

# CEMINTEL®



CONSTRUCTAFLOOR® INTERIOR FLOORING  
Interior Flooring System

## INTRODUCTION

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## Introduction

Cemintel Constructafloor® Interior flooring is an advanced, lightweight, fibre cement flooring sheet. It has a flat surface with a tongue and grooved joint to the two long edges of the sheet. Constructafloor Interior flooring can be installed with a pneumatic nail gun for ease of installation.

The joint between sheets is filled with flexible sealant to provide a flat surface suitable to accept a wide range of surface toppings.

This Cemintel Constructafloor Interior Flooring Design and Installation Guide recommends good building practice and has been prepared as a general guide of design considerations, system engineering information and installation procedures for common external applications. It assumes that the user has an intermediate knowledge level of building design

and construction. In no way does it replace the services of the building professionals required to design projects, nor is it an exhaustive guide of all possible scenarios.

It is the responsibility of the architect, designer and various engineering parties to ensure that the details in this Design and Installation Guide are appropriate for the intended application.

Cemintel Constructafloor Interior sheets can be installed as an interior floor substrate. This guide refers to internal installations only as components differ depending on the installation.

Refer to the 'Cemintel Constructafloor Exterior Flooring Design and Installation Guide' for instructions regarding external applications.



## PRODUCT OVERVIEW



## PRODUCT OVERVIEW

### Panel Information

Constructafloor Interior flooring is available in two thickness, 19mm and 22mm and in the following sizes for interior applications.

Order No	Product	Sheet Thickness
115657	Constructafloor Interior 600x2700mm	19mm
115658	Constructafloor Interior 900x1800mm	19mm
193406	Constructafloor Interior 600x2400mm	22mm

### Product Specifications

Constructafloor Interior Flooring sheets conform to the requirements of AS/NZS 2908.2: Cellulose-cement products, Part 2 – Flat sheets for Type B Category 2.

Property	Tolerance
Thickness (19mm & 22mm nominal)	-0.0mm / +0.3mm
Mass (nominal)	25.5kg/m <sup>2</sup> (19mm thick)
	28.6kg/m <sup>2</sup> (22mm thick)
Sheet Width	-3.0mm / +0.0mm
Sheet Length	-3.0mm / +0.0mm
Diagonals Difference (max.)	3.0mm

### Fire Resistance

In accordance with the NCC 2022 C2D10 (5)(d) [NCC 2019: C1.9 (e)(iv)], Cemintel Constructafloor Interior sheets can be used wherever non-combustible material is required.

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## SYSTEM OVERVIEW



## SYSTEM OVERVIEW

### Applications

Constructafloor Interior flooring is a high strength, durable building product that is impervious to water with a suitable waterproof membrane system. It can be fixed directly to structural framing to form the interior substrate for both wet area and non-wet area applications.

When combined with a suitable waterproofing system, Constructafloor Interior flooring offers a NCC compliant waterproof solution to wet areas which may be covered with your selection of tiles or decorative finishes in a range of floor applications including:

- Bathrooms
- Ensuites
- Laundries

In non-wet areas applications, Constructafloor Interior flooring may be finished with carpet, direct fixed tiles or vinyl sheet in areas that are not required to be waterproof.

Constructafloor Interior flooring offers proven, reliable and cost effective solutions to all internal residential wet areas and other tiled areas.

### Advantages

- Simple and quick to install using screw or gun nail fixings.
- Tough durable substrate for wet areas.
- Suitable for all tiled floor areas.
- Lightweight and economical building material.
- Termite resistant.
- Manufactured from highly durable and robust fibre cement – panels will not rot, swell or warp when correctly installed and maintained.
- Fire – fibre cement sheets can be used where non-combustible material is required under the NCC provisions.
- Ideal for upper storey construction.
- Available in a range of sheet sizes to reduce waste.

### System Selection

A number of systems are available for different wet area and non-wet area applications, surface finishes and waste services treatments. Refer to Table 3.01 for details.

#### Waterproof Systems

Constructafloor Interior flooring is a fibre cement product can be used in wet areas, and waterproofing systems should be chosen that are recommended by their manufacturer for fibre cement substrates. Components including sealers, membranes, mortars, adhesives and finishes should be considered for their compatibility with each other, as well as with the substrate, and their performance as a complete system.

