INNOVA by etex

October 2025

Bushfire Solutions

Bushfire prone construction to AS 3959

Technical Supplement
Australia

Disclaimer

Innova products and systems designed by Etex Australia Pty Ltd are produced in accordance with the Building Code of Australia and relevant Australian Standards at the time of publication. Information in this document is to be used as a guide and is subject to project approval as many aspects of construction are not comprehensively covered. It is the responsibility of the designer to confirm Innova products and systems are suitable and meet the requirements for the intended application. Etex Australia Pty Ltd will not be held responsible for any claims resulting from installation not in accordance with the manufacturer's technical literature or relevant Standards.

Failure to design, install, finish and maintain Innova fibre cement products accordance with this Technical Supplement, Design & Installation Guides, applicable state or territory building codes, regulations and Australian Standards may lead to injury, reduction in performance, violate building codes and product warranties.

Innova regularly updates technical literature; to ensure this document is current with the latest information, visit innovafibrecement.com.au.

About Innova

Innova is a commercial brand of Etex, a global building material manufacturer and pioneer in lightweight construction. Etex wants to inspire people around the world to build living spaces that are ever more safe, sustainable, smart, and beautiful. Founded in 1905 in Belgium, Etex are a family-owned company with more than 13,500 employees across 160 sites and 45 countries.

Innova are the fibre cement specialists, and distribute external cladding systems, interior lining and flooring substrate products specifically designed for the residential and commercial markets in Australia and New Zealand

With a deep understanding of the local market needs, the Innova range of fibre cement products provide architects, designers, builders and homeowners with a range of traditional and contemporary solutions to create spaces that work for their project.

Innova are constantly looking for ways to evolve and innovate their product offering, adapting to changes in the market.

Innova - built on change, backed by Etex.

1. Working Safely

1.1 Working Safely with Innova Fibre Cement

WARNING: P2 OR HIGHER-GRADE RESPIRATOR MUST BE WORN AND PRODUCT CUT OUTDOORS.

Innova fibre cement is manufactured from finely ground sand (silica), cellulose fibers, portland cement and additives. In the product's manufactured state, it does not release airborne dust. Inhalation of Respirable Crystalline Silica (RCS) is hazardous and can cause damage to lungs, respiratory system, and cancer when users are exposed to dust over prolonged periods without adequate controls in place.

The risks associated with RCS inhalation arise during installation activities where mechanical methods are used for cutting, rebating, drilling, routing, crushing, sanding and cleaning up, disposing of, or relocating dust.

Before, during and after installation, it is important to be aware of activities that generate and lead to dust becoming airborne. Innova recommends following the Innova Working Safely Guidelines listed below in addition to site-specific safety procedures, Safe Work Australia guidelines and state or territory guidelines.

USERS ARE RESPONSIBLE FOR ADHERING TO GUIDELINES, RECOMMENDATIONS, SAFETY DATA SHEETS, INSTALLATION GUIDES, FEDERAL AND LOCAL REGULATIONS TO AVOID SERIOUS HEALTH IMPACTS.

Control the risks by utilising engineering controls (i.e. tools/equipment), administrative controls (i.e. workspace/safe work method statement) and correct PPE (i.e. respirator/eye wear).

1.2 Innova Working Safely Guidelines

Documentation

Read the current Safety Data Sheet and Working Safely documents available at innovafibrecement.com.au.

ALWAYS wear a properly fitted P2 or higher-grade respirator when cutting, drilling, rebating, sanding.

ALWAYS alternate cutting activities with others to reduce exposure time.

AVOID using power tools to cut or shape fibre cement products indoors.

NEVER use a saw blade that is not designed to cut fibre cement.

ALWAYS use on-tool dust extraction when using power tools; M or H-Class vacuum fitted with a HEPA filter.

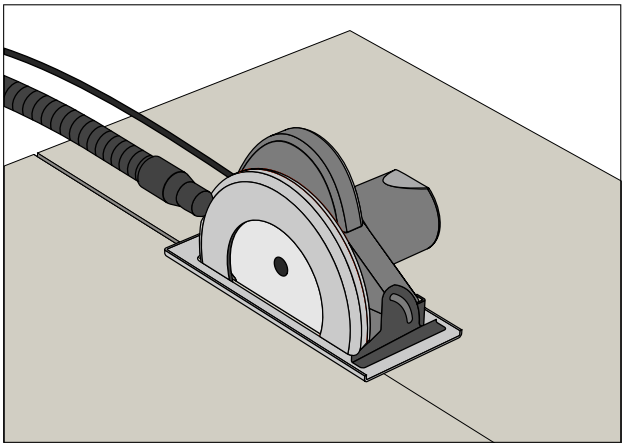
ALWAYS follow the tool manufacturer's guidelines for correct and safe operation.

DO NOT dry sweep. Use wet suppression then sweep or H or M-Class vacuum.

DO NOT continue activities if you are concerned about exposure levels or cannot comply with the above guidelines.

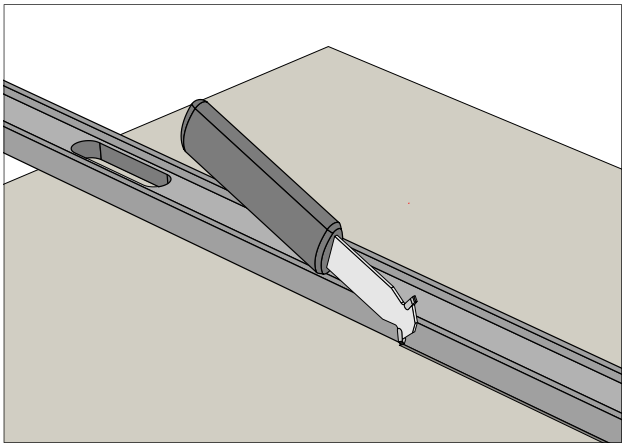
Power Saw

Circular, compound mitre and track saws with dust extraction provide accurate and clean cuts. Ensure saw is fitted with a PCD 4 or 6 tooth fibre cement blade. Always follow the manufacturers guidelines for safe operation.



Score and Snap Knife

Score the face of the product using a straight edge and repeat until adequate depth is achieved for a clean break when pulling upwards. Smooth rough edges with a rasp.



2. Requirements and Compliance Guidance

2.1 Introduction

Building structures located in bushfire-prone areas must be designed to resist a bushfire. The National Construction Code (NCC) refers to AS 3959: 2018, Construction of buildings in bushfire-prone areas and is the governing standard for building in these locations.

