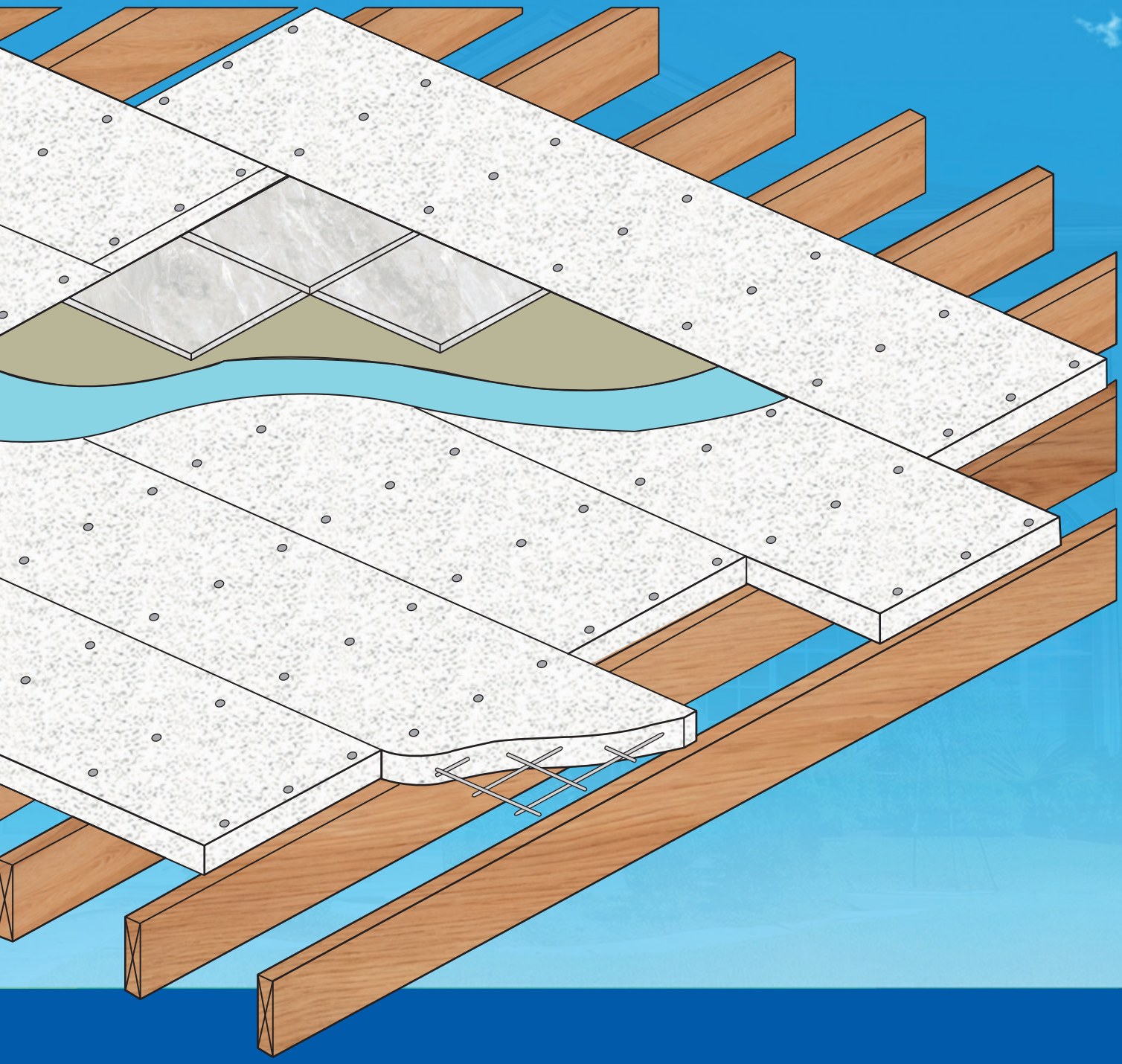
CodeMark Australia | CMI Certification Certificate CM40470 | EASTLAND

Eastland AAC Flooring Technical Manual

Rev 1.2 - NOV. 2025



CONTENTS

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 Eastland AAC Flooring 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 length options of 1,500mm, 1,800mm and 2,400mm.

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 flooring solutions across a wide range of applications, including two-storey residential, low to mid rise multi-residential and light commercial construction.

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

- Solid & durable construction
- Fire resistant & non-combustible
- Solidity of Concrete with flexibility of framed construction
- Efficient & low cost construction systems
- Thermally efficient
- Excellent Acoustics
- Fast construction

1.3 System Description

The Eastland AAC Flooring system presents loadbearing suspended flooring systems for use in framed floor applications for low-rise residential & multi-residential dwellings and light commercial applications where suspended flooring may be required.

The Eastland AAC Flooring system components includes 50mm and 75mm reinforced AAC panels and Eastland AAC Adhesive. The builder / installer is required to supply framing and appropriately rated fasteners for the support structures for the Eastland AAC Floor panels.

The Eastland AAC Floor panels are fire rated, loadbearing panels and may be installed directly over structural floor framing with or without insulation and/or fire rated plasterboard ceiling systems beneath.

1.4 Eastland AAC Flooring Systems

Eastland AAC Flooring delivers long-term durability and the solid feel of a concrete slab without the delays and mess of a poured concrete floor. Precast, reinforced Autoclaved Aerated Concrete (AAC) panels are fixed directly to either timber and steel joists and are immediately ready for floor finishes.

Floor framing structures supporting Eastland AAC Panels shall be designed as loadbearing structures with suitable joist spacing to suit AAC floor panels plus loading and spanning requirements of the floor system.

1.5 Internal Floor Loads

For Flooring applications, the nominated imposed actions (loads) are determined by reference to AS/NZS 1170.1:2002 – Table 3.1. For Eastland AAC Flooring systems a Uniformly Distributed Load of 2.0 kPa may be applied along with a Concentrated Load of 1.8 kN (applied over a 350mm2 area).

50mm Eastland AAC Floor panels may be installed directly over Joists at maximum spacing of 450mm and require a structural flooring overlay such as particleboard or fibre cement floor sheeting prior to the installation of floor coverings. Structural floor overlay panels shall be laid perpendicular to the orientation of the AAC panels.

75mm Eastland AAC Floor panels may be installed directly over Joists at maximum spacing of 600mm. Floor coverings may be installed directly over the 75mm AAC panels using a suitable fastening system.

Joist spacing, span and specification shall be subject to Engineering assessment of total loads and spans.

Please contact Eastland for technical advice if the enclosed loadings are insufficient for your project.

2. SYSTEM COMPONENTS

2.1 Eastland AAC Panel Properties

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

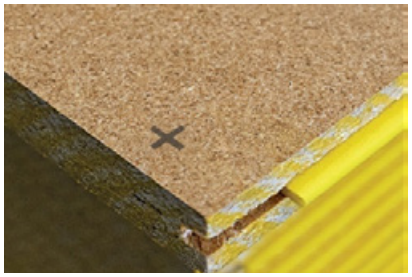
Eastland Reinforced AAC Panels			
Properties	Panel Thickness (mm)		Reference
	50	75	
Width (mm)	600	600	AS 5146.2 Appendices A & K
Lengths (mm)	1,500 1,800 2,400	1,500 1,800 2,400	
Mass of Panel (kg/m^2)	30	38	AS 5146.2 Appendix C
Dry Density (kg/m^3)	515	445	
Working Density (kg/m^3)	592	512	AS 5146.2
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 x 10^{-6}	8 x 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 Flooring 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 Timber joists or Light gauge Steel joists	50mm Panels 14-10x75mm Type 17 screws or 14-10x68mm Tek screws 75mm Panels 14-10x100mm Type 17 screws or 14-10x95mm Tek screws	
Timber Floor Framing	Timber framing in accordance with: • AS 1720 Timber structures or • AS 1684 Residential timber framing construction	

Application	Accessory Details	
Light Gauge Steel Floor Framing	Light Gauge Steel Framing in accordance with: • NASH Standard – Residential and Low-Rise Steel Framing • AS/NZS 4600 Cold formed steel structures	
Structural Floor Overlay (for 50mm AAC Floor Panels only) To be laid perpendicular to the orientation of the AAC panels.	Particleboard Flooring or Compressed Fibre Cement Flooring	 
Sealants & Backing Rod	Foam backing rod is required to control the depth of sealant in control joints. Fire and Acoustic rated Acrylic and/or PU based sealants approved for use in Fire rated applications. Silicone based sealants are NOT recommended.	
Insulation	Typically, 90mm thick (R2.0) Glasswool insulation batts may be installed between the floor joists. Mid-floor Insulation is primarily used for acoustic purposes, subject to project specifications.	
Plasterboard Ceiling Lining	Depending on the application, the ceiling lining may be 10mm, 13mm or 16mm thick plasterboard (in single or multiple layers). Some applications may require the plasterboard to be Fire resistant and/or Moisture resistant.	

3. Flooring 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 ABCB Housing Provisions) – Establishes the standards for domestic residential construction, defined as Class 1 and 10 buildings.

Within the context of flooring systems, the BCA is structured to provide minimum requirements for Structure, Fire Safety & Resistance, Acoustic attenuation and Thermal Resistance of the building envelope.

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

Section 5 of this manual provides specific details relating to the performance of the Eastland AAC Flooring 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.

BCA 2022 (A2)	Volume One	Volume Two & Housing Provisions	Applications
Structure	B1D4 Determination of structural resistance of materials and forms of construction	H1P1 Structural reliability and resistance	Mid-floor construction over structural framing (Timber or Steel)
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	Separating floors in multi-residential construction, including plasterboard ceiling systems
Acoustics	F7D5 Sound insulation rating of floors	H4D8 Sound insulation, refer: Housing Provisions Part 10.7 for Separating walls	Separating floors in multi-residential construction
Thermal	J3D10 Energy Efficiency – Floors of a sole occupancy unit of Class 2 building or Class 4 part of a building J4D7 Energy Efficiency – Floors (for Class 3, 5, 6, 7, 8 & 9 buildings)	H6D2 Energy Efficiency, refer: Housing Provisions – 13.2.6 – Building Fabric – Floors and subfloor walls	Flooring where separated conditioned spaces are above and/or below. Insulation may be needed to provide the required thermal performance.

3.2 AS 5146 – Reinforced Autoclaved Aerated Concrete

The structural properties of Eastland AAC Floor 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, Fire, Acoustic & Thermal requirements of the BCA. Both 50mm and 75mm thick AAC Floor panels installed above structural floor framing 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 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

4. Designing with Eastland AAC

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

4.1 Low-rise Domestic (Single Dwelling) Residential Flooring

1. Consult the project engineer to determine all relevant loads on the Floor. Where relevant use the nominated residential domestic floor loads (refer AS/NZS 1170.1 – Table 3.1).

2. Refer to Project Engineer or Floor Frame supplier / installer for design specifications for base structural system design (typically Timber or Steel joists & framing supports).

3. Determine any additional design criteria for the Floor, as required for the project or by the relevant provisions of the BCA, including but not limited to:

    a. Sound transmission
    b. Thermal insulation
    c. Provision & Treatment of Services

4. Check the relevant construction details with reference to Acoustic and Thermal requirements.

5. Plan AAC panel layout including movement joint locations according to building geometry and any floor covering transitions.

6. Fit floor coverings in accordance with manufacturer's recommendations for installation over AAC floor panels.

Eastland AAC Low-rise Residential Flooring may be installed over a variety of substrates, including:

- Timber floor joists & framing in accordance with AS 1684 and/or AS 1720
- Lightweight steel floor framing in accordance with AS 4600 and/or NASH standard
- Structural Steel in accordance with AS 4100

4.2 Multi-Residential Flooring

1. Consult the project engineer to determine all relevant loads on the Floor. Where relevant use the nominated residential domestic floor loads (refer AS/NZS 1170.1 – Table 3.1).

2. Refer to Project Engineer or Floor Frame supplier / installer for design specifications for base structural system design (typically Timber or Steel joists & framing supports).

3. Determine any additional design criteria for the Floor, as required by the relevant provisions of the BCA, including but not limited to:

    a. Fire resistance (FRLs)
    b. Sound transmission
    c. Thermal insulation
    d. Provision & Treatment of Services

4. Check the relevant construction details with reference to FRLs, Acoustic and Thermal requirements.

5. Plan AAC panel layout including movement joint locations according to building geometry and any floor covering transitions.

6. Fit floor coverings in accordance with manufacturer's recommendations for installation over AAC floor panels.

Eastland AAC Multi-Residential & Light Commercial Flooring may be installed over a variety of substrates, including:

- Timber floor joists & framing in accordance with AS 1684 and/or AS 1720
- Lightweight steel framing in accordance with AS 4600 and/or NASH standard
- 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). Elements of separating Flooring systems (including accessories, fixings and ceiling linings) may be required to be non-combustible in accordance with the requirements of BCA 2022 Volume 1 C2D10.

BCA 2022 Volume 2 has no specific requirements for non-combustible materials for separating floor systems.

5.2 Fire Resistance Levels

Separating Floor and ceiling systems may be required to provide Resistance to Fire as defined in the relevant parts of the BCA, the Eastland AAC Floor systems shall be specified and constructed to provide the required Fire Resistance Levels (FRLs) as nominated in the BCA (where applicable).

Floor and ceiling 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.

Fire Rated construction is presented by the Eastland AAC panels for a Fire source above the floor system, Plasterboard Ceiling systems presents Fire Rated construction for Fire sources below the floor system.

The structural floor frame shall be designed to independently support the imposed loads in the event of a fire either above or below the floor system. On the fire exposed side of the floor, the AAC panels (Fire source above) or the Plasterboard ceiling (Fire source below) shall provide protection to the floor framing.

The various floor & ceiling system options and relevant FRLs are provided in the tables contained in Section 5.4 below.

5.3 Acoustics – Sound Insulation

The BCA nominates the Performance Requirements for sound insulation ratings of floors. 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 (Rw) or weighted reduction index with spectrum adaptation term (Rw + Ctr).

Impact sound attenuation for floors is documented as either L'n,w for laboratory measured systems or L'nT,w for insitu measured systems and is achieved by the use of resilient mounted ceiling systems, please consult with your project Acoustic consultant to ensure compliance with impact sound attenuation.

The Acoustic performance details provided in the tables in Section 5.4 below have been developed in accordance with the requirements of BCA 2022 (A2) and may be used by project acoustic consultants to develop project specific Acoustic performance and compliance documentation and specifications.

5.4 Thermal Insulation

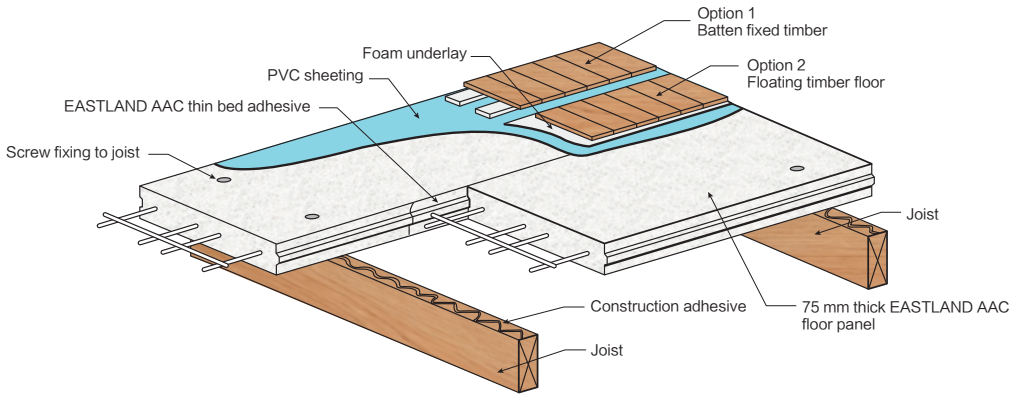
Where the Eastland AAC floor system is exposed to the external environment below, the thermal R values of the construction may need to be calculated for the building envelope including the suspended flooring sections. Eastland AAC floor panels contribute to the overall building envelope thermal R values, the following material R values are provided for the Eastland AAC floor panels.

