

Eastland AAC Intertenancy Wall (Party Wall)

Technical Manual
Rev 1.2-September 2025



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This Technical Manual is intended to serve as a general reference for project consultants. It does not replace the expertise and services of professional engineers and consultants involved in the project design process.

It is the responsibility of the architects, designers and engineering consultants to verify that the guidance provided in this document is suitable for the specific project.

The enclosed recommendations are based on sound building practices but should not be considered a comprehensive compilation of all applicable information.

1. INTRODUCTION

This Technical Manual for Low-rise & High-rise Intertency Walls using Eastland AAC panels is intended to provide design and installation guidance to building professionals including designers, engineers, builders and installers.

All building professionals referencing this Technical Manual shall assess the information contained herein and ensure that such information is relevant and suitable for the project.

1.1 Autoclaved Aerated Concrete

Manufacturing of Autoclaved Aerated Concrete (AAC) involves mixing cement, sand, lime and water, with an aluminium paste expanding agent. The mixture is poured into large moulds, filling to about two-thirds of the mould height. Upon contact, the expanding agent reacts with the other ingredients through a chemical reaction that creates small, finely-dispersed air bubbles. The resultant expansion causes the mix to rise within the mould to the full height.

The moulds are then pre-cured in a heated environment for 18-24 hours. The resulting semi-solid material, still in a green state, is then transported to a cutting machine where it is sliced into panels of desired sizes. Subsequently, the sliced panels or blocks undergo steam pressure curing in autoclaves for up to 12 hours where the final hydration of the cementitious mix occurs.

Panels are reinforced with steel reinforcing bars, placed into the mould prior to the liquid mixture being poured. Eastland AAC Panels are manufactured in 50mm or 75mm thickness with a standard width of 600mm and various length options.

The combination of the expanding chemical reaction and the autoclave process confers upon AAC its distinctive lightweight properties. AAC exhibits exceptional thermal insulation and acoustic absorption capabilities, along with superior fire resistance and termite resistance. It conforms to relevant building codes and offers ease and efficiency in handling. AAC stands out as a versatile and cost-effective building material, meeting diverse demands better than alternatives due to its physical and mechanical properties.



1.2 Eastland AAC

Eastland AAC panels present acoustic and fire rated wall solutions across a wide range of applications, including intertenancy walls, service riser shafts, internal partition walls and external walls.

Benefits of using Eastland AAC panels in your next project include:

- Solid & durable masonry finish
- Thermally efficient
- Fire resistant & non-combustible
- Excellent Acoustics
- Aesthetic appeal
- Fast construction
- Efficient & low cost construction systems

1.3 System Description

The Eastland AAC Intertenancy Wall system presents loadbearing and non-loadbearing wall systems for use in intertenancy (party) walls, service riser shafts and internal partition wall applications for low-rise multi residential dwellings, high-rise multi-residential apartments and commercial buildings.

The Eastland AAC Intertenancy Wall system components includes 50mm and 75mm reinforced AAC panels and Eastland AAC Adhesive. The builder / installer is required

to supply framing, battens, brackets and appropriately rated fasteners for the support structures for the vertical or horizontal oriented AAC panels.

The Eastland AAC panels are non-loadbearing and may be installed with structural framing as a loadbearing structure for low-rise multi-residential dwellings or as a non-loadbearing assembly for high-rise apartments and commercial buildings.

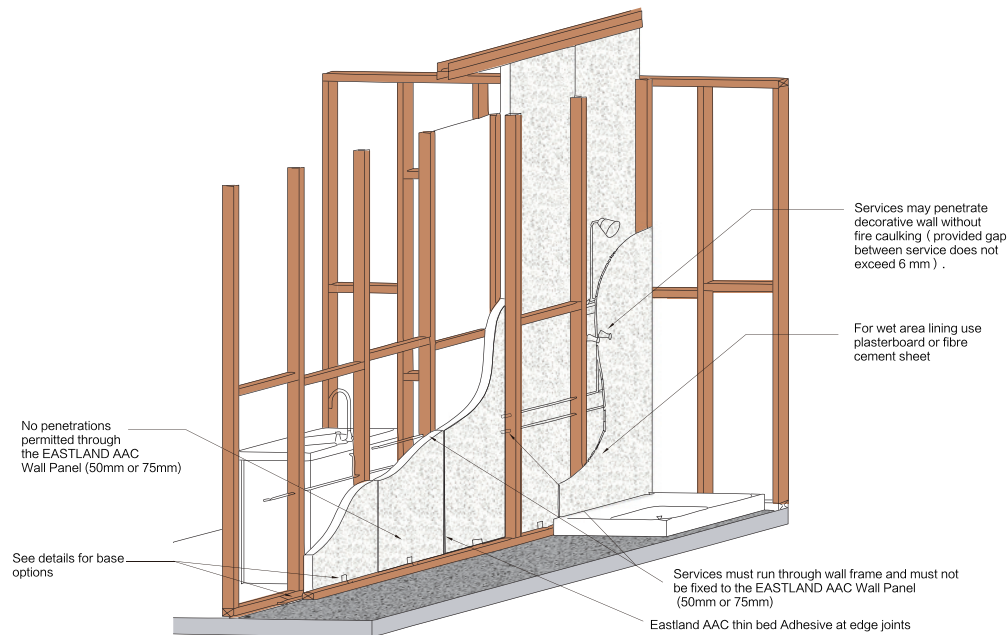
1.4 Discontinuous Construction

Discontinuous construction can significantly reduce the transmission of both airborne and impact sounds through walls and refers to a method where two separate leaves of an intertenancy wall are not connected by any solid means except at the perimeter of the wall elements. By separating the leaves of the wall, a minimum 20mm gap is created that breaks the direct path for sound waves to travel through the wall.

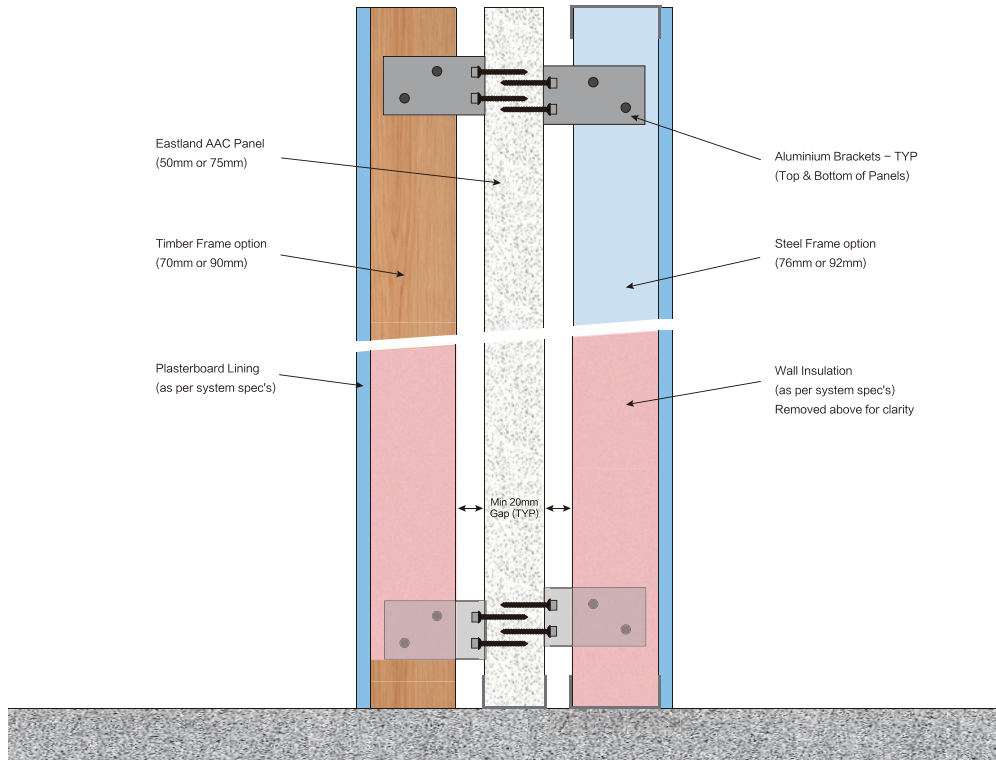
Discontinuous construction is required by the NCC / BCA when an intertenancy wall separates a habitable area (living areas or bedrooms) of one dwelling/tenancy from a kitchen or wet area (kitchen, bathroom or laundry) of the adjacent dwelling/tenancy.

All Eastland AAC Intertenancy wall systems are design to facilitate discontinuous construction.

1.5 Low-Rise Residential Intertenancy Walls



Low-rise Intertenancy (Party) Walls provide Structural Support while Ensuring Acoustic and Fire separation between units.



Eastland AAC Low-rise Intertenancy (Party) Walls (50mm or 75mm AAC) with timber or steel frames

The wall structures adjacent to the Eastland AAC Panels (shown above) shall be designed as loadbearing structures for each tenancy, separate from the other tenancy.

1.6 High-Rise Multi-Residential Intertenancy Walls



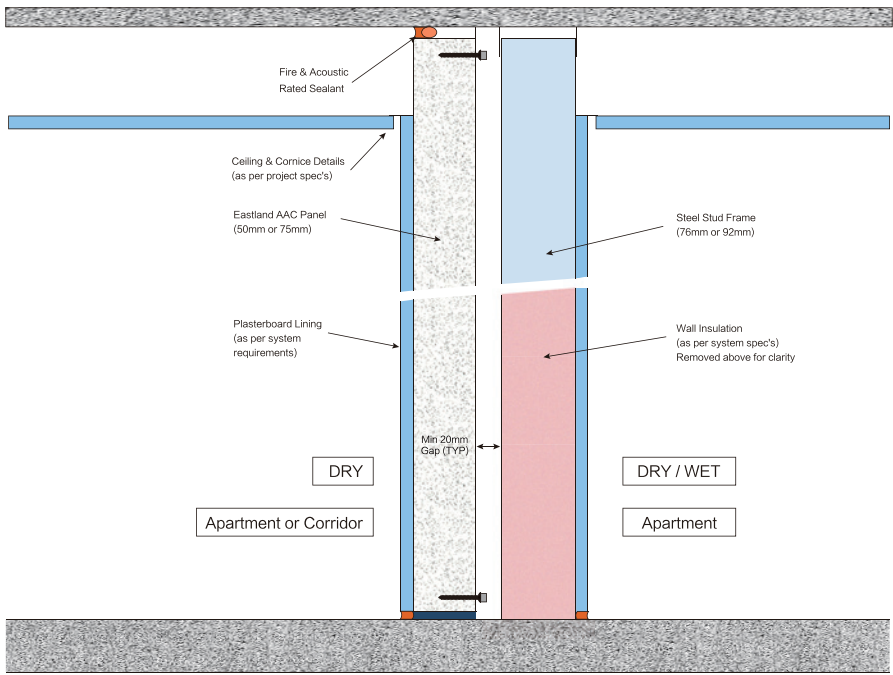
High-rise Intertenancy (Party) Walls ensure Acoustic and Fire separation between units

KEY:



DESCRIPTION:

Intertenancy Walls
Corridor Walls
Service Shaft Walls



Typical arrangement for Eastland AAC High-rise Intertenancy (Party) Walls using separated steel frame

The Eastland AAC panels and adjacent steel stud frames may be considered non-loadbearing and shall be installed between the loadbearing floor / soffit elements of a high-rise building structure.

1.7 Internal Wind Pressures

For Low-rise Intertenancy wall applications between one and two storey dwellings, the resistance of the AAC panel to wind pressure applied to internal walls (typically less than 0.3 kPa) is satisfied for wall heights up to 3.0 metres per storey where lateral resistance for the panel is provided at each level and at the roof structure.

For High-rise Intertenancy wall applications, the Project Engineer must be engaged to provide the internal wall wind

pressures for each level of the building. Where internal wall wind pressures are greater than 0.3 kPa and/or the floor to soffit span is greater than 2.7 metres for 50mm Eastland AAC Panels and 3.5 metres for 75mm Eastland AAC panels, additional lateral support or an alternate wall configuration may be needed.

Please contact Eastland for technical advice if the enclosed limitations are exceeded.

2. SYSTEM COMPONENTS

2.1 Eastland AAC Panel Properties

The key components of the Eastland AAC Intertenancy wall systems are the 50mm & 75mm thick reinforced AAC panels, compliant with AS 5146.1 & AS 5146.2.

Eastland Reinforced AAC Panels			
Properties	Panel Thickness (mm)		Reference
	50	75	
Width (mm)	600	600	AS 5146.2 Appendices A & K
Lengths (mm)	2,200	2,200	
	2,400	2,400	
	2,700	2,700	
	2,850	2,850	
	3,000	3,000	
Mass of Panel (kg/m ²)	30	38	AS 5146.2 Appendix C
Dry Density (kg/m ³)	515	445	
Working Density (kg/m ³)	592	512	AS 5146.2
Characteristic Compressive Strength f_{ck} (MPa)	≥ 2.5	≥ 2.0	AS 5146.2 Appendix D
Characteristic Flexural Strength (MOR) f_{ut} (MPa)	0.32	0.39	AS 5146.2 Appendix E
Characteristic ULS Bending Moment Capacity (kN.m/m)	0.306	0.547	AS 5146.2 Appendix P
Characteristic Shear Capacity (kN/m)	4.98	6.68	AS 5146.2 Section 4.3
Characteristic Punching Shear Capacity (kN)	0.96	1.78	AS 5146.2 Section 4.4
Characteristic Axial Load Capacity (kN)	15.66	20.16	AS 5146.2 Section 4.8
Elastic Modulus – Mean value (MPa)	1,825	1,475	AS 5146.2 Section 3.5
Thermal Conductivity k W/(m.K)	0.125	0.107	AS 5146.2 Section 7 or AS/NZS 4859.1
Thermal Resistance R (m ² .K)/W	R 0.40	R 0.701	
Coefficient of Thermal Expansion (mm/mm/°C)	8×10^{-6}	8×10^{-6}	AS 5146.2 Section 3

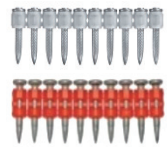


Eastland Reinforced AAC Panels (cont'd)

Properties	Panel Thickness (mm)		Reference
	50	75	
Steel Reinforcing: Yield Strength f_{yk} (MPa) Tensile Strength f_{st} (MPa) Longitudinal Bars Diameter Number per Panel Transverse Bars Diameter Max spacing	> 500 > 600 5mm 4 to 5 4mm 600mm	> 500 > 600 5mm 4 to 5 4mm 600mm	AS/NZS 4671
Combustibility	Non-combustible	Non-combustible	NCC 2022 Defined

2.1 System Accessories

The following accessories are approved for use in installing the Eastland AAC Intertency wall System.

