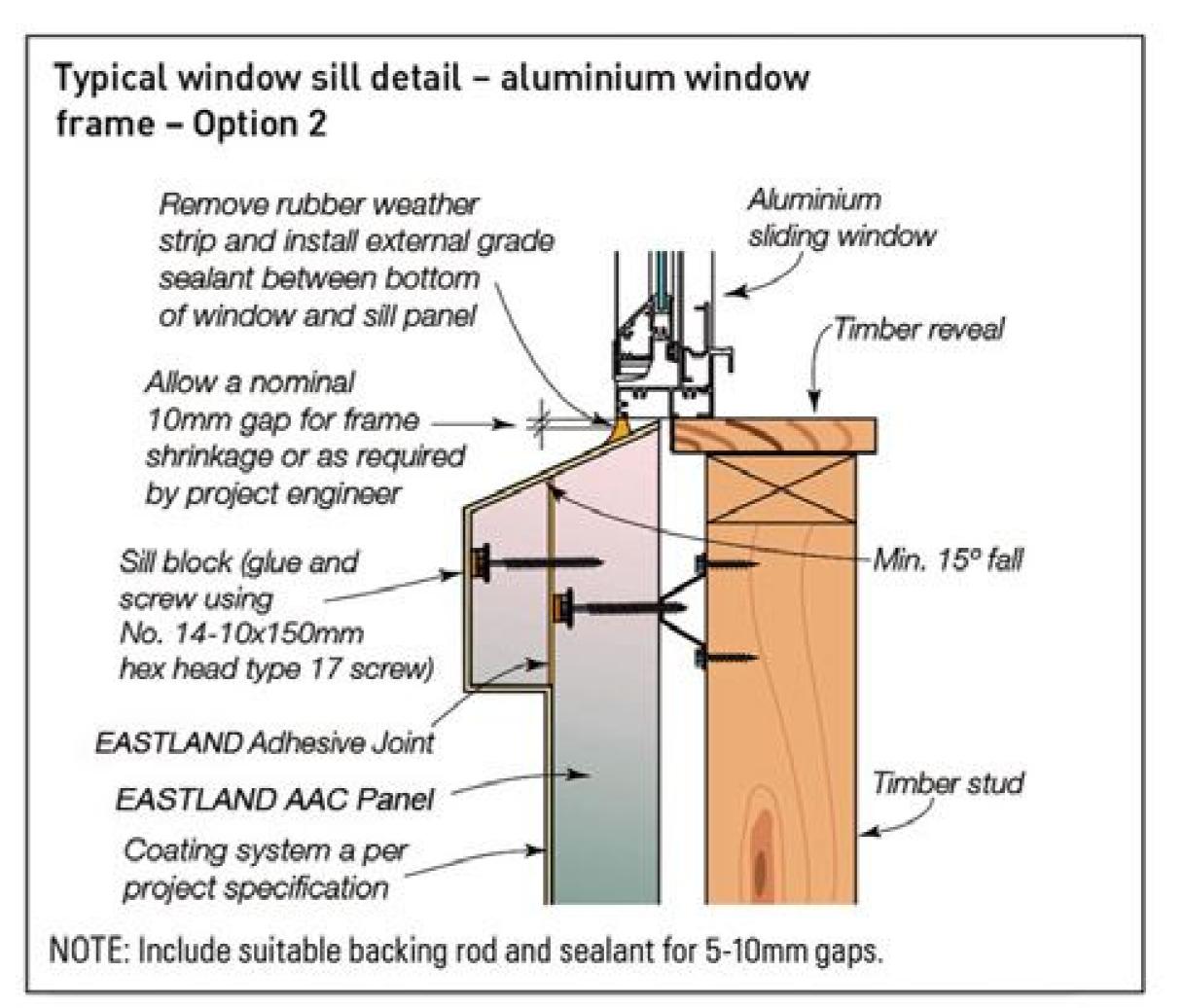
DOOR & WINDOW DETAIL

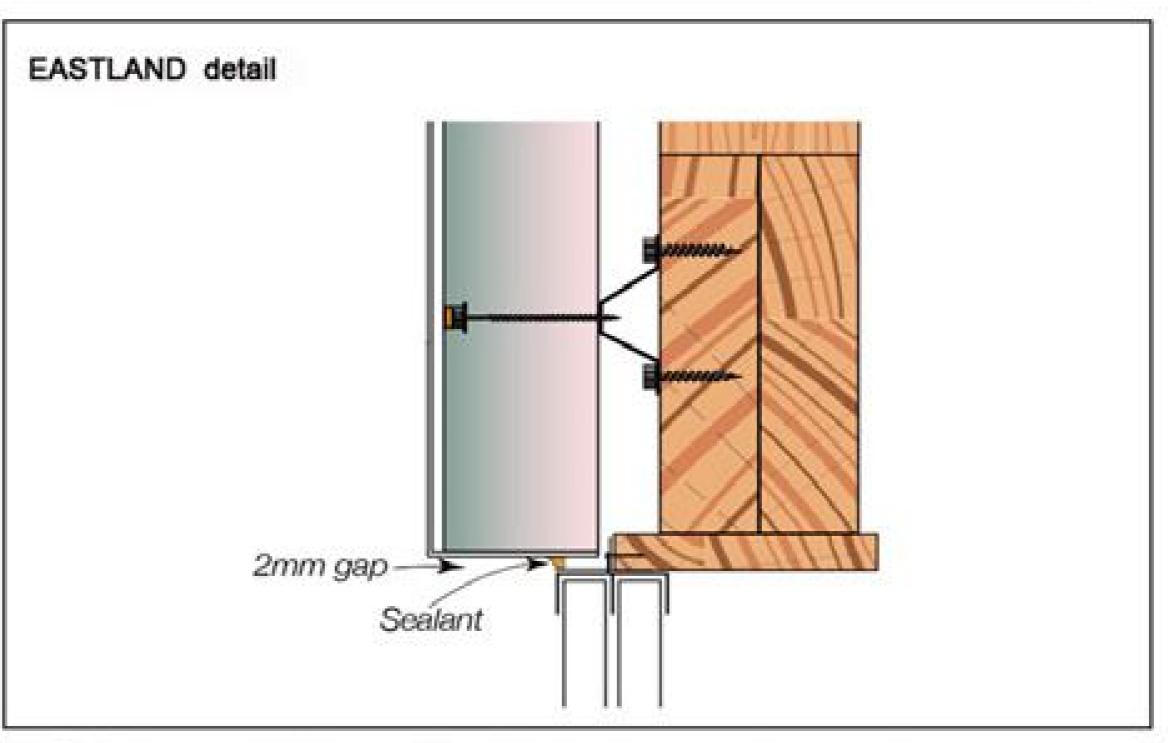




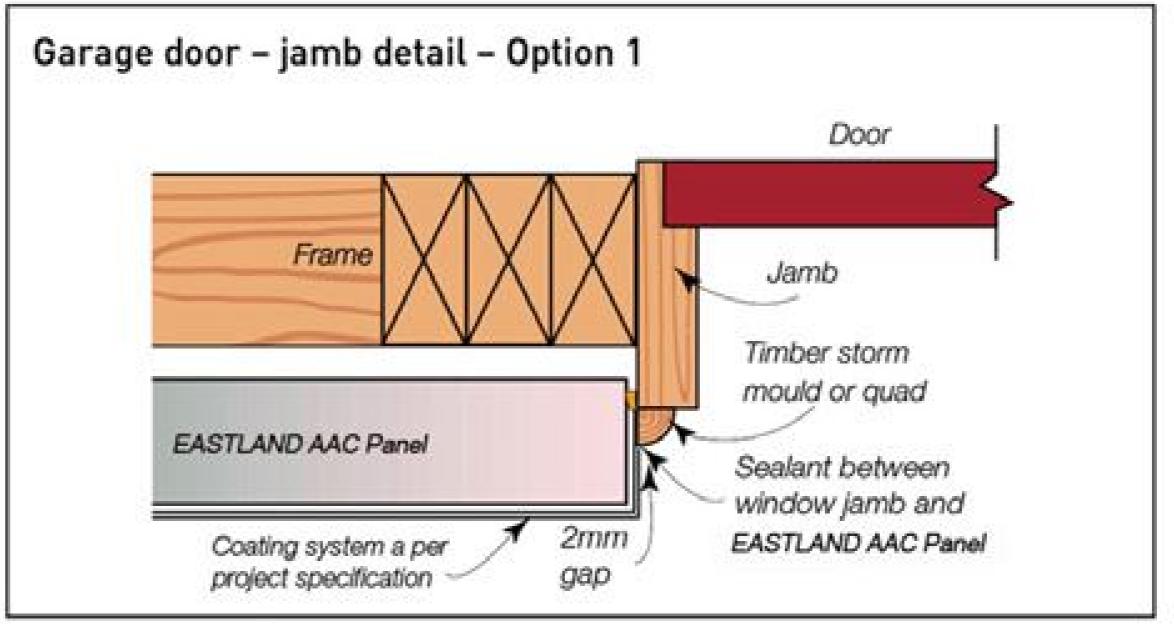
NOTE: EASTLAND recommends the removal of the rubber weather strip at the window sill prior to applying external grade sealant between the bottom of the window sill and panel. Windows shall be caulked around all sides to ensure that the system remains sealed and not allow water ingress into the cavity. The installation of any alternative details shall be the responsibility of the builder to provide supporting evidence that it meets the requirements of a sealed system and maintains a dry cavity.