Eastland AAC Floor Panels		
Panel thickness	50 mm	75 mm
Material R Value	0.402 $m^2 \cdot K/W$	0.702 $m^2 \cdot K/W$

5.5 Eastland AAC Flooring & Ceiling Options

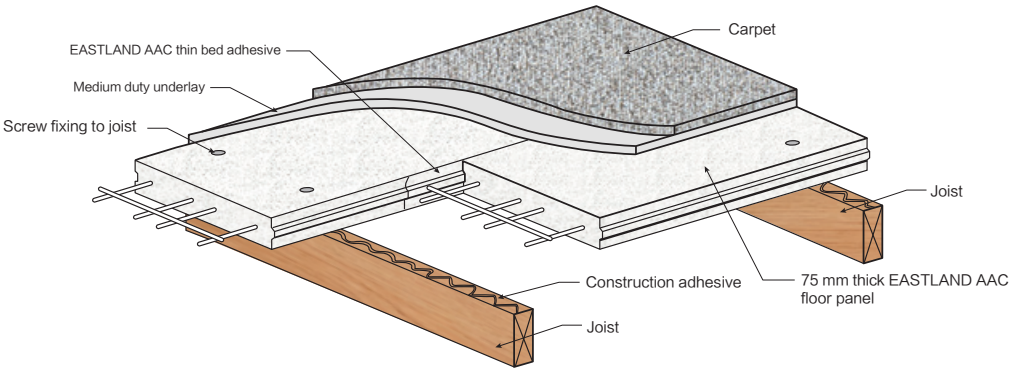
The following Eastland AAC flooring system options are presented with the respective Fire and Acoustic performance details for each option.

EASTLAND AAC flooring with Timber Floating Floor



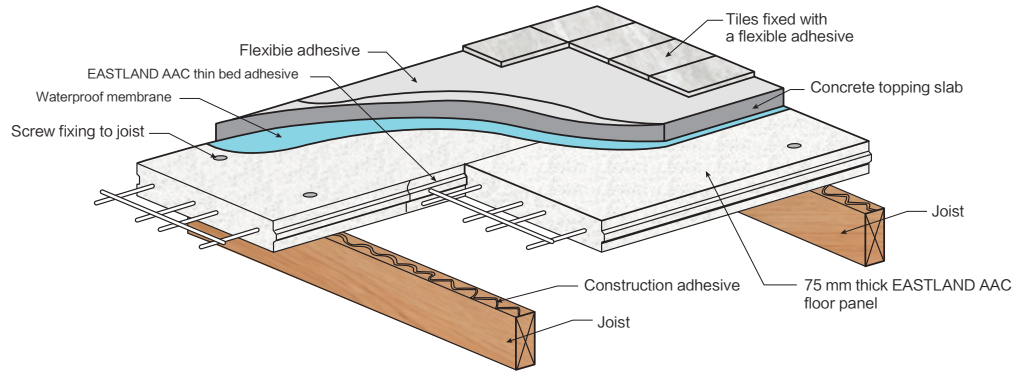
NOTE: Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.

EASTLAND AAC flooring with Carpet on Underlay



NOTE: Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.

EASTLAND AAC flooring with Ceramic Tiles on Bed of Mortar



NOTE: Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.

5.5.1 Eastland AAC 50mm Floor Panel & Ceiling System

The Eastland AAC 50mm floor panels may be installed over Timber or Light Gauge Steel Joists at a maximum spacing of 450mm.

Insulated plasterboard ceiling options are detailed below with the relevant Fire and Acoustic performance details (Red text is likely to fail NCC Acoustic requirements, Green text is compliant).

Note:50mm EASTLAND AAC Flooring requires a structural flooring overlay such as particleboard prior to laying floor covering. Structural floor overlay panels shall be laid perpendicular to the orientation of the EASTLAND AAC panels.

TIMBER or STEEL FRAMED CONSTRUCTION								Direct Fix Ceilings			Resilient Mount Ceilings		
System#	Floor Finish	AAC Panel	Mid-Floor Insulation	Framing	Ceiling Lining Options	FRL from Above	FRL from Below	R_w	$R_w + C_{tr}$	$L_{n,w}$	R_w	$R_w + C_{tr}$	$L_{n,w}$
EFS01a	18-20mm Timber Floating Floor on 35mm timber battens & 5mm acoustic rubber underlay	50mm Eastland AAC	R2.5 HDG/W Insulation (14kg/m³) - 90mm Thickness	Nom 240mm Timber/ LVL or Light Gauge Steel Joists	10mm Std Plasterboard	90/90/90	-/-/-	47	41	72	57	51	59
EFS01b					13mm FR Plasterboard		30/30/30	50	46	70	61	57	59
EFS01c					16mm FR Plasterboard		30/30/30	50	47	70	61	57	59
EFS02a	Carpet on Foam underlay				10mm Std Plasterboard	90/90/90	-/-/-	47	41	57	57	51	37
EFS02b					13mm FR Plasterboard		30/30/30	50	46	57	61	57	37
EFS02c					16mm FR Plasterboard		30/30/30	50	47	57	61	57	37
EFS03a	8-10mm Ceramic Tiles on 15-25mm Bed of Sand / Cement Mortar & 5mm acoustic rubber underlay				10mm Std Plasterboard	90/90/90	-/-/-	50	44	73	59	53	60
EFS03b					13mm FR Plasterboard		30/30/30	53	48	72	63	58	60
EFS03c					16mm FR Plasterboard		30/30/30	54	51	72	63	58	60

5.5.2 Eastland AAC 75mm Floor Panel & Ceiling System

The Eastland AAC 75mm floor panels may be installed over Timber or Light Gauge Steel Joists at a maximum spacing of 600mm.

Insulated plasterboard ceiling options are detailed below with the relevant Fire and Acoustic performance details (Red text is likely to fail NCC Acoustic requirements, Green text is compliant).

TIMBER or STEEL FRAMED CONSTRUCTION								Direct Fix Ceilings			Resilient Mount Ceilings		
System#	Floor Finish	AAC Panel	Mid-Floor Insulation	Framing	Ceiling Lining Options	FRL from Above	FRL from Below	R_w	$R_w + C_{tr}$	$L_{n,w}$	R_w	$R_w + C_{tr}$	$L_{n,w}$
EFS04a	18-20mm Timber Floating Floor on 35mm timber battens & 5mm acoustic rubber underlay	75mm Eastland AAC	R2.5 HDG/W Insulation (14kg/m³)- 90mm Thickness	Nom 240mm Timber/LVL or Light Gauge Steel Joists	10mm Std Plasterboard	120/120/120	-/-/-	51	46	71	58	52	54
EFS04b					13mm FR Plasterboard		30/30/30	52	48	69	62	58	53
EFS04c					16mm FR Plasterboard		30/30/30	52	49	69	62	58	52
EFS05a	Carpet on Foam underlay				10mm Std Plasterboard	120/120/120	-/-/-	51	46	55	58	52	35
EFS05b					13mm FR Plasterboard		30/30/30	52	48	54	62	58	35
EFS05c					16mm FR Plasterboard		30/30/30	52	49	54	62	58	35
EFS06a	8-10mm Ceramic Tiles on 15-25mm Bed of Sand/Cement Mortar & 5mm acoustic rubber underlay				10mm Std Plasterboard	120/120/120	-/-/-	55	49	73	60	54	56
EFS06b					13mm FR Plasterboard		30/30/30	54	50	72	63	59	55
EFS06c					16mm FR Plasterboard		30/30/30	55	52	72	63	59	54

5.5.3 Additional Ceiling System Options

If the above ceiling system FRLs are insufficient (for a fire source below), refer the following options.

Ceiling System	FRL
2 x 13mm FR Plasterboard or 13mm + 16mm FR Plasterboard	60/60/60
2 x 16mm FR Plasterboard	90/90/90
3 x 16mm FR Plasterboard	120/120/120

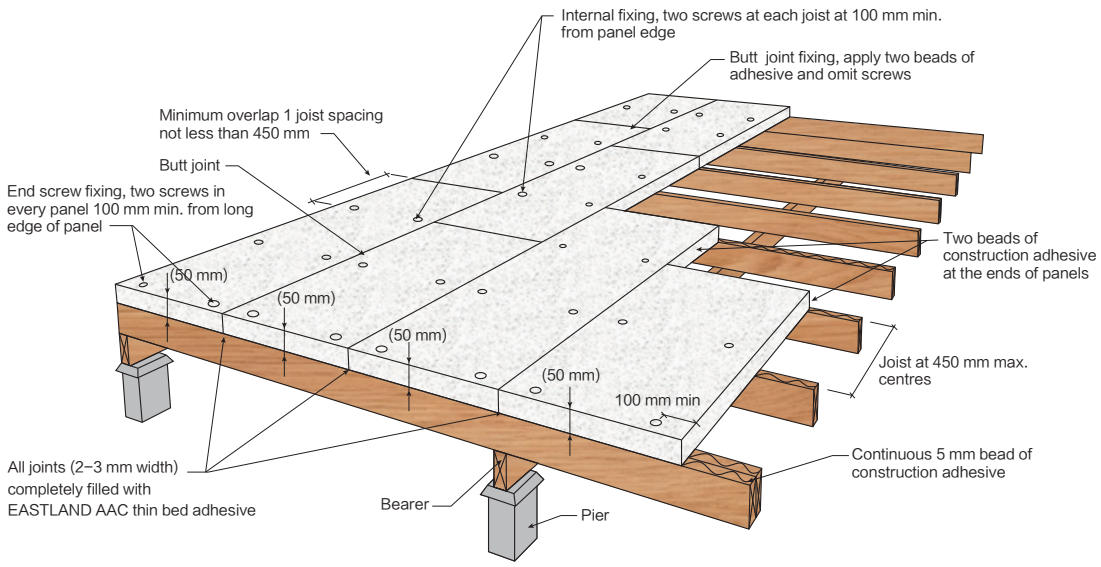
6. Construction Details

The enclosed floor construction details are relevant for construction using both 50mm and 75mm Eastland AAC floor panels .

6.1 Fixing of 50mm Eastland AAC Flooring

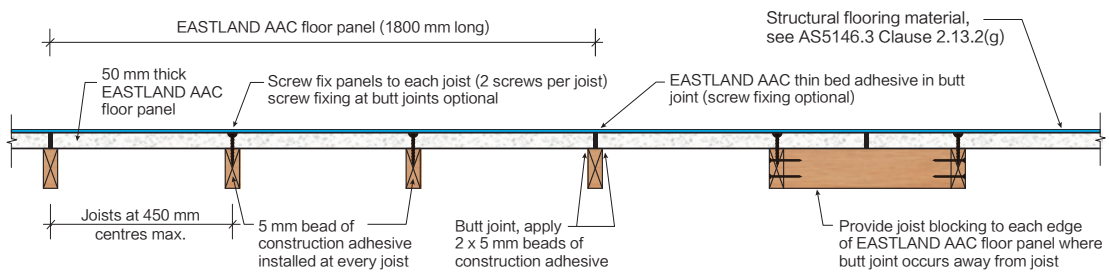
AS 5146.3 requires 50mm Thick AAC Floor Panels to have a structural floor overlay secured, prior to floor coverings being installed. Structural floor overlay panels shall be oriented perpendicular to the AAC panels.

6.1.1 Typical 50mm EASTLAND AAC Floor Panel Layout

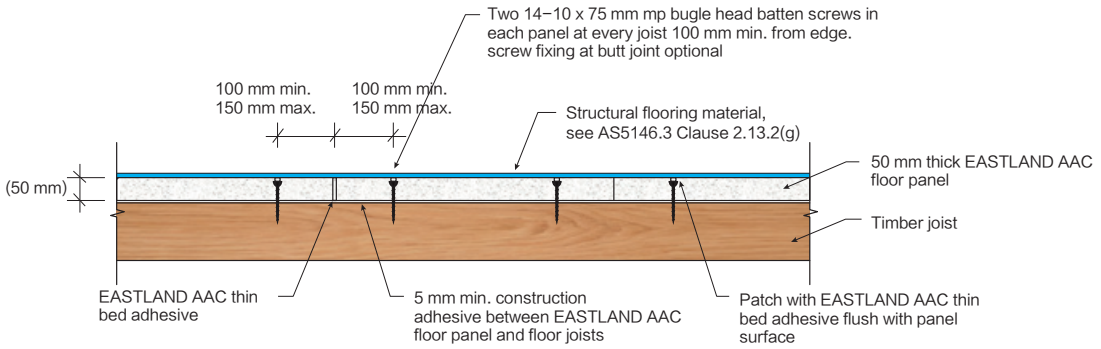


NOTES:
1 Details are applicable to 50 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

6.1.2 Typical 50mm EASTLAND AAC Floor Panel Fixing

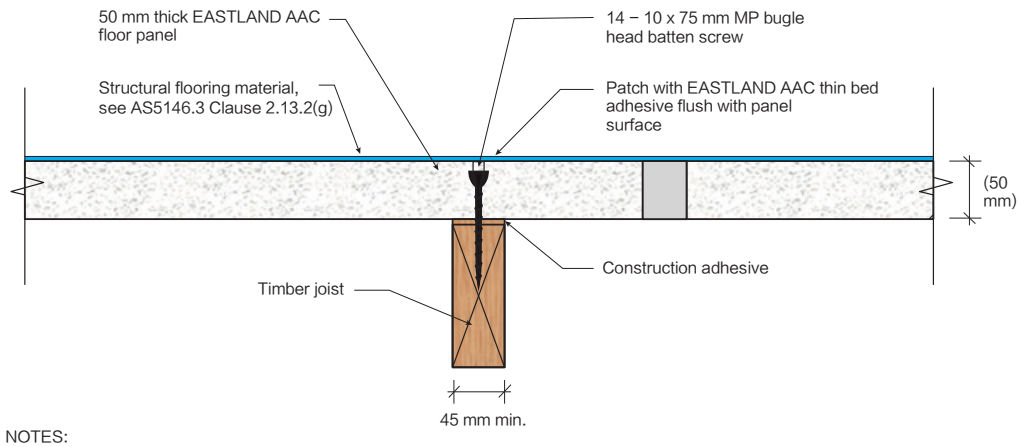


NOTES:
1 Details are applicable to 50 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.