Effective protection requires a holistic and systematic approach that takes into account the entire building to ensure resilience against bushfire attack. AS 3959: 2018 provides prescriptive methods outlining how building elements must be designed, detailed, and constructed to achieve adequate levels of resistance to ember attack, radiant heat, and direct flame contact.

2.2 Systems and Bushfire Applications

This guide outlines Innova fibre cement products, which can be used to meet the requirements of AS 3959 across different Bushfire Attack Level (BAL) categories.

Fibre cement is widely recognised as a material suitable for non-combustible construction, and when specified in accordance with minimum thickness, it offers a robust solution for building elements such as external walls, eaves, and soffits.

This Technical Supplement does not cover all areas of bushfire construction including, but not limited to doors, windows, fascias, roofs, and penetrations. Refer to AS 3959:2018 for further information. This supplement does not replace the standard; rather, it is intended to assist designers and builders in designing and constructing with Innova fibre cement products for BAL zones. This Technical Supplement should always be used in conjunction with the current Australian Standard and relevant local building regulations.

The Innova product range includes external cladding, structural flooring, eaves and soffits linings systems that have been assessed and demonstrated to comply with the non-combustibility criteria and thickness thresholds for BAL zones specified in AS 3959:2018. These cladding systems provide designers and builders with options for achieving compliance whilst maintaining architectural flexibility.

Whilst Innova products, systems and literature provide compliant methods of construction in bushfire zones, it is the responsibility of the project designer to ensure that the building as a whole meets bushfire construction requirements. The project engineer must assess the bushfire adequacy of the building incorporating Innova products and systems to determine whether additional detailing is necessary.

2.3 Bushfire Attack Level (BAL)

The Bushfire Attack Level (BAL) is the primary framework for determining the construction requirements of buildings in bushfire-prone areas. BAL is defined as a measure of the severity of a building's potential exposure to ember attack, radiant heat, and direct flame contact. Each BAL corresponds to a level of heat flux exposure, which in turn dictates the required construction methods and materials.

The BAL scale, as set out in AS 3959, includes:

- BAL–Low
- BAL–12.5
- BAL–19
- BAL–29
- BAL–40
- BAL–FZ (Flame Zone)

Each BAL corresponds to specific heat flux exposure thresholds has been shown in the Figure 1 below.

Table 1 to Table 5 outlines Innova product suitability and additional requirements to adhere to BAL construction requirements.

BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5	BAL-LOW
Direct exposure to flame and radiant heat levels exceeding 40 kW/m2.	Very high risk, exposure to heat flux up to 40 kW/m2, with possible flame contact.	Exposure to embers and radiant heat up to 29 kW/m2.	Increased exposure to ember attack and heat flux up to 19 kW/m2.	Ember attack	Minimal risk, no specific construction requirements.

Figure 1. Bushfire attack levels

Product suitability for construction in BAL-12.5 Bushfire Zones

Table 1: BAL-12.5 rating in accordance with AS 3959:2018

Category	Type	Product	Thickness (mm)	BAL Rating	AS 3959 Ref.
Exterior Walls	Weatherboards	Nuline®	14	✓	Cl. 5.4.1 (c) (ii)
		Stratum®	12	✓	Cl. 5.4.1 (c) (ii)
		Contour®	10	✓	Cl. 5.4.1 (c) (ii)
		Duraplank®	7.5	✓	Cl. 5.4.1 (c) (ii)
	Exterior Facades	Duragroove®	9	✓	Cl. 5.4.1 (c) (ii)
		Durascape®	9	✓	Cl. 5.4.1 (c) (ii)
		Duragrid®	9	✓	Cl. 5.4.1 (c) (ii)
		Duracom®	9	✓	Cl. 5.4.1 (c) (ii)
			12		
	Exterior Base Sheets	Duratex®	7.5	✓	Cl. 5.4.1 (c) (ii)
			9		
		Stonesheet®	9	✓	Cl. 5.4.1 (c) (ii)
	Pre-Finished Facade	Montage®	16	✓	Cl. 5.4.1 (c) (ii)
			18		
	Features	Effects® fascia	14	✓	Cl. 5.6.6 (d)
		Effects® base trim	19	✓	Cl. 5 [varies]
			38		
Eaves & Soffits	Eaves Linings & Soffits	Durasheet®	4.5	✓	Cl. 5.6.6 (d)
			6		
		Duralux®	6	✓	Cl. 5.6.6 (d)
			9		
		Intergroove®	7.5	✓	Cl. 5.6.6 (d)
Flooring	Flooring	Durafloor®	19	✓	Cl. 5.3.2.1 Cl. 5.3.2.2 (a) (ii) Cl. 5.7.2.4 (a) Cl. 5.7.3.3 (a)
			22		
		Compressed Flooring	15	✓	Cl. 5.3.2.1 Cl. 5.3.2.2 (a) (ii) Cl. 5.7.2.4 (a) Cl. 5.7.3.3 (a)
			18		
			24		

Note:

1. "✓" denotes acceptable use of the product.
2. "N/A" denotes product is not suitable for installation.
3. "Cl" denotes clause reference to the relevant clause in AS 3959:2018.
4. All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or buttjointed.
5. Combustible external mouldings, jointing strips, trims and sealants may be used for decorative purposes or to cover joints between sheeting material.
6. Joints in eaves linings, fascias and gables may be sealed with plastic joining strips or timber storm moulds.
7. Where wall wrap is required, it shall have a flammability index of not more than 5 when tested to AS 1530.2.
8. The BAL-12.5 denotes as there is a risk of ember attack. The construction elements are expected to be exposed to heat flux up to 12.5 kW/m2.
9. Vents and weepholes in external walls shall be screened with a mesh made of corrosion-resistant steel or bronz, or aluminium (for exceptions see clause 3.6 of AS 3959)