Application	Accessory Details	
Eastland AAC reinforced panels	50mm & 75mm AAC panels, refer section 2.1 above.	
Eastland AAC Adhesive	Eastland AAC Adhesive (supplied in 20 kg bags), used for gluing the AAC panels together at the panel edges.	
Fix Eastland AAC panels to Aluminium support brackets and Light gauge steel framing	50mm Panels – 14-10x35mm Type 17 Hex head screws 75mm Panels – 14-10x65mm Type 17 Hex head screws	
Fix Aluminium support brackets to Light gauge steel framing	10-16x16mm Self-drilling Hex head Tek screws	
Fix Light Gauge Steel Framing to masonry or concrete	Hilti X-U MX 16mm or 19mm pins, using DX351 MX Powder actuated tool, or Ramset P8HC617 Premium drive 17mm pins, using Trakfast 800 tool or similar	

Application	Accessory Details	
Timber Framing (Low-rise residential only)	Timber framing in accordance with: AS 1720 Timber structures or AS 1684 Residential timber framing construction	
Light Gauge Steel Framing (Low-rise & High-rise construction)	Light Gauge Steel Framing, including Top Tracks, Bottom Tracks, Head Angles, Studs & Noggings in accordance with: NASH Standard – Residential and Low-Rise Steel Framing AS/NZS 4600 Cold formed steel structures	
Aluminium Angle Brackets	2mm BMT Aluminium bracket required to fasten the Eastland AAC panels to loadbearing Timber or Steel stud framing in low-rise intertenancy walls.	
Sealants & Backing Rod	Foam backing rod is required to control the depth of sealant joints in construction. Fire and Acoustic rated Acrylic and/or PU based sealants approved for use in Fire rated separating wall applications. Silicone based sealants are NOT recommended.	
Insulation	Typically 75mm-90mm thick Glasswool insulation batts (R2.0-R2.7) installed within the adjacent stud frames. Insulation is primarily used for acoustic purposes.	
Plasterboard	Depending on the application, 10mm, 13mm or 16mm thick plasterboard may be required (in single or multiple layers). Some specific applications may require the plasterboard to be Fire resistant and/or Moisture resistant.	

3. Intertenancy Wall System Compliance

3.1 Building Code of Australia

The Building Code of Australia (BCA) is part of the National Construction Code (NCC) which defines the minimum standards by which buildings are designed and constructed. The BCA comprises two volumes:

- BCA Volume 1 – Establishes the requirements for multi-residential, commercial and public buildings, defined as Class 2 to 9 buildings.

- BCA Volume 2 (including the Housing Provisions) Establishes the standards for domestic residential construction, defined as Class 1 and 10 buildings.

Within the context of internal separating wall systems, the BCA is structured to provide minimum requirements for Structure, Fire Safety & Resistance and Acoustic attenuation.

Eastland AAC Intertenancy wall systems may be used for a wide range of intertenancy and separating walls and is compliant (or contributes to compliance) with the following sections of the BCA:

BCA 2022 (A1)	Volume One	Volume Two & Housing Provisions	Applications
Structure	B1D4 Determination of structural resistance of materials and forms of construction	H1P1 Structural reliability and resistance	Intertenancy separation walls & Service shaft walls
Fire	C2D2 Fire resistance and stability (Refer Specification 5) C2D10 Non-combustible building elements	H3D4 Fire protection of separating walls and floors, refer Housing Provisions Part 9.3 for Separating walls H3D5 Fire protection of garage top dwellings, refer Housing Provisions Part 9.4 for Walls requiring protection	Intertenancy separation walls & Service shaft walls
Acoustics	F7D6 Sound insulation rating of walls	H4D8 Sound insulation, refer Housing Provisions Part 10.7 for Separating walls	Intertenancy separation walls & Service shaft walls

Section 4 of this manual provides specific details relating to the performance of the Eastland AAC Intertenancy wall system. While this technical manual may provide guidance on some select BCA requirements, it is the responsibility of

relevant project professionals to ensure the construction systems specified and installed meet all relevant BCA requirements.

3.2 AS 5146 – Reinforced Autoclaved Aerated Concrete

The structural properties of Eastland AAC panels in 50mm and 75mm thickness (detailed in section 2.1 of this manual) have been determined by testing and calculation in accordance with AS 5146.2:2018.

The Eastland reinforced AAC panel products are considered compliant with AS 5146 “Reinforced Autoclaved Aerated Concrete”, which comprises 3 parts:

- AS 5146.1:2015 “Reinforced Autoclaved Aerated Concrete Part 1 – Structures”

- AS 5146.2:2018 “Reinforced Autoclaved Aerated Concrete Part 2 – Design”
- AS 5146.3:2018 “Reinforced Autoclaved Aerated Concrete Part 3 – Construction”

The above Standards are referenced in the BCA meaning AS 5146 compliant AAC products are Deemed-to-Satisfy (DTS) for Structural and Weatherproofing requirements of the BCA. Both 50mm and 75mm thick AAC panels installed Horizontally and Vertically are included in the construction requirements of AS 5146.3.

3.3 Standards Compliance

In addition to the AS 5146 series, all design and construction works are required to be carried out in accordance with the BCA (as discussed in 3.1 above) and the relevant standards, which may include (but are not limited to):

- AS/NZS 1170.0:2002 Structural design actions – General principles
- AS/NZS 1170.1:2002 Structural design actions – Permanent, imposed and other actions
- AS/NZS 1170.2:2021 Structural design actions – Wind actions
- AS 4055:2021 Wind loads for housing
- AS 1720.1:2010 Timber structures – Design methods
- AS 1720.3:2016 Timber structures – Design criteria for timber-framed residential buildings
- AS 1684.2:2021 Residential timber-framed construction – Non-cyclonic areas
- AS 1684.3:2021 Residential timber-framed construction – Cyclonic areas
- AS 1684.4:2021 Residential timber-framed construction – Simplified – Non-cyclonic areas
- NASH Standard – Residential and Low-rise Steel Framing, Part 1: Design Criteria (2006)
- NASH Standard – Residential and Low-rise Steel Framing, Part 2: Design Solutions (2014)
- AS 3623:1993 (R2018) Domestic metal framing
- AS 4100:2020 Steel structures
- AS/NZS 4600:2018 Cold formed steel structures
- AS 2904:1995 Damp proof courses and flashings
- AS 2870:2011 Residential slabs and footings
- AS 3600:2018 Concrete Structures
- AS 3999:2015 Bulk thermal insulation – Installation
- AS/NZS 2589:2017 Gypsum linings – Application and finishing
- AS 1905.1:2015 Components for the protection of openings in fire-resistant walls – Fire-resistant doorsets

4. Designing with Eastland AAC

The following design process is used to ensure your Eastland AAC Intertenancy wall system is suitable for the intended purposes:

4.1 Low-rise Residential Intertenancy Walls

1. Consult the project engineer to determine all relevant loads on the intertenancy walls. Where relevant use a no minal internal wind pressure (refer AS 4055 or AS/NZS 1170.2).
2. Refer to Project Engineer or Stud Frame supplier / installer for design specifications for base structural wall system design (typically Timber or Steel stud frame).
3. Determine any additional design criteria for the Intertenancy walls, as required by the relevant provisions of the BCA, including but not limited to:
 - a.Fire resistance (FRLs)
 - b.Sound transmission and insulation
 - c.Provision & Treatment of Services
- 4.Check the relevant construction details with reference to FRLs and Acoustic requirements.

5. Plan AAC panel layout including movement joint locations according to building geometry.

Eastland AAC Low-rise Residential Intertenancy wall systems may be installed in conjunction with a variety of substrates, including:

- Timber framing in accordance with AS 1684 and/or AS 1720
- Lightweight steel framing in accordance with AS 4600 and/or NASH standard
- Concrete structures (including permanent formwork) in accordance with AS 3600
- Masonry structures in accordance with AS 3700 and/or AS 4773
- Structural Steel in accordance with AS 4100

4.2 High-rise Multi-Residential Intertenancy Walls

1. Consult the project engineer to determine all relevant loads on the intertenancy walls, including the wind pressures on the internal walls (refer AS 4055 or AS/NZS 1170.2).
2. Refer to Steel Stud Frame supplier / installer for design specifications for the ancillary wall system design specifications (typically Steel stud frame).
3. Determine any additional design criteria for the Intertenancy walls, as required by the relevant provisions of the BCA, including but not limited to:
 - a.Fire resistance (FRLs)
 - b.Sound transmission and insulation
 - c.Provision & Treatment of Services
- 4.Check the relevant construction details with reference to FRLs and Acoustic requirements.

5. Plan AAC panel layout including movement joint locations according to building geometry.

Eastland AAC High-rise Multi-Residential Intertenancy wall systems may be installed in conjunction with a variety of substrates, including:

- Lightweight steel framing in accordance with AS 4600 and/or NASH standard
- Concrete structures (including permanent formwork) in accordance with AS 3600
- Masonry structures in accordance with AS 3700 and/or AS 4773
- Structural Steel in accordance with AS 4100

5. System Performance

5.1 Non-Combustible

Non-combustible

Eastland AAC materials are deemed non-combustible according to BCA 2022 Volume One C2D10 (4).

All elements of Intertency wall systems are required to be non-combustible in accordance with the general concessions provided in BCA 2022 Volume 1 C2D10.

5.2 Fire Resistance Levels

All Intertency wall systems are required to provide Resistance to Fire as defined in the relevant parts of the BCA, the Eastland AAC Intertency wall systems shall be specified and constructed to provide the required Fire Resistance Levels (FRLs) as nominated in the BCA.

The system FRLs have been developed in accordance with BCA 2022 (A2) Specification 1 and may be used by project Fire Engineers to develop project specific Fire Engineering designs & specifications.

5.2.1 Low-Rise Residential

For Low-Rise Residential construction (BCA Volume 2), Fire Rated construction in both directions is presented by the Eastland AAC panels, the framing on each side of the Intertency wall and the respective plasterboard layers do not contribute to the Fire Resistance of the wall system.

Each structural frame is designed to independently support the Eastland AAC panels in the event of a fire on the opposite side of the Intertency wall. On the fire exposed side of the wall, the Aluminium brackets are designed to allow the framing to burn and/or fall away without disturbing the Eastland AAC panels.

The various wall system options and relevant FRLs are provided in the tables on the following page.

5.2.2 High-Rise Multi-Residential

For High-Rise Multi-residential construction (BCA Volume 1), the Eastland AAC panels provide Fire Resistance for one side of the wall with the adjacent steel stud frame requiring protection from a fire in that occupancy by fire resistant plasterboard.

The various wall system options and relevant FRLs are provided in the tables on the following page.

5.3 Acoustics – Sound Insulation

The BCA nominates the Performance Requirements for sound insulation ratings. These acoustic performance ratings set minimum values to evaluate two types of sound, airborne and impact sound.

The airborne sound performance criteria is documented as either the weighted sound reduction index (R_w) or weighted reduction index with spectrum adaptation term ($R_w + C_{tr}$).

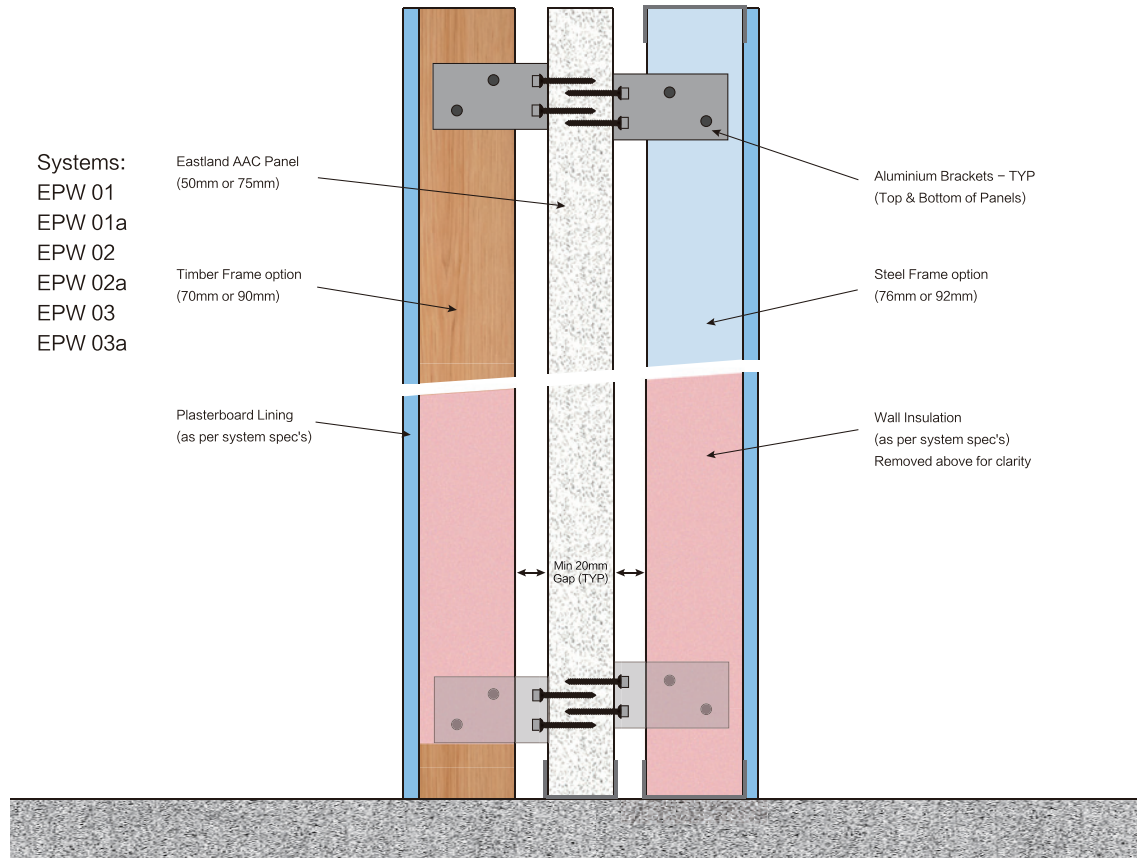
Impact sound attenuation for walls is achieved by ensuring discontinuous construction across the wall construction as described in section 1.4 of this manual.

The enclosed Acoustic performance details have been developed in accordance with the requirements of BCA 2022 and may be used by project acoustic consultants to develop project specific Acoustic performance and compliance documentation and specifications.

5.4 Low-Rise Residential Intertenancy Wall Options

The following wall system options for Low-rise Residential Intertenancy Walls are presented along with the respective Fire and Acoustic performance details for each option.