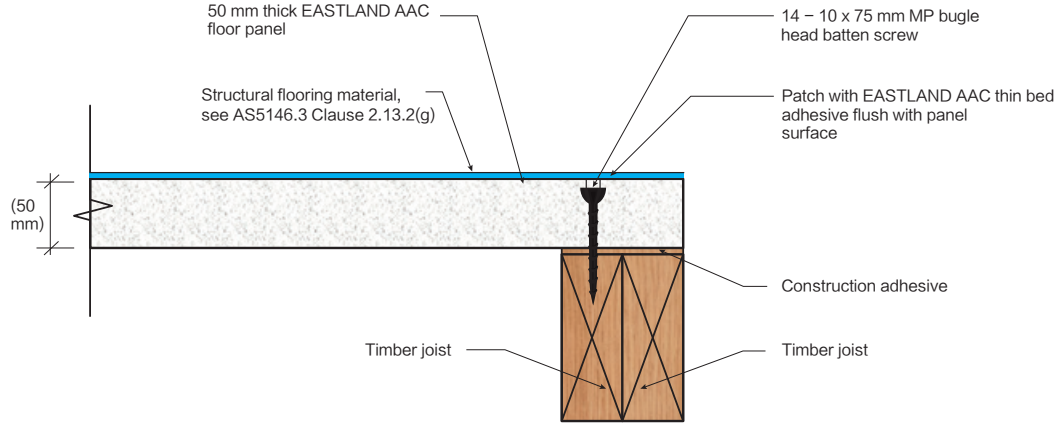
NOTES:
1 Details are applicable to 50 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

6.1.3 Fixing of 50mm EASTLAND AAC Floor Panels into Timber Joists – General



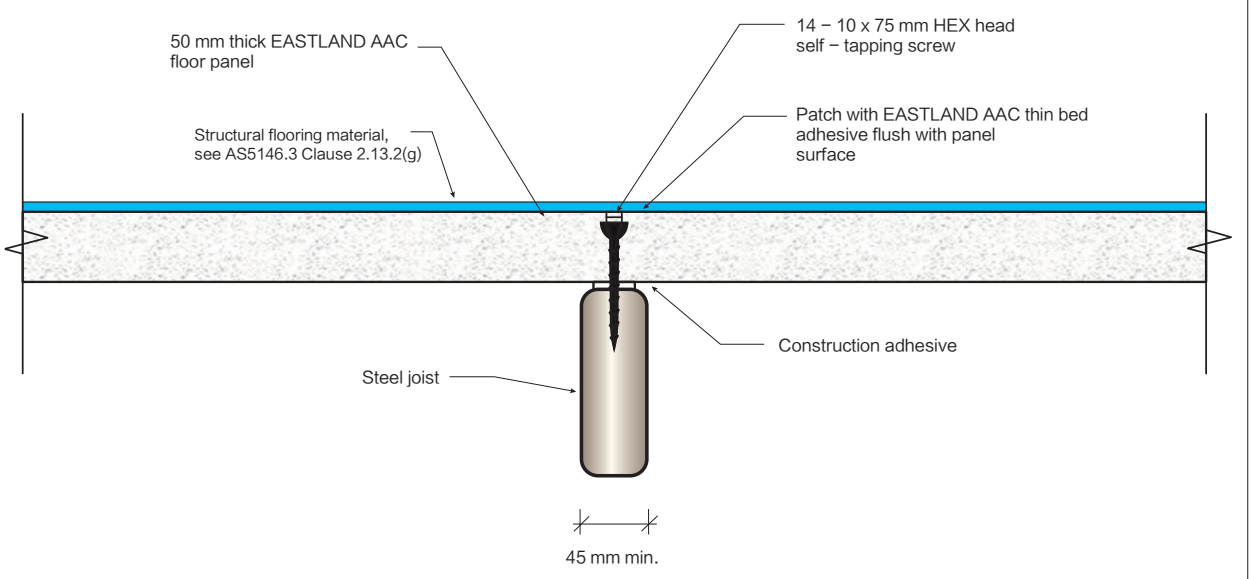
NOTES:
1 Details are applicable to 50 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

6.1.4 Fixing of 50mm EASTLAND AAC Floor Panels into Timber Joists – Panel Ends



NOTES:
1 Details are applicable to 50 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

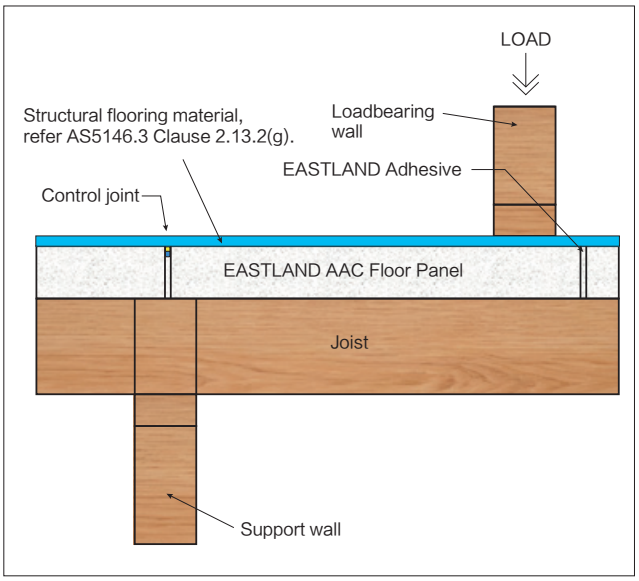
6.1.5 Fixing of 50mm EASTLAND AAC Floor Panels into Steel Joists – General

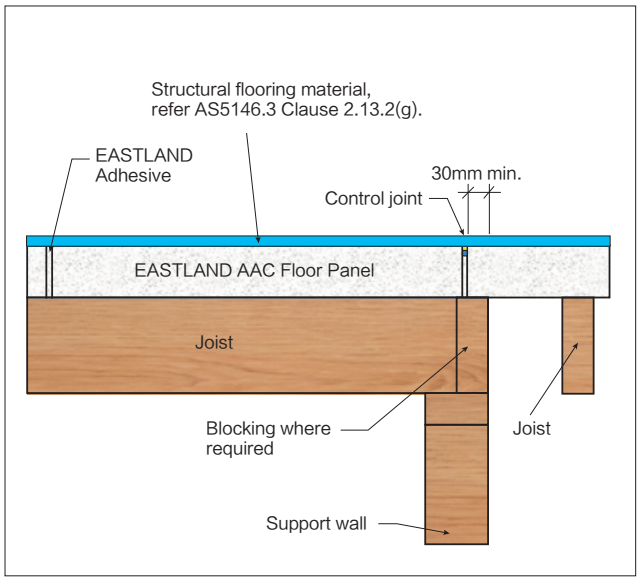


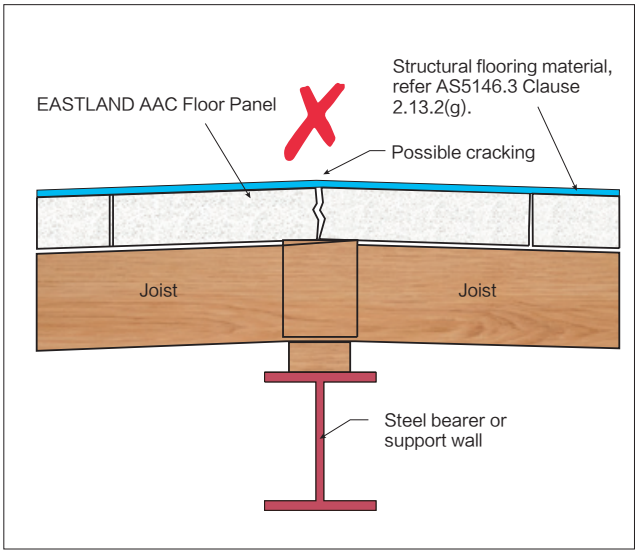
NOTES:

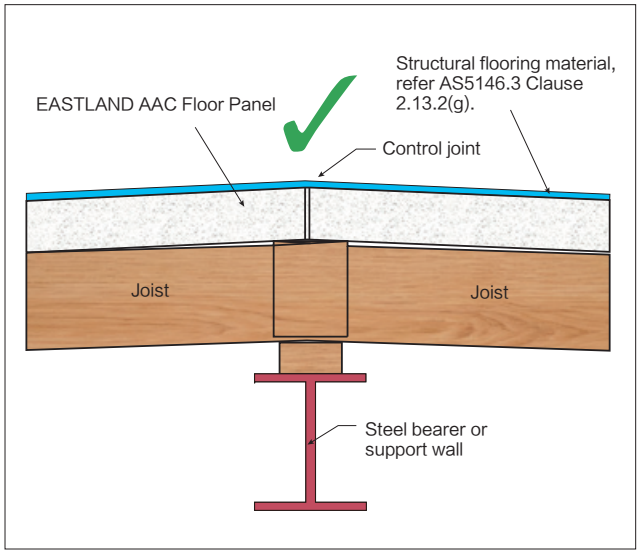
1 Details are applicable to 50 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

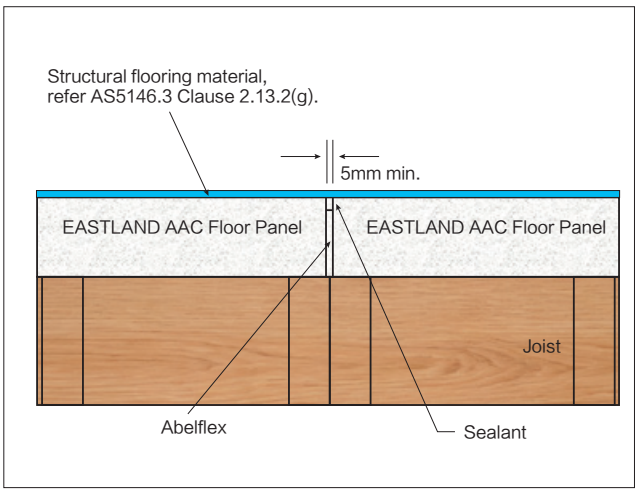
6.1.6 50mm EASTLAND AAC Floor – Control Joint Details