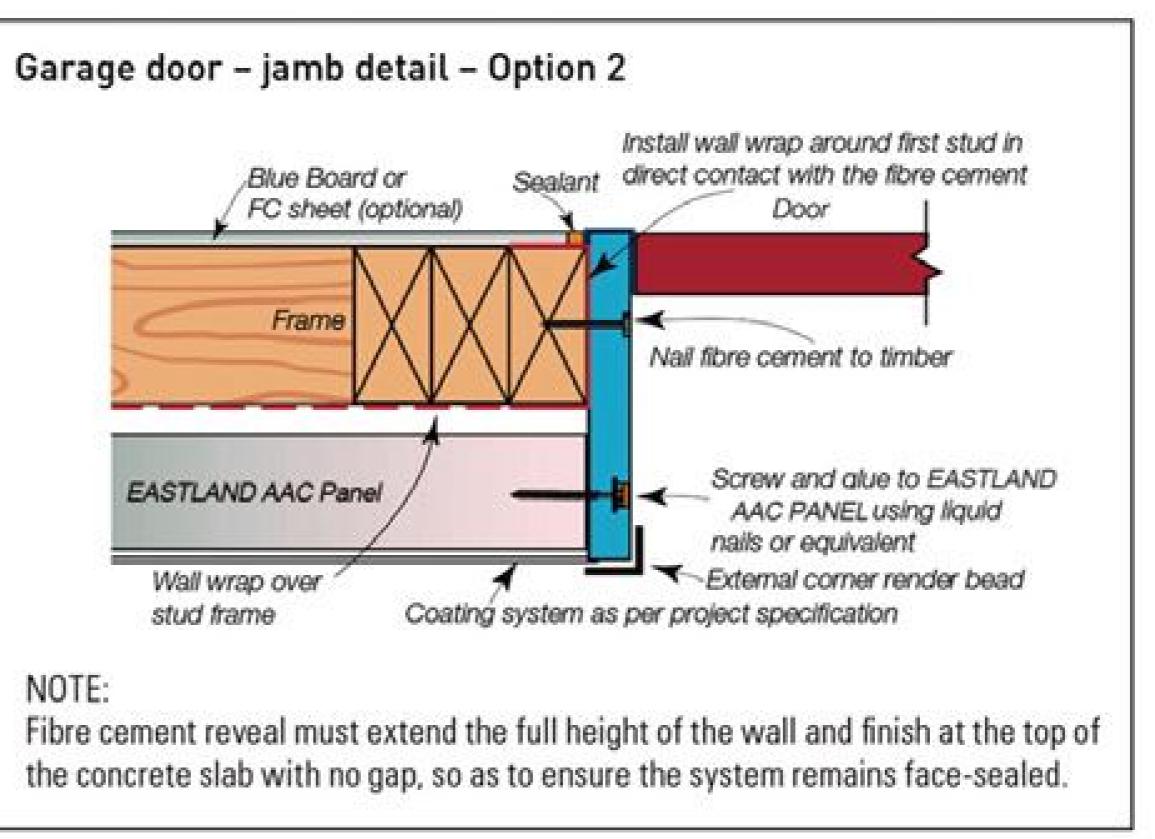




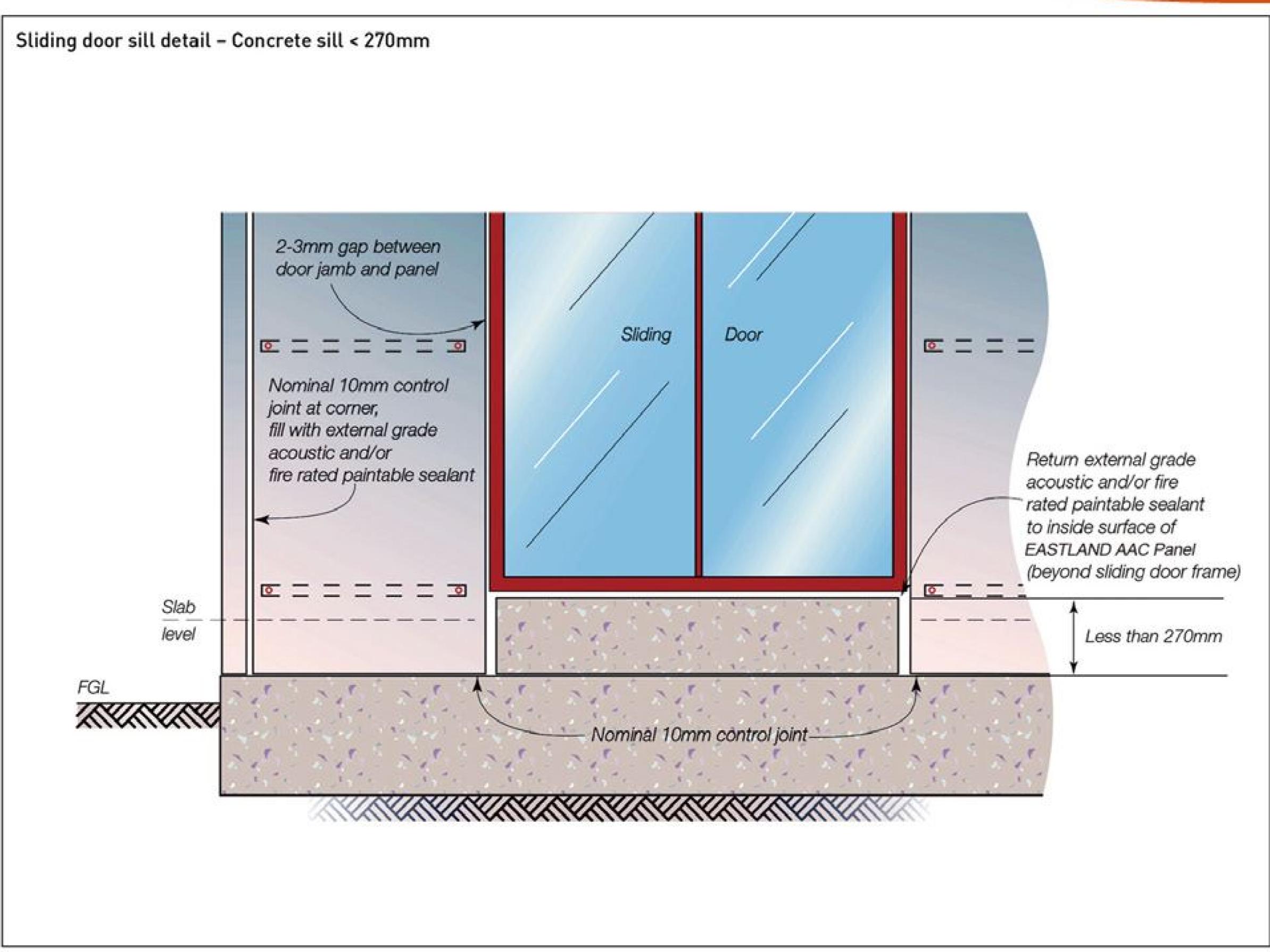


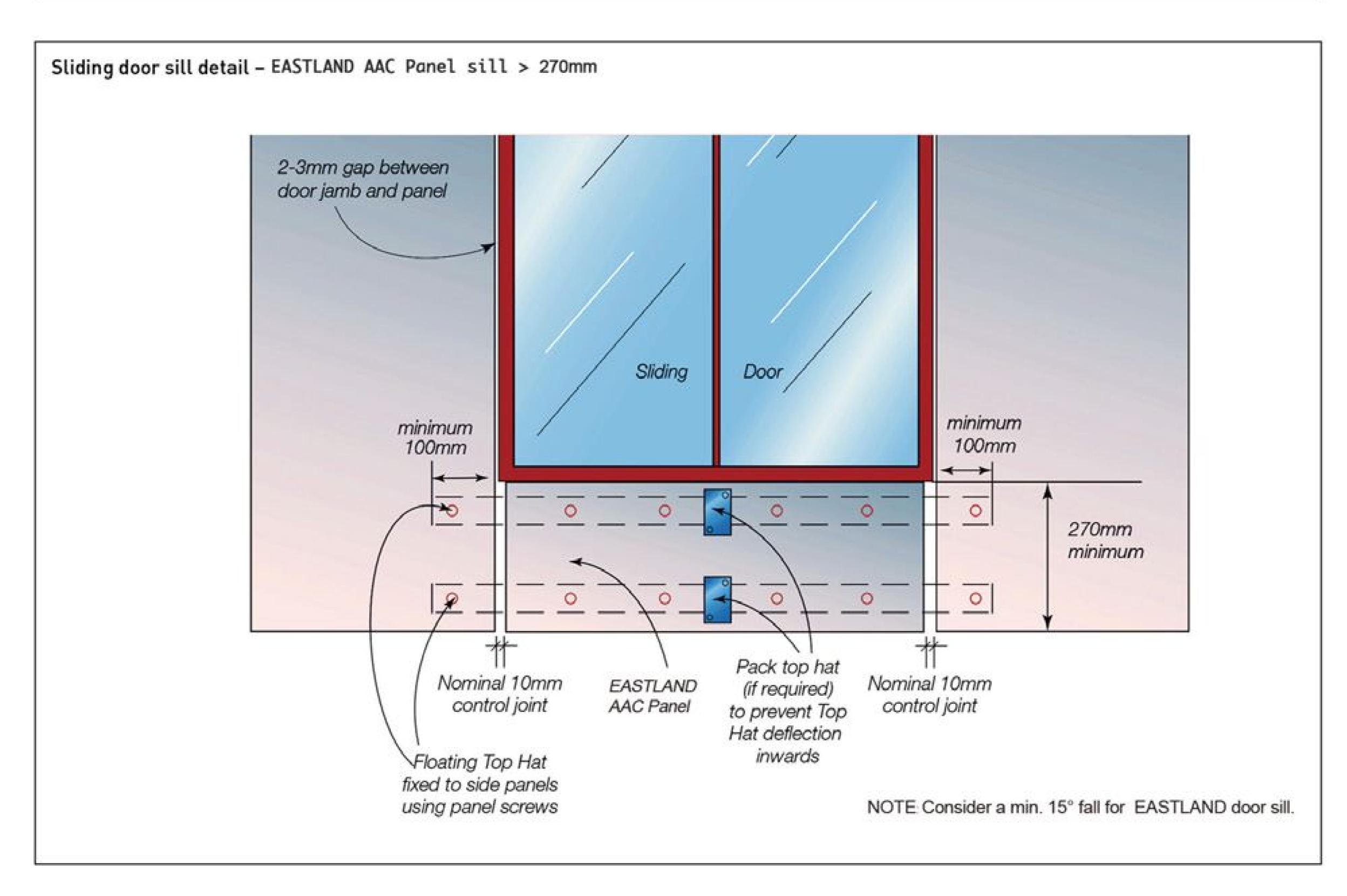
NOTE: Drainage of window and door sills, in either aluminium or timber, should be directed to the outside of the building, on top of the window sill.