5.4.1 Eastland Low-Rise Party Walls – EPW 01, 01a, 02, 02a, 03 & 03a

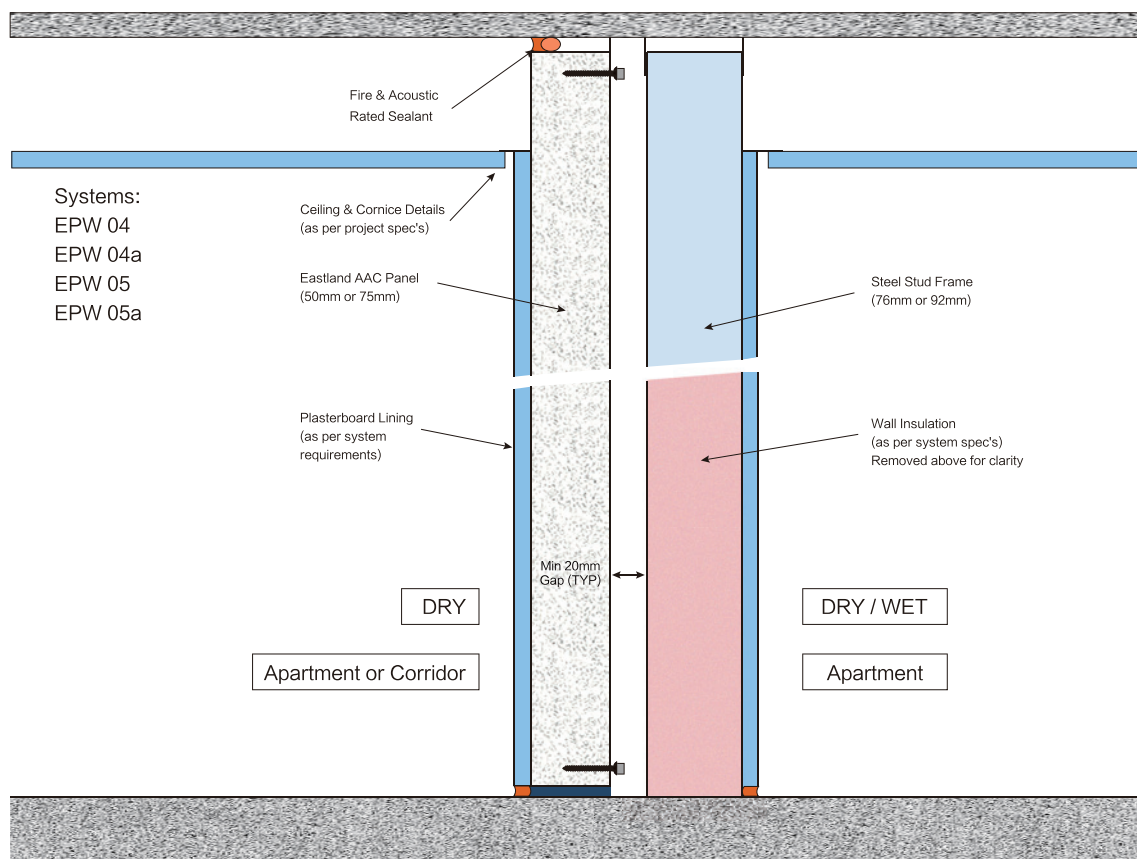


TIMBER FRAMED CONSTRUCTION - LOADBEARING													
System #	Lining	Timber Frame	Insulation	Air Gap	AAC Panel	Air Gap	Insulation	Timber Frame	Lining	Wall Thickness	FRL	R _w	R _w + C _{tr}
EPW 01	10mm Standard Plasterboard	70mm Timber Stud Frame	R2.0 HD G/W Insulation (14 kg/m³)	20mm Air Gap	75mm Eastland AAC	20mm Air Gap	R2.0 HD G/W Insulation (14 kg/m³)	70mm Timber Stud Frame	10mm Standard Plasterboard	275mm	120/120/120	66	52
EPW 01a	13mm Standard Plasterboard								13mm Standard Plasterboard	281mm	120/120/120	69	55
EPW 02	10mm Standard Plasterboard	90mm Timber Stud Frame	R2.0 G/W Insulation (11 kg/m³)	20mm Air Gap	50mm Eastland AAC	20mm Air Gap	R2.0 G/W Insulation (11 kg/m³)	90mm Timber Stud Frame	10mm Standard Plasterboard	290mm	90/90/90	66	52
EPW 02a	13mm Standard Plasterboard								13mm Standard Plasterboard	296mm	90/90/90	69	55
EPW 03	Standard Plasterboard				10mm Standard Plasterboard	315mm	120/120/120		70	55			
	13mm Standard Plasterboard				13mm Standard Plasterboard								
EPW 03a	13mm Standard Plasterboard				321mm	120/120/120	72		58				
STEEL FRAMED CONSTRUCTION - LOADBEARING													
System#	Lining	Steel Frame	Insulation	AirGap	AAC Panel	Air Gap	Insulation	Steel Frame	Lining	Wall Thickness	FRL	R _w + C _{tr}	R _w + C _{tr}
EPW 01	10mm Standard Plasterboard	76mm Steel Stud Frame	R2.0 HD G/W Insulation (14 kg/m³)	20mm Air Gap	75mm Eastland AAC	20mm Air Gap	R2.0 HD G/W Insulation (14 kg/m³)	76mm Steel Stud Frame	10mm Standard Plasterboard	287mm	120/120/120	67	53
EPW 01a	13mm Standard Plasterboard								13mm Standard Plasterboard	293mm	120/120/120	70	56
EPW 02	10mm Standard Plasterboard	92mm Steel Stud Frame	R2.0 G/W Insulation (11 kg/m³)	20mm Air Gap	50mm Eastland AAC	20mm Air Gap	R2.0 G/W Insulation (11 kg/m³)	92mm Steel Stud Frame	10mm Standard Plasterboard	294mm	90/90/90	67	52
EPW 02a	13mm Standard Plasterboard								13mm Standard Plasterboard	300mm	90/90/90	69	55
EPW 03	Standard Plasterboard				10mm Standard Plasterboard	319mm	120/120/120		70	56			
	13mm Standard Plasterboard				13mm Standard Plasterboard								
EPW 03a	13mm Standard Plasterboard	325mm	120/120/120	73	58								

5.5 High-Rise Multi-Residential Intertenancy Wall Options

The following wall system options for High-rise Multi-Residential Intertenancy Walls are presented along with the respective Fire and Acoustic performance details for each option.

5.5.1 Eastland Party Walls – EPW 04, 04a, 05 & 05a

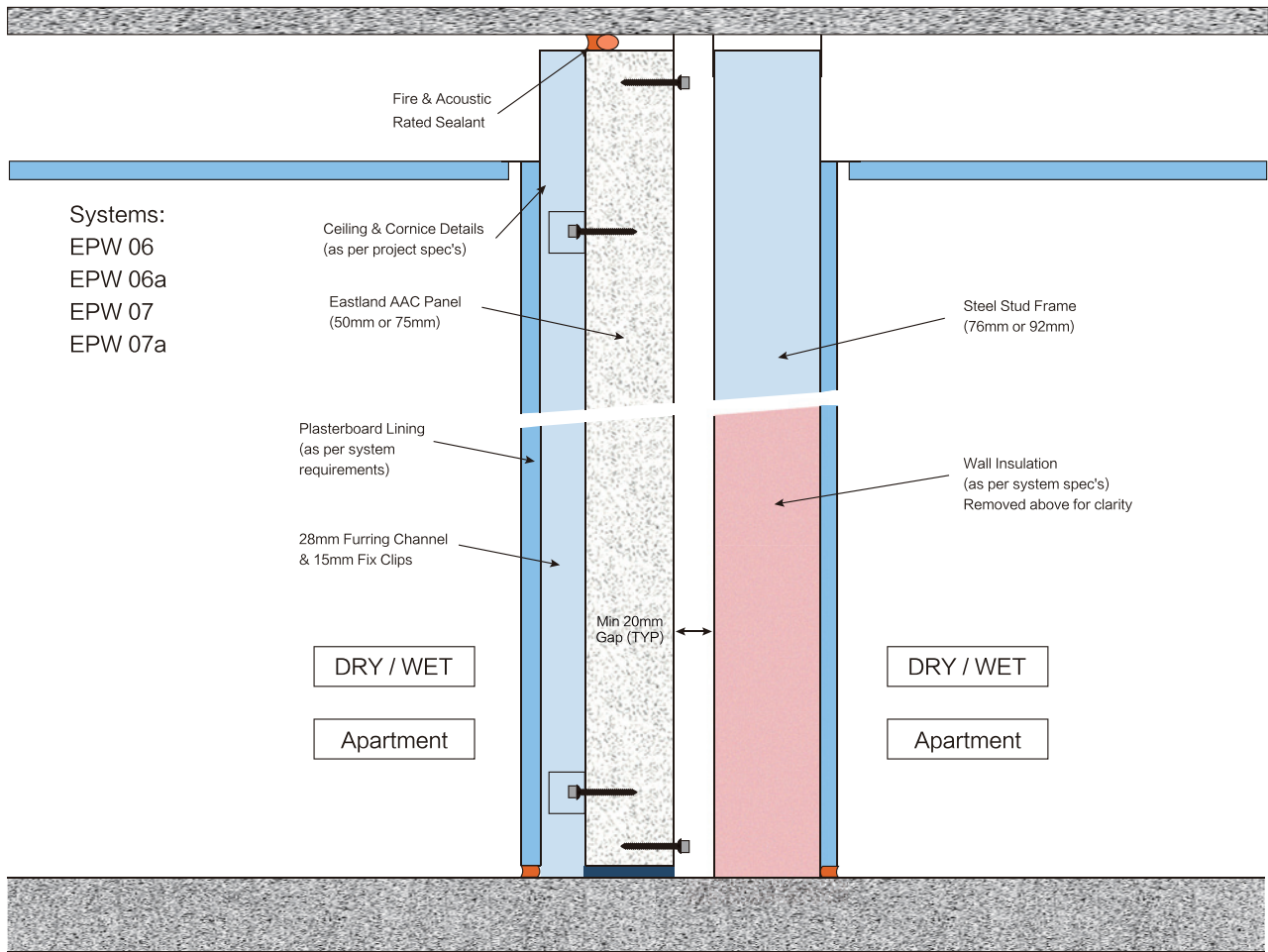


The following Wall options are suitable for Intertenancy and Corridor Walls, they also comply with discontinuous construction requirements for impact sound.

STEEL FRAMED CONSTRUCTION - NON LOADBEARING													
System #	Description	Lining	Frame	Insulation	Air Gap	AAC Panel	Ancillary Framing & Insulation	Lining	Wall Thickness	FRL	R _w	R _w + C _{tr}	
EPW 04	Dry to Dry	13mm FR Plasterboard	76mm Steel Stud Frame	R2.0 HD G/W Insulation (14kg/m³)	20mm Air Gap	50mm Eastland AAC	Nil	13mm FR Plasterboard	172	-/60/60	60	50	
	Wet to Dry	13mm FR / Wet Plasterboard						13mm FR Plasterboard		-/60/60	60	50	
	Wet to Wet	13mm FR / Wet Plasterboard						13mm FR / Wet Plasterboard		-/60/60	60	50	
EPW 04a	Dry to Dry	13mm FR Plasterboard	92mm Steel Stud Frame	R2.0 G/W Insulation (11kg/m²)	20mm Air Gap		Nil	13mm FR Plasterboard	188	-/60/60	62	52	
	Wet to Dry	13mm FR / Wet Plasterboard						13mm FR Plasterboard		-/60/60	62	52	
	Wet to Wet	13mm FR / Wet Plasterboard						13mm FR / Wet Plasterboard		-/60/60	62	52	
EPW 05	Dry to Dry	13mm FR Plasterboard	76mm Steel Stud Frame	R2.0 HD G/W Insulation (14kg/m³)	20mm Air Gap		75mm Eastland AAC	Nil	13mm FR Plasterboard	197	-/90/90	64	54
	Wet to Dry	13mm FR / Wet Plasterboard							13mm FR Plasterboard		-/90/90	64	54
	Wet to Wet	13mm FR / Wet Plasterboard							13mm FR / Wet Plasterboard		-/90/90	64	54
EPW 05a	Dry to Dry	13mm FR Plasterboard	92mm Steel Stud Frame	R2.0 G/W Insulation (11kg/m³)	20mm Air Gap	Nil		13mm FR Plasterboard	213	-/90/90	65	55	
	Wet to Dry	13mm FR / Wet Plasterboard						13mm FR Plasterboard		-/90/90	65	55	
	Wet to Wet	13mm FR / Wet Plasterboard						13mm FR / Wet Plasterboard		-/90/90	65	55	

Note: "Wet" above means Plasterboard suitable for use in Wet areas.