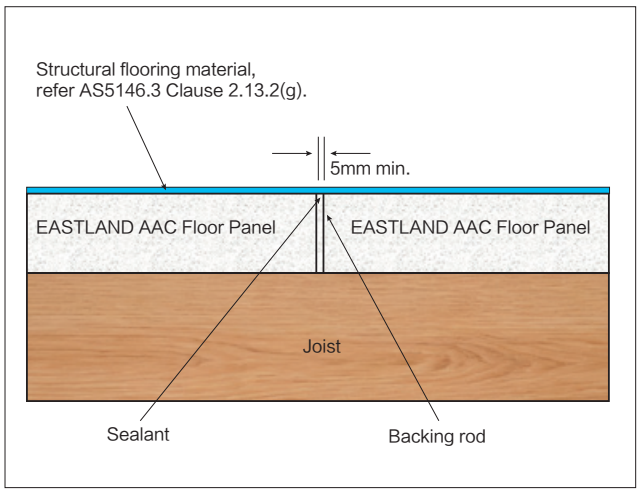




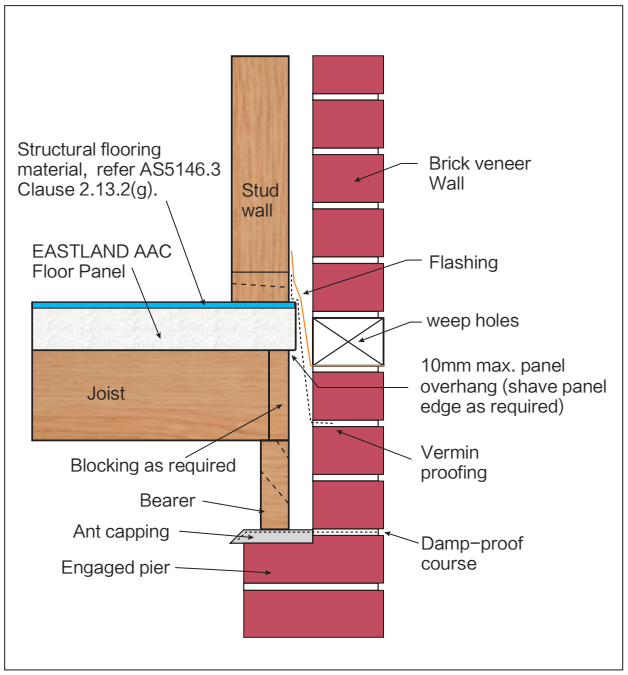


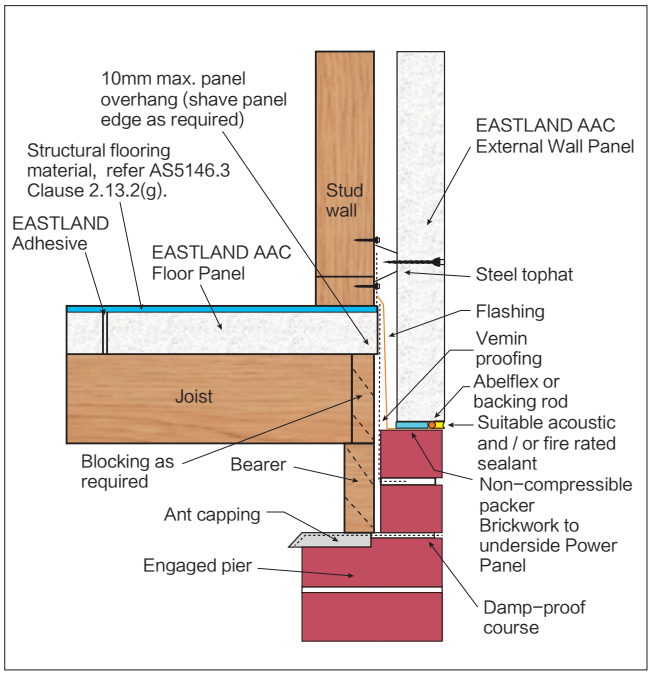


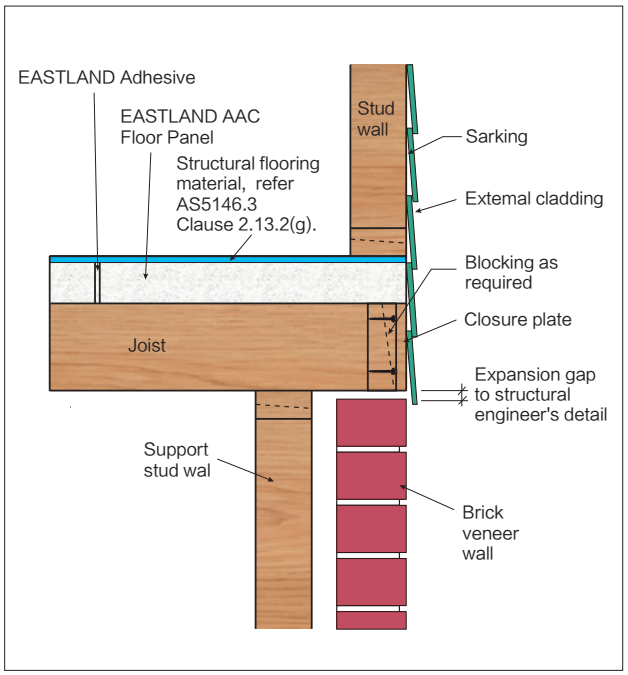


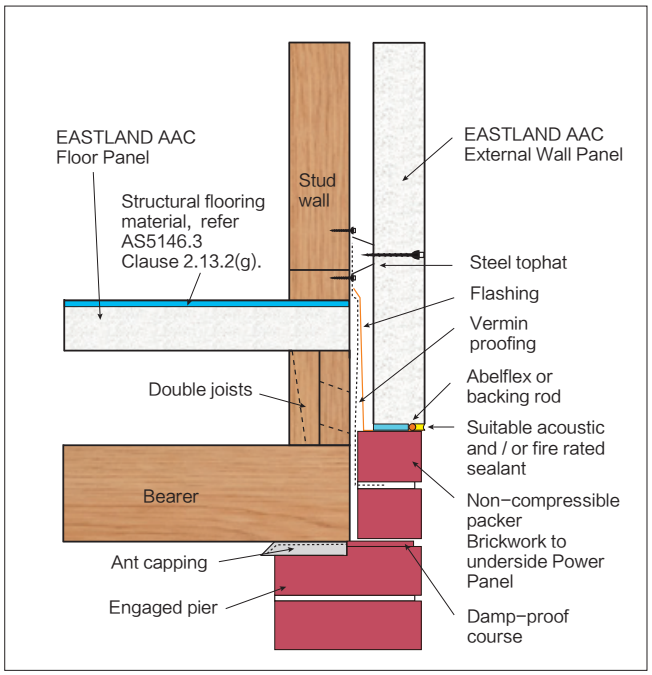


6.1.7 50mm EASTLAND AAC Floor – Interface Detail with External Walls

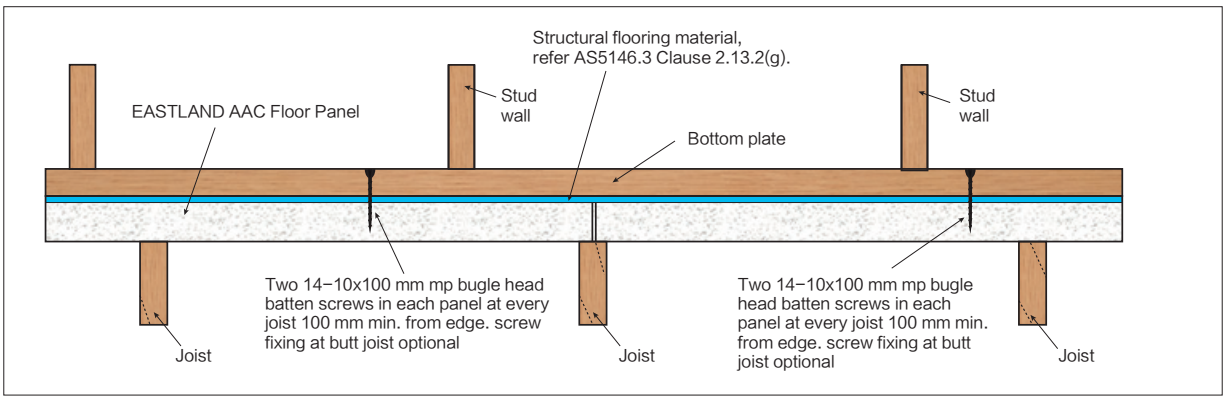


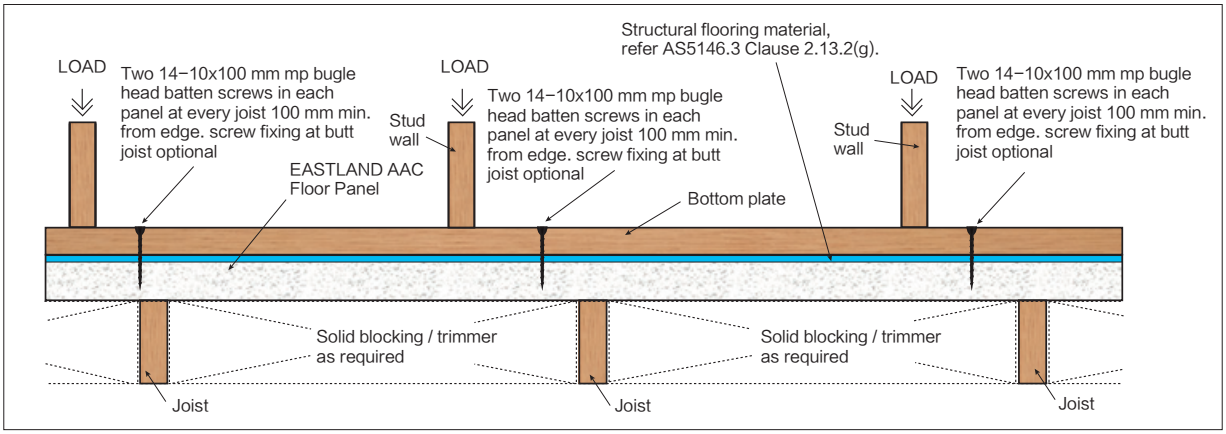


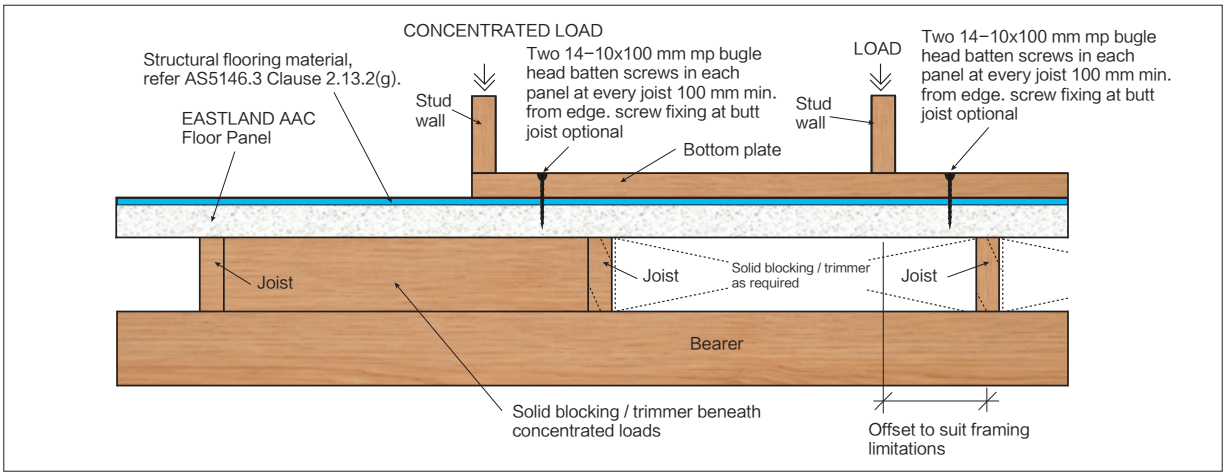


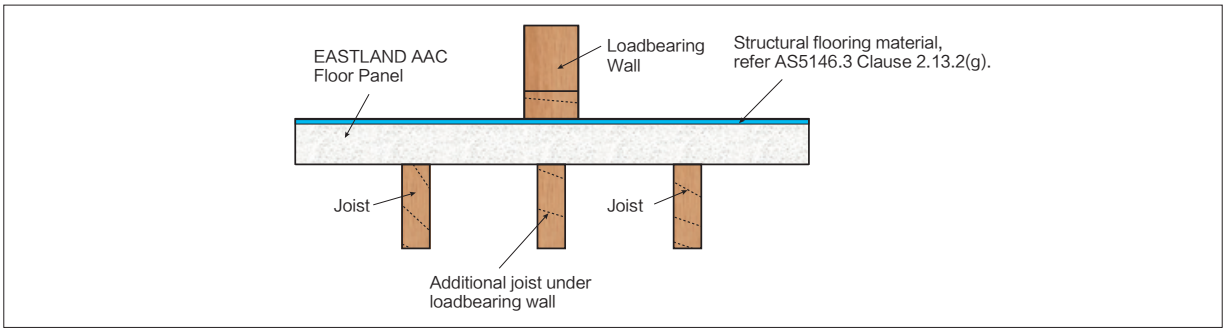


6.1.8 50mm EASTLAND AAC Floor – General Construction Details

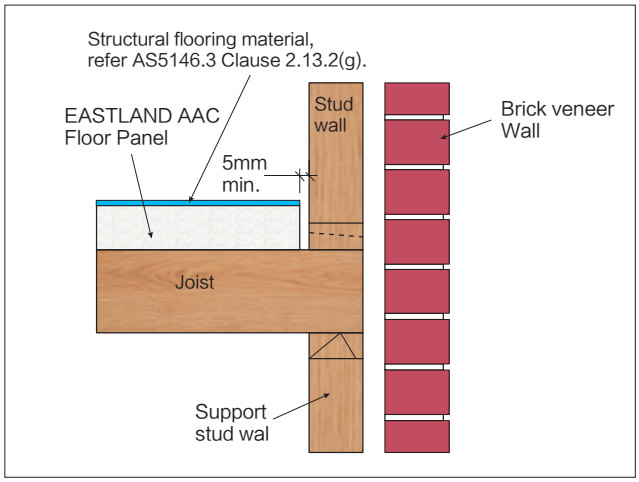


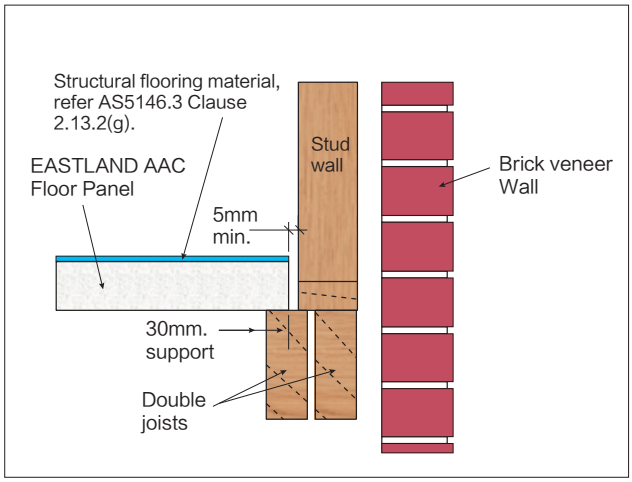


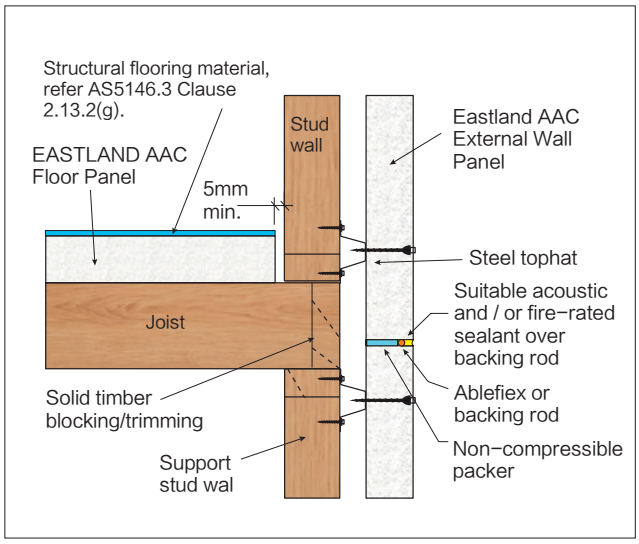


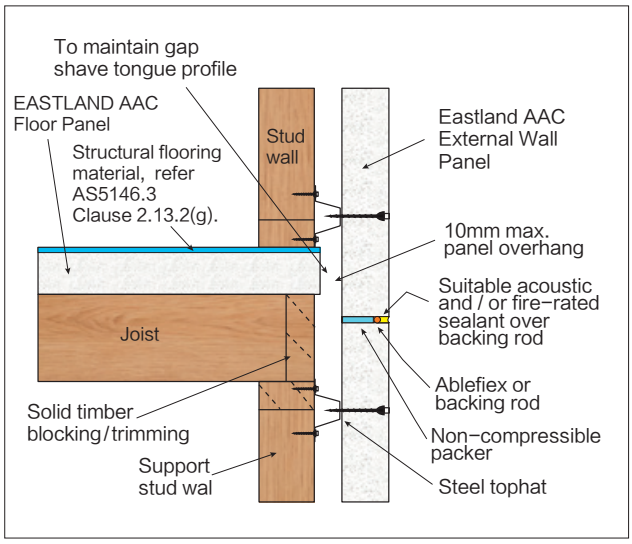


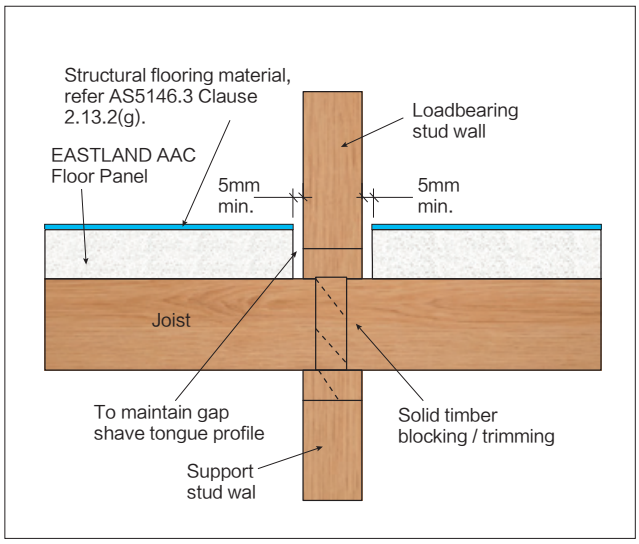
6.1.9 50mm EASTLAND AAC Floor – Multi-level Construction Details