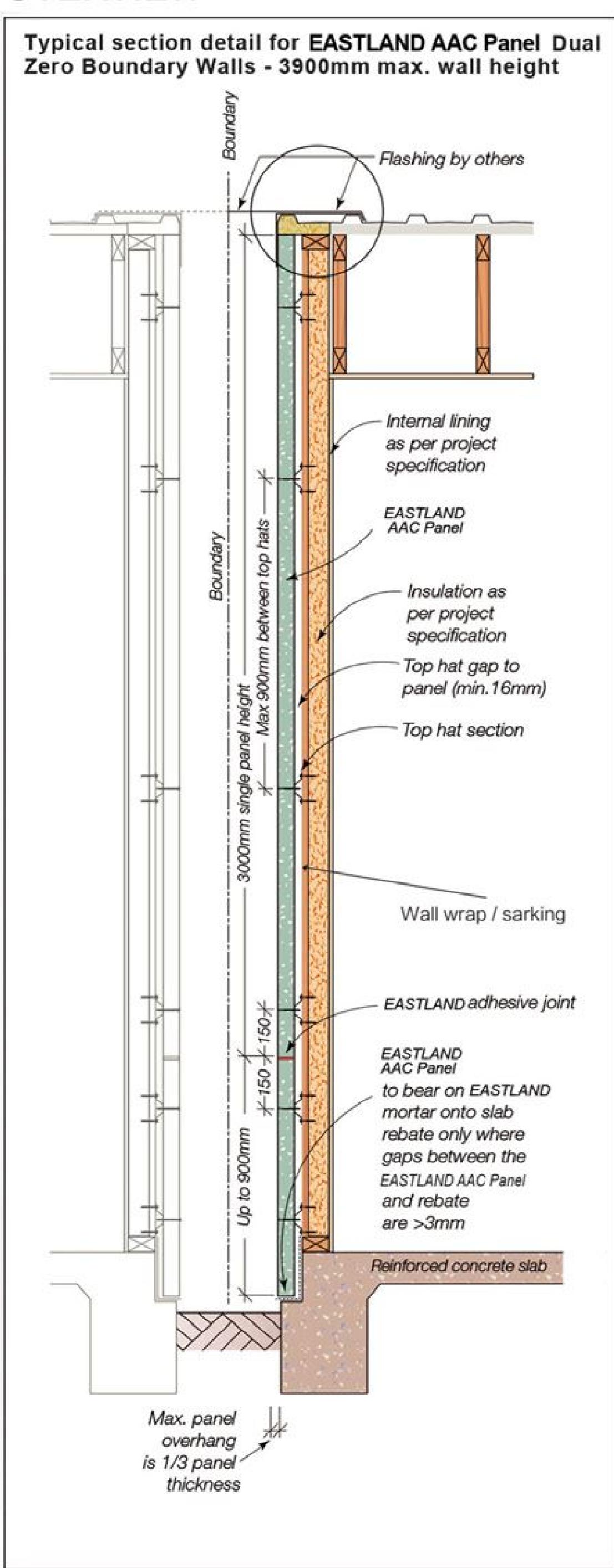


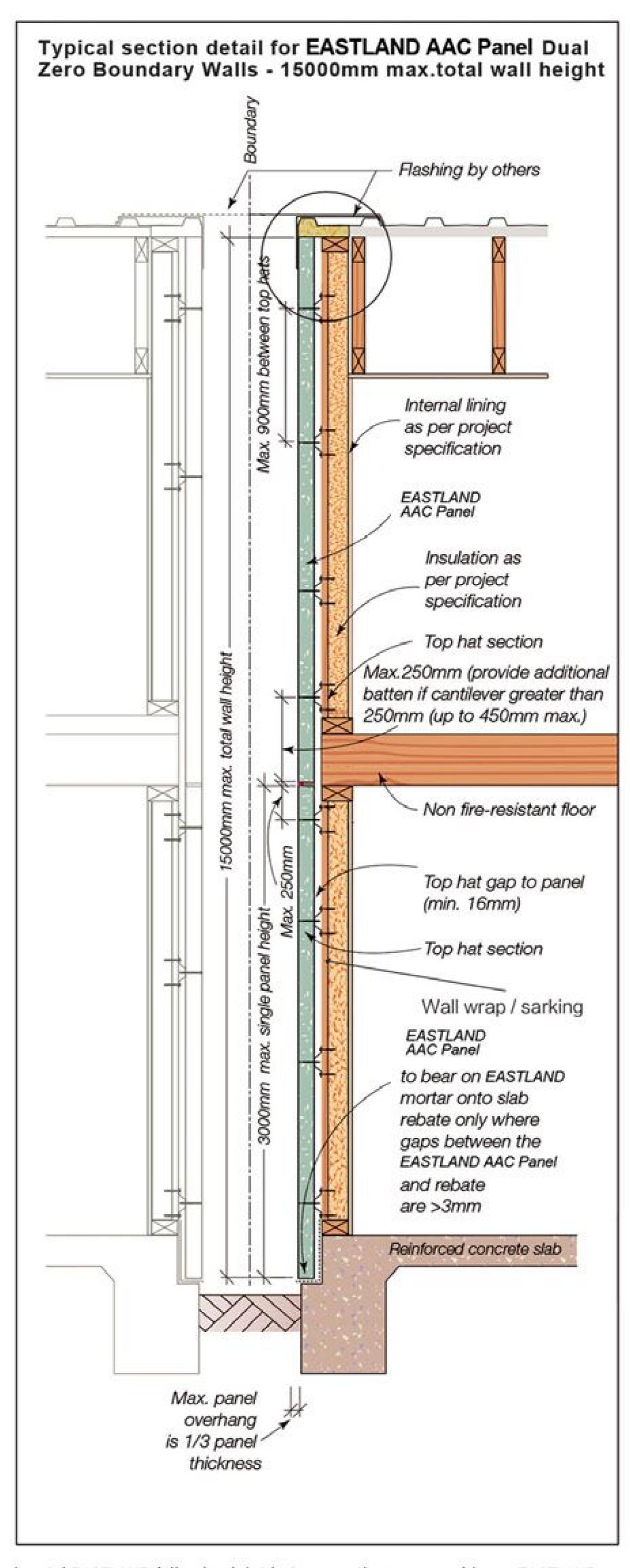




CONSTRUCTION DETAILS: EASTLAND AAC PANEL DUAL ZERO BOUNDARY WALLS

OVERVIEW

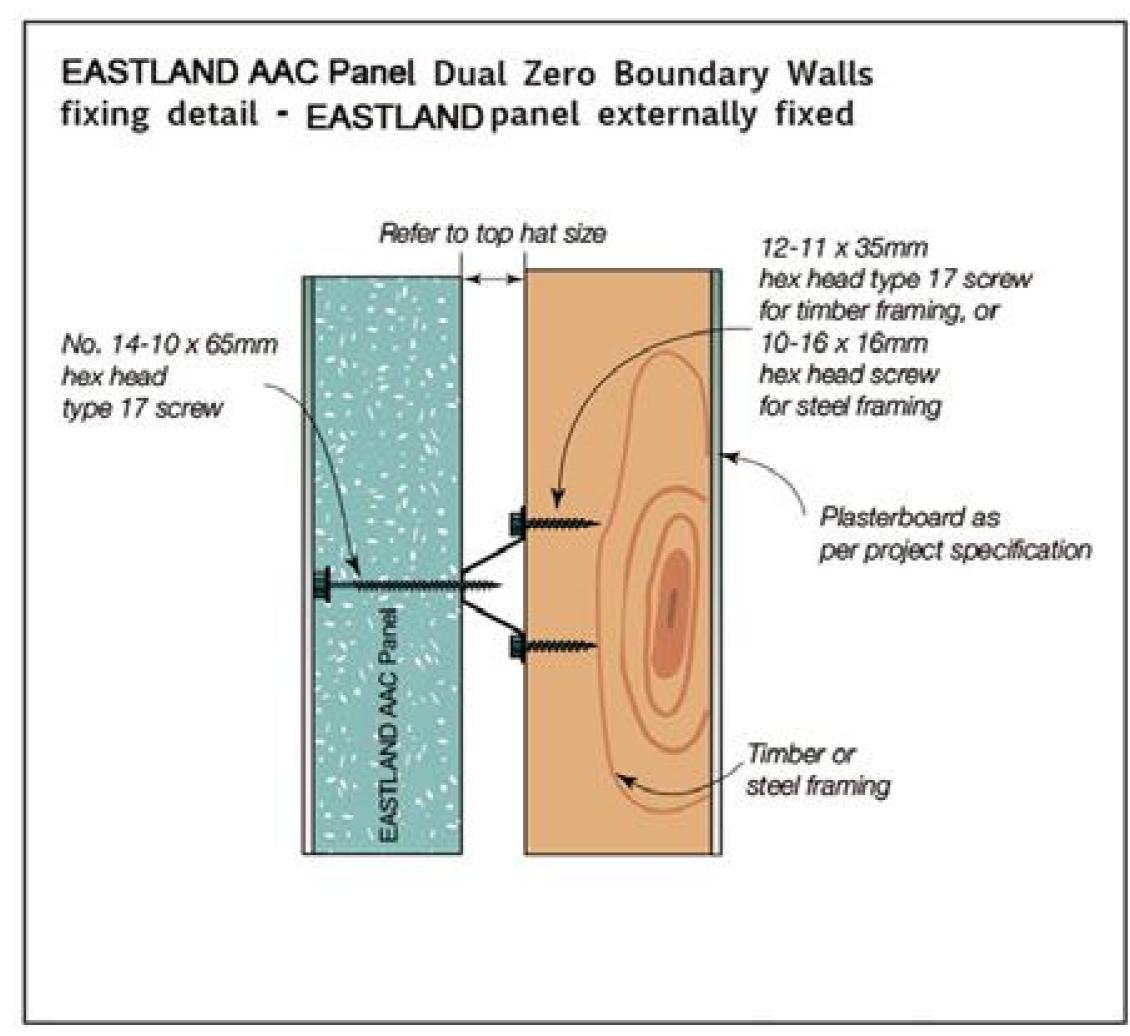


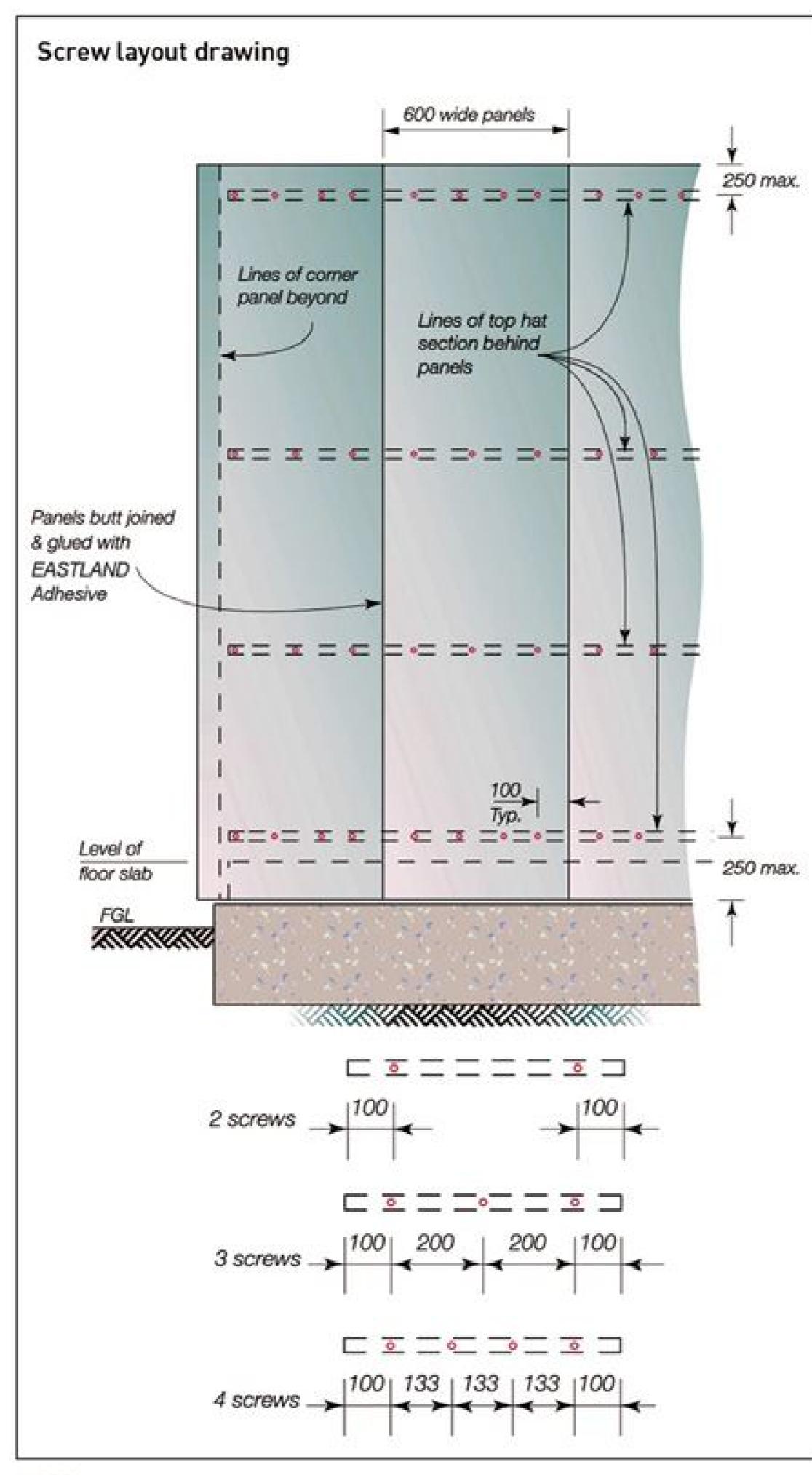


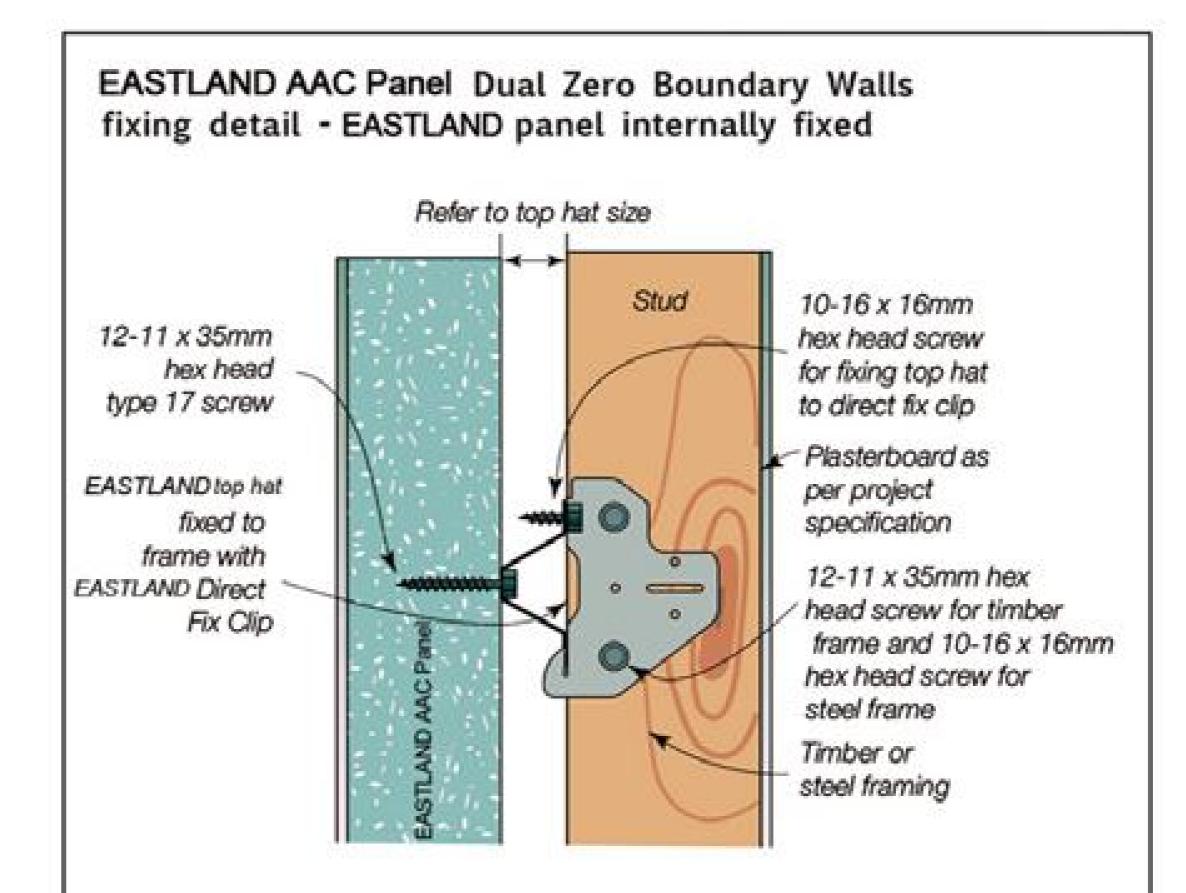
NOTE:A maximum EASTLAND wall height of 3,900mm can be constructed with a horizontal EASTLAND Adhesive joint betwee en the upper and lower EASTLAND panels for areas that contain heights above 3000mm. The maximum length of EASTLAND AAC Panel is 3,000mm therefore the lower panel can be installe ed as a max length panel vertically with either a horizontal 600mm wide panel (max total wall height 3600mm) or a vertical 900mm high panel (max total wall height 3,900mm).