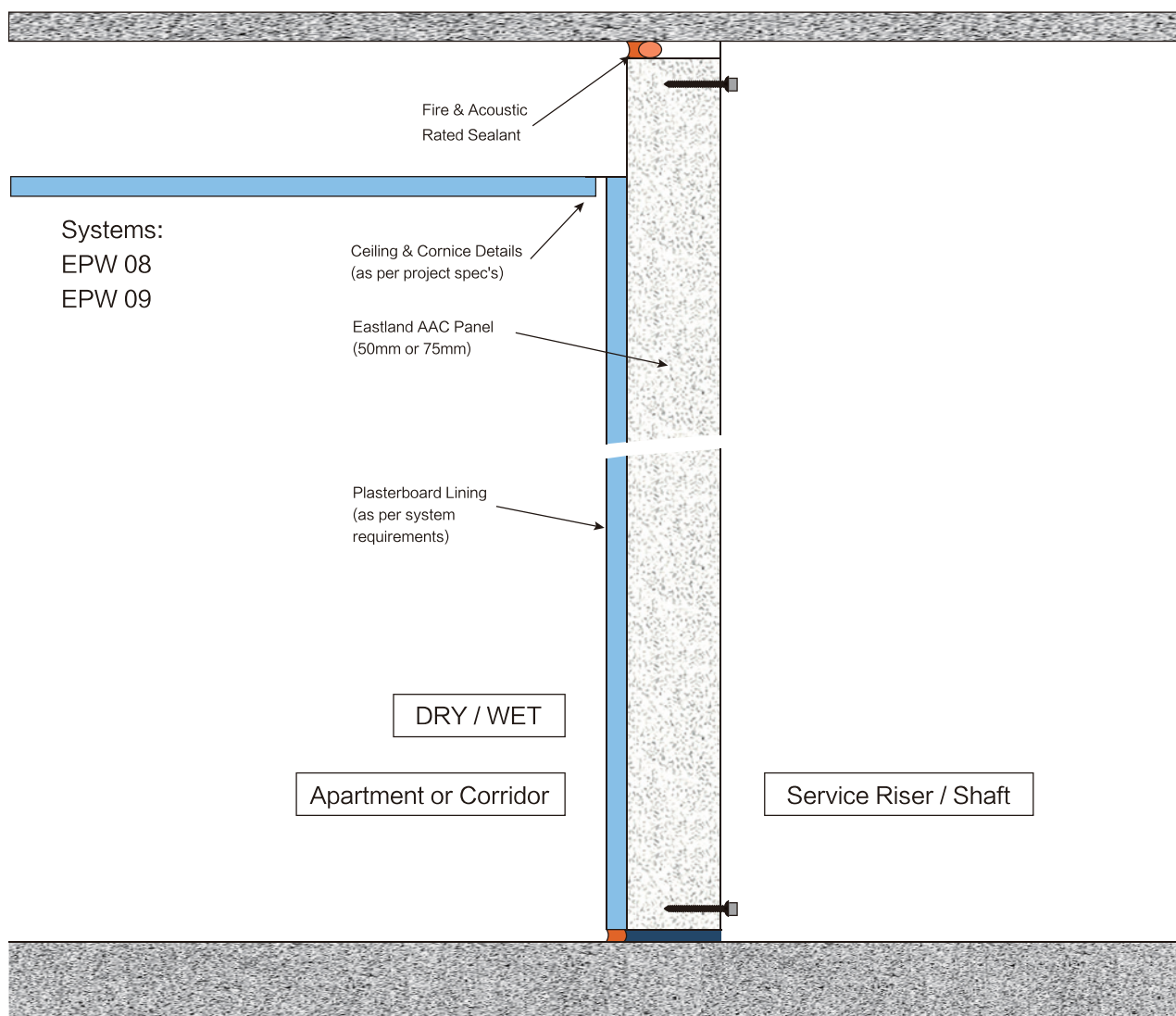
5.5.2 Eastland Party Walls – EPW 06, 06a, 07 & 07a



STEEL FRAMED CONSTRUCTION - NON LOADBEARING												
System #	Description	Lining	Frame	Insulation	Air Gap	AAC Panel	Ancillary Framing & Insulation	Lining	Wall Thickness	FRL	$R_w + C_e$	$R_w + C_{tr}$
EPW 6	Dry to Dry	13mm FR Plasterboard	76mm Steel Stud Frame	R2.0 HD G/W Insulation (14kg/m³)	20mm Air Gap	50mm Eastland AAC	28mm Furring Channel with 15mm Fix Clips & R1.3 HD G/W Insulation (14kg/m³)	13mm FR Plasterboard	215	-/60/60	62	50
	Wet to Dry	13mm FR / Wet Plasterboard						13mm FR Plasterboard		-/60/60	62	50
	Wet to Wet	13mm FR / Wet Plasterboard						13mm FR / Wet Plasterboard		-/60/60	62	50
EPW 6a	Dry to Dry	13mm FR Plasterboard	92mm Steel Stud Frame	R2.0 G/W Insulation (11kg/m³)	20mm Air Gap	50mm Eastland AAC	28mm Furring Channel with 15mm Fix Clips & R1.3 HD G/W Insulation (14kg/m³)	13mm FR Plasterboard	231	-/60/60	62	50
	Wet to Dry	13mm FR / Wet Plasterboard						13mm FR Plasterboard		-/60/60	62	50
	Wet to Wet	13mm FR / Wet Plasterboard						13mm FR / Wet Plasterboard		-/60/60	62	50
EPW 7	Dry to Dry	13mm FR Plasterboard	76mm Steel Stud Frame	R2.0 HD G/W Insulation (14kg/m³)	20mm Air Gap	75mm Eastland AAC	28mm Furring Channel with 15mm Fix Clips & R1.3 HD G/W Insulation (14kg/m³)	13mm FR Plasterboard	240	-/90/90	65	52
	Wet to Dry	13mm FR / Wet Plasterboard						13mm FR Plasterboard		-/90/90	65	52
	Wet to Wet	13mm FR / Wet Plasterboard						13mm FR / Wet Plasterboard		-/90/90	65	51
EPW 7a	Dry to Dry	13mm FR Plasterboard	92mm Steel Stud Frame	R2.0 G/W Insulation (11kg/m³)	20mm Air Gap	75mm Eastland AAC	28mm Furring Channel with 15mm Fix Clips & R1.3 HD G/W Insulation (14kg/m³)	13mm FR Plasterboard	256	-/90/90	65	53
	Wet to Dry	13mm FR / Wet Plasterboard						13mm FR Plasterboard		-/90/90	65	53
	Wet to Wet	13mm FR / Wet Plasterboard						13mm FR / Wet Plasterboard		-/90/90	65	52

Note: "Wet" above means Plasterboard suitable for use in Wet areas.

5.5.3 Eastland Party Walls – EPW 08 & 09



AAC PANELS SPANNING FLOOR TO SLAB - NON LOADBEARING												
System #	Description	Lining	Frame	Insulation	AirGap	AAC Panel	Ancillary Framing & Insulation	Lining	Wall Thickness	FRL	R _w	R _w + C _{tr}
EPW 8	Shaft/ Service Wall	Nil	Nil	Nil	Nil	50mm Eastland AAC	Nil	Nil	50	-/60/60	33	30
		13mm FR / Wet Plasterboard							63	-/90/90	36	34
		13mm FR Plasterboard								-/90/90	36	34
EPW 9	Shaft/ Service Wall	Nil	Nil	Nil	Nil	75mm Eastland AAC	Nil	Nil	75	-/90/90	36	33
		13mm FR / Wet Plasterboard							88	-/90/90	37	35
		13mm FR Plasterboard	28mm Furring Channel with 15mm Clips	R1.3 HD G/W Insulation (14kg/m³)					131	-/120/120	50	40

Note: "Wet" above means Plasterboard suitable for use in Wet areas.

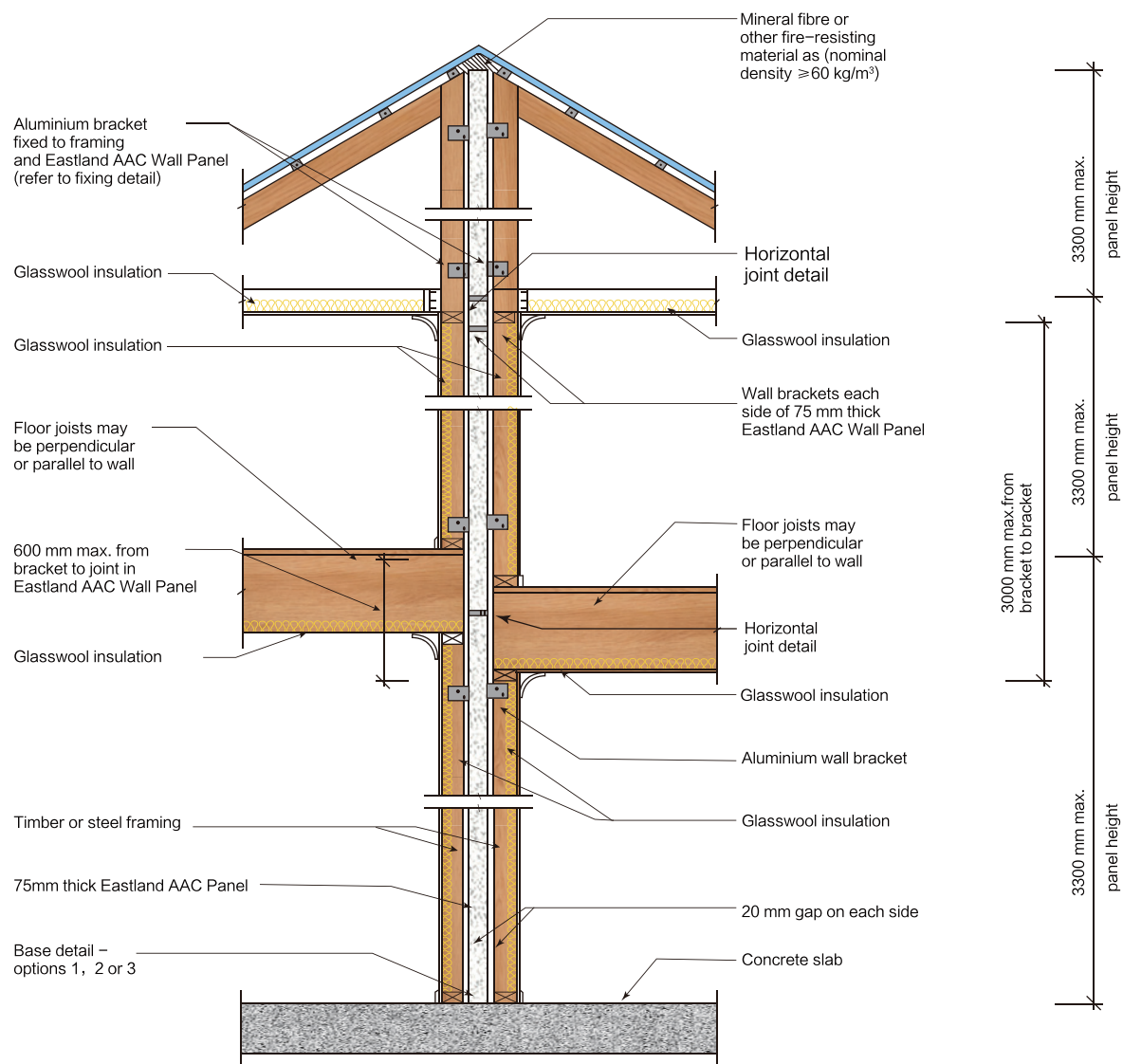
6. Construction Details

6.1 Low-Rise Residential Intertenancy Walls

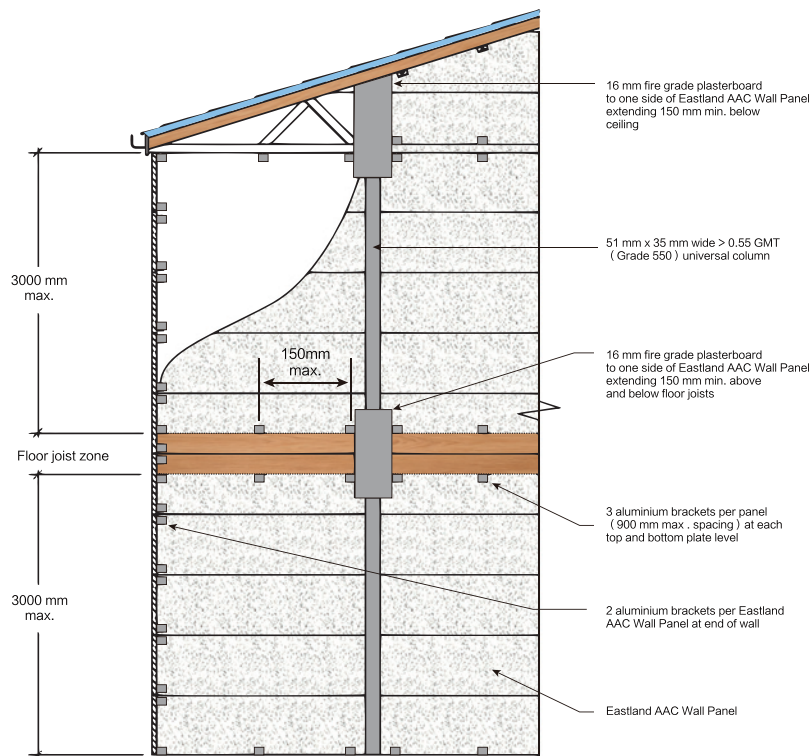
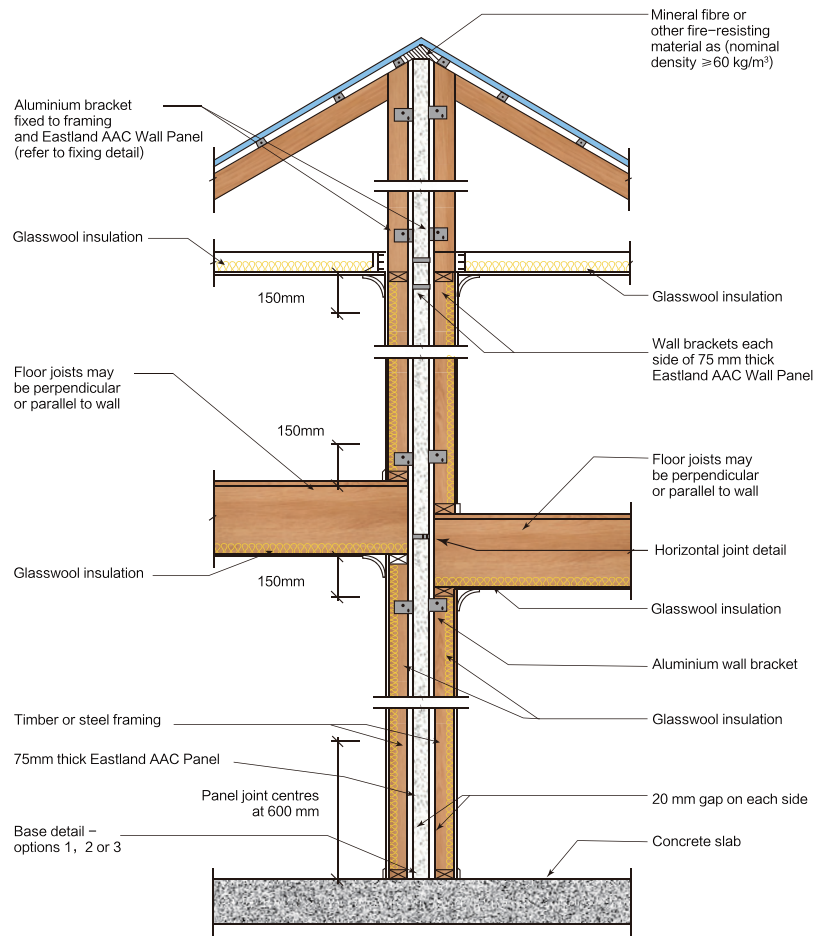
The following construction details are relevant for construction using either 50mm or 75mm Eastland AAC panels. Typically 50mm panels are installed Horizontally

in vertical support channels and 75mm panels installed vertically, panels require lateral support from the structural framing either side of the AAC panels.