Product suitability for construction in BAL-19 Bushfire Zones

Table 2: BAL-19 rating in accordance with AS 3959:2018

Category	Type	Product	Thickness (mm)	BAL Rating	AS 3959 Ref.
Exterior Walls	Weatherboards	Nuline®	14	✓	Cl. 6.4.1 (c) (ii)
		Stratum®	12	✓	Cl. 6.4.1 (c) (ii)
		Contour®	10	✓	Cl. 6.4.1 (c) (ii)
		Duraplank®	7.5	✓	Cl. 6.4.1 (c) (ii)
	Exterior Facades	Duragroove®	9	✓	Cl. 6.4.1 (c) (ii)
		Durascape®	9	✓	Cl. 6.4.1 (c) (ii)
		Duragrid®	9	✓	Cl. 6.4.1 (c) (ii)
		Duracom®	9	✓	Cl. 6.4.1 (c) (ii)
			12		
	Exterior Base Sheets	Duratex®	7.5	✓	Cl. 6.4.1 (c) (ii)
			9		
		Stonesheet®	9	✓	Cl. 6.4.1 (c) (ii)
	Pre-Finished Facade	Montage®	16	✓	Cl. 6.4.1 (c) (ii)
			18		
	Features	Effects® fascia	14	✓	Cl. 6.6.6 (d)
		Effects® base trim	19	✓	Cl. 6 [varies]
			38		
Eaves & Soffits	Eaves Linings & Soffits	Durasheet®	4.5	✓	Cl. 6.6.6 (d)
			6		
		Duralux®	6	✓	Cl. 6.6.6 (d)
			9		
		Intergroove®	7.5	✓	Cl. 6.6.6 (d)
Flooring	Flooring	Durafloor®	19	✓	Cl. 6.3.2.1 Cl. 6.3.2.2 (a) (ii) Cl. 6.7.2.4 (a) Cl. 6.7.3.3 (a)
			22		
		Compressed Flooring	15	✓	Cl. 6.3.2.1 Cl. 6.3.2.2 (a) (ii) Cl. 6.7.2.4 (a) Cl. 6.7.3.3 (a)
			18		
			24		

Note:

1. "✓" denotes acceptable use of the product.
2. "N/A" denotes product is not suitable for installation.
3. "Cl" denotes clause reference to the relevant clause in AS 3959:2018.
4. All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or buttjointed.
5. Combustible external mouldings, jointing strips, trims and sealants may be used for decorative purposes or to cover joints between sheeting material.
6. Joints in eaves linings, facias and gables may be sealed with plastic joining strips or timber storm moulds.
7. Where wall wrap is required, it shall have a flammability index of not more than 5 when tested to AS 1530.2.
8. The BAL-19 denotes as there is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat. The construction elements are expected to be exposed to a heat flux up to 19 kW/m2.
9. Vents and weepholes in external walls shall be screened with a mesh made of corrosion-resistant steel or bronze, or aluminium (for exceptions see clause 3.6 of AS 3959).
10. Any gaps greater than 2mm to be screened with 2mm mesh in corrosive resistant steel or bronze.

Product suitability for construction in BAL-29 Bushfire Zones

Table 3: BAL-29 rating in accordance with AS 3959:2018

Category	Type	Product	Thickness (mm)	BAL Rating	AS 3959 Ref.
Exterior Walls	Weatherboards	Nuline®	14	✓	Cl. 7.4.1 (c) (i)
		Stratum®	12	✓	Cl. 7.4.1 (c) (i)
		Contour®	10	✓	Cl. 7.4.1 (c) (i)
		Duraplank®	7.5	✓	Cl. 7.4.1 (c) (i)
	Exterior Facades	Duragroove®	9	✓	Cl. 7.4.1 (c) (i)
		Durascape®	9	✓	Cl. 7.4.1 (c) (i)
		Duragrid®	9	✓	Cl. 7.4.1 (c) (i)
		Duracom®	9	✓	Cl. 7.4.1 (c) (i)
			12		
	Exterior Base Sheets	Duratex®	7.5	✓	Cl. 7.4.1 (c) (i)
			9		
		Stonesheet®	9	✓	Cl. 7.4.1 (c) (i)
	Pre-Finished Facade	Montage®	16	✓	Cl. 7.4.1 (c) (i)
			18		
	Features	Effects® fascia	14	N/A	Cl. 7.6.6
		Effects® base trim	19	✓	Cl. 7 [varies]
			38		
Eaves & Soffits	Eaves Linings & Soffits	Durasheet®	4.5	✓	Cl. 7.6.6 (c) (i) and (f)
			6		
		Duralux®	6	✓	Cl. 7.6.6 (c) (i) and (f)
			9		
		Intergroove®	7.5	✓	Cl. 7.6.6 (c) (i) and (f)
Flooring	Flooring	Durafloor®	19	✓	Cl. 7.3.2.1 Cl. 7.3.2.2 (a) (ii) Cl. 7.7.2.4 (a) Cl. 7.7.3.3 (a)
			22		
		Compressed Flooring	15	✓	Cl. 7.3.2.1 Cl. 7.3.2.2 (a) (ii) Cl. 7.7.2.4 (a) Cl. 7.7.3.3 (a)
			18		
			24		

Note:

1. "✓" denotes acceptable use of the product.
2. "N/A" denotes product is not suitable for installation.
3. "Cl" denotes clause reference to the relevant clause in AS 3959:2018.
4. All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or buttjointed.
5. Combustible external mouldings, jointing strips, trims and sealants may be used for decorative purposes or to cover joints between sheeting material.
6. Joints in eaves linings, facias and gables may be sealed with plastic joining strips or timber storm moulds.
7. Where wall wrap is required, it shall have a flammability index of not more than 5 when tested to AS 1530.2.
8. The BAL-29 denotes as there is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an incerased level of radiant heat. The construction elements are expected to be exposed to a heat flux up to 29 kW/m2.
9. Vents and weepholes in external walls shall be screened with a mesh made of corrosion-resistant steel or bronze, or aluminium (for exceptions see clause 3.6 of AS 3959).
10. Any gaps greater than 2mm to be screened with 2mm mesh in corrosive resistant steel or bronze.

Product suitability for construction in BAL-40 Bushfire Zones

Table 4: BAL-40 rating in accordance with AS 3959:2018

Category	Type	Product	Thickness (mm)	BAL Rating	AS 3959 Ref.
Exterior Walls	Weatherboards	Nuline®	14	✓	Cl. 8.4.1 (b) (i)
		Stratum®	12	✓	Cl. 8.4.1 (b) (i)
		Contour®	10	✓	Cl. 8.4.1 (b) (i)
		Duraplank®	7.5	N/A	Cl. 8.4.1 (b) (i)
	Exterior Facades	Duragroove®	9	✓	Cl. 8.4.1 (b) (i)
		Durascape®	9	✓	Cl. 8.4.1 (b) (i)
		Duragrid®	9	✓	Cl. 8.4.1 (b) (i)
		Duracom®	9	✓	Cl. 8.4.1 (b) (i)
			12		
	Exterior Base Sheets	Duratex®	7.5	N/A	Cl. 8.4.1 (b) (i)
			9	✓	
		Stonesheet®	9	✓	Cl. 8.4.1 (b) (i)
	Pre-Finished Facade	Montage®	16	✓	Cl. 8.4.1 (b) (i)
			18		
	Features	Effects® fascia	14	N/A	Cl. 8.6.6
		Effects® base trim	19	✓	Cl. 8 [varies]
			38		
Eaves & Soffits	Eaves Linings & Soffits	Durasheet®	4.5	N/A	Cl. 8.6.6 (c) (i) and (f)
			6	✓	
		Duralux®	6	✓	Cl. 8.6.6 (c) (i) and (f)
			9		
		Intergroove®	7.5	✓	Cl. 8.6.6 (c) (i) and (f)
Flooring	Flooring	Durafloor®	19	✓	Cl. 8.3.2.1 Cl. 8.3.2.2 (a) or (b) Cl. 8.7.2.4 (a) Cl. 8.7.3.3 (a)
			22		
		Compressed Flooring	15	✓	Cl. 8.3.2.1 Cl. 8.3.2.2 (a) or (b) Cl. 8.7.2.4 (a) Cl. 8.7.3.3 (a)
			18		
			24		