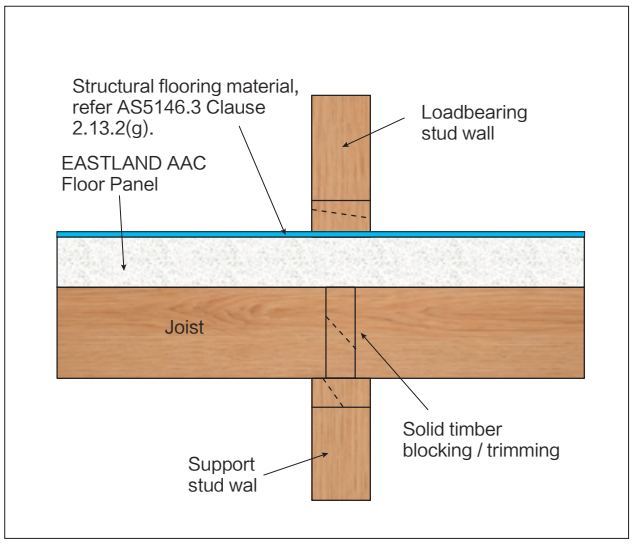




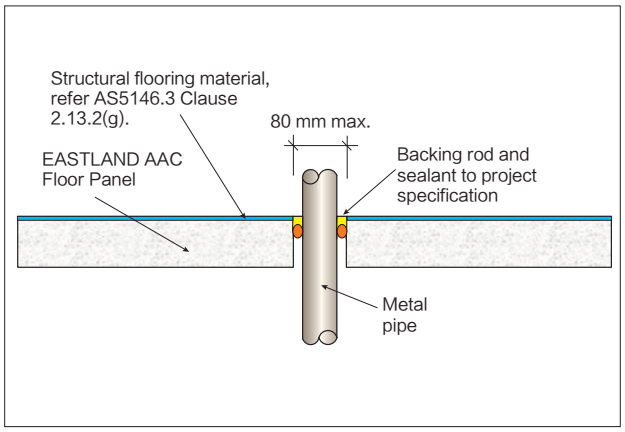


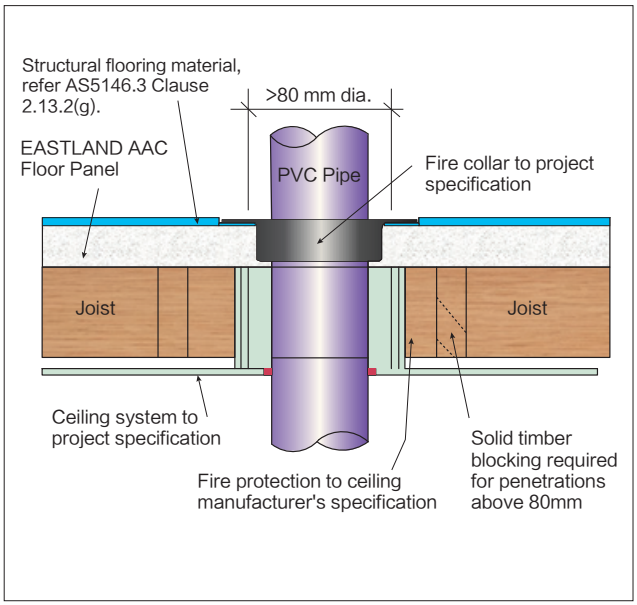


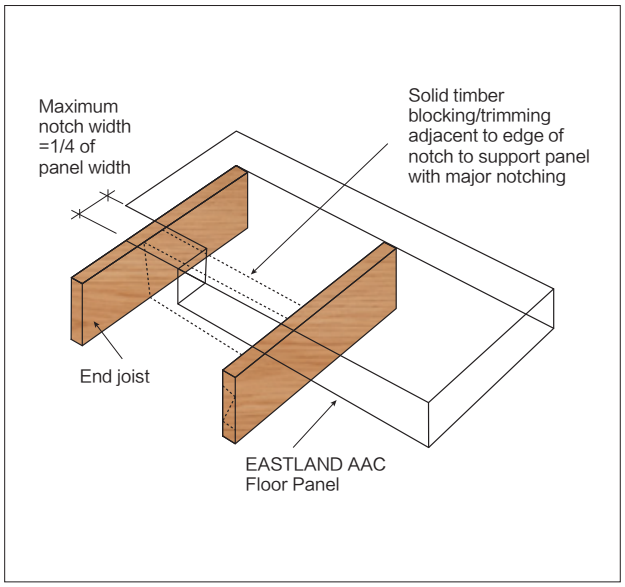


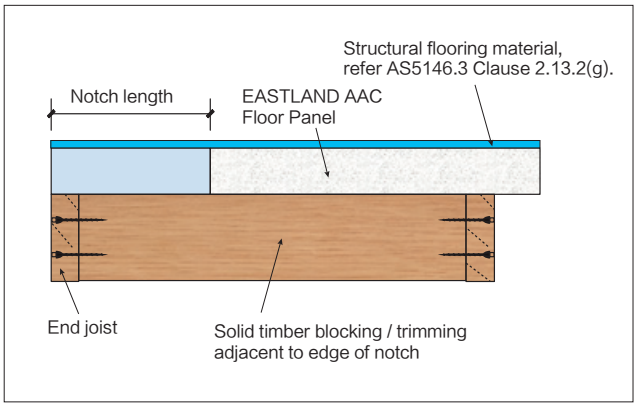


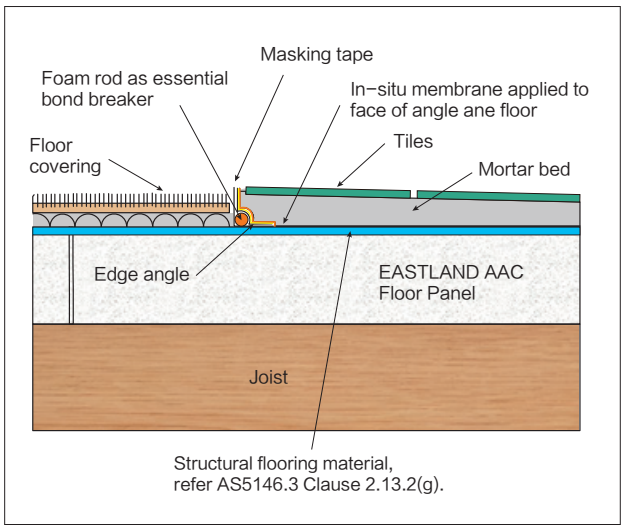
6.1.10 50mm EASTLAND AAC Floor – Penetration Details

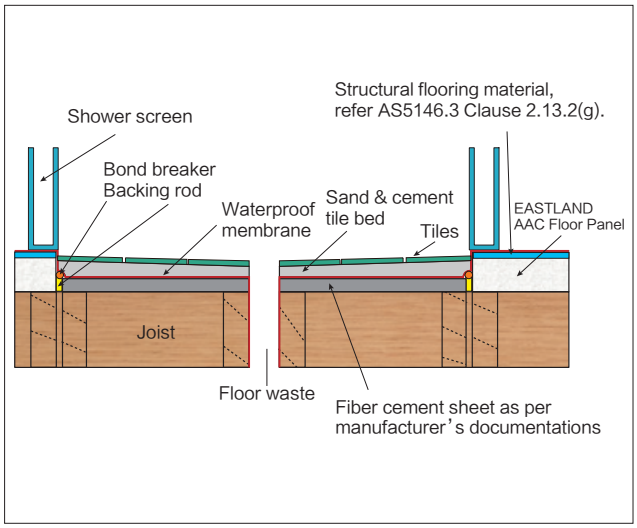




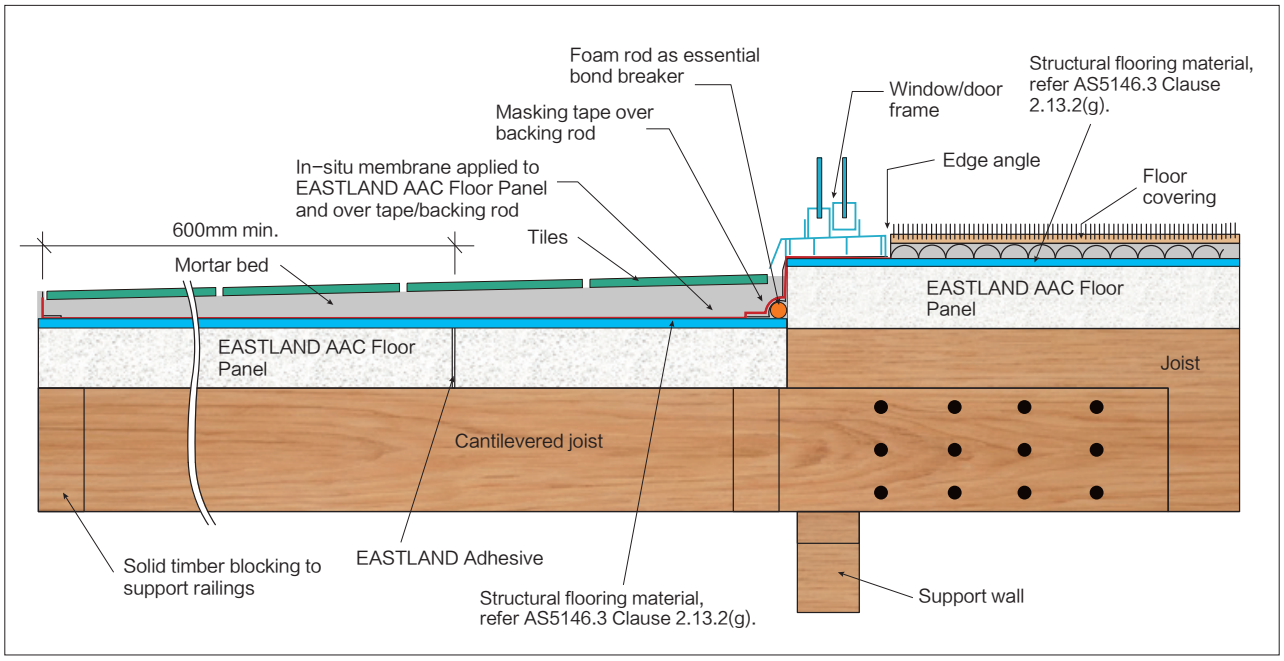


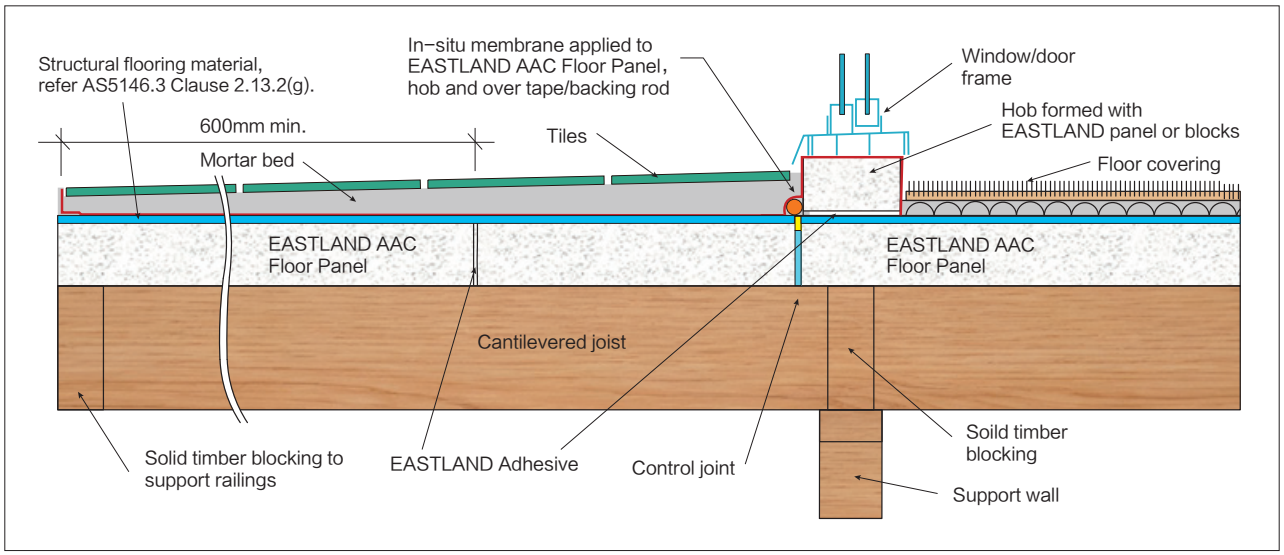


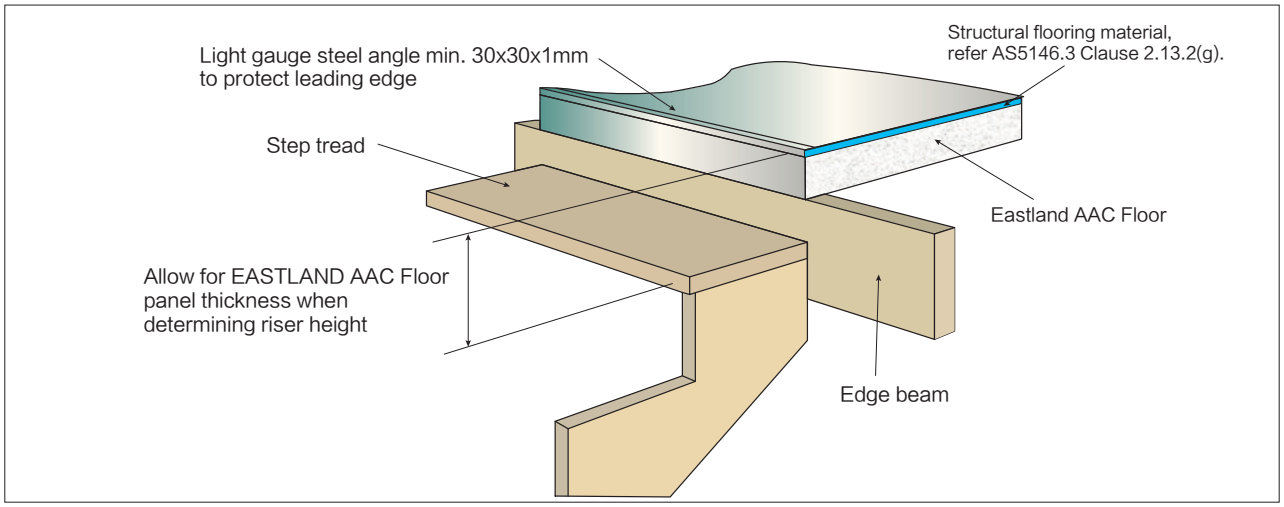




6.1.11 50mm EASTLAND AAC Floor – Balcony & Stair Details

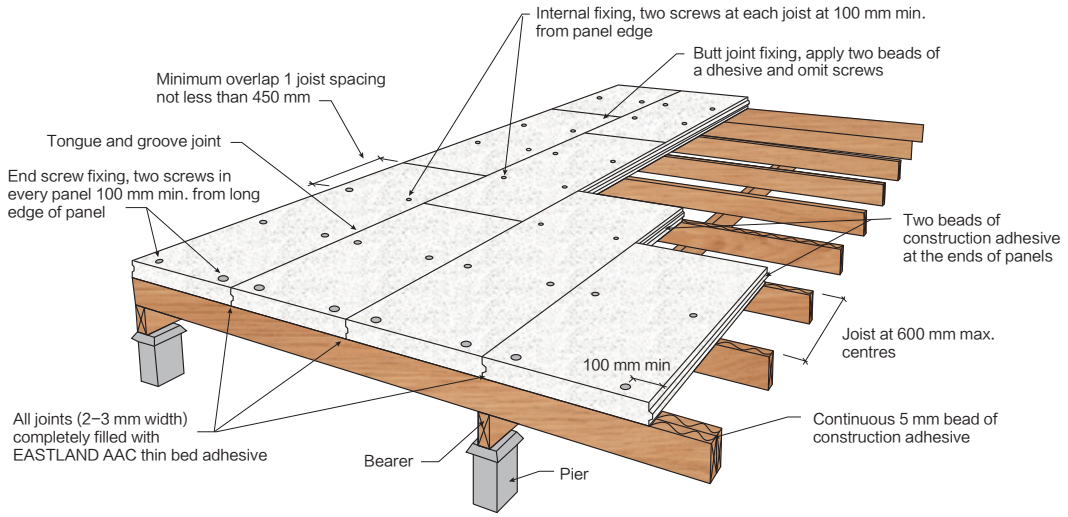






6.2 Fixing of 75mm Eastland AAC Flooring

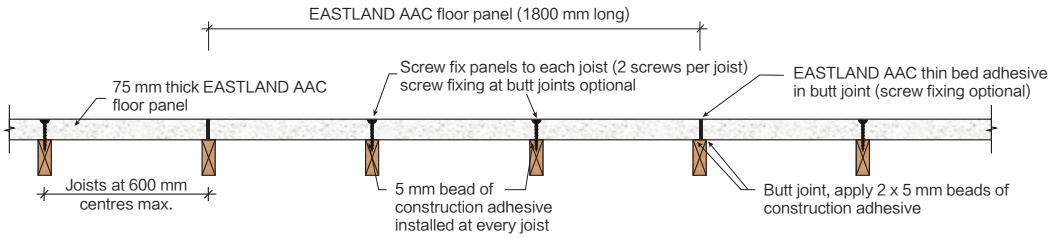
6.2.1 Typical 75mm EASTLAND AAC Floor Panel Layout



NOTES:

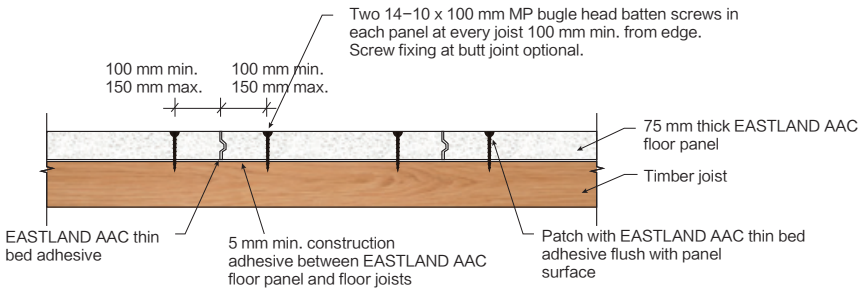
1 Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

6.2.2 Typical 75mm EASTLAND AAC Floor Panel Fixing



NOTES:

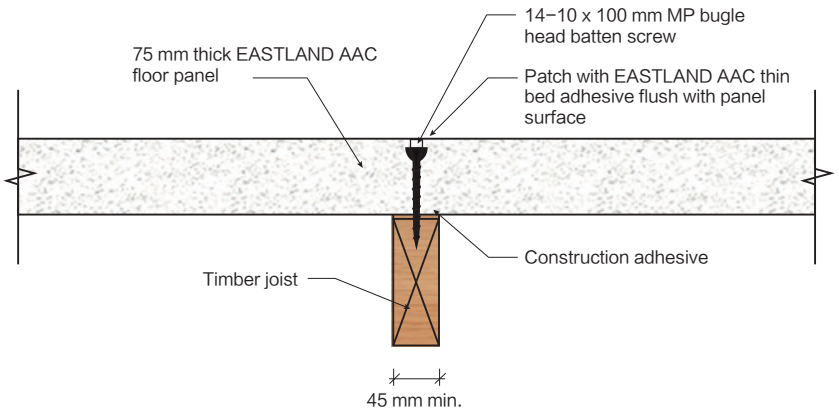
1 Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.