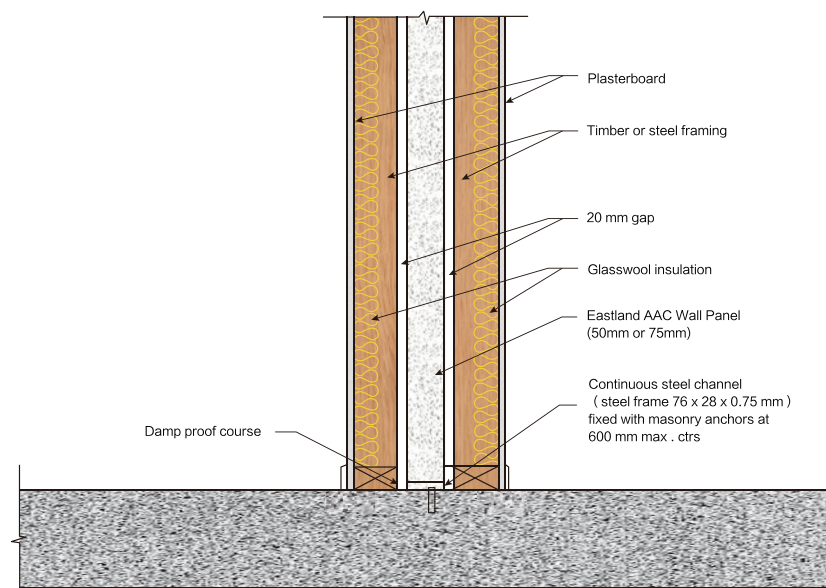
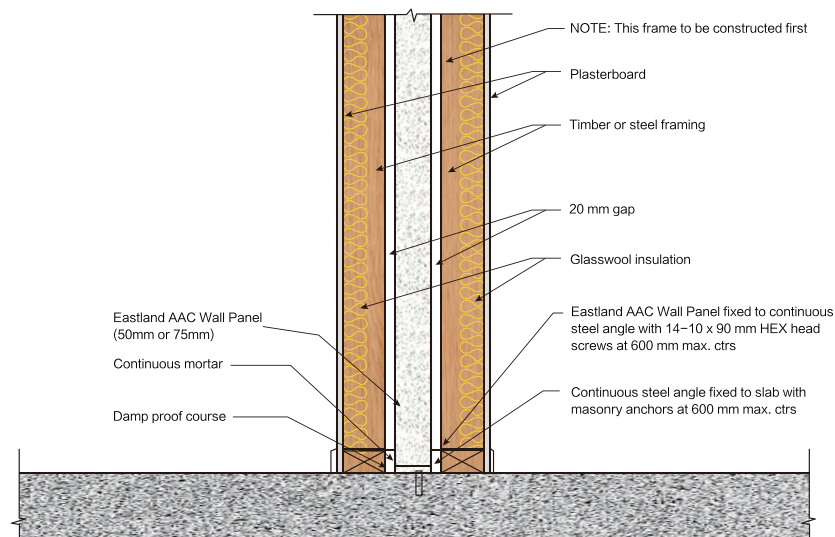
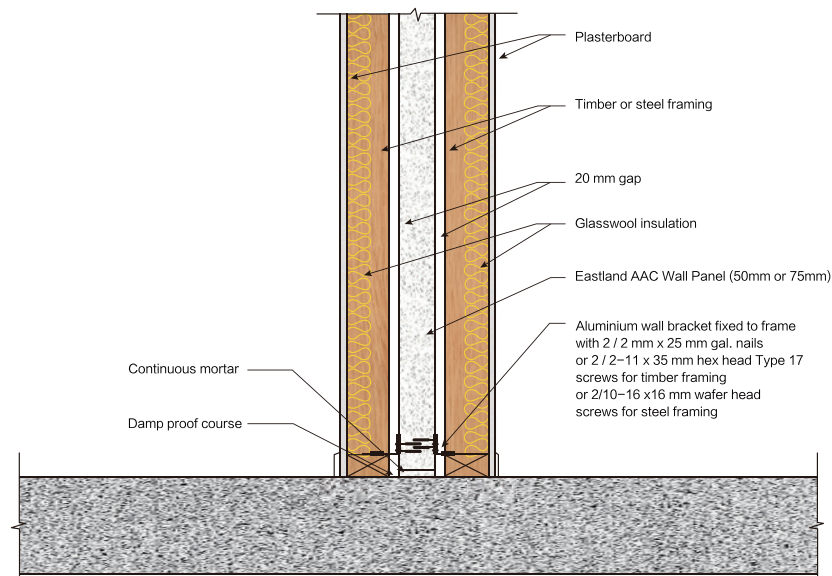
6.1.1 Typical Wall Elevation – Vertical 75mm Panels



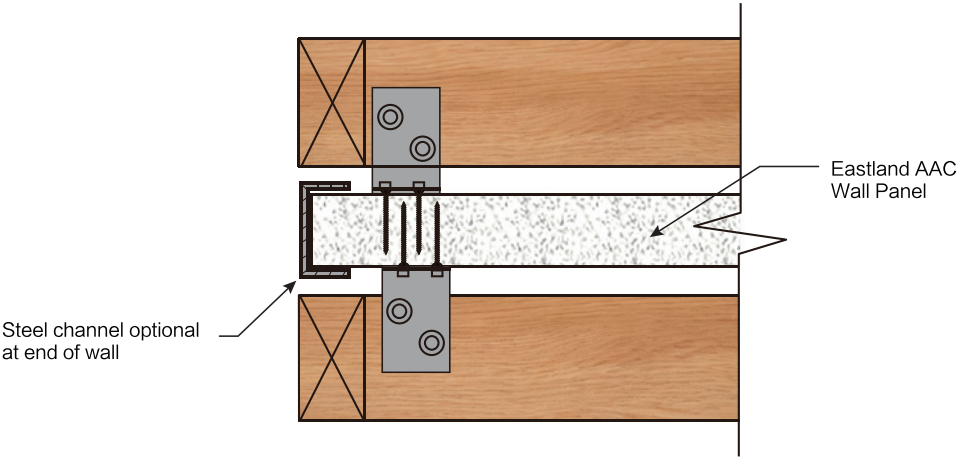
6.1.2 Typical Wall Elevation – Horizontal 50mm Panels



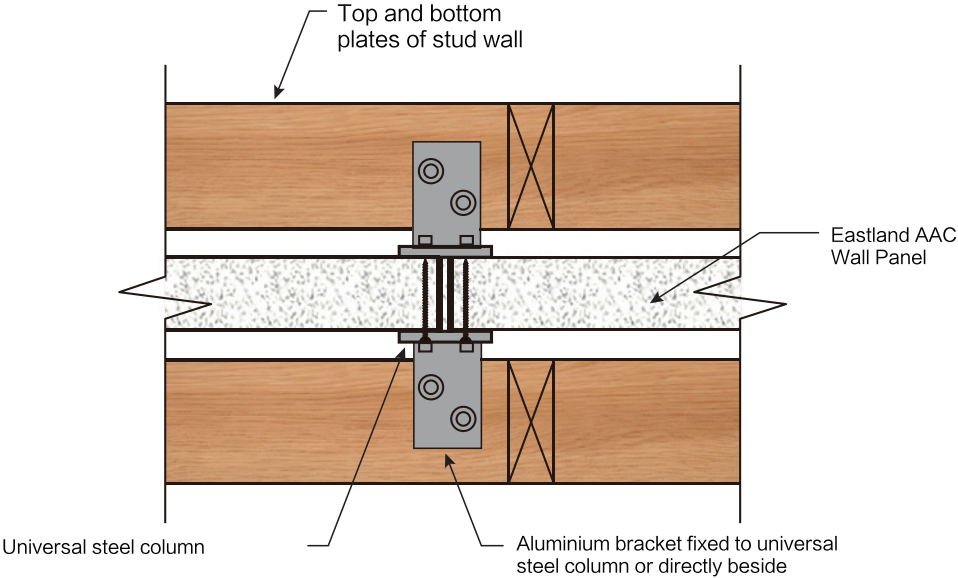
6.1.3 Wall Base Options – 50mm & 75mm Panels



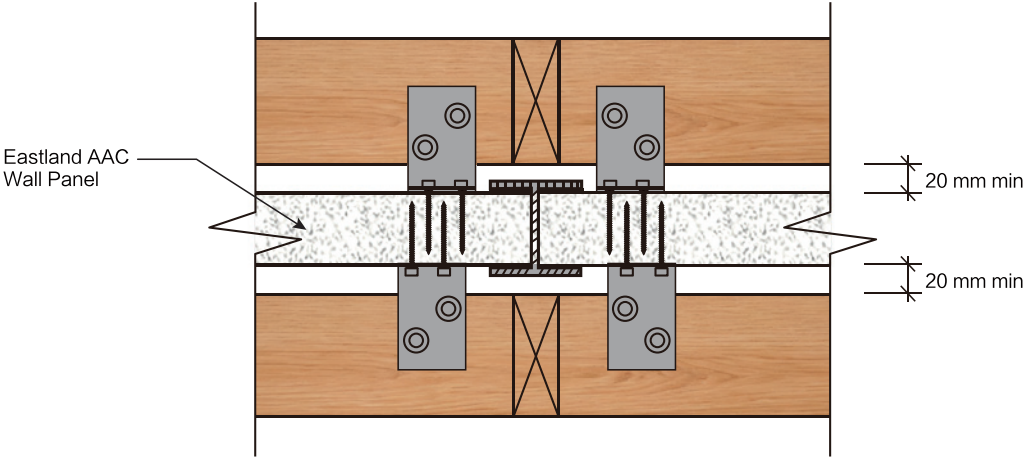
6.1.4 Vertical Channel Details – Horizontal 50mm Panels



(a)

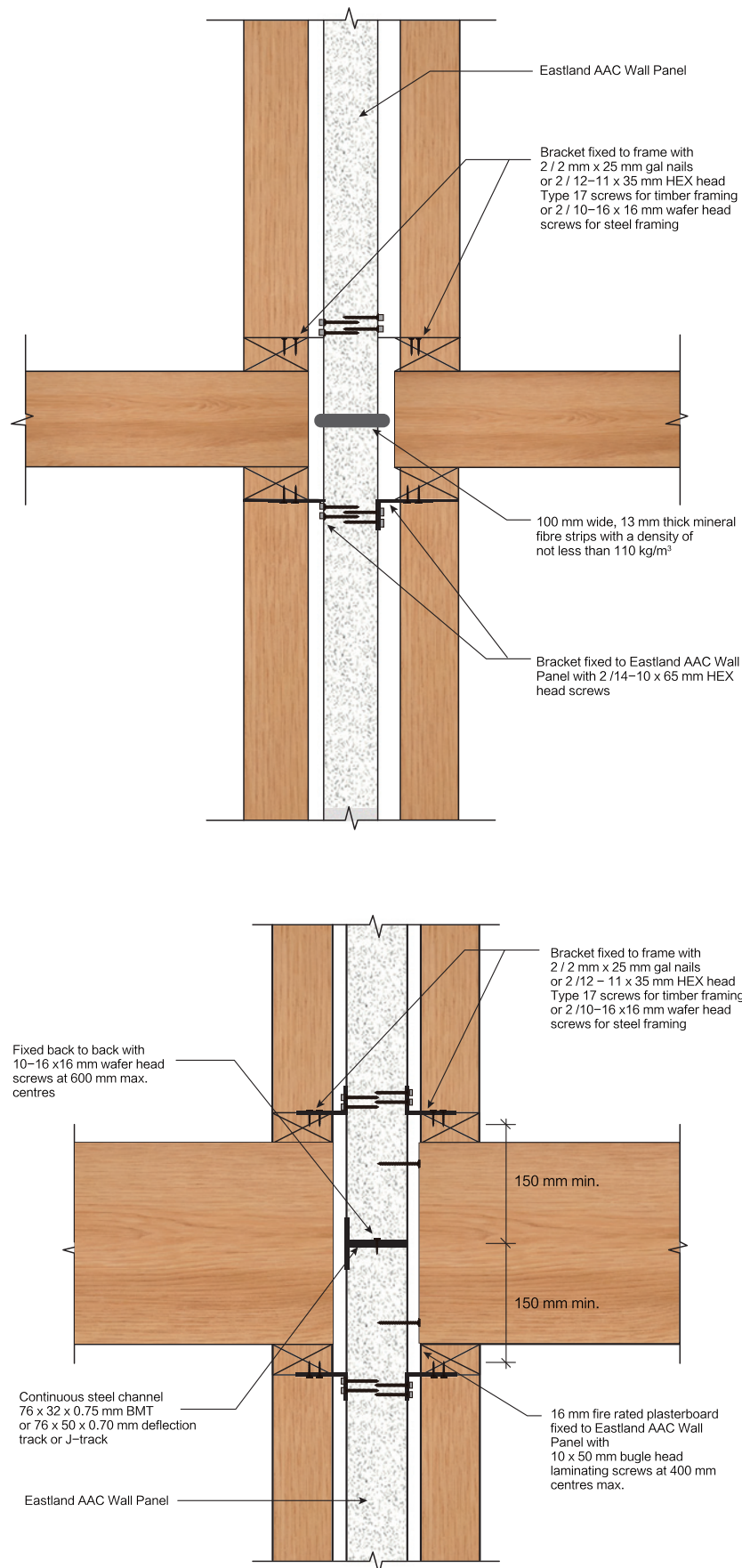


(b)