FIXING &INSTALLATION DETAIL



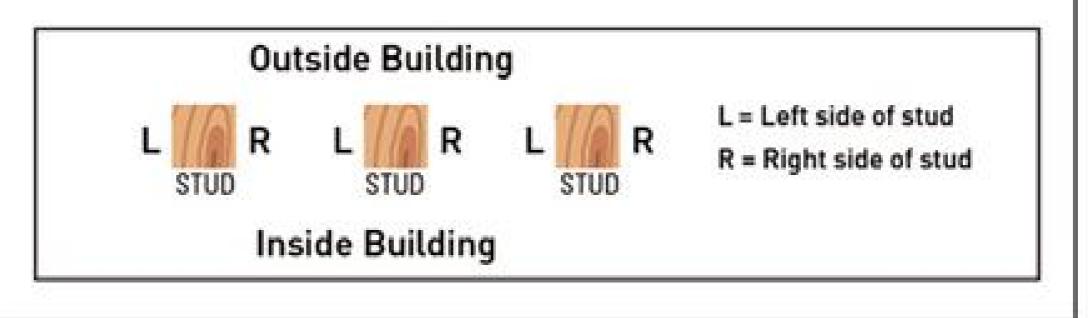


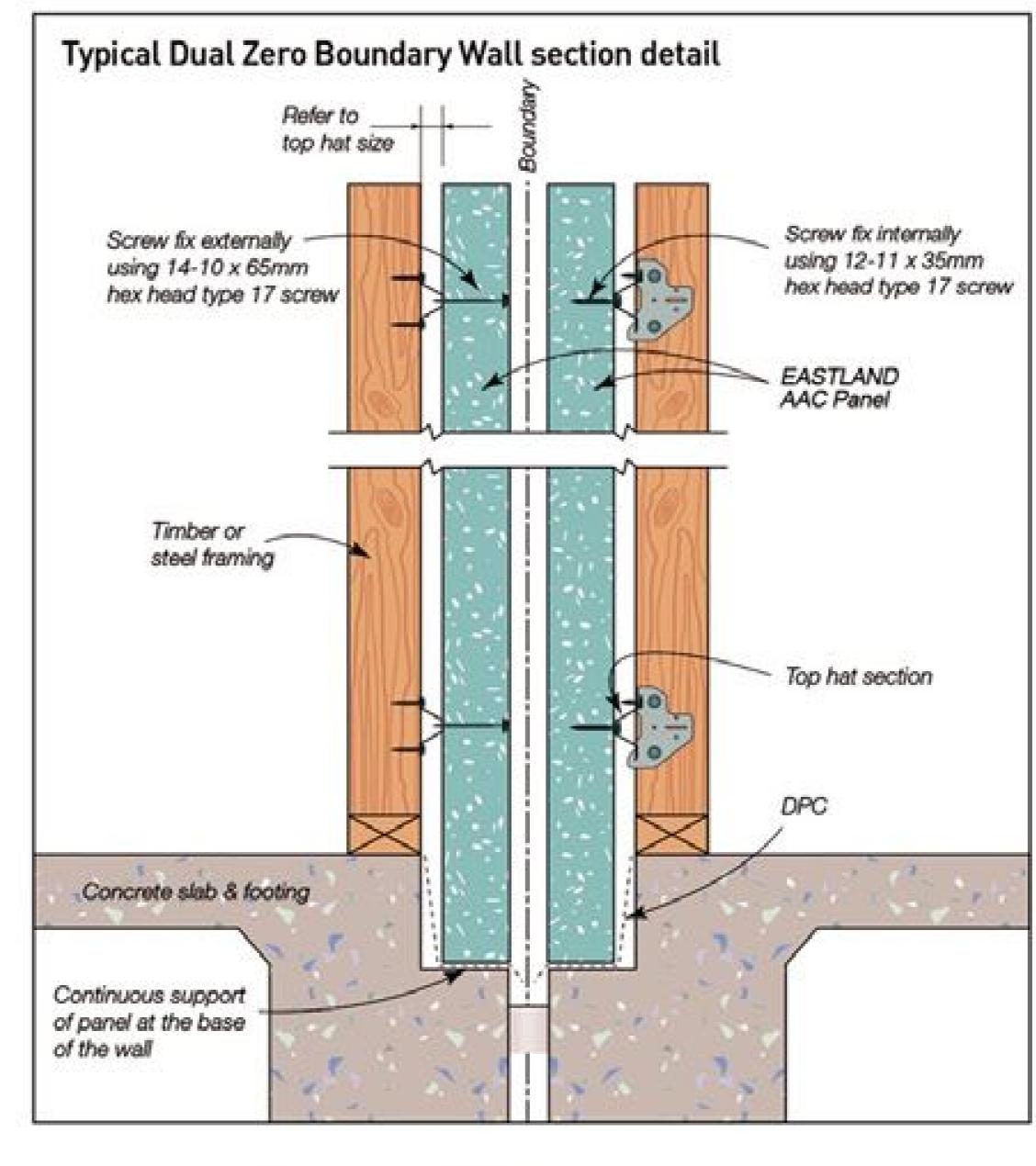


IMPORTANT: Top hat clip is fixed on the left hand side of the stud (when looking from inside to the outside of the building) except at the last stud, only, when the clip may be installed upside down.

Installing the clip upside down i.e where the screw fixing from the clip to the top hat is at the bottom flange of the top hat, will be acceptable provided that:

- A: The upside down clip is fixed on the right hand side of the stud (when looking from the inside to the outside of the building)
- B: The upside down clip installation is to the last stud of a wall run (only), such that the spacing between the last and second last studs is no greater than 600mm,
- C: The top hat is continuous in this region for a minimum of two spans i.e top hat extends across two stud spacings,
- D: In all other locations, clips are to be installed to the left hand side of the stud with the screw fixing to the top side of the clip i.e into the top flange of the horizontal top hat.