NOTES:

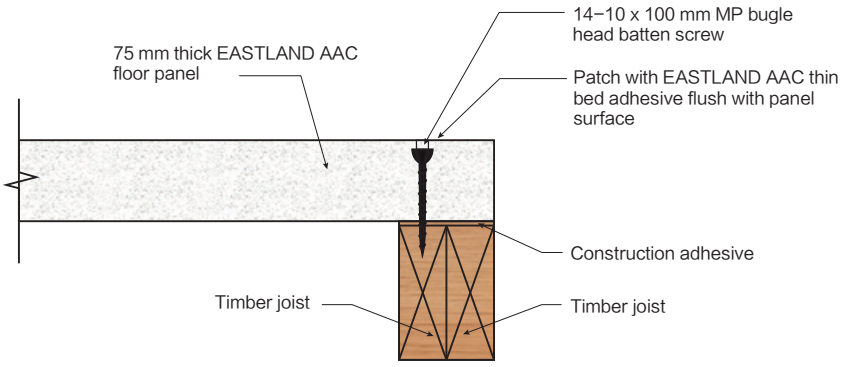
1 Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

6.2.3 Fixing of 75mm EASTLAND AAC Floor Panels into Timber Joists – General



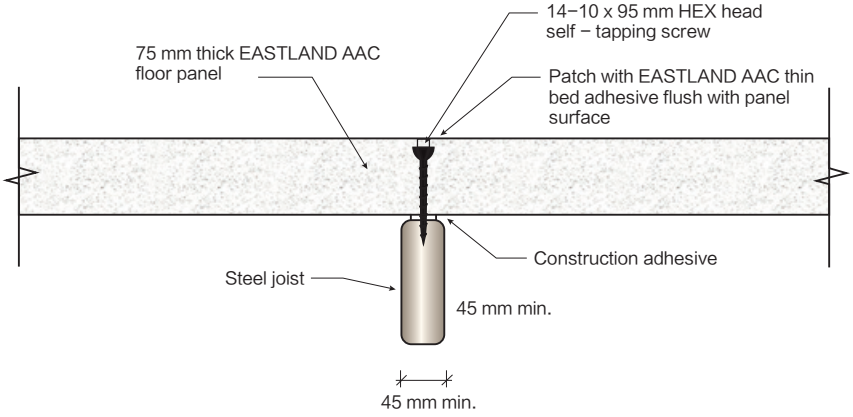
NOTES:
1 Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

6.2.4 Fixing of 75mm EASTLAND AAC Floor Panels into Timber Joists – Panel Ends



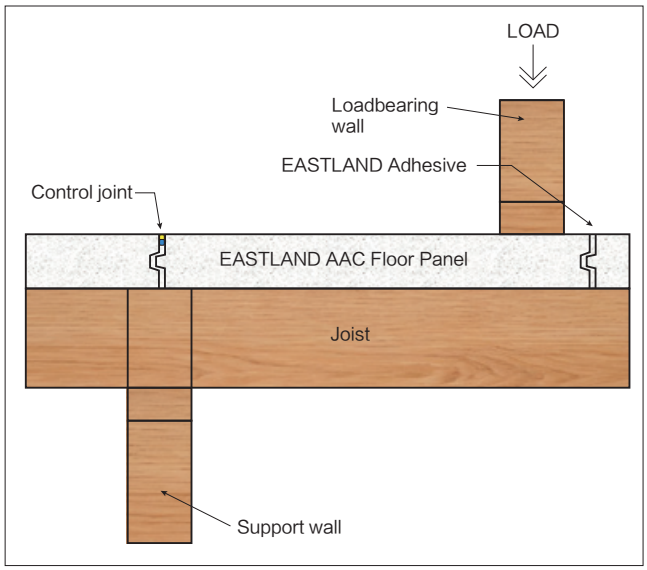
NOTES:
1 Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

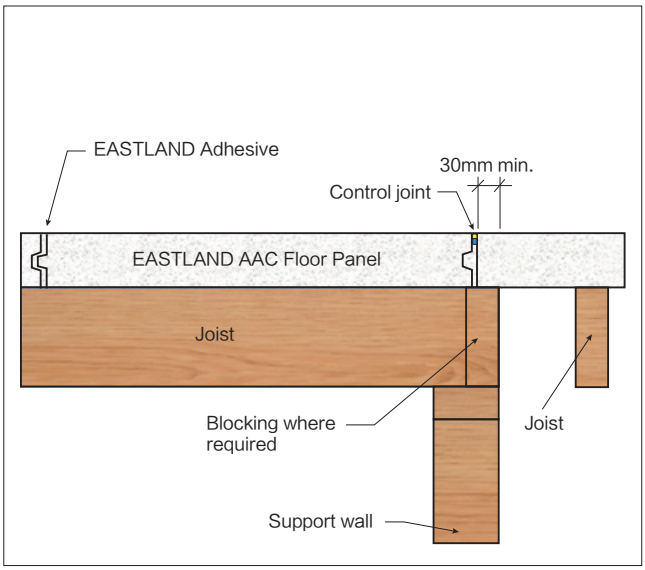
6.2.5 Fixing of 75mm EASTLAND AAC Floor Panels into Steel Joists – General

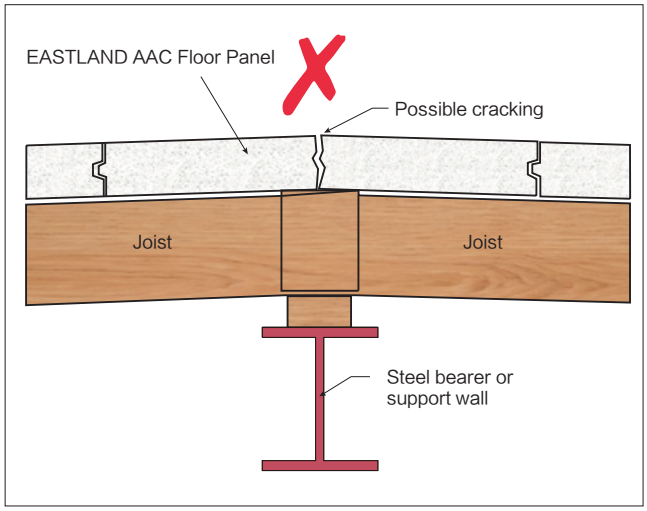


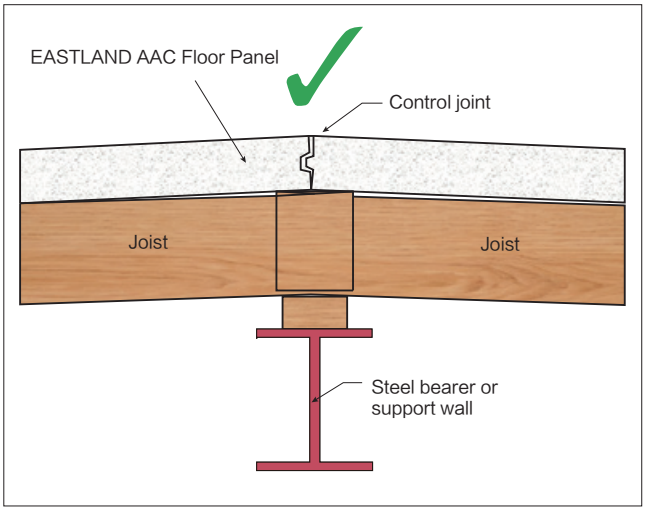
NOTES:
1 Details are applicable to 75 mm Reinforced EASTLAND AAC floor panels.
2 Refer AS5146.3 Section 6.3 for EASTLAND AAC floor installation guidelines.
3 Any recesses at fixings and local chipping shall be patched prior to the installation of floor coverings.