Waterproofing systems information for use with Constructafloor Interior flooring has been provided by ARDEX, Bostik, Crommelin and Parchem. Please contact these manufacturers to confirm project suitability. Further information is available at [cemintel.com.au](http://cemintel.com.au).

##### Mortar Bed & Tile with Waterproof Membrane

Constructafloor Interior flooring is laid directly on joists and covered with a waterproof sheet

membrane. Depending on the size and thickness of the mortar bed layer, the designer may specify a separating layer or slip-sheet can be installed to separate the membrane from the mortar bed to accommodate minor movement.

Typically, the drainage of the wet area is provided by a fall in the mortar bed that drains to a waste service outlet. Should the mortar bed contain a reinforcement mesh then control joints in tiling need not correspond with sheet joints.

##### Direct Fixed Tiles with Liquid Membrane

This system has an applied waterproof membrane directly over the Constructafloor Interior flooring. Tiles are fixed over the membrane, and drainage is provided by fall in the sheets. Control joints in tiling must correspond with sheet joints.

#### Non-Waterproof Systems

Floor systems in non-wet areas have no waterproof membrane and the floor finish is installed directly over the Constructafloor Interior flooring. Typical floor finishes are tiles and vinyl, that are directly fixed over the flooring. Control joints in tiling must correspond with sheet joints.

SYSTEM OVERVIEW



System Selection Table

TABLE 3.01 Cemintel Constructafloor Interior Flooring

Flooring System	Description
<b>WATERPROOF SYSTEM</b>	
	<b>Mortar Bed &amp; Tile with Waterproof Membrane</b> <ul style="list-style-type: none"><li>• Drainage to waste service.</li><li>• Tile control joints NEED NOT correspond with sheet joints.</li><li>• Suitable for all floor widths.</li><li>• Waterproof system.</li></ul>
	<b>Direct Fixed Tile with Liquid Membrane</b> <ul style="list-style-type: none"><li>• Tile control joints MUST correspond with sheet joints.</li><li>• Suitable for all floor widths.</li><li>• Waterproof system.</li></ul>
<b>NON-WATERPROOF SYSTEM</b>	
	<b>Direct Fixed Tile</b> <ul style="list-style-type: none"><li>• Tile control joints MUST correspond with sheet joints.</li><li>• Suitable for all floor widths.</li><li>• Not a waterproof system.</li></ul>
	<b>Vinyl Finish</b> <ul style="list-style-type: none"><li>• Suitable for all floor widths.</li><li>• Not a waterproof system.</li></ul>

# 04

DESIGN + AESTHETIC  
CONSIDERATIONS



## DESIGN + AESTHETIC CONSIDERATIONS



**This guide provides detailed installation information for flooring systems with Cemintel Constructafloor Interior sheets in timber and steel construction. This section outlines some important areas for consideration in determining an appropriate design of the Cemintel Interior Flooring Systems. The following points are not exhaustive. It is the responsibility of the architect / building designer to ensure the design conforms to NCC requirements and other relevant building standards that may exist for that location. It is recommended that the architect/building designer assigns the responsibility for the flooring design to the project engineer.**

This installation guide should be read in conjunction with the NCC, and design information presented in the CSR Cemintel® Facades & Cladding – Design Guide and CSR Gyprock The Red Book publications.

### Waterproof Systems

The systems outlined in this guide are based on Australian Standard AS 3740: Waterproofing of wet areas within residential buildings, and for further waterproofing construction detailing information should be read in conjunction with Cemintel Wet Area Systems publication.

This Australian Standard details the design, materials, and installation requirements for wet areas within residential buildings. A wet area is defined by the standard as an area within a building supplied with water from a water supply system, including bathrooms, showers, laundries and toilets, but excluding kitchens, bars and similar. Elements within wet areas may have requirements to be water resistant or waterproof, as set out in the National Construction Code of Australia (NCC).

Waterproof areas are floors within and near showers, and at junctions between floors and walls in showers and bathrooms.

A waterproof membrane must be applied in these areas.

### Waterproof System Components

Constructafloor Interior flooring is a fibre cement product and waterproofing and lining components should be chosen that are recommended by their manufacturer for fibre cement substrates. Components including sealers, membranes, mortars, adhesives and finishes should be considered for their compatibility with each other, as well as with the substrate, and their performance as a complete system.