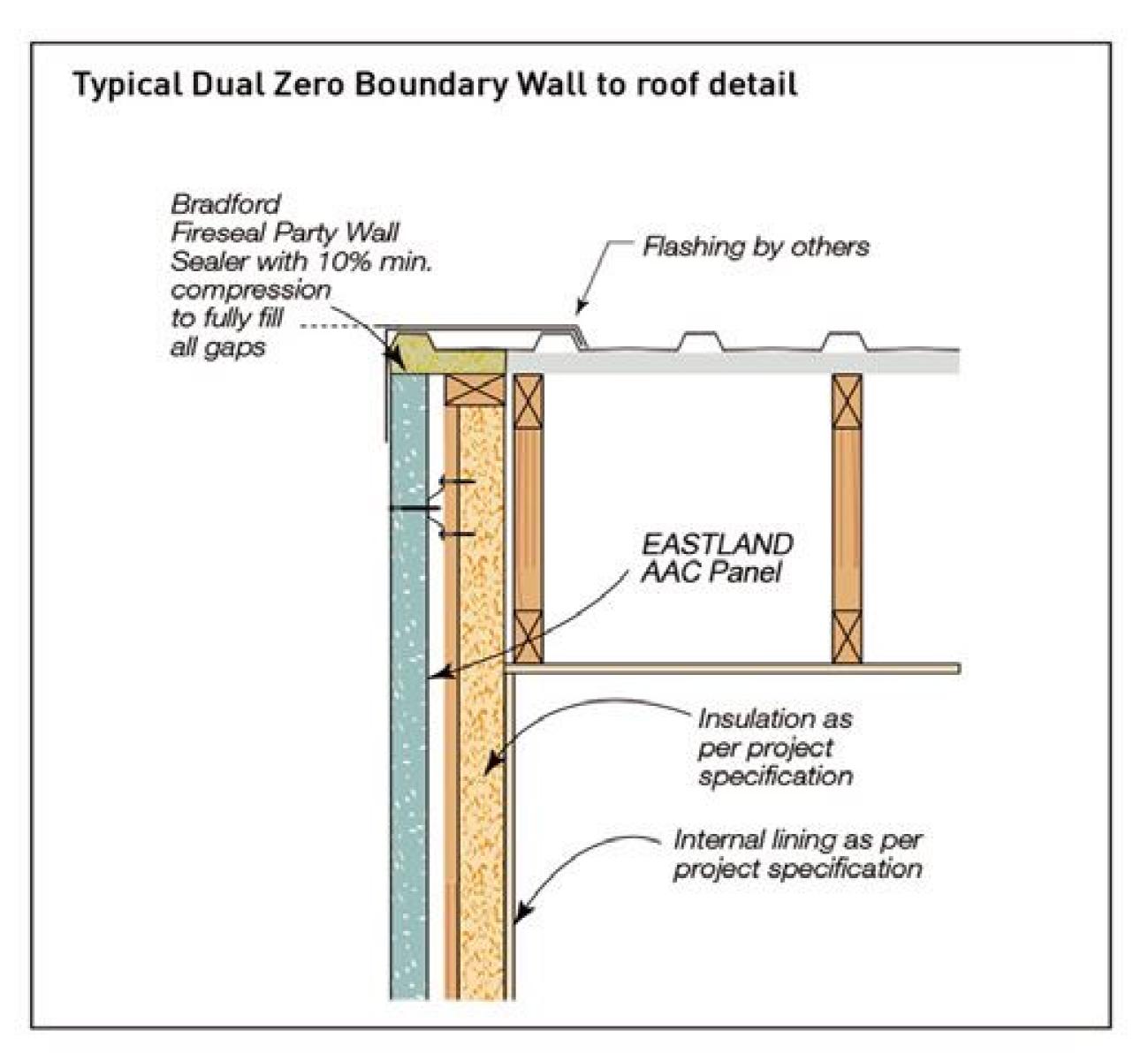


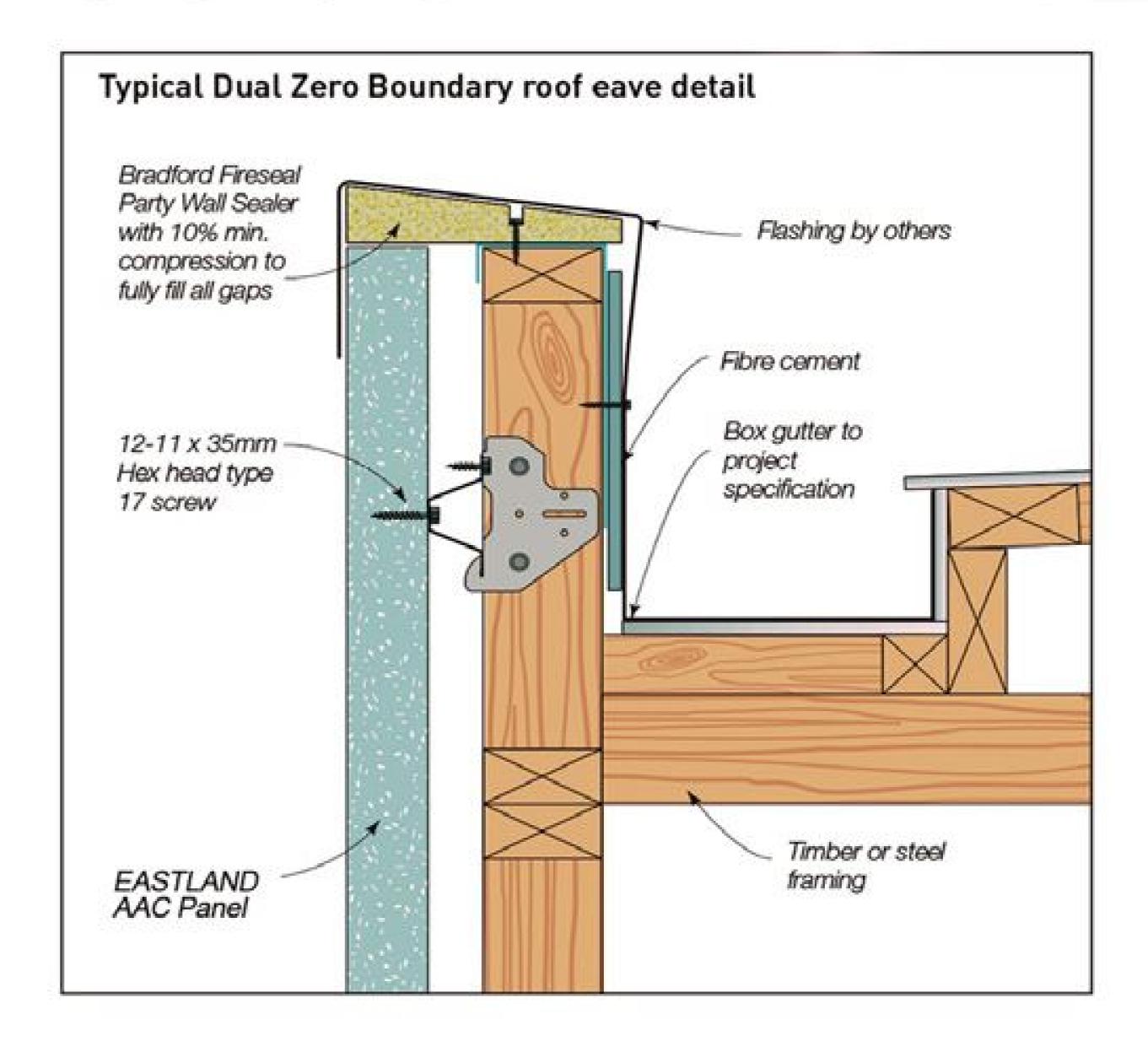


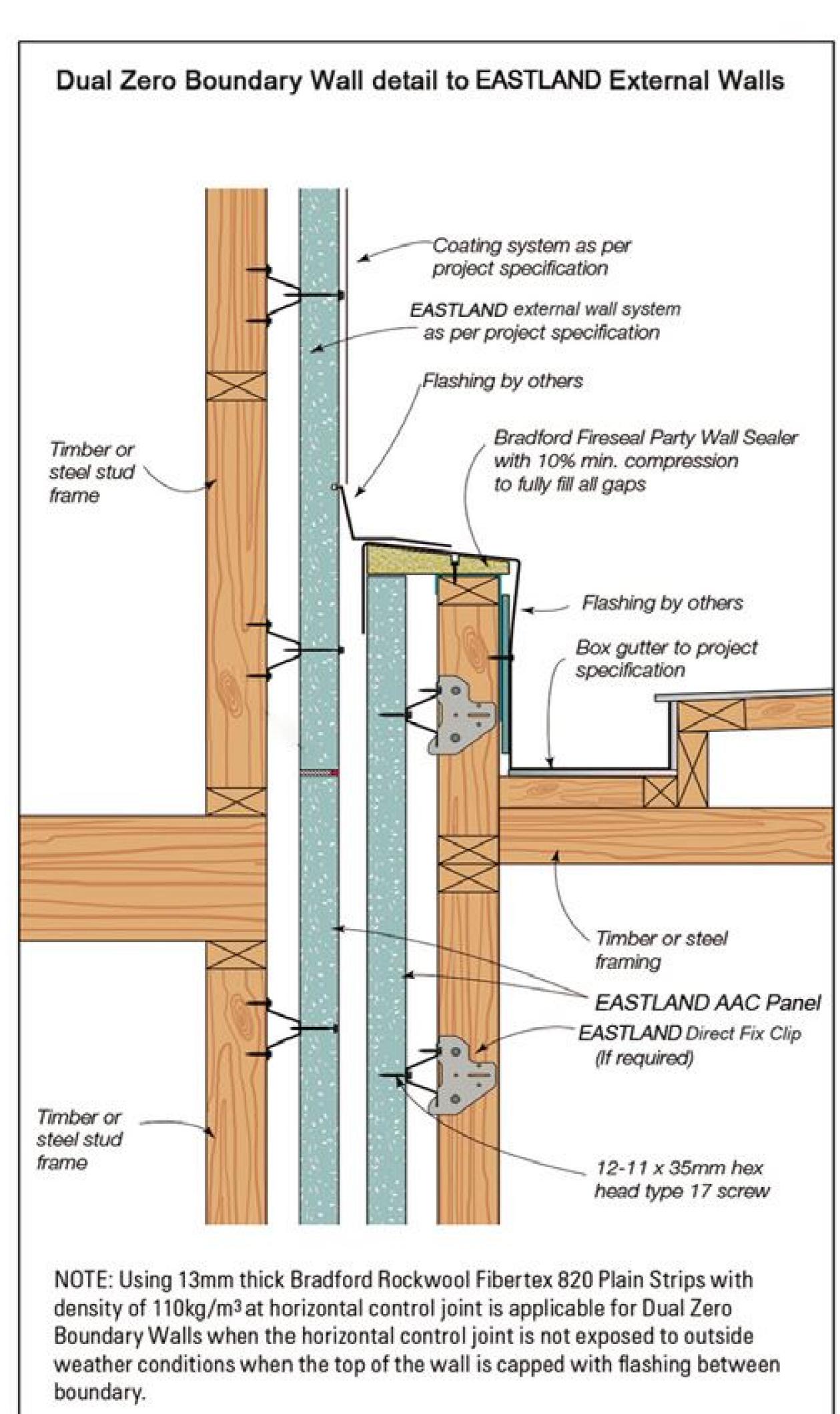
- 1. Fixing top hat / battens directly to the frame, or, connecting top hat / battens to the direct fix clip are both acceptable methods of installation.
- 2. When positioning the stud frames allow 5-7mm extra cavity width for the sheet bracing between top hat and timber stud.
- 3. The slab edge details do not comply with the termite visible inspection zone requirements. Alternative termite management systems must be used when selecting these details. It is the responsibility of the builder to provide a suitable physical or chemical barrier in accordance with AS 3660.