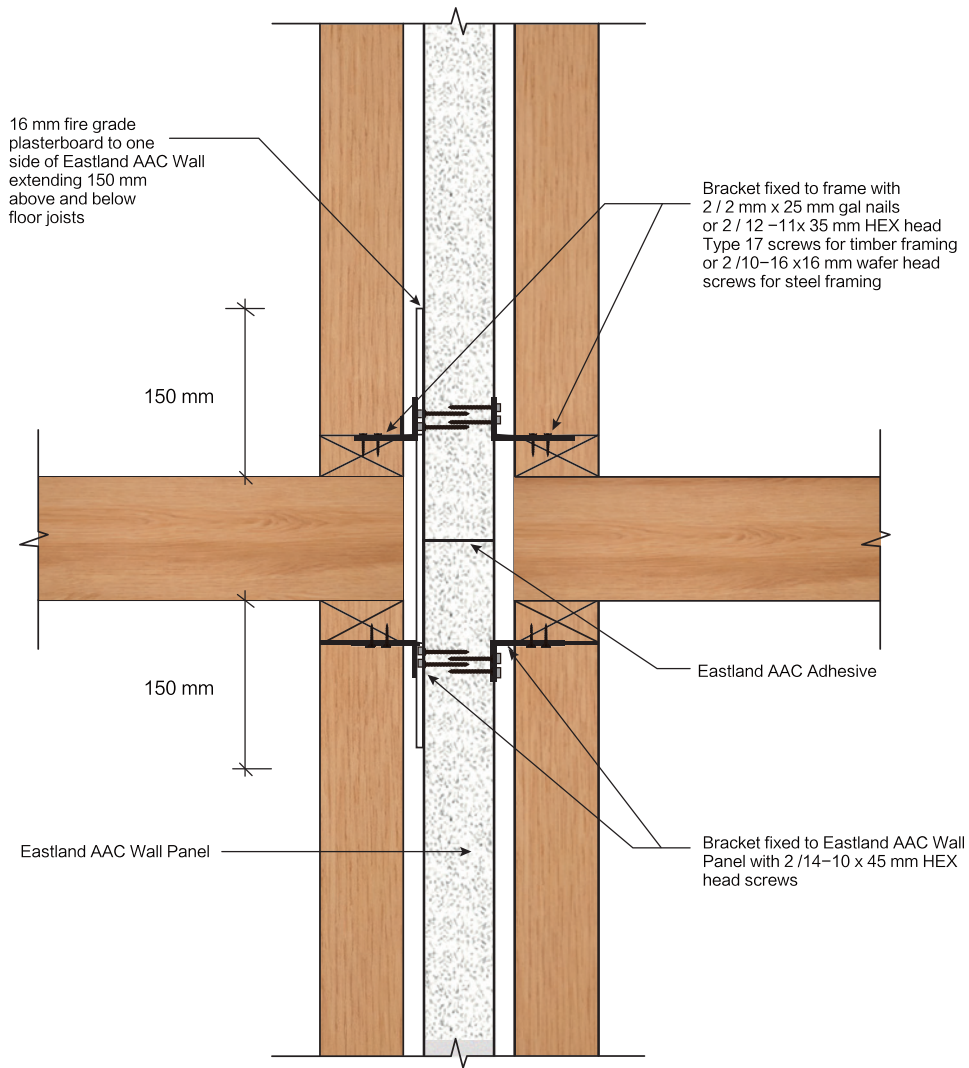


(c)

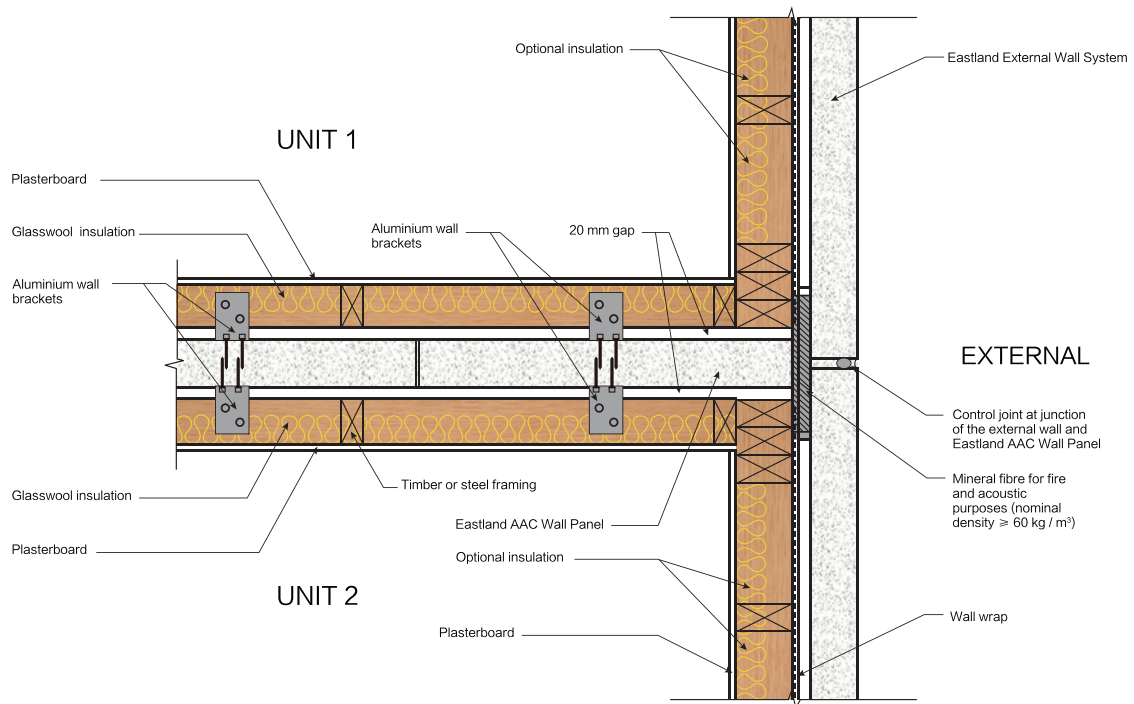
6.1.5 Horizontal Joint for Vertical Panels – Options



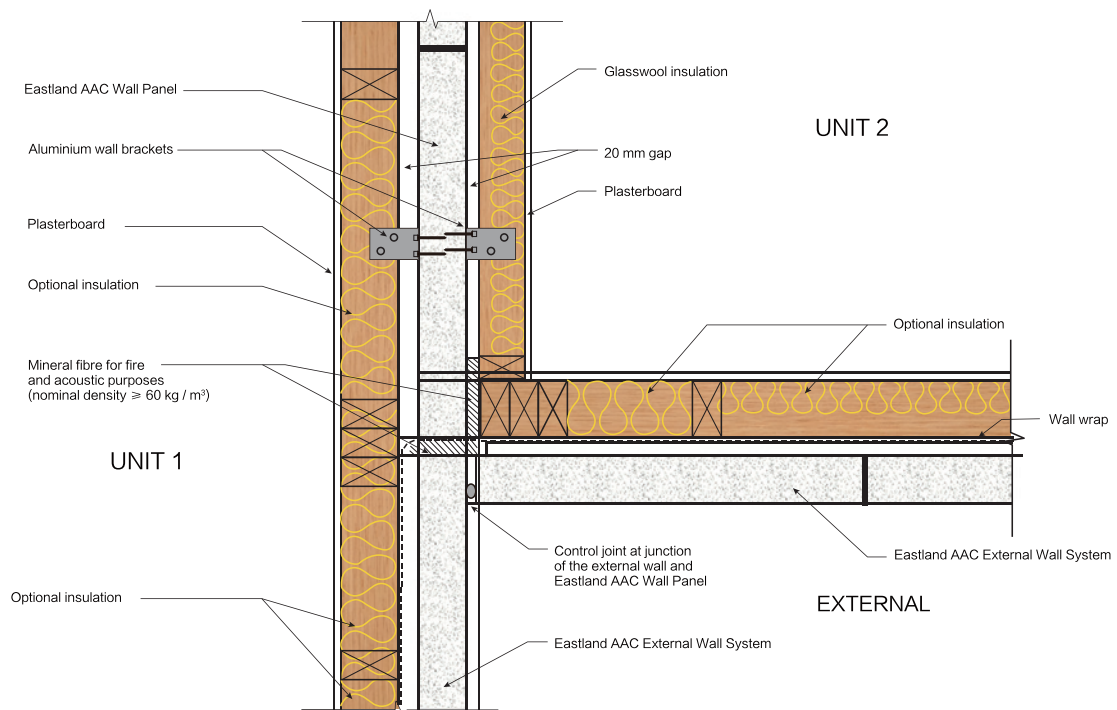
6.1.6 Horizontal Joint for Horizontal Panels