Note:

1. "✓" denotes acceptable use of the product.
2. "N/A" denotes product is not suitable for installation.
3. "Cl" denotes clause reference to the relevant clause in AS 3959:2018.
4. All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or buttjointed.
5. Combustible external mouldings, jointing strips, trims and sealants may be used for decorative purposes or to cover joints between sheeting material.
6. Joints in eaves linings, facias and gables may be sealed with plastic joining strips or timber storm moulds.
7. Where wall wrap is required, it shall have a flammability index of not more than 5 when tested to AS 1530.2.
8. The BAL-40 denotes as there is a much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front. The construction elements are expected to be exposed to a heat flux up to 40 kW/m2.
9. Vents and weepholes in external walls shall be screened with a mesh made of corrosion-resistant steel or bronze, or aluminium (for exceptions see clause 3.6 of AS 3959). Any gaps greater than 2mm to be screened with 2mm mesh in corrosive resistant steel or bronze.

Product suitability for construction in BAL-FZ Bushfire Zones

Table 5: BAL-FZ rating in accordance with AS 3959:2018

Category	Type	Product	Thickness (mm)	BAL Rating	AS 3959 Ref.
Exterior Walls	Weatherboards	Nuline®	14	✓	Cl. 9.4.1 (c)
		Stratum®	12	✓	Cl. 9.4.1 (c)
		Contour®	10	✓	Cl. 9.4.1 (c)
		Duraplank®	7.5	✓	Cl. 9.4.1 (c)
	Exterior Facades	Duragroove®	9	✓	Cl. 9.4.1 (c)
		Durascape®	9	✓	Cl. 9.4.1 (c)
		Duragrid®	9	✓	Cl. 9.4.1 (c)
		Duracom®	9	✓	Cl. 9.4.1 (c)
			12		
	Exterior Base Sheets	Duratex®	7.5	✓	Cl. 9.4.1 (c)
			9	✓	
		Stonesheet®	9	✓	Cl. 9.4.1 (c)
	Pre-Finished Facade	Montage®	16	✓	Cl. 9.4.1 (c)
			18		
	Features	Effects® fascia	14	N/A	Cl. 8.6.6
		Effects® base trim	19	N/A	Cl. 8 [varies]
			38		
Eaves & Soffits	Eaves Linings & Soffits	Durasheet®	4.5	✓	Cl. 9.6.6 (c) (i) and (f)
			6	✓	
		Duralux®	6	✓	Cl. 9.6.6 (c) (i) and (f)
			9		
		Intergroove®	7.5	✓	Cl. 9.6.6 (c) (i) and (f)
Flooring	Flooring	Durafloor®	19	✓*	Cl. 9.3.2.1 Cl. 9.3.2.2 (a) or (b) Cl. 9.7.2.4 (a) or (b)* Cl. 9.7.3.3 (a) or (b)*
			22		
		Compressed Flooring	15	✓*	Cl. 9.3.2.1 Cl. 9.3.2.2 (a) or (b) Cl. 9.7.2.4 (a) or (b) Cl. 9.7.3.3 (a) or (b)
			18		
			24		

Note:

1. "✓" denotes acceptable use of the product.
2. "N/A" denotes product is not suitable for installation.
3. "Cl" denotes clause reference to the relevant clause in AS 3959:2018.
4. All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or buttjointed.
5. Combustible external mouldings, jointing strips, trims and sealants may be used for decorative purposes or to cover joints between sheeting material
6. Joints in eaves linings, facias and gables may be sealed with plastic joining strips or timber storm moulds.
7. * denotes the products are only applicable for decking, stair tread and trafficable surfaces of ramps and landings (enclosed or unenclosed). Not applicable for enclosed and unenclosed elevated floors.
8. Where wall wrap is required, it shall have a flammability index of not more than 5 when tested to AS 1530.2.
9. The BAL-FZ denotes as there is an extremely high risk of ember attack and burning debris ignited by windborne embers, and a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front. The construction elements are expected to be exposed to a heat flux greater than 40 kW/m2. Any gaps greater than 2mm to be screened with 2mm mesh in corrosive resistant steel or bronze.

4. Applications

This Technical Supplement provides guidelines for Innova fibre cement products, with reference to the construction in accordance with AS 3959:2018 and NCC 2022, in bushfire-prone areas for Bushfire Attack Levels (BAL).

4.1 Floors

4.1.1 Enclosed subfloor

AS 3959:2018 does not have specific construction requirements where the subfloor space is enclosed with a wall that conforms with the relevant clause in each section (clauses 5.4 for BAL-12.5, 6.4 for BAL-19, 7.4 for BAL-29, 8.4 for BAL-40, and 9.4 for BAL-FZ). Therefore, if the cladding products conform in accordance with the relevant clauses for walls, then the requirements of AS 3959:2018 for enclosed subfloor spaces are satisfied.

4.1.2 Unenclosed subfloor

For BAL 12.5 and BAL 19 where the subfloor space is unenclosed, flooring material, including bearers, joists and flooring less than 400 mm above finished ground level (see Figure 2), shall be materials that conform with the following:

(i) Bearers and joists shall be

- Non-combustible; or
- Of bushfire-resisting timber; or
- A combination of Items above.

(ii) Flooring shall be -

- Non-combustible; or
- Of bushfire-resisting timber; or
- Timber (other than bushfire-resisting timber), particleboard or plywood flooring where the underside is lined with sarking-type material or mineral wool insulation; or
- A combination of Items above.

The details are shown in Figure 2.

For BAL 29 where the subfloor space is unenclosed, flooring material, including bearers, joists and flooring less than 400 mm above finished ground level, shall be:

- Non-combustible (e.g., concrete, steel); or
- Of bushfire-resisting timber; or
- Particleboard or plywood flooring where the underside is lined with sarking-type material or mineral wool insulation; or
- A combination of the above.

The details are shown in Figure 2.