Waterproofing systems information for use with Constructafloor has been provided by Ardex, Bostik, Crompton and Parchem.

Please contact these companies to confirm project suitability. Further information is available at [www.cemintel.com.au](http://www.cemintel.com.au)

### Framing

Constructafloor Interior flooring can be fixed to timber or steel floor joists at a maximum off:

- 450mm centres for 19mm Constructafloor
- 600mm centres for 22mm Constructafloor

Joists and trimmers must have a minimum face fixing width of 45mm or to floor joist manufacturer's requirements. All perimeters must be supported on framing.

As a minimum requirement, framing shall be in accordance with the following standards:

- AS 1684 – Residential Timber-Framed Construction
- AS 1720.1 – Timber Structures – Design method
- AS/NZS 4600 – Cold-Formed Steel Structures
- AS 3623 – Domestic metal framing
- National Construction Code (NCC)

Timber shall be seasoned or have reached an equilibrium moisture content of 16% or less at the time of framing. Unseasoned timber is not recommended.

The design and construction of the steel frames should be considered in conjunction with the advice from the manufacturer. In highly corrosive environments, appropriate measures should be taken to protect the frame from corrosion.

Fixings to steel joists are suitable up to a 2.0mm base metal thickness (BMT), contact CSR Cemintel® for fixing information where steel BMT is greater than 2.0mm.

### Control Joints

Control joints between Constructafloor Interior sheets must be provided at 9m centres maximum at tongue and groove edges to allow for differential movement in both the materials and the structure. Where the floor is exposed to direct sunlight, control joints are to be spaced at 6m centres maximum. Refer to Figure 4.01, Figure 4.02 and Figure 4.03.

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## DESIGN + AESTHETIC CONSIDERATIONS

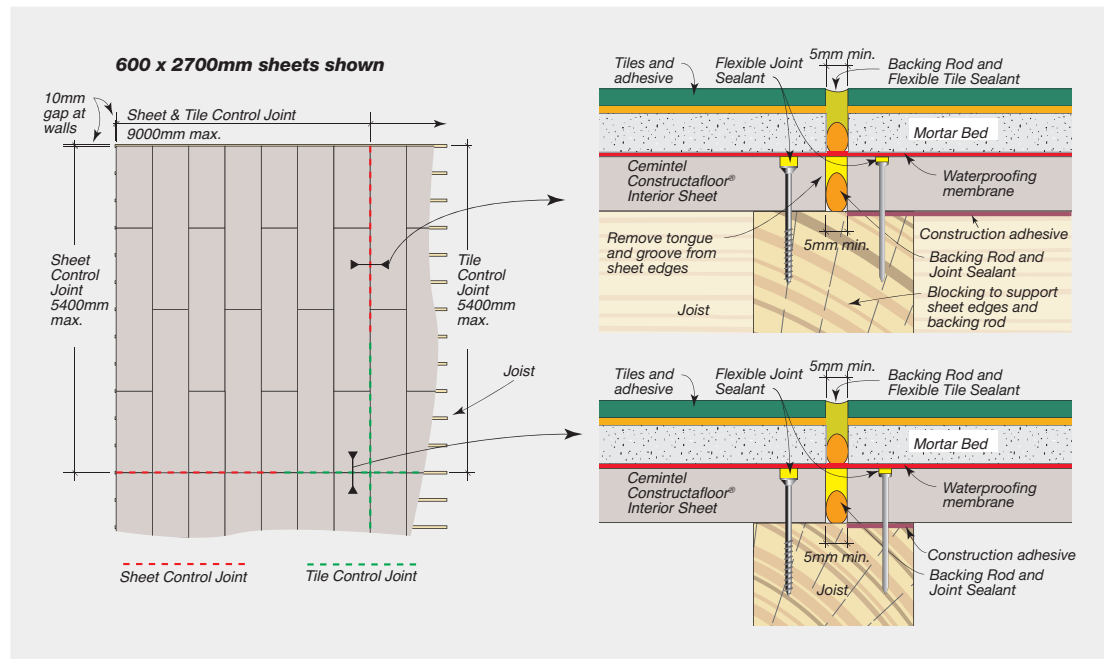
Control joints between sheets must be provided at butt joints in accordance with Figure 4.01, Figure 4.02 and Figure 4.03. Sheet ends must be aligned at control joints.