6.2.6 75mm EASTLAND AAC Floor – Control Joint Details

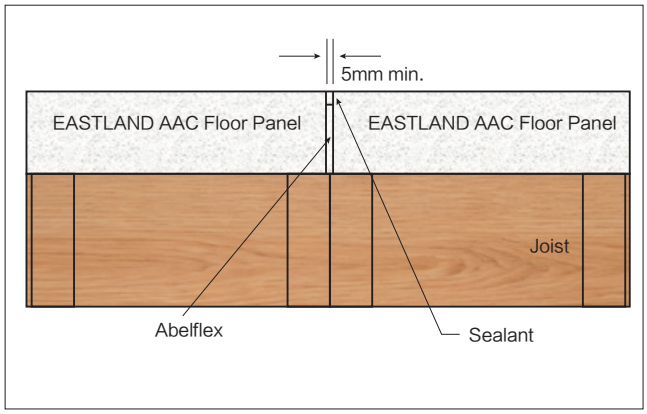


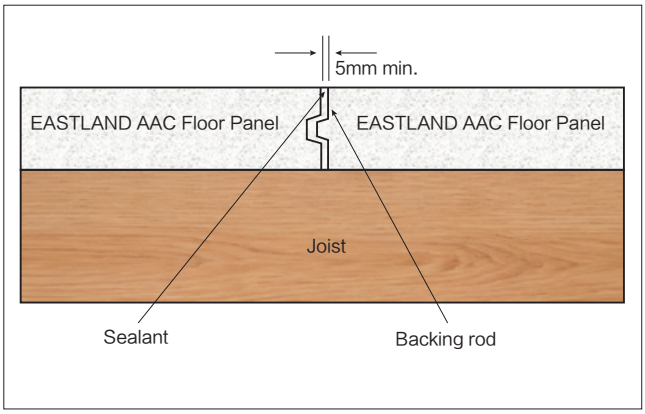




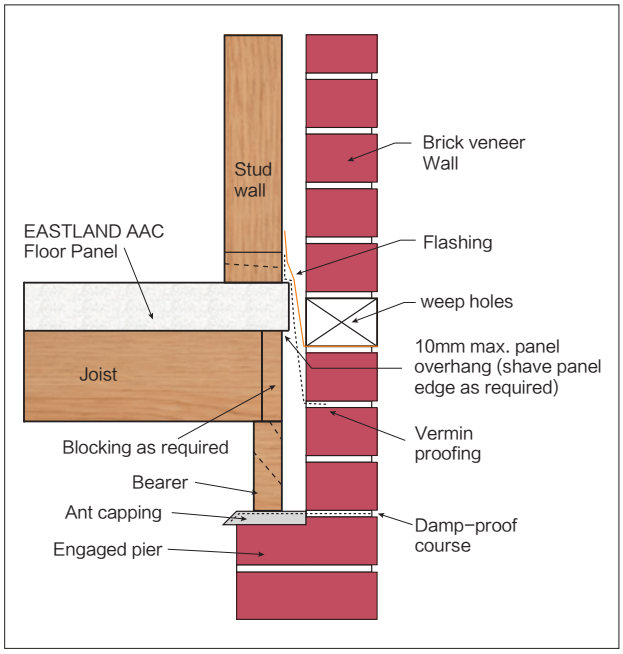


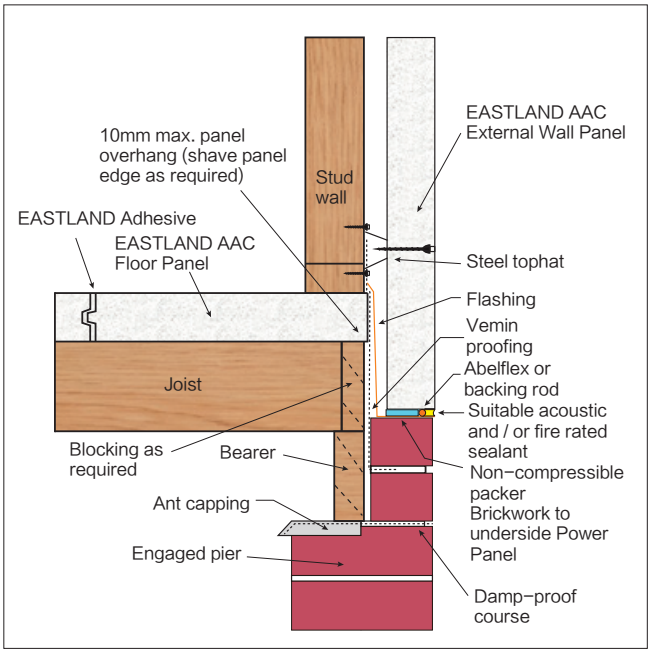
WET AREA DETAIL

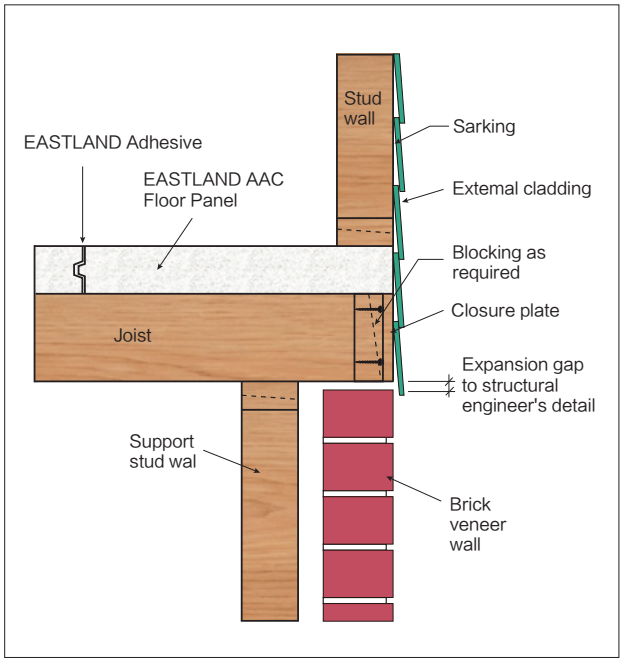


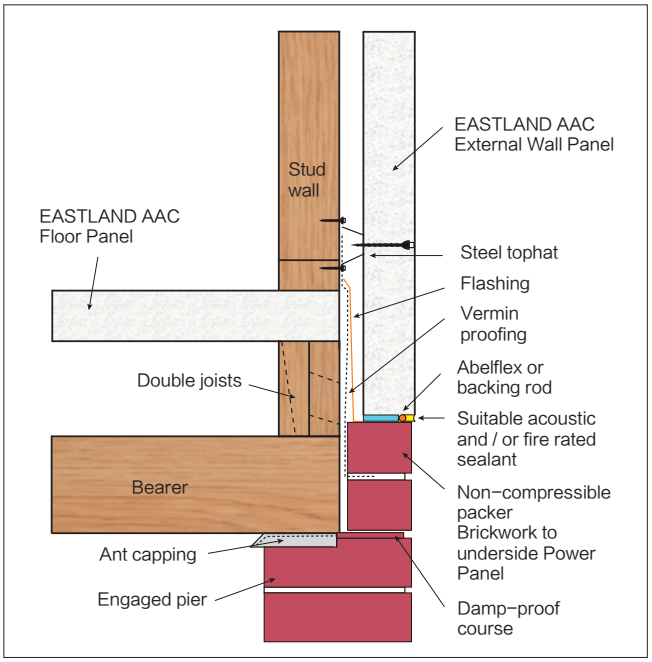


6.2.7 75mm EASTLAND AAC Floor – Interface Detail with External Walls

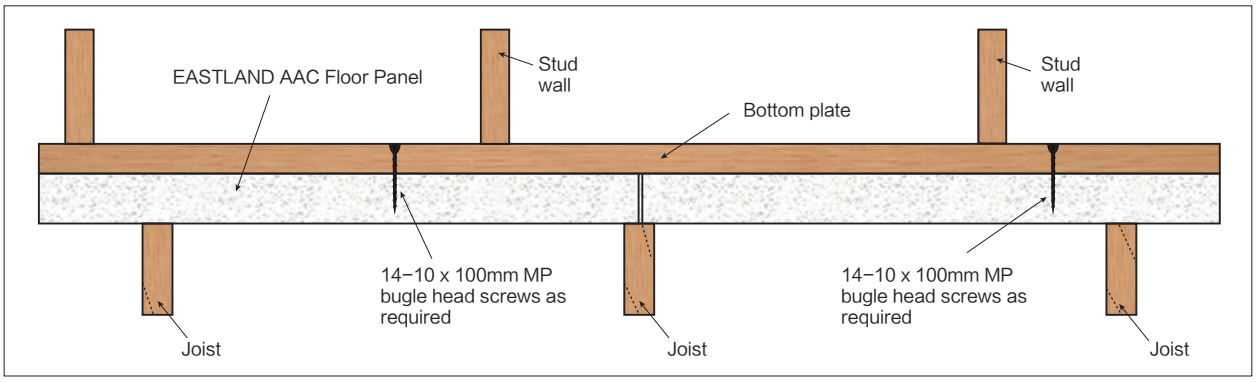


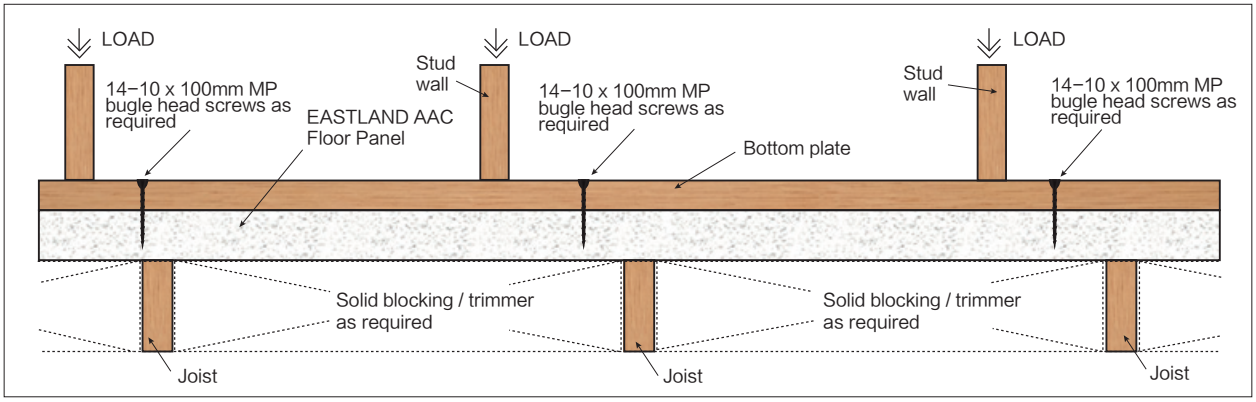


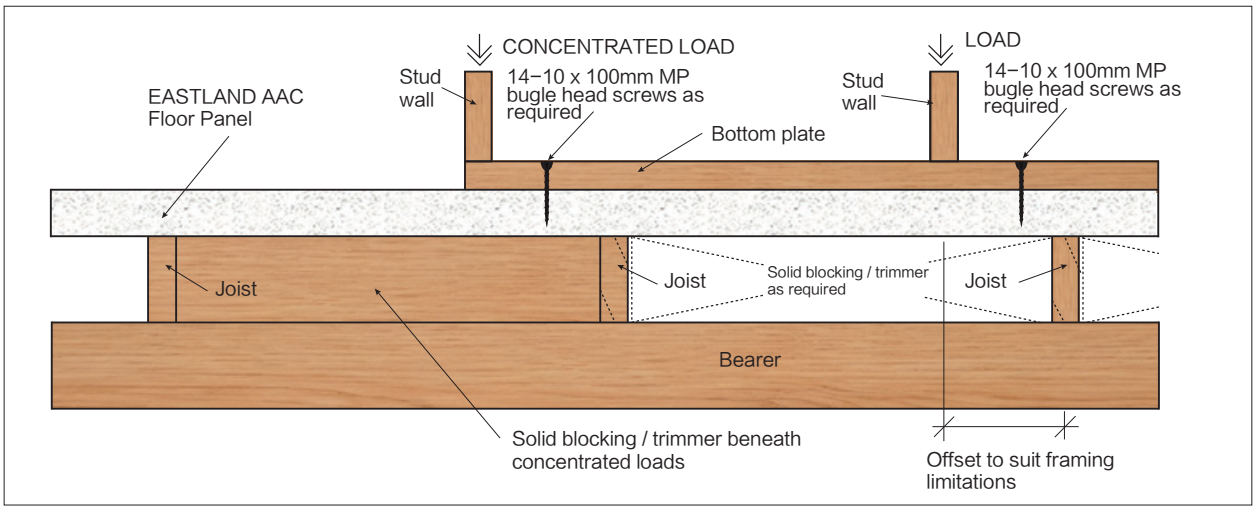


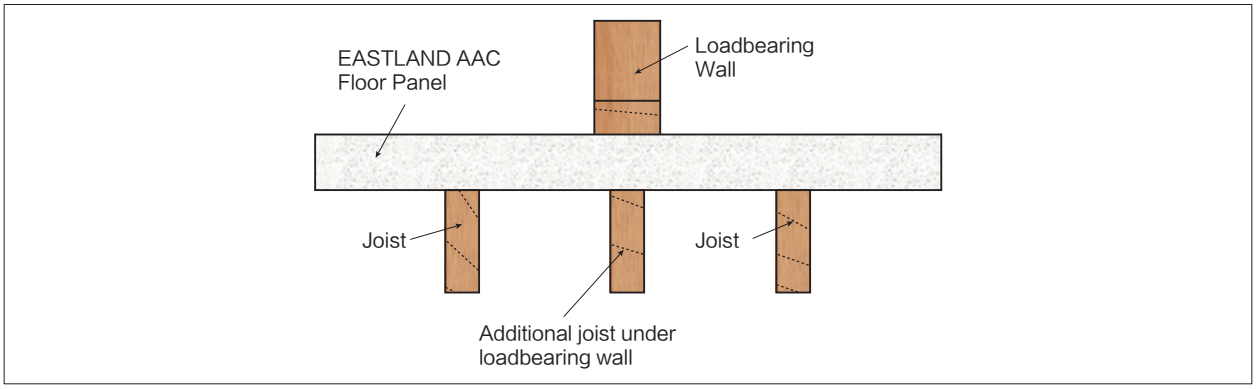


6.2.8 75mm EASTLAND AAC Floor – General Construction Details

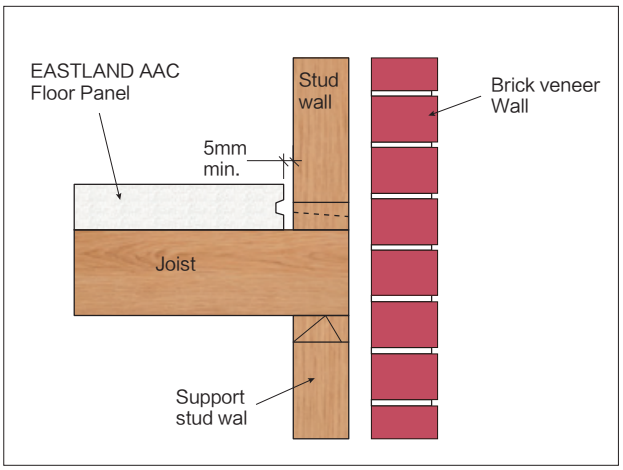


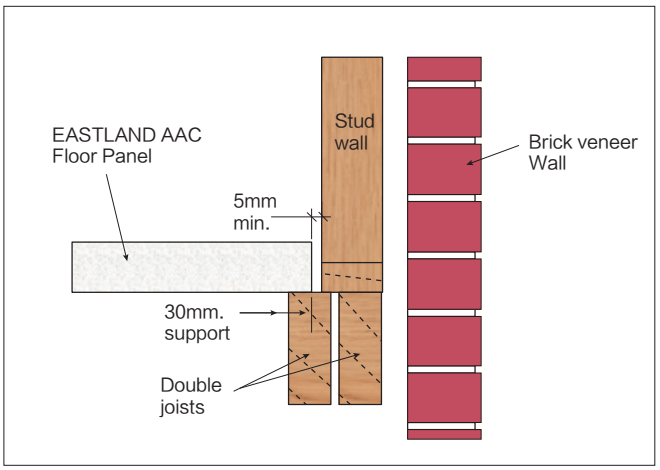


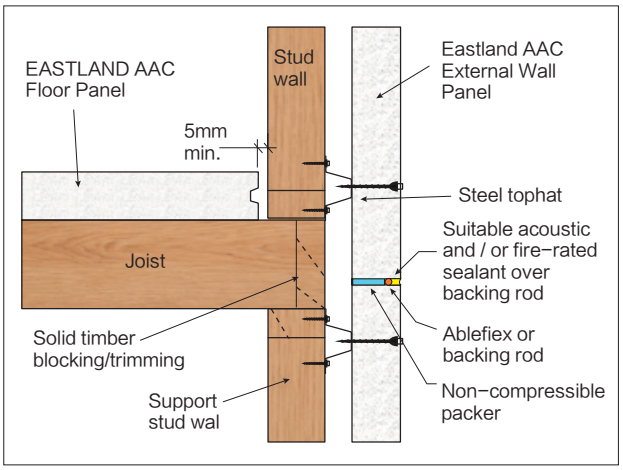


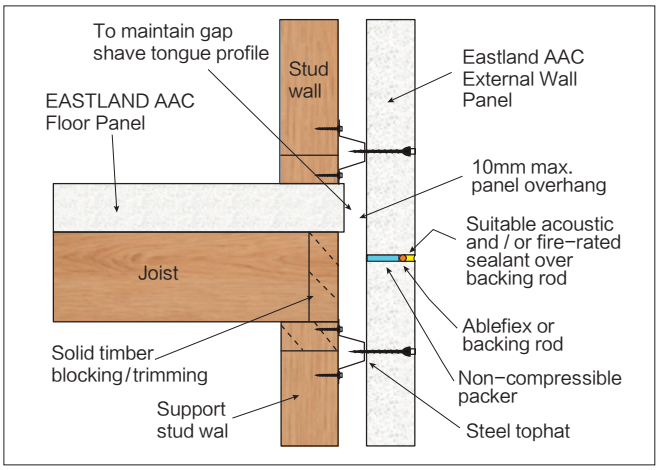


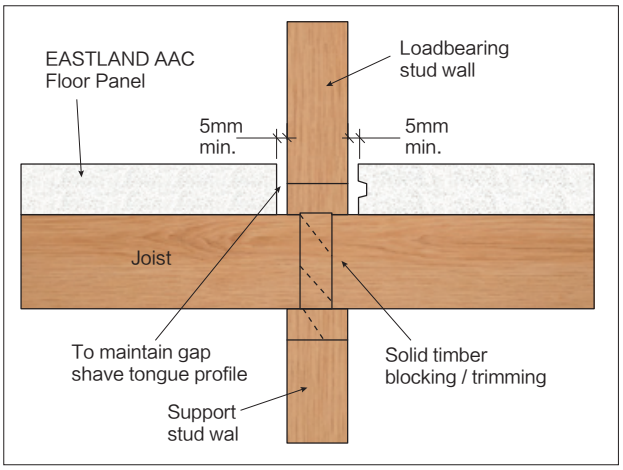
6.2.9 75mm EASTLAND AAC Floor – Multi-level Construction Details