For BAL 40 where the subfloor space is unenclosed, the flooring material, including bearers, joists and flooring, shall:

- Be non-combustible (e.g., concrete, steel); or
- Have the underside of the combustible elements of the floor system protected with a non-combustible material (e.g., fibre-cement sheet or metal sheet); or
- A combination of the above.

The details are shown in Figure 3.

For BAL FZ where the subfloor space is unenclosed, floor system, including bearers, joists and flooring shall:

- Have and FRL of at least 30/30/30 and the surface materials shall be non-combustible(e.g., concrete, steel); or
- Have the underside of the combustible elements of the floor system protected with a 30 minute resistance to incipient spread of fire system; or
- A combination of the above.

The details are shown in Figure 4.

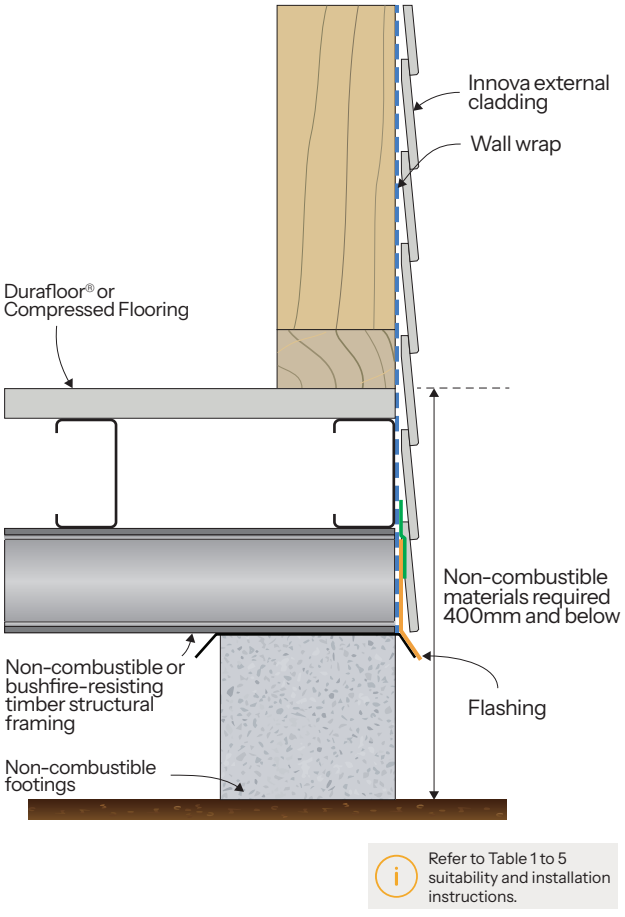


Figure 2. BAL 12.5 to BAL 29 Subfloor detail

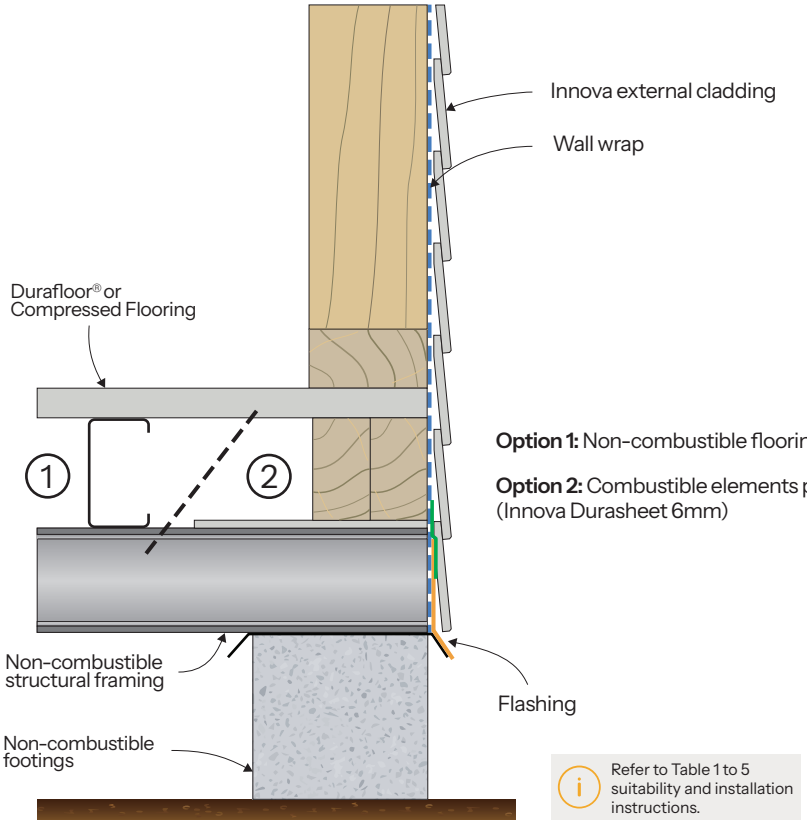


Figure 3. BAL 40 Subfloor detail

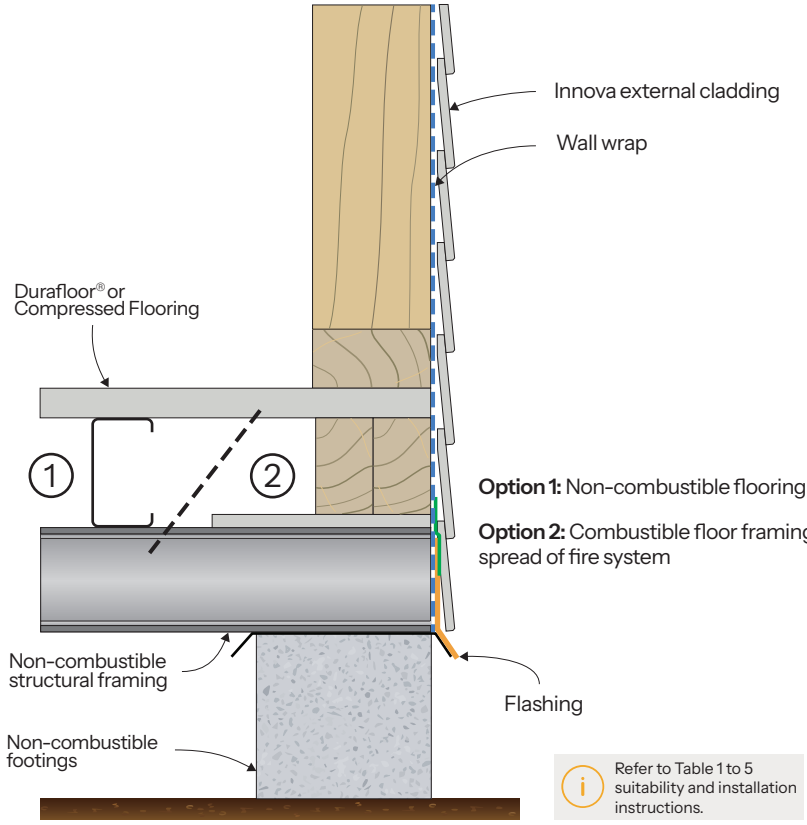


Figure 4. BAL FZ Subfloor detail

4.2 Walls

In accordance with AS 3959: 2018, for BAL 12.5 and BAL 19, exposed components of an external wall surface that are less than 400 mm from the ground (see Figure. 5) or less than 400 mm above decks, carport roofs, awnings and similar elements (see Figure. 6) or fittings having an angle less than 18 degrees to the horizontal and extending more than 110 mm in width from the wall (see Figure. 7) shall be of non-combustible material.