Control joints in sheets must also be provided at changes in direction of sheets and structural framing,

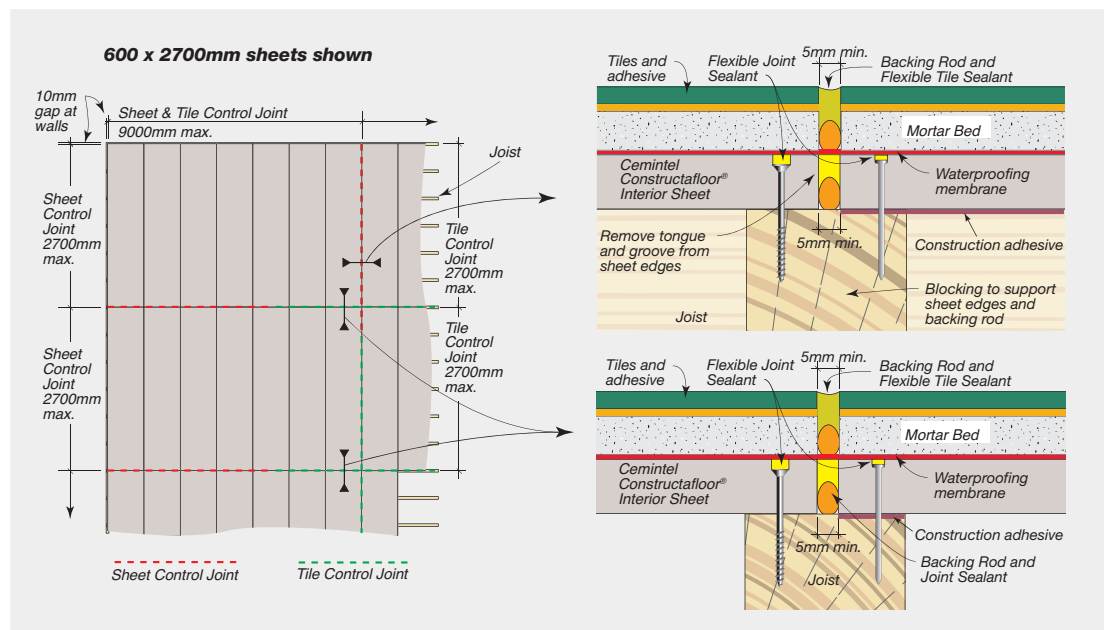
at doorways and at any control joints in the structural framing.

Control joints in the finish layer must be aligned with control joints in the sheets. Refer to installation details.

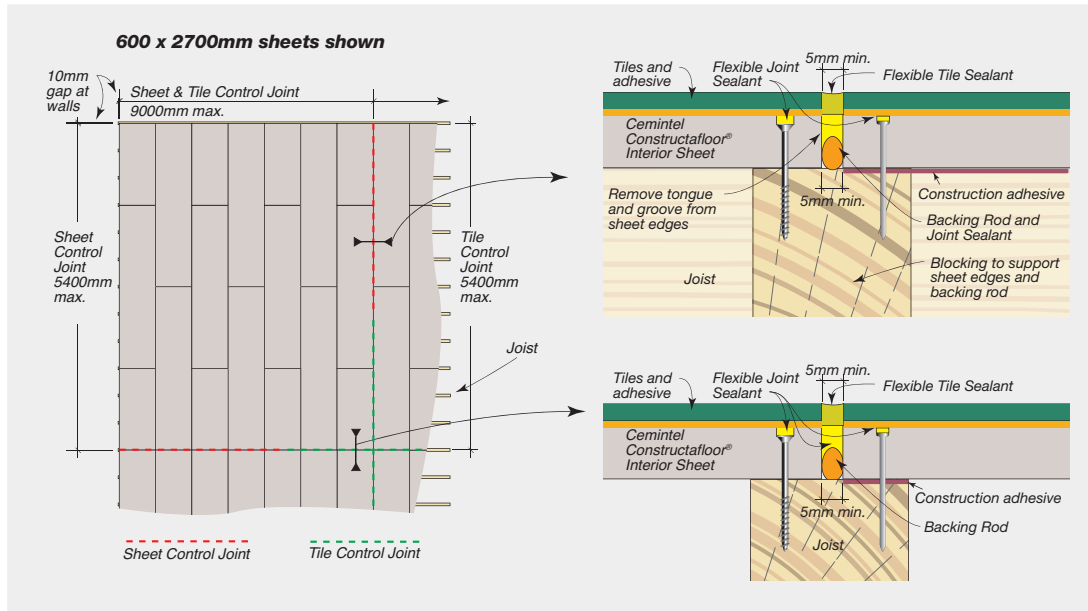
**FIGURE 4.01** Typical Sheet & Control Joint Layout – Sheets Staggered & Mortar Bed System shown