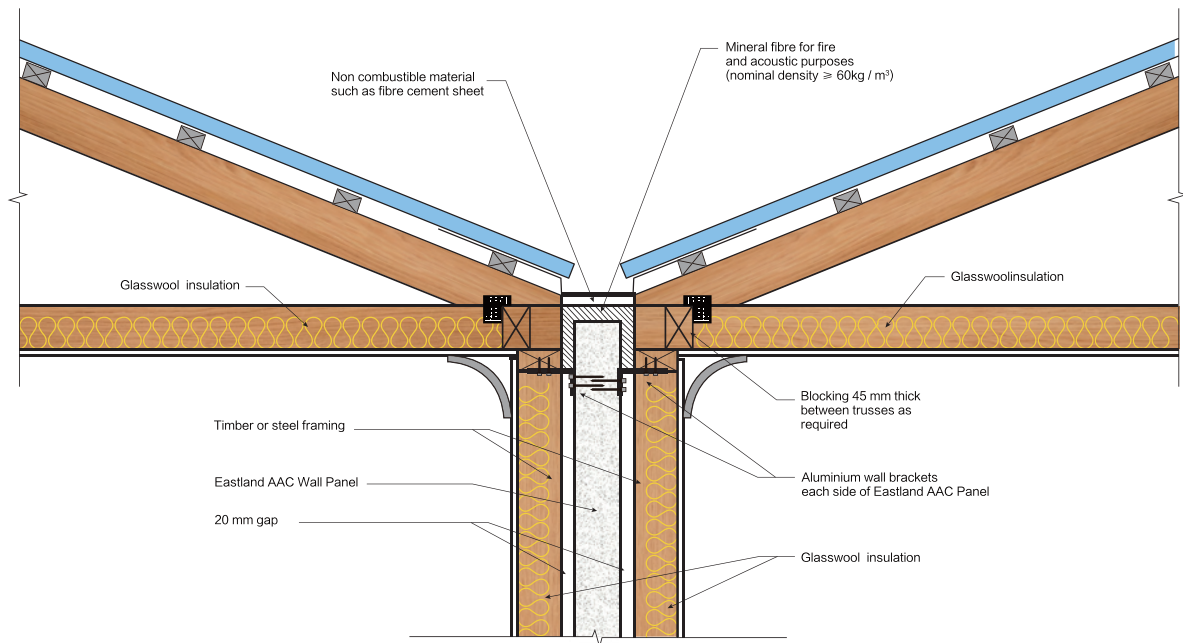
6.1.7 External Wall Junction



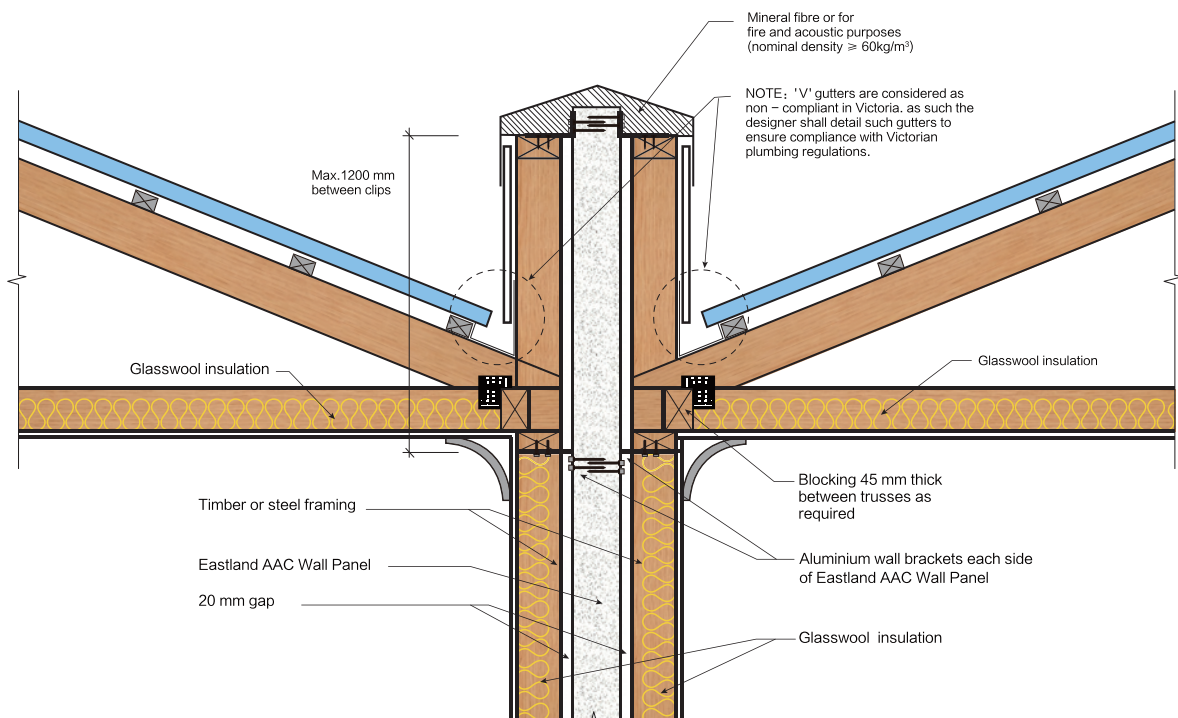
6.1.8 External Wall Junction at Corner



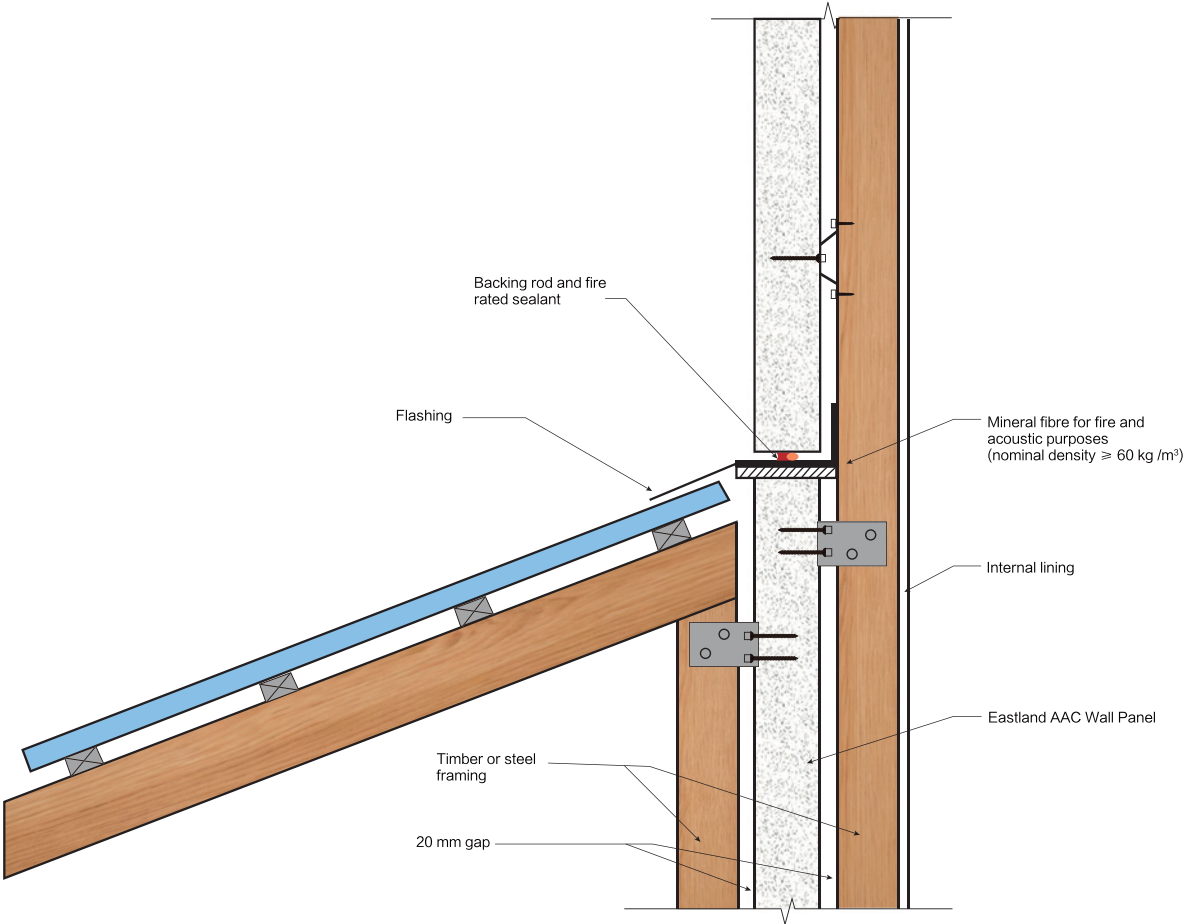
6.1.9 Roof Junctions – Valley Gutter



6.1.10 Roof Junctions – Roof Parapet



6.1.11 Transition from Intertenancy Wall to External Wall – Step in Roof

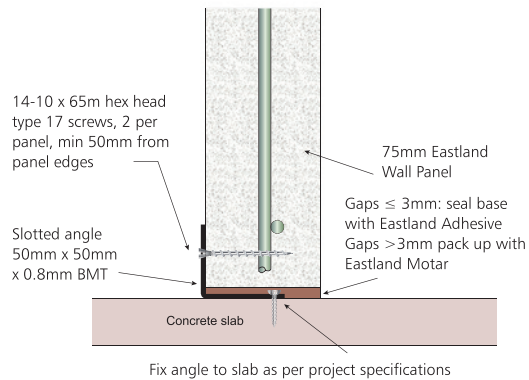


6.2 High-Rise Multi-Residential Intertenancy Walls

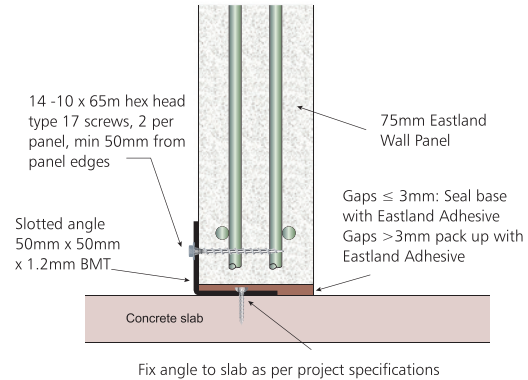
High-Rise Multi-Residential Intertenancy Walls are non-loadbearing, AAC panels are installed either vertically or horizontally and require lateral support at the slab and soffit. Details are relevant for 50mm & 75mm Eastland AAC panels.

6.2.1 Wall Base Options

For panel heights $\leq 3300\text{mm}$

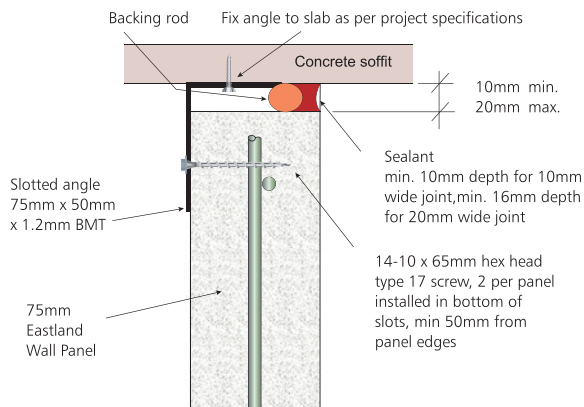


For panel heights $> 3300\text{mm}$

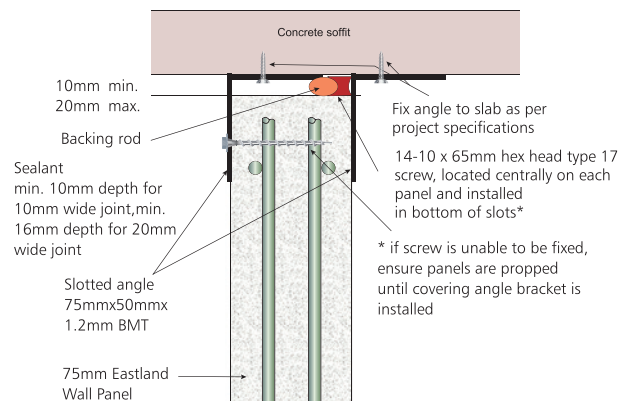


6.2.2 Wall Head Options

For panel heights $\leq 3300\text{mm}$

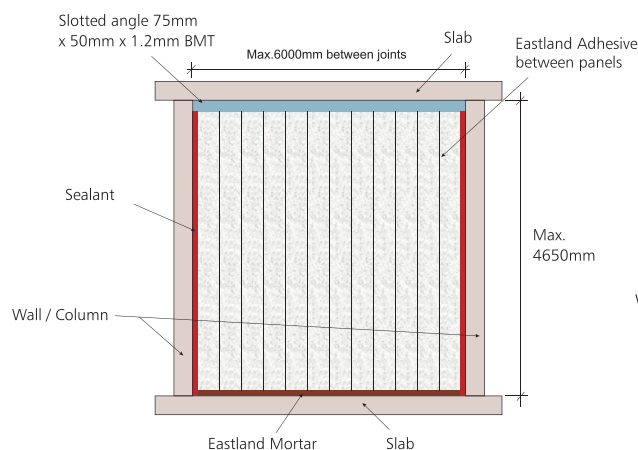


For panel heights $> 3300\text{mm}$

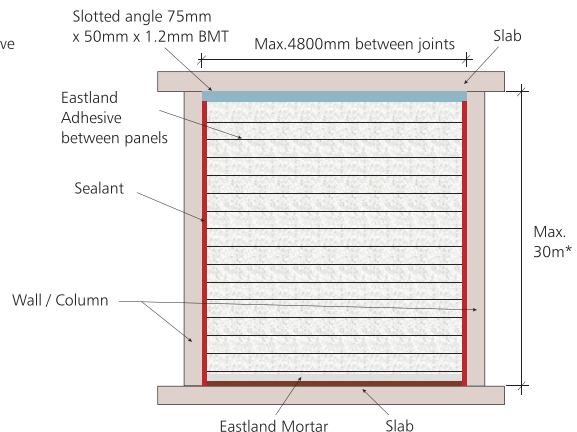


6.2.3 Panel Support – Vertical & Horizontal Panel Orientation

Maximum wall height 4.65m

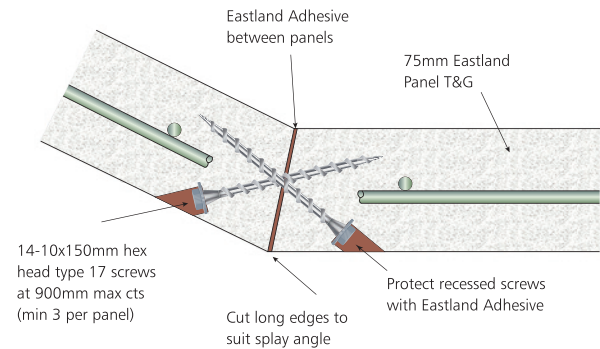
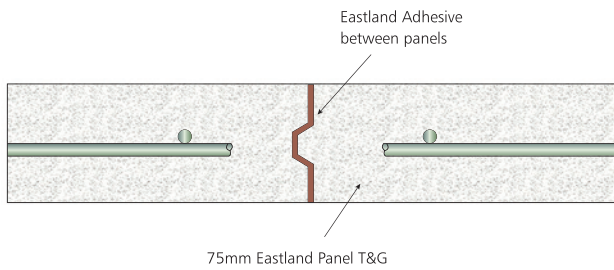


Maximum wall height 30m

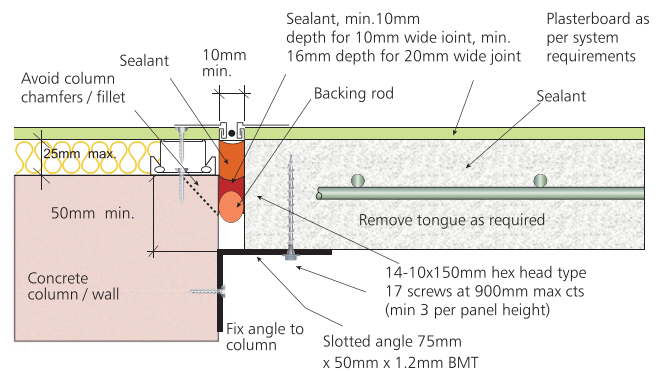
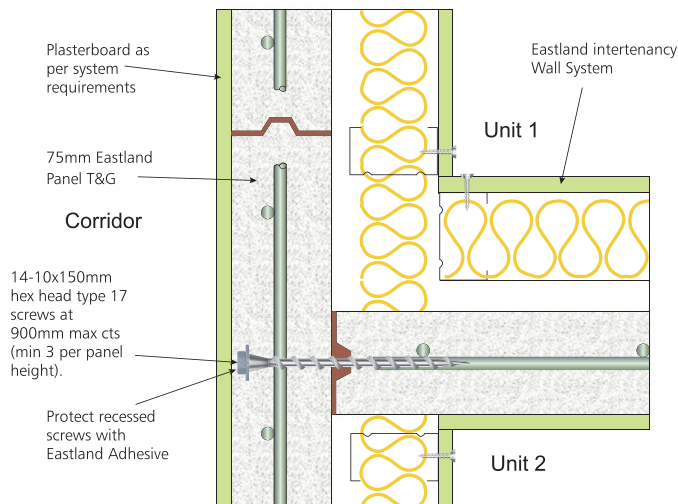
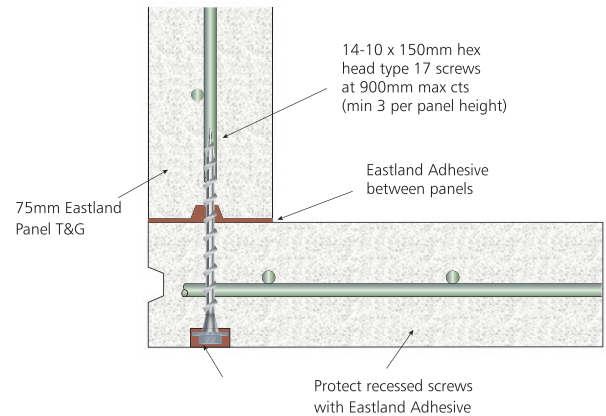
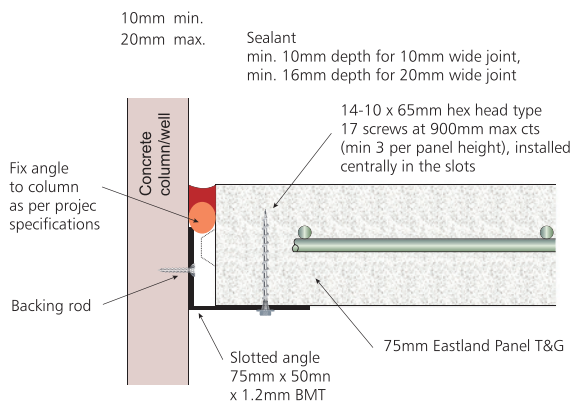


6.2.4 Panel Joints & Wall Junction Details

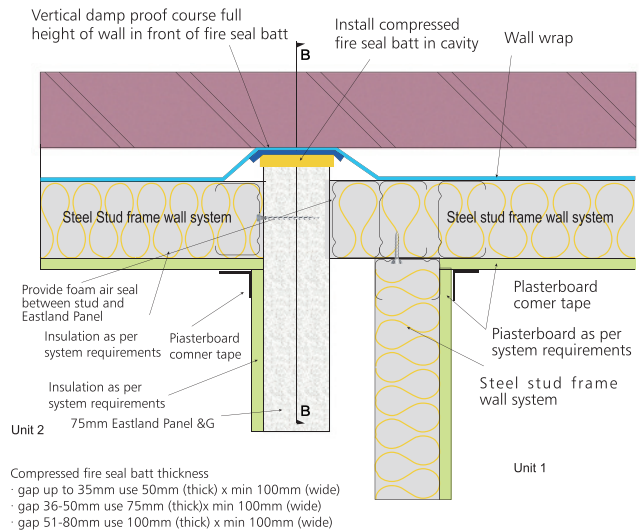
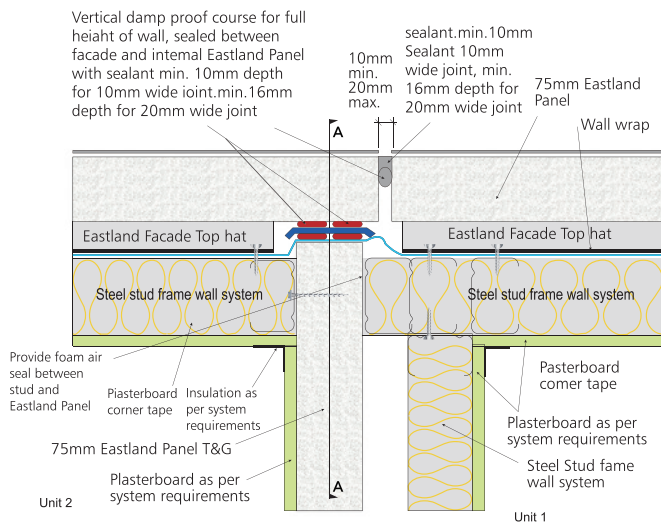
Tongue & groove panel profile



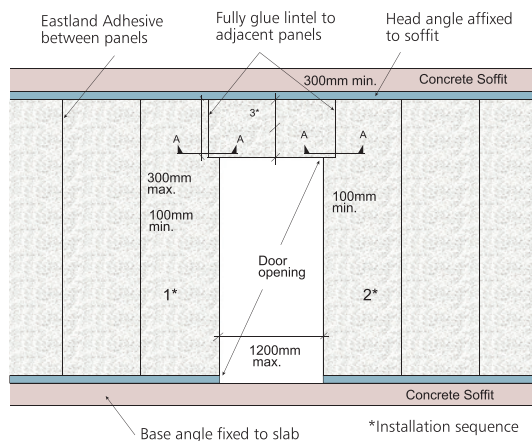
For panels > 3300mm & / or panel width < 300mm