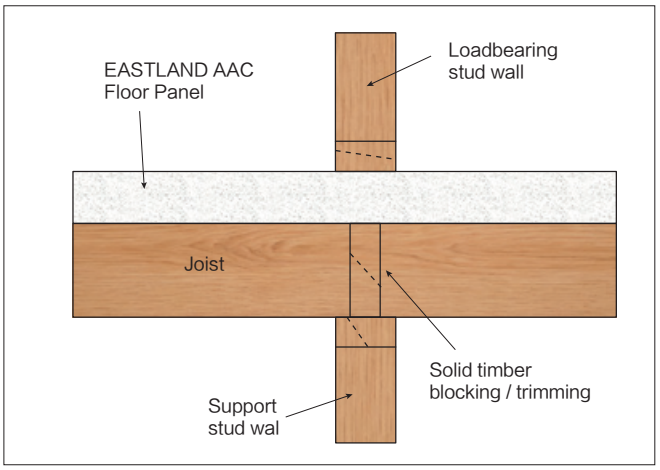




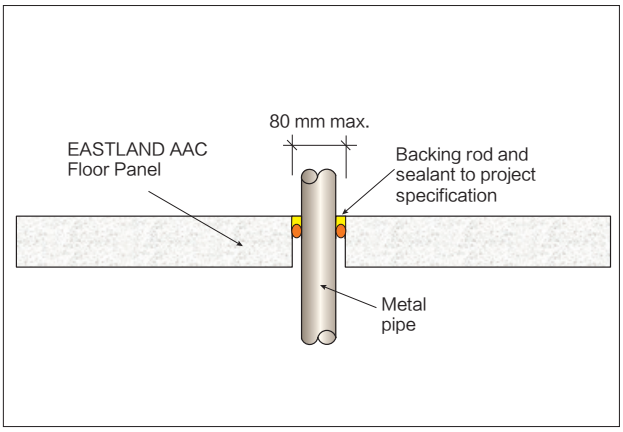


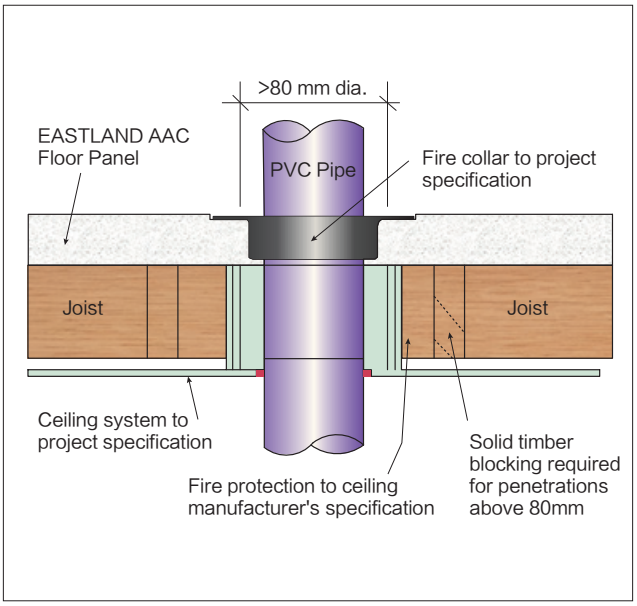


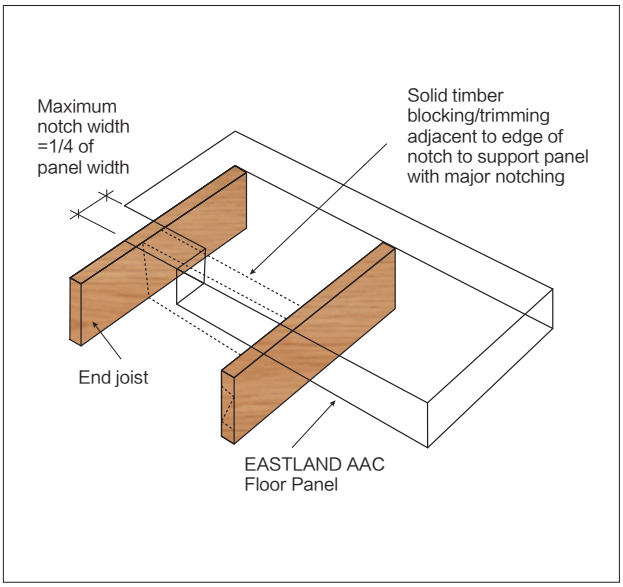


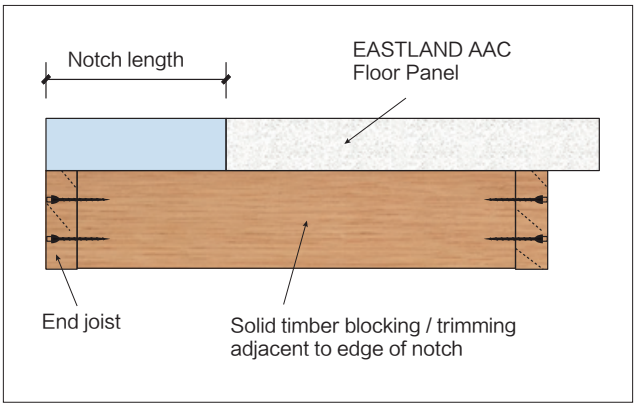


6.2.10 75mm EASTLAND AAC Floor – Penetration Details

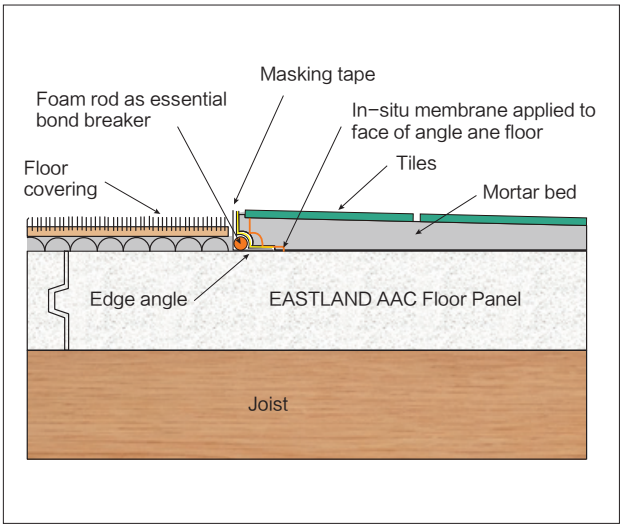


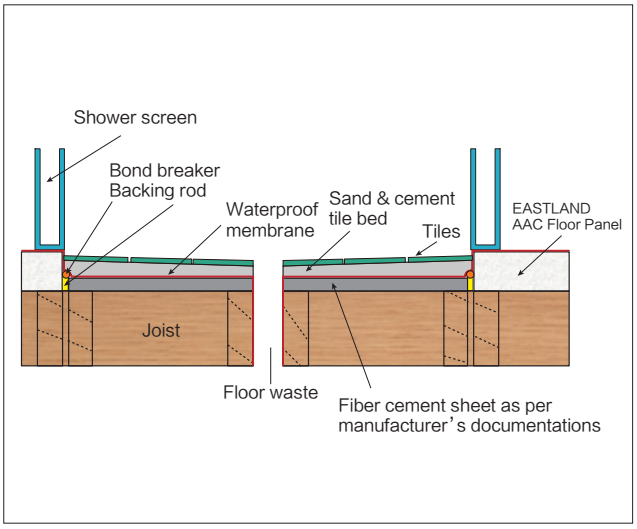




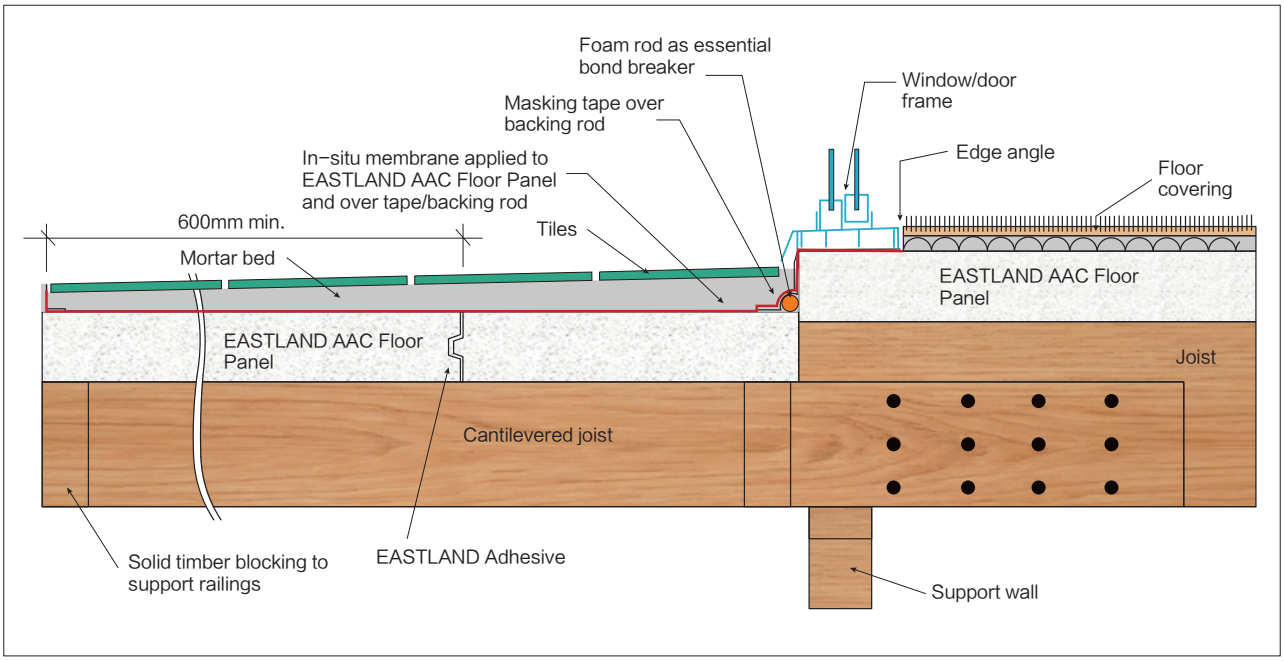


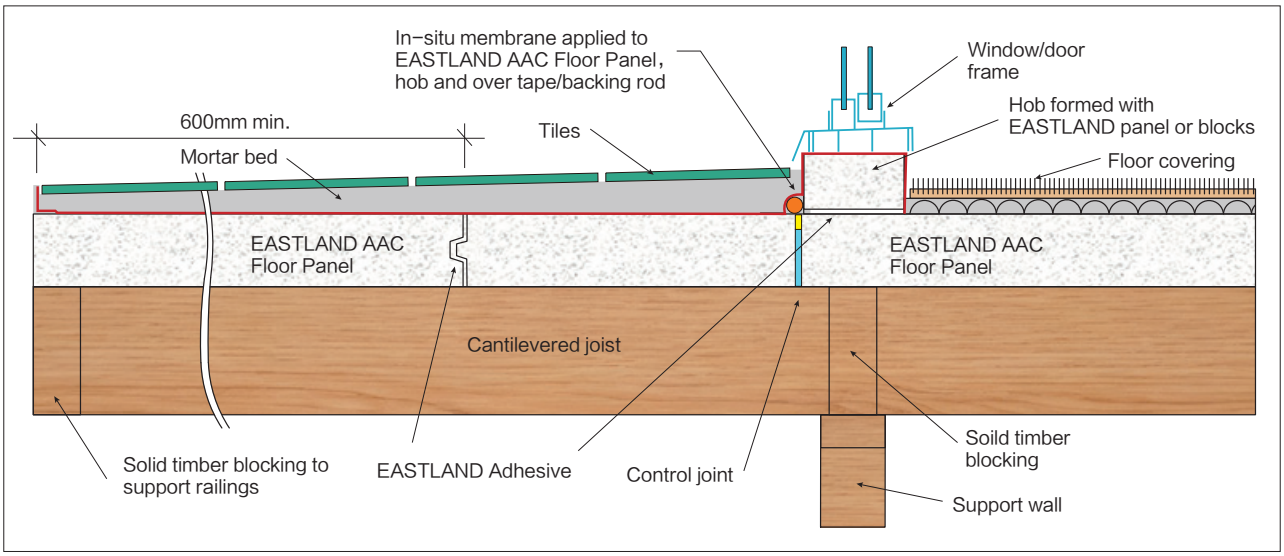
WET AREA DETAIL

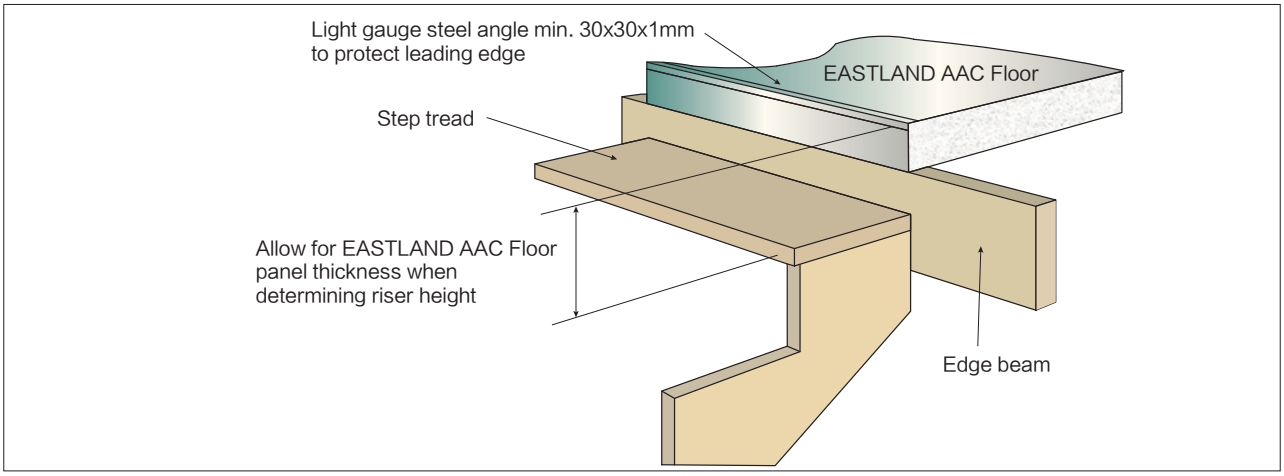




6.2.11 75mm EASTLAND AAC Floor – Balcony & Stair Details







7. Installation of Floor Coverings

For all floor coverings, the first step shall be to thoroughly sweep & vacuum the floor to remove all dust, debris and loose particles. Carefully reveal any surface imperfections such as chips, cracks, gaps, ridges, or similar blemishes. Treat all deficient areas using a suitable and compatible patching compound—such as Eastland AAC adhesive or mortar. Once the repairs are complete, ensure the surface and panels are left clean and fully dry.

7.1 Timber Flooring

Ideally the Eastland AAC shall have a moisture content below 7%, if the moisture content of the Eastland AAC is greater than 7%, a polyethylene sheet is recommended to be laid over the AAC prior to installation of the timber flooring.

7.1.1 Floating Timber flooring

Ensure the Eastland AAC panels are level & true prior to laying floating timber floor, apply a levelling compound if required.

Acoustic rated or standard underlay shall be laid similarly to a concrete slab substrate. The floating timber floor may then be laid as per normal applications.

7.1.2 Timber Strip Flooring

Mechanical fix – lay 12mm plywood sheets over the Eastland AAC floor panels and fixed using an approved construction adhesive such as Maxbond or equivalent, plus coarse thread countersunk screws (length of screws to be 5-10mm less than the panel thickness) at 450mm centres.

Timber Batten fix – Fix the timber battens at the required centres (recommend 450mm centres) using anchors suitable for AAC.

7.2 Carpet

Carpet Straight Edge (Gripper Strips) shall be installed in accordance with AS/NZS 2455.1: 2019. Standard fasteners supplied with the carpet gripper strips are NOT suitable for use with AAC. Special fasteners approved for use with AAC are required (typically type 17 coarse threaded screws and/or masonry plugs – refer Buildex, Ramset or Mungo). Carpet gripper strips are often available without factory supplied fixings.

Medium duty carpet underlays are highly recommended for use on Eastland AAC, for a more comfortable under foot experience.

Once the carpet gripper strips are secured and the underlay is installed, the carpet may be laid as per normal carpet laying requirements.

7.3 Ceramic Tiles

Tile installation shall be as per standard tile laying methodology, using a sealer as required and waterproofing membrane for all wet areas. A bed of mortar is recommended to obtain suitable fall in wet areas, a levelling compound is recommended for general areas. Tile adhesive & tiles may be laid once the preliminary bed / layer is set.

8. Safe Handling and PPE

8.1 Site Safety

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

8.2 Personal Protective Equipment (PPE)

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

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

8.3 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. The panels are likely to crack if lifted laying flat. Site trolleys may be used for moving panels to reduce the strain on installers and to reduce the risk of damaging panels.

8.4 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.

9 Installation

9.1 Tools

The following tools are required when installing Eastland AAC Flooring 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 all supporting structures & substrates have been installed by the builder and/or previous trades and is ready for installation of the Eastland AAC Flooring systems.

9.2 Preparation

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

Accurate set-out of the alignment of the Flooring 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 floor joist direction changes, control joints are required. All joints, corners & interfaces with adjacent materials shall be sealed with fire and acoustic rated sealant.

The supporting frame or ancillary frame components of the Eastland AAC Flooring systems shall be level and aligned. For Low-Rise Residential construction the supporting frames shall be capable of supporting the Flooring 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 walls / substrates shall be designed and constructed in accordance with AS 3600

If supporting frames are out of alignment or not level, efforts shall be made to bring the structure into alignment prior to installing the Eastland AAC floor panels.

9.3 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.

The edges of the installed panels shall have Eastland AAC Adhesive applied continuously along the vertical faces, such that when the subsequent panel is placed 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 joists. Excess adhesive on the top 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.

9.4 Insulation

Insulation shall be installed in accordance with AS 3999:2015 and manufacturers' instructions. All insulation shall fill the floor framing between joists with no gaps between batts or blankets to ensure the acoustic performance is not adversely affected.

9.5 Plasterboard Ceiling 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, joins between sheets shall be offset to avoid acoustic flanking. Plasterboard sheets shall be fixed either directly to the floor framing or using resilient mounts for impact noise attenuation.

9.6 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.

9.7 Penetrations

All electrical, plumbing and other service penetrations through Flooring 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 Flooring 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 Flooring panels.

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.