**FIGURE 4.02** Typical Sheet & Control Joint Layout – Sheets Aligned & Mortar Bed System shown



## DESIGN + AESTHETIC CONSIDERATIONS

**FIGURE 4.03** Typical Sheet & Control Joint Layout – Staggered & Direct Fix Tile System shown**Sheet Layout**

Constructafloor Interior sheets are fixed directly to the floor joists. Sheets are laid with tongue and groove joints perpendicular to the joists. Sheet ends must align with the centre of joists, and may be staggered or aligned. Sheet ends must be aligned at control joints.

All perimeters must be supported on framing. Leave a 10mm gap at wall junctions.

Sheets must be fully supported wherever a tongue or groove profile has been removed or where the profiles do not engage fully.

**Sheet Jointing****Tiled Areas**

Sheets must be fixed in position ready for joints to be completed. Ensure joints are clean and clear of any dust that may prevent sealant adhering.

Place a strip of masking tape along both sides of the joint to ensure a neat finish is achieved. For Control Joints, press foam backing rod into joint pressing down firmly against joist leaving approximately 6mm depth gap at top to suit sealant requirements.

Fill tongue and groove, butt and control joints with flexible sealant, finishing flush with the sheet surface. Joints must be smoothed within 10 minutes. Remove masking tape and allow sealant to dry for approximately 24 hours.

**Vinyl Finish**

Sealant is not required at tongue and groove or butt joints. Treat control joints as for tiled areas. Refer to the following details for jointing and fixing information.

**Loads**

Constructafloor Interior flooring has been designed to satisfy the live loads associated with internal domestic and residential activities outlined in AS/NZS 1170.1:2002 Table 3.1 and appropriate load combinations in AS/NZS 1170.0:2002. Not suitable for vehicle wheel loads. The 'Specific Uses' presented in Table 4.01 reflect the minimum imposed live load actions listed in Table 3.1 of AS/NZS 1170.1. Contact DesignLINK for further information on higher live load requirements.

Table 4.01 presents the maximum allowable unfactored loads to satisfy a span/300 deflection limit under serviceability loading, appropriate load combinations in AS1170.0:2002 and a superimposed dead load of 0.6kPa for floor coverings (i.e., tiles, grout screeds, etc.). The unfactored loads have been based on the Constructafloor sheeting having an Equilibrium Moisture Content (EMC) condition. It is the responsibility of the designer to specify the water proof membranes or sealants to prevent moisture ingress into the Constructafloor sheets to maintain the EMC condition. Contact DesignLINK for information on Constructafloor sheets at a saturated condition.



## DESIGN + AESTHETIC CONSIDERATIONS

**TABLE 4.01** Cemintel Constructafloor Interior Flooring – ‘Double Span’ Sheet Installation, SDL = 0.6kPa

Cemintel Constructafloor		Specific Uses	Maximum Allowable Unfactored Floor Loadings			
Sheet Thickness (mm)	Max. Joist Spacing (mm)		Dead Load	Live Load		
			SDL* (kPa)	UDL (kPa)	Concentrated Point Load (kN)	
					P <sub>350</sub>	P <sub>100</sub>
19	450	Category A1 & A2 Domestic and residential activities – general areas, private kitchens, laundries, bedrooms, hospital wards, hotel rooms, toilet areas	0.6	3.0	1.8	2.2
22	400	All categories in buildings and structures with a concentrated live load action less than 4.5kN	0.6	7.5	1.8	4.5
	450	All categories in buildings and structures with a concentrated live load action less than 4.0kN	0.6	7.5	1.8	4.0
	600	Category A1 & A2 Domestic and residential activities – general areas, private kitchens, laundries, bedrooms, hospital wards, hotel rooms, toilet areas, balconies, roofs used for roof type activities	0.6	5.0	1.8	2.0