Cladding that is fixed externally to a timber-framed or a steel-framed wall shall be of non-combustible material. Innova fibre cement external cladding greater than 6mm may be used.

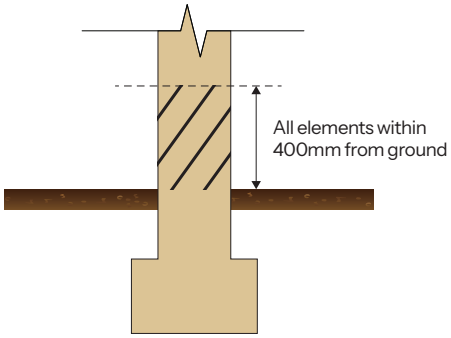


Figure 5. Construction requirements for external walls, glazing or door joinery within 400mm of ground level

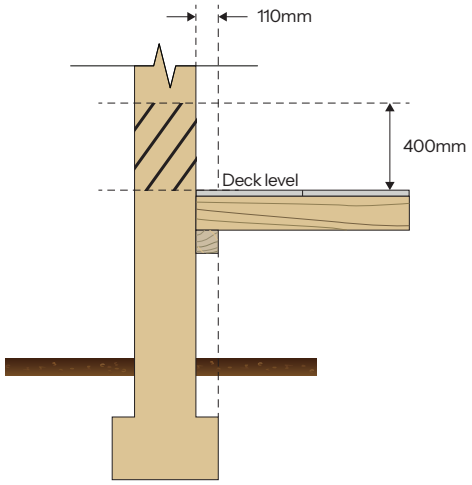


Figure 6. Construction requirements for external walls, glazing or door joinery within 400mm of deck level

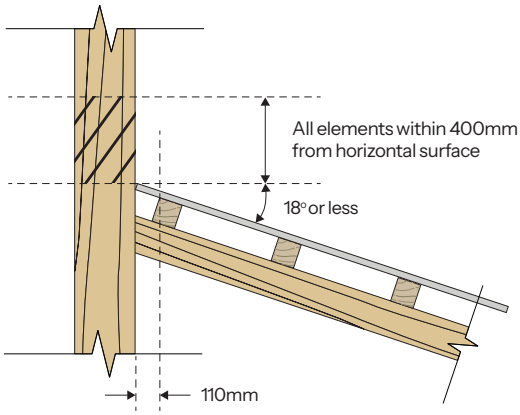


Figure 7. Construction requirements for external walls within 400mm of carport, veranda or awning roof.

BAL 29, walls shall be made of non-combustible material (e.g., full masonry, brick veneer, mud brick, concrete);or timber logs; or made of timber-framed or steel-framed walls that are sarked on the outside of the frame and clad with any Innova fibre cement cladding 6mm thickness or greater.

BAL 40, walls shall be made of non-combustible material (e.g., full masonry, brick veneer, mud brick, concrete);or made of timber-framed or steel-framed walls that are sarked on the outside of the frame and clad with Innova fibre cement cladding 9mm thickness or greater.

BAL FZ, walls shall be made of non-combustible material (e.g., masonry, brick veneer, mud brick, concrete) with a minimum of 90 mm in thickness; or a system complying with AS 1530.8.2 when tested from the outside; or a system with an FRL of 30/30/30 or -/30/30 when tested from the outside; or a combination of any of Items above.

The Innova fibre cement products alone do not provide an FRL rating. Fibre cement products are required to be used in conjunction with plasterboard systems provided in Siniat Blueprint Lightweight Construction Manual. For example, when a minimum 70mm timber stud frame is constructed at 600mm maximum stud centres using Siniat TSW480 system configuration (see Fig. 8), it will satisfy a 30/30/30 one way FRL from the outside.

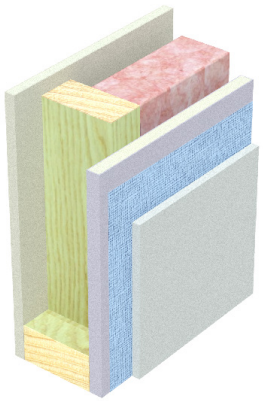


Figure 8. Fire rated wall - 30/30/30 for BAL-FZ

Note: All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed.

For further information, refer to Siniat Blueprint Lightweight Construction Manual available for download at www.siniat.com.au

4.3 Eaves linings

The BAL requirements for different BAL ratings are summarised in the table below.

BAL	Requirement
BAL-Low	No construction requirement. Minimum 4.5 mm fibre cement sheet is recommended.
BAL-12.5	No construction requirement. Minimum 4.5 mm fibre cement sheet is recommended.
BAL-19	No construction requirement but min. 4.5 mm fibre cement sheet is recommended.
BAL-29	Minimum 4.5 mm fibre cement sheet.
BAL-40	Minimum 6 mm fibre cement sheet.
BAL-FZ	A system with an FRL or -/30/30.

For BAL-FZ, eaves linings must achieve a Fire Resistance Level (FRL) of -/30/30. Appendix H of AS 3959:2018 provides compliant systems for both tiled and metal sheet roofs, including suitable eaves lining options, as shown in Figure 9 and Figure 10 below. Note that the roof/wall junction must be sealed by either the use of fascia or eaves linings or by sealing between the rafters at the line of the wall. All other types of roofing must be constructed to ensure that burning embers do not penetrate into the roof space.

Alternatively, Siniat has provided fire rated ceiling systems to provide FRL of 30/30/30. The system CUR210 is used for building with sheet metal roofing and system CUR310 is used for buildings with concrete or terracotta tiles. For further details, please refer to the Siniat Blueprint Lightweight Construction Manual.