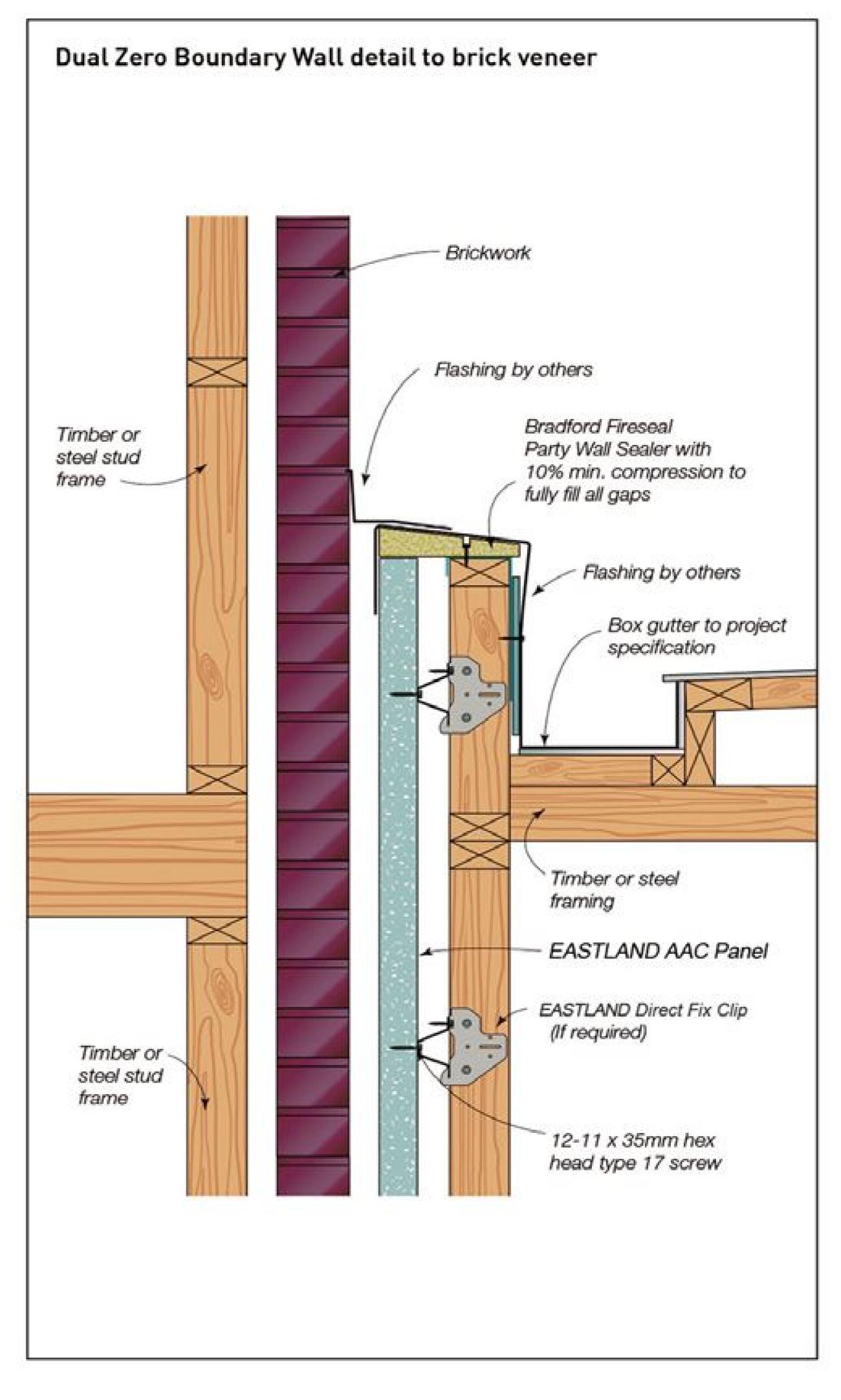


WALL JUNCTION DETAILS AND SECTIONS



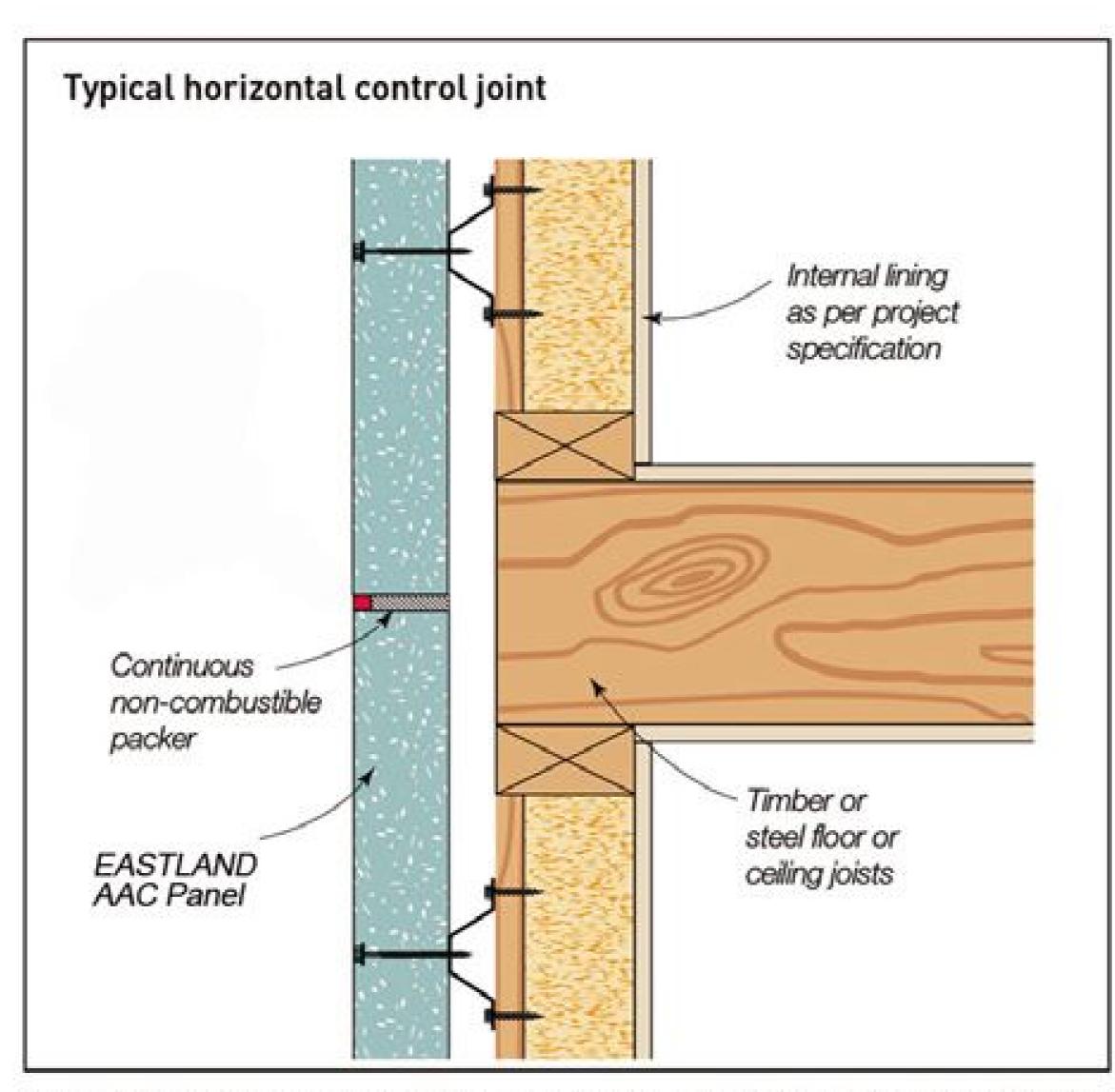


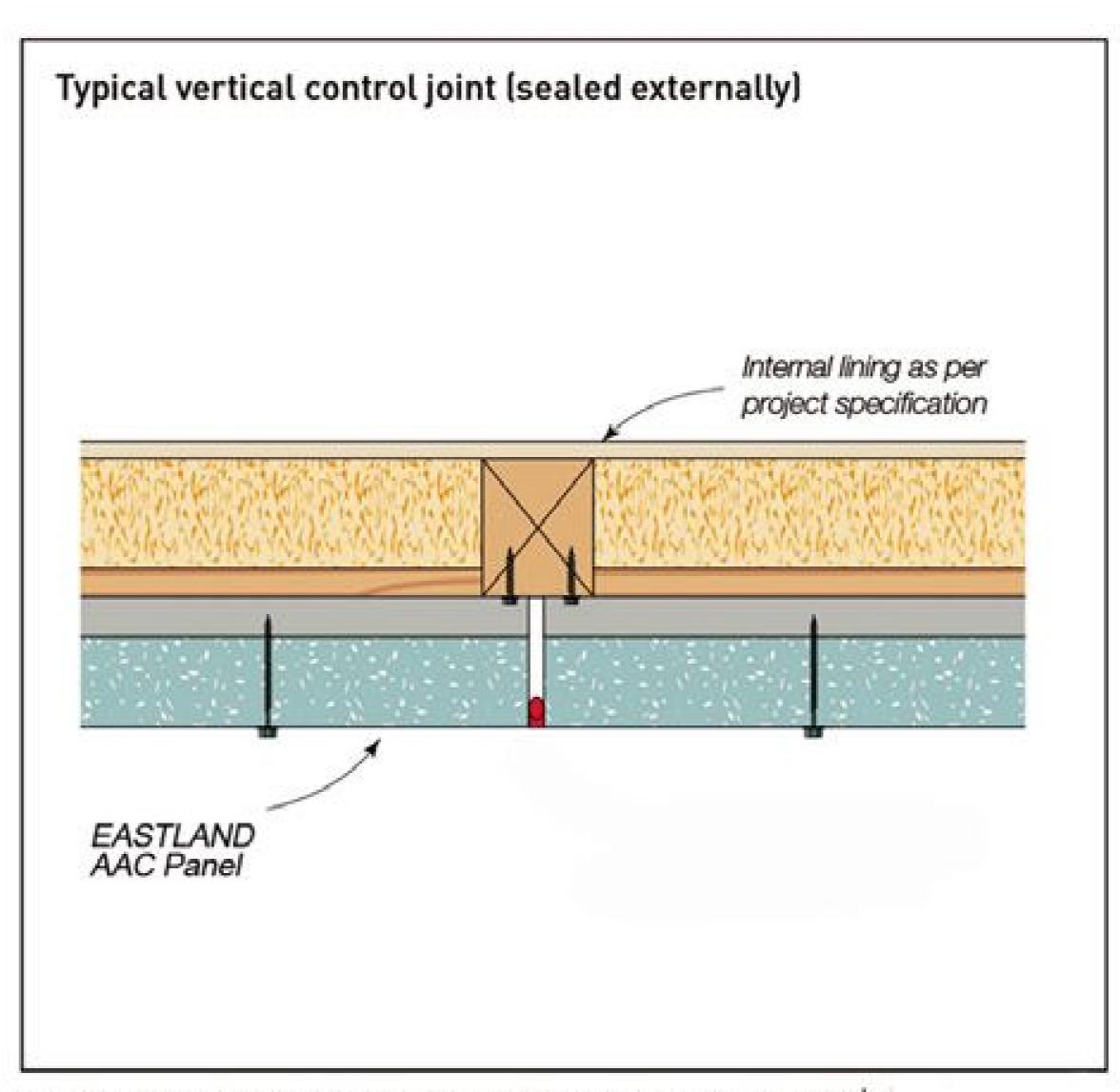




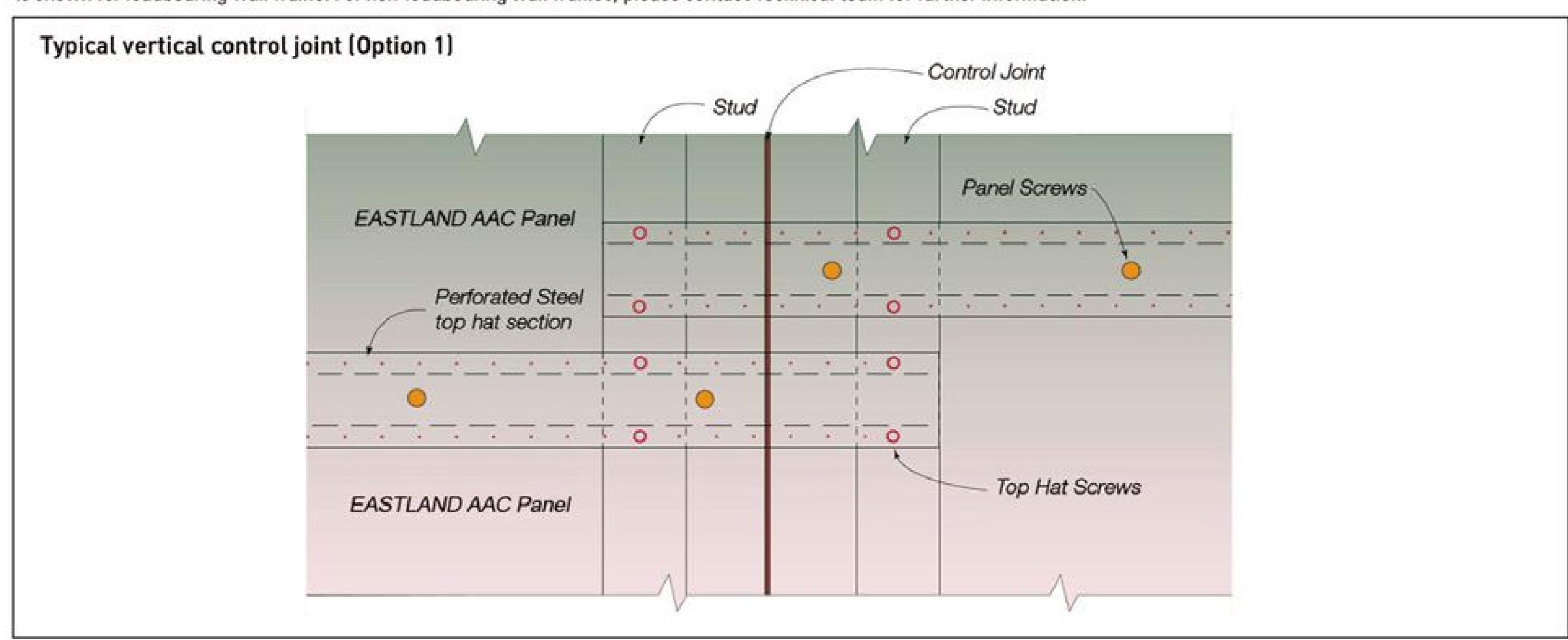


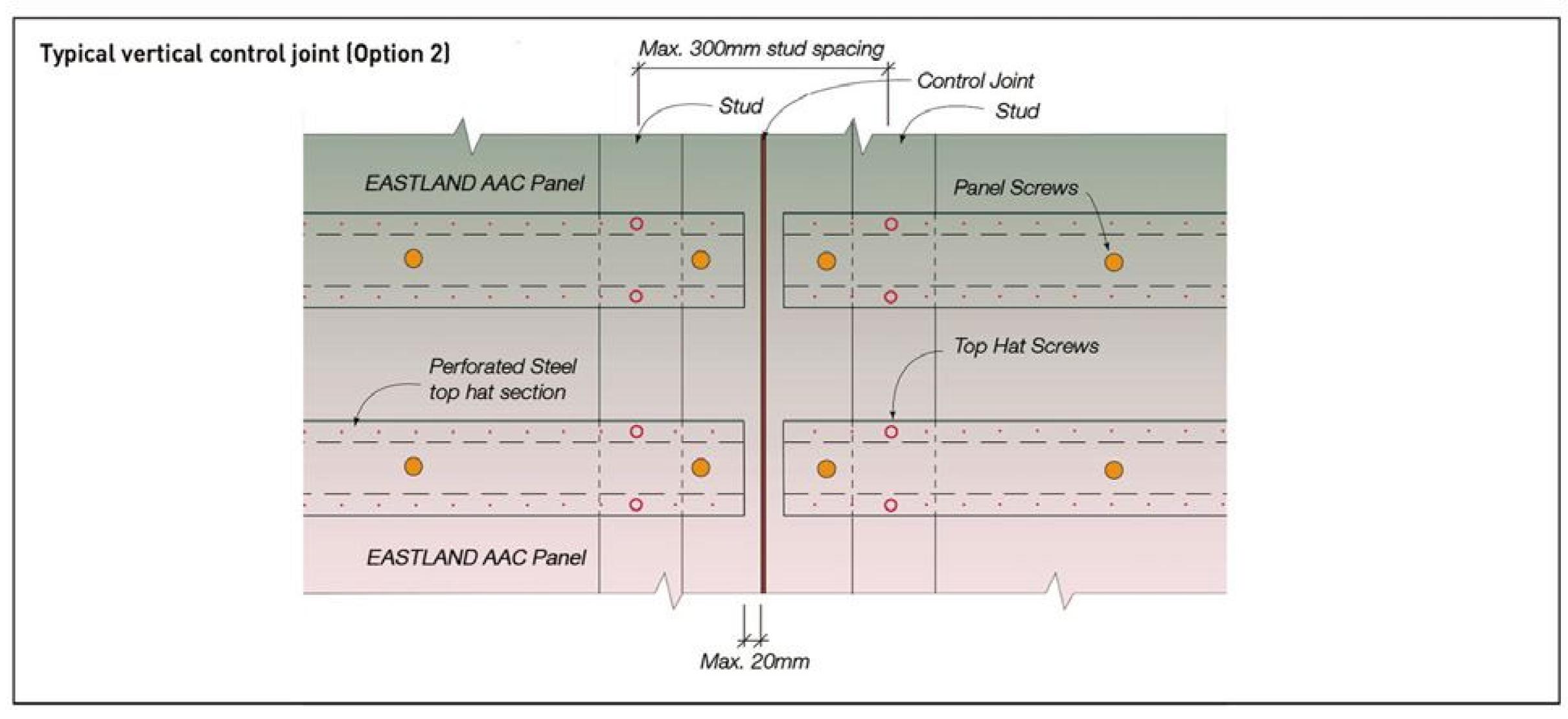
CONTROL JOINTS

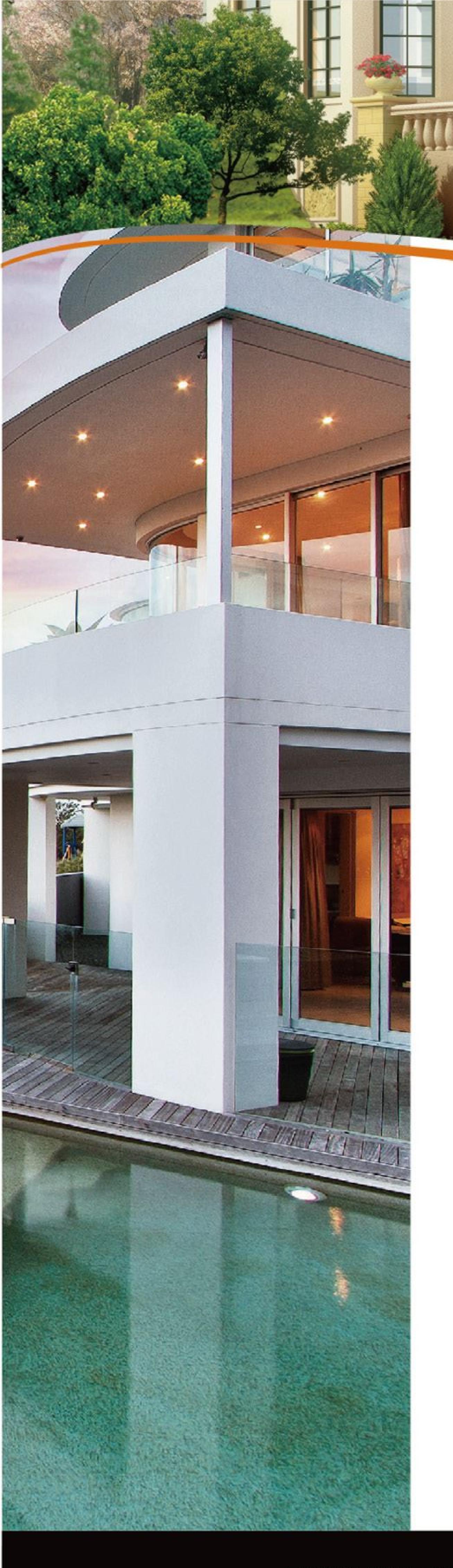




NOTE: Where access to the external EASTLAND face available, both vertical and horizontal control joints are to be sealed to the external face of the EASTLAND panels. Where access to the external EASTLAND face is not available, both vertical and horizontal control joints are to be sealed to the internal face of the EASTLAND panels. is shown for loadbearing wall frame. For non-loadbearing wall frames, please contact Technical team for further information.







GUARANTEE & WARRANTY & DISCLAIMER

EASTLAND

GUARANTEE

EASTLAND AAC Panel are guaranteed to be free of defect in material and manufacture.

Installation workmanship and coating application work is guaranteed by the certified personnel in charge of the installation. This guarantee does not count for all other guarantees and liability for consequential damaged or loss caused by defective panel, other than those imposed by legislation.

WARRANTY

EASTLAND AAC Panel are warranted for at least 20 years (from date of purchase), when installed as exterior wall cladding, meeting the 7 years requirements outlined in BCA and the relevant Australian Standards. EASTLAND AAC Panel are designed to have a longer life span than the minimum required period.

DISCLAIMER

The design of wall or flooring system requires the service of professional consultants. This documents has been prepared a general source of information and to provide general guidance to those consultants it in no way replaces the services of a professional consultant a relevant engineers design the project. EASTLAND therefor accept no liability for the use of this guide.







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