Notes: SDL superimposed dead load, i.e., weight of the floor coverings, such as, carpet, underlay, grout, mortar bed and tiles.  
 UDL uniformly distributed live load, AS/NZS 1170.1:2002 Table 3.1.  
 P350 concentrated point live load applied to a 350mm<sup>2</sup> bearing area. Refer to Note 1, AS/NZS 1170.1:2002 Table 3.1.  
 P100 concentrate point live load applied to a 100mm x 100mm bearing area (0.01m<sup>2</sup>). Refer AS/NZS 1170.1:2002 Cl.3.2(b).  
 Ψ<sub>s</sub> = 0.7, for uniformly distributed loading, AS/NZS 1170.0:2002 Table 4.1.  
 Ψ<sub>s</sub> = 1.0, for concentrated point loading, AS/NZS 1170.0:2002 Table 4.1.  
 \* Span/300 deflection limit under serviceability loading.

**Constructafloor Interior sheets must be installed over a minimum of 3 supporting joists.** For single span sheeting, provide blocking and/or trimmers to ALL the edges of the sheeting.

### Tiling

When selecting tiles ensure they are fit for purpose and an appropriate adhesive compatible with a fibre cement substrate is selected. In all cases the tile and tile adhesive manufacturer's instructions should be followed.

For further advice, refer to Australian Standard AS 3958.1 'Guide to the installation of ceramic tiles'.

Tile adhesive must conform to Australian Standard AS 2358 'Adhesives - for fixing ceramic tiles'. In all cases the tile and tile adhesive manufacturers' instructions should be followed.

### Fixing Sheets

#### Tiled Areas

Sheets are installed with the side printed 'This side down for tiling' facing down. A chamfer at each tongue and groove edge allows for waterproofing sealant.

Tongue and groove joints must be butted tightly together prior to fixing. Refer to detail. Butt joints must be fixed to the frame leaving a 2mm minimum gap between each flooring sheet to allow for joint sealant.

Control Joints must be installed leaving a 5mm minimum gap between sheets to allow for the installation of backing rod and sealant. This gap is important to accommodate movement of the building materials and structure.

Fix sheets with screws at 450mm centres maximum along framing. Alternatively, where sheets are to be nail fixed, apply a continuous bead of construction adhesive to sheet framing and power nail at 200mm centres maximum. Fixings must be kept a minimum of 50mm from corners. Refer to installation details and 'Sheet Jointing' section for edge distance requirements.

Fixings should finish below the finished level of the Constructafloor sheet and any indentation should be filled with flexible sealant.

#### Vinyl Finish

Sheets are installed with the side printed 'This side down for tiling' facing up. There is no chamfer at tongue and groove edges.

All panel joints are to be butted tightly together prior to fixing.

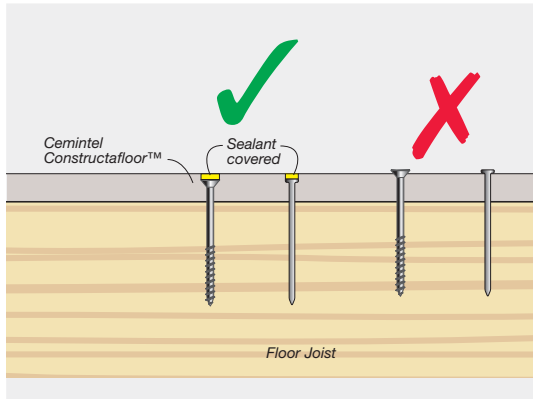
Screw or nail fix sheets as for tiled areas. Fixings should finish below the finished level of the Constructafloor sheet and any indentation should be filled with epoxy or polyester filler.