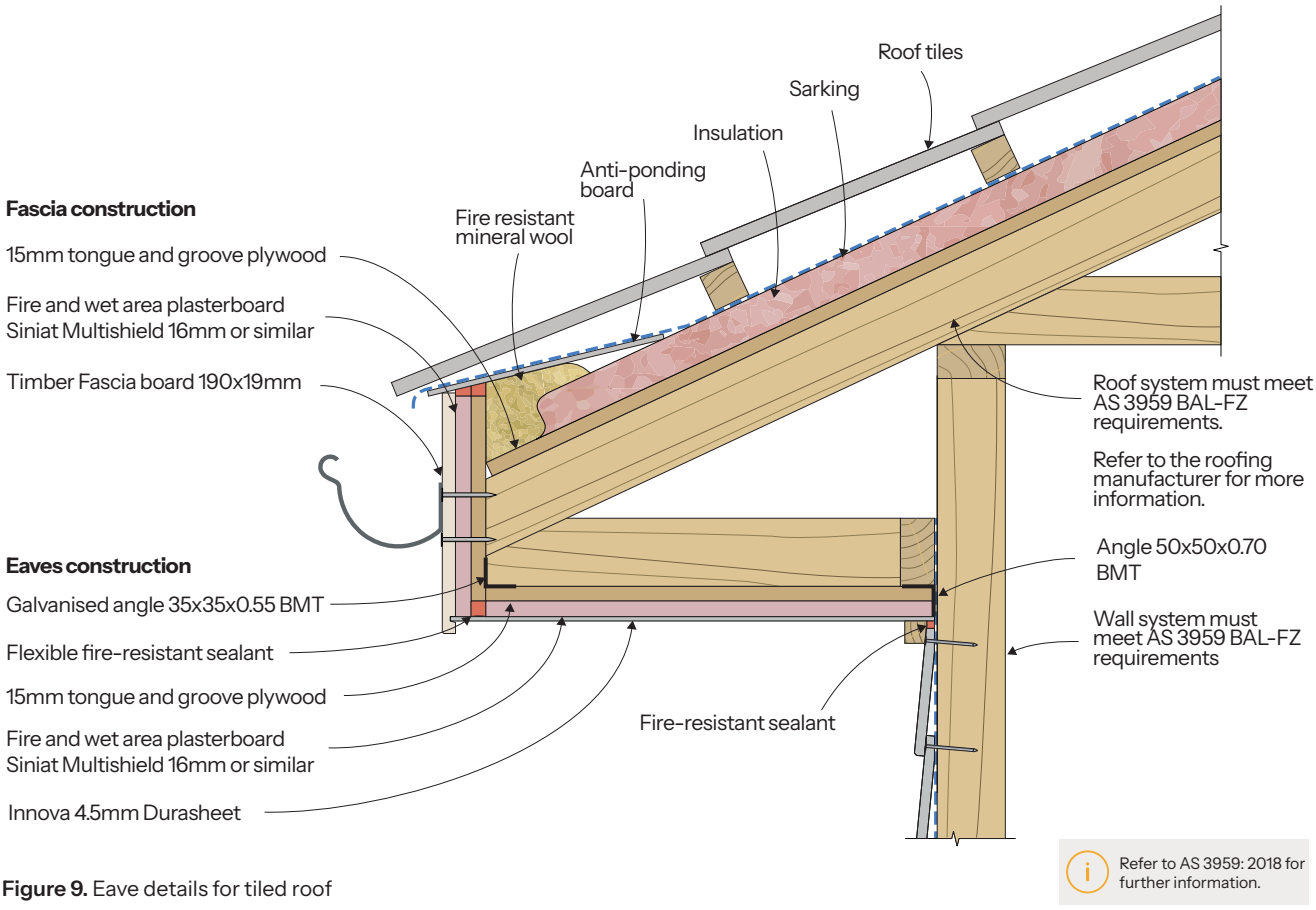


Figure 9. Eave details for tiled roof

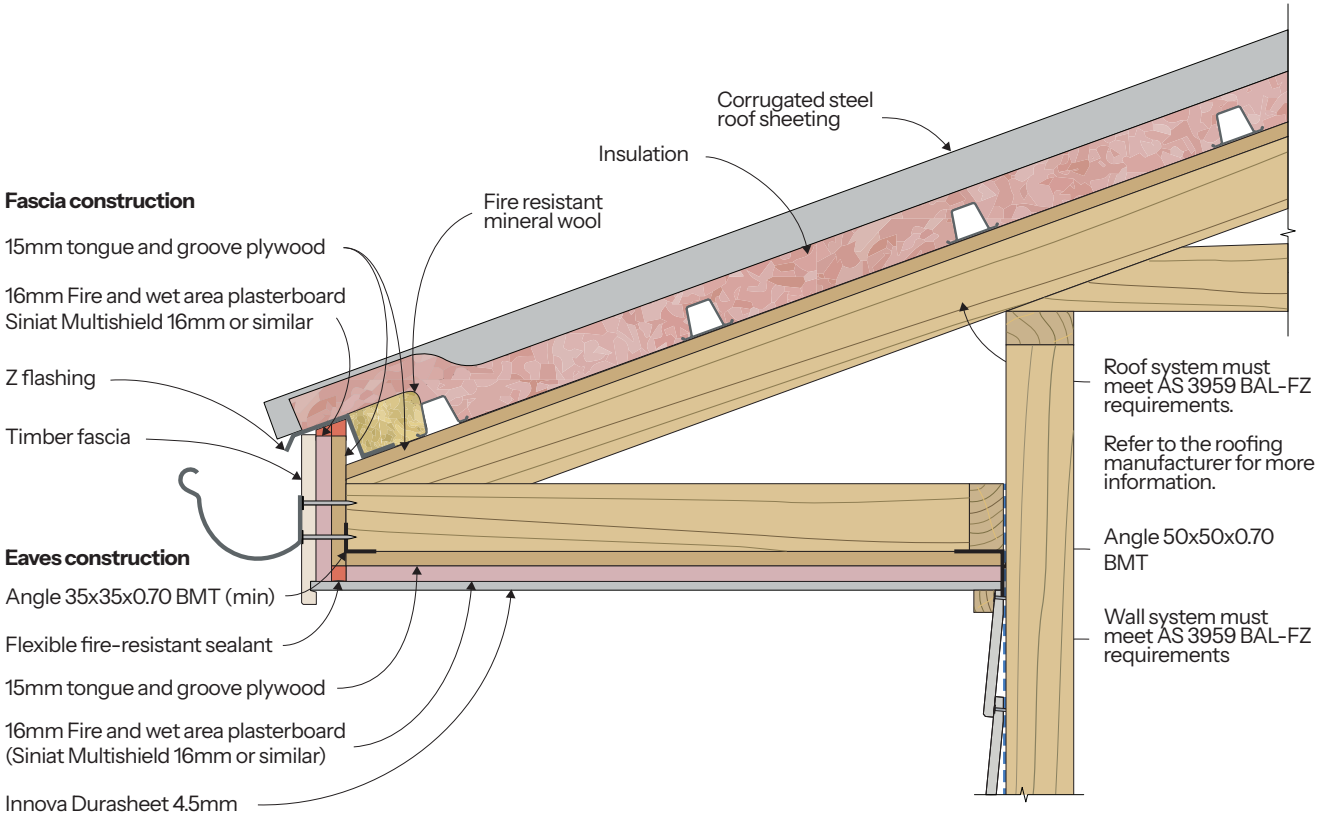


Figure 10. Eaves details for metal roof

4.3 Decks

BAL-12.5 to BAL-19

For BAL-12.5 and BAL-19, decking less than 300 mm (measured horizontally at deck level) from glazed elements that are less than 400 mm (measured vertically) from the surface of the deck (see Figure. 11 and Figure. 12) shall be made from non-combustible material such as Innova Durafloor® or Compressed Flooring with a non-combustible finish. There are no additional requirements for the framing i.e. bearers and joists.

BAL-29

For BAL-29, decking shall be made from non-combustible material such as Innova Durafloor® or Compressed Flooring.

Support posts, columns, stumps, piers and poles as well as framing shall be of non-combustible material; or bushfire-resisting timber or combination of items above.

BAL-40

For BAL-40, decking shall be made from non-combustible material such as Innova Durafloor® or Compressed Flooring.