6.2.5 External Wall Junctions

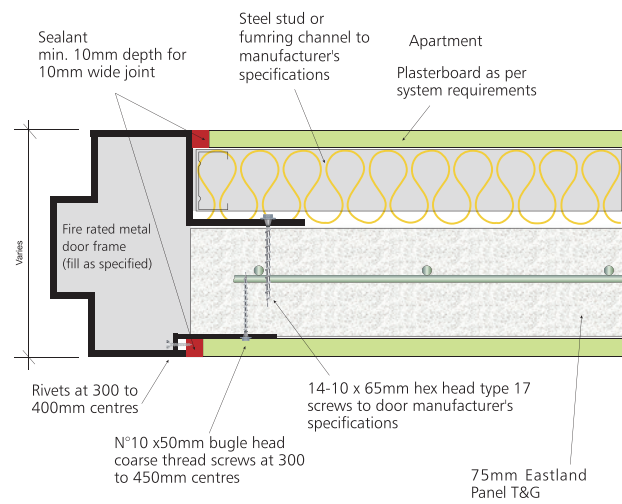


6.2.6 Door Openings



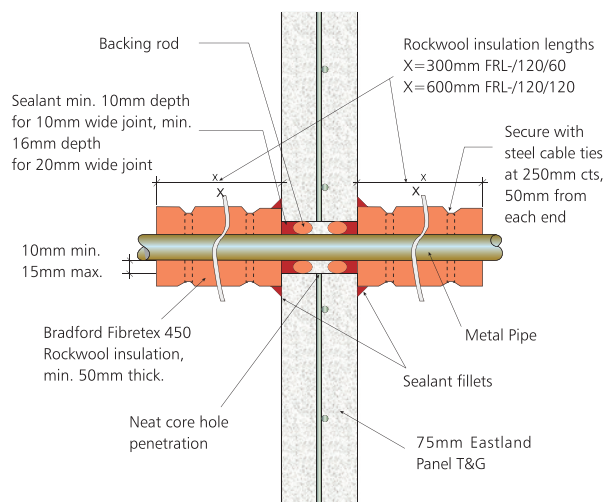
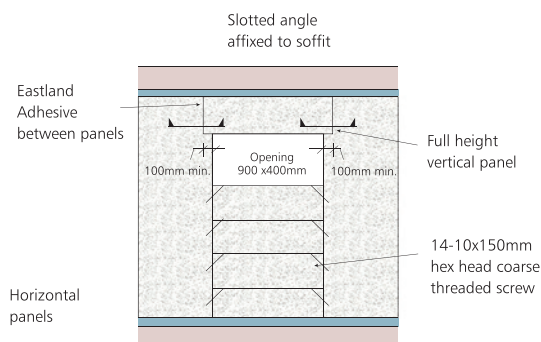
Important::

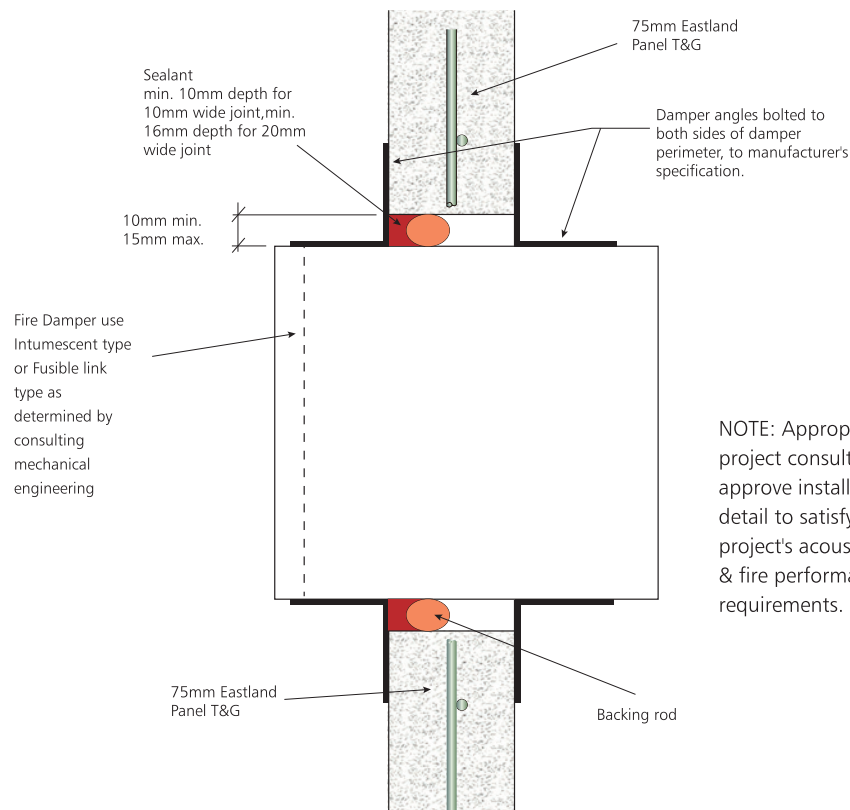
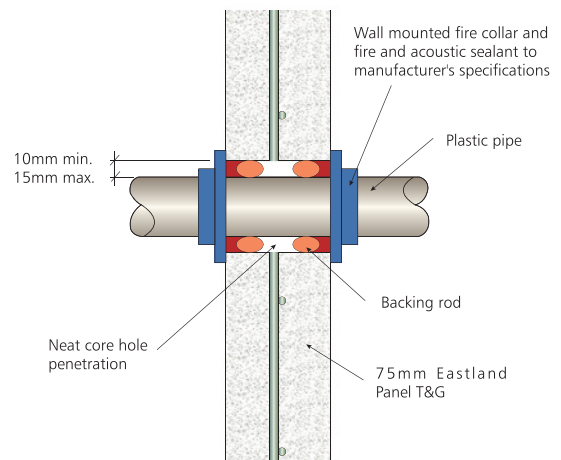
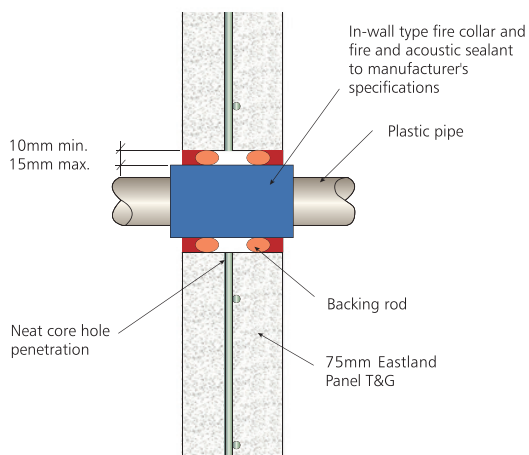
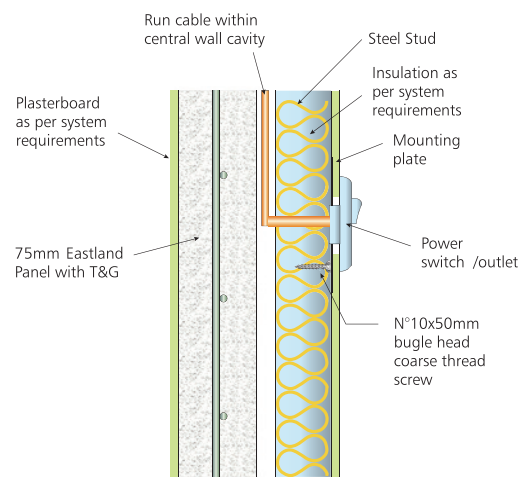
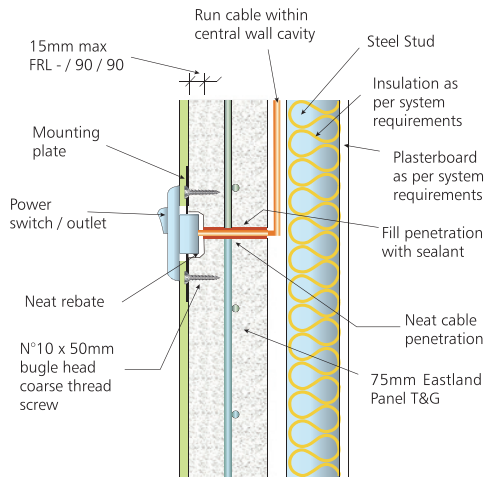
- All door frame installations and detailing to be approved by door frame manufacturer.
- Continuously screw fix door frame to Eastland Panel around perimeter of door opening.
- Eastland recommends core filling of the door frame for additional robustness.
- Fix door frame at the base.



NOTE: All gaps between wall and frame to be filled with Tyco Fyreflex.

6.2.7 Penetration Details





NOTE: Appropriate project consultant to approve installation detail to satisfy project's acoustic & fire performance requirements.

7. Safe Handling and PPE

7.1 Site Safety

Local OH&S regulations must be adhered to when installing Eastland AAC Intertency walls, with specific reference to handling and cutting of masonry and steel.

7.2 Personal Protective Equipment (PPE)

In addition to normal construction site PPE, the following PPE is recommended when installing Eastland AAC wall panels:

- Eye protection
- Hearing protection
- P1 or P2 mask / respirator (when cutting AAC panels)
- Gloves



7.3 Manual Handling of AAC Panels

Eastland AAC panels should be stored on site, close to where they will be installed (if possible). Repeated movement of panels around sites may cause unnecessary damage to panels.

While Eastland AAC panels are much lighter than conventional concrete panels of the same dimensions,

the panel sizes result in total panel weights that exceed the limits for single person lifts. All panels shall be lifted on their edges by at least 2 persons. If lifted when laying flat the panels are likely to crack. Site trolleys may be used for moving panels to reduce the strain on installers and to reduce the risk of damaging panels.

7.4 AAC and Dust

All concrete based products (including AAC) contain Crystalline Silica which can be released as dust when processing such products on site. Handling and moving AAC on site presents a low risk of dust.

Eastland AAC panels may be cut, chased, drilled and sanded using hand or power tools. When working with AAC panels, dust extraction and respirators must be used effectively to reduce dust exposure.

8. Installation

8.1 Tools

The following tools are required when installing Eastland AAC Intertenancy wall systems:

Drop Saw (diamond blade)	Dust extraction / vacuum	Mallet / Hammer
Masonry (wet) Saw	Nail Gun / Screw Gun	Sealant / caulking gun
Angle grinder	Impact driver / cordless drill	Tape measure
Tin snips	Drill with mortar mixing paddle	Chalk line
Knives	Trowel for Eastland AAC Adhesive	Spirit level
Straight edge	Pencil	Chisels
Tool belt / nail bag	Adhesive mixing buckets	Power leads for tools
Render hawk & trowel	Sanding float	Packing wedges

The above assumes the adjacent wall framing / substrate has been installed by the builder and/or previous trades and is ready for installation of the Eastland AAC Intertenancy wall systems.

8.2 Preparation

The work area shall be clean and clear of any equipment and materials not required for the installation of the Eastland AAC Intertenancy wall system.

Accurate set-out of the alignment of the intertenancy walls shall be conducted referencing the approved, detailed project drawings.

The base fixing for the Eastland AAC panels (base angles or track) shall be secured to the slab or floor

substrate using appropriate fasteners at 450mm to 600mm centres. Where the wall direction changes, the base angles or tracks shall be mitred with no gaps at corners. All joins and corners shall be sealed with fire and acoustic rated sealant.

The supporting frame or ancillary frame components of the Eastland AAC Intertenancy wall systems shall be vertical and aligned. For Low-Rise Residential construction the supporting frames shall be capable of supporting the Intertenancy wall loads.

- Timber framing (Low-Rise Residential construction only) shall be designed and constructed in accordance with AS 1684
- Steel framing shall be designed and constructed for the relevant project loads and in accordance with AS 4600 and/or NASH Standard
- Masonry walls / substrates shall be designed and constructed in accordance with AS 3700
- Concrete substrates shall be designed and constructed in accordance with AS 3600

If the adjacent wall frame is out of alignment, efforts shall be made to bring the structure into alignment prior to installing the Eastland AAC wall panels.

8.3 Eastland AAC Panels

Eastland AAC panels are to be lifted carefully into position and then screw fixed to the supporting structures with the appropriate fasteners.

Where screw fasteners are applied through the fixing angles, tracks or brackets and then into the Eastland AAC panels, the installers must ensure screws are not over-torqued causing the AAC material to be stripped by the screw thread, this renders the fixing ineffective. Screws must be made snug into the AAC.

The vertical edge of the installed panels shall have

8.4 Insulation

Insulation shall be installed in accordance with AS 3999:2015 and manufacturers' instructions. All insulation shall fill the wall framing with no gaps

Eastland AAC Adhesive applied continuously along its vertical face, such that when the subsequent panel is lifted into place and gently pushed against the previous panel, the adhesive provides a 2-3mm wide continuous joint, once the new panel is in place it may be screw fixed to the supporting angles, tracks or brackets. Excess adhesive on the outside face of the panel should be trowelled off to spread across the face of the panel joint.

Refer to the typical construction drawing details provided in section 6 for specific details.

between batts or blankets to ensure the acoustic performance is not adversely affected.

8.5 Plasterboard Wall Linings

Plasterboard shall be installed in accordance with AS/NZS 2589:2017 and manufacturers' instructions. Plasterboard sheets shall be cut to fit the size required and installed without gaps, where plasterboard is

installed in multiple layers, joints between sheets shall be offset to avoid acoustic flanking. Plasterboard sheets are to be fixed directly to the wall framing.

8.6 Sealants & Backing Rod

All movement joints and any gaps in construction shall be sealed using an approved fire and acoustic rated sealant. All sealants shall be installed in accordance with manufacturer's instructions.

Foam backing rod is used to control the depth of sealant, the size of backing rod shall be suitable for the size of gaps requiring sealant.

8.7 Penetrations

All electrical, plumbing and other service penetrations through an intertenancy wall shall be caulked and sealed using backing rod and an approved Fire & Acoustic Rated caulking sealant joint material.

Penetrations may be drilled or cut into the Eastland AAC Intertenancy wall system using appropriate

masonry cutting or drilling tools.

Ancillary items such as cable trays, dampers, ceiling systems etc, shall be fixed directly to the building structure such that no dead load shall be carried by the Eastland AAC Intertenancy wall panels.

8.8 Doors

All Fire doors shall be installed in accordance with AS 1905.1:2015 and manufacturers' instructions. Fire rated door frames shall be suitably fire stopped

around the perimeter and door panel elements achieve the required Fire Ratings (FRLs) with compliant automatic door closers.

NOTES

DISCLAIMER:

Construction details enclosed are limited to the generalised design specification for Eastland AAC panel products and are intended for use by a suitably qualified building professional only. Any use of the enclosed is at their own discretion and risk.

Any structural framing shown in the enclosed details are to be reviewed and assessed by a registered structural engineer prior to installation.

EASTLAND AAC

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