Support posts, columns, stumps, piers and poles as well as framing shall be of non-combustible material such as concrete or steel.

BAL-FZ

For BAL-FZ, decking shall be made from non-combustible material such as Innova Durafloor® or Compressed Flooring.

Support posts, columns, stumps, piers and poles as well as framing shall be of non-combustible material; or a system that conforms with AS 1530.8.2; or combination of items above.

Please note BAL-40 and BAL-FZ areas require steel or concrete subframing, bushfire-resisting timber is not allowed. Details are shown in Figure. 13.

In addition, according to specification C2D10 of NCC 2022, fibre-reinforced cement sheeting (fibre cement) can be used where non-combustible are required; therefore, Innova flooring is suitable for exterior decking.

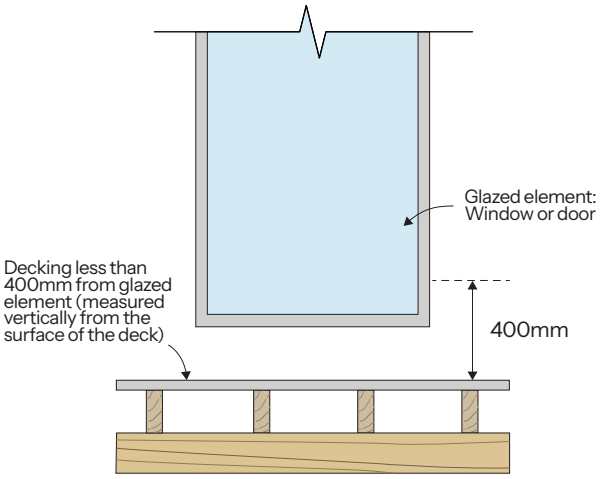


Figure 11. BAL 12.5 and BAL 19 decking limits (elevation view)

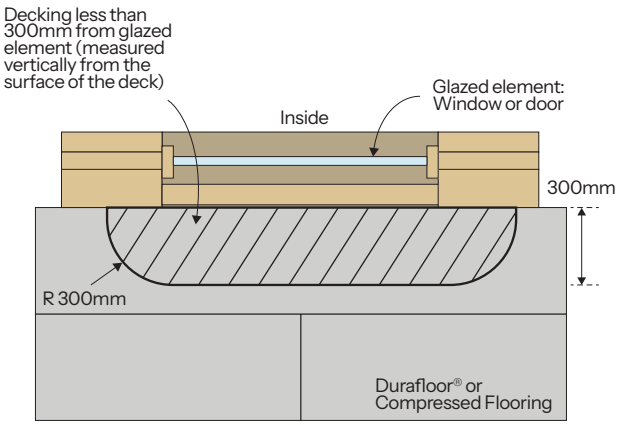


Figure 12. BAL 12.5 and BAL 19 decking limits (plan view)

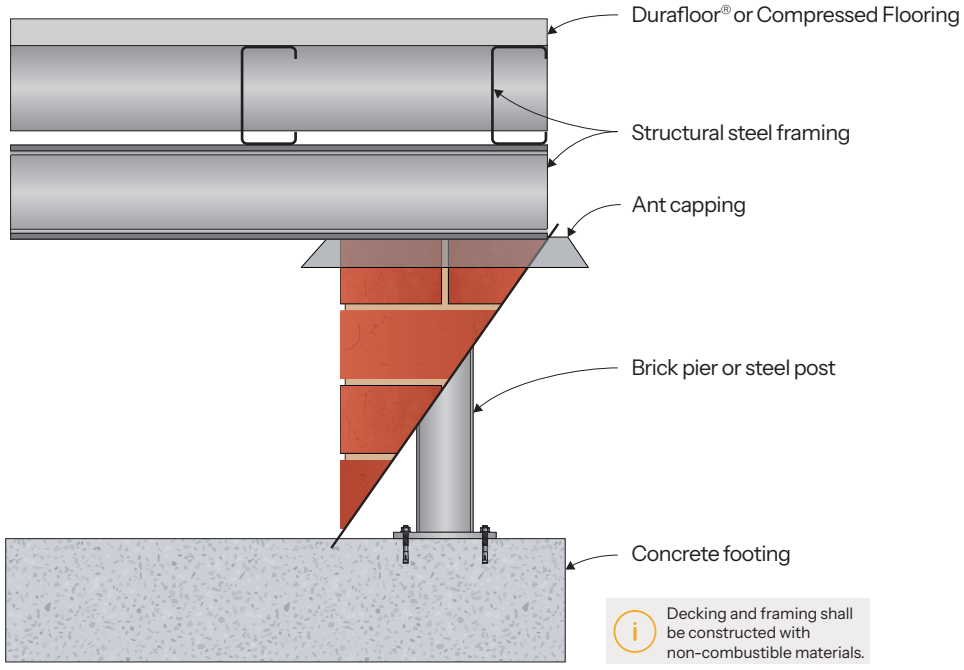


Figure 13. BAL 40 and BAL FZ External deck detail