## DESIGN + AESTHETIC CONSIDERATIONS

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**FIGURE 4.04** Fastener Countersinking Detail

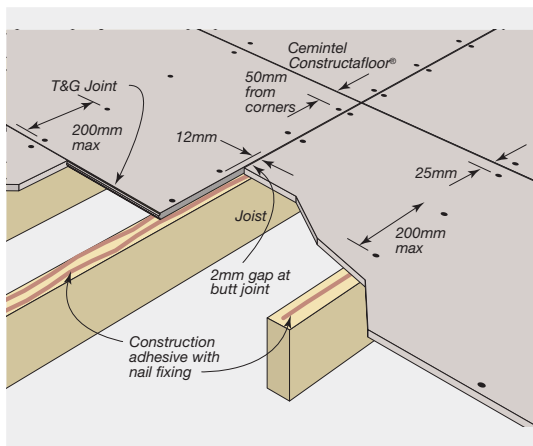
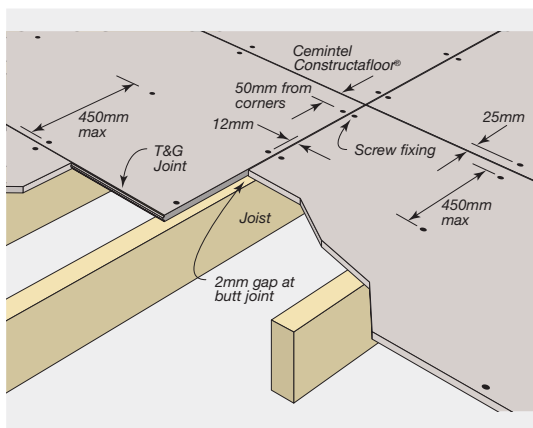
Handy Hint: To prevent sealant spillage, place a strip of adhesive tape over the screw hole prior to drilling, then remove once screw is in place and covered with sealant.

**Maintenance**

The durability of the system can be maintained by periodic inspection, including examination of the surface finishes, flashings, penetrations and membranes. Any cracked or damaged flashings or seals that would allow water ingress must be repaired immediately.

**Sheet Preparation**

Cement based levelling products may be used. Sheets should not be sanded. Sheets should be cut from the back using a power saw, refer to the 'Components + Accessories' section of this guide.

**FIGURE 4.05** Constructafloor Fixing Detail –Nail Fixing**FIGURE 4.06** Constructafloor Fixing Detail –Screw Fixing

# 05

COMPONENTS + ACCESSORIES










## COMPONENTS + ACCESSORIES

05

Note: Codes can change from time to time. Refer to the website for the current list of components prior to ordering.

## Accessories







**Note: In high corrosion zones, such as the coastal marine environment, stainless steel or Class 4 fasteners must be used.**

Accessories	Description	Size / Colour	Quantity	Product Code
<b>DECKING FIXINGS</b>				
	<b>Nail for Timber Framing</b> – Used for direct fixing Constructafloor sheets to a minimum MGP10 timber framing. Class 3 or Class 4 finish.			
	• 50mm machine driven D Head	2.87mmø x 50mm	Supplied by others	
	<b>Screws for Steel Framing</b> – Used for direct fixing Constructafloor sheets to steel framing. To suit a minimum 0.75mm BMT G2 framing. Pre-drill Constructafloor sheets and countersink heads.			
	• Drill point, CSK countersunk head, Class 3 or Class 4	10-16 x 30mm	Supplied by others	
	• Winged, self-embedding head, Class 3	10g x 40mm	Supplied by others	
	<b>Screw for Timber Framing</b> – Used for direct fixing Constructafloor sheets to a minimum MGP10 timber framing. Pre-drill Constructafloor sheets and countersink heads.			
	• Type 17, CSK countersunk head, stainless steel or Class 3	10g x 50mm	Supplied by others	
	<b>Construction Adhesive</b> – Used when nail fixing Constructafloor sheets to minimum MGP10 timber framing.			
	• Sikaflex II FC	310mL tube	1 each	39378
	• Fuller Max Bond		Supplied by others	
	• Fuller Max Bond Pro		Supplied by others	
<b>FLASHINGS, SHEETS, MEMBRANES, ADHESIVES</b>				
	<b>Mortar Bed</b> – Used to create profile of surface finish and compatible with the membrane.			
	• As required for the system to AS 3958.1		Supplied by others	
	<b>Insitu Membrane/Internal Tray</b> – Used for an impervious barrier/Water Proof Membrane (WPM) or as required by system, may incorporate joint reinforcing.			
	• Proprietary impervious barrier assessed and classified in accordance with AS/NZS 4858		Supplied by others	
	<b>Perimeter Flashing</b> – Used at the wall/floor junction.			
	• PVC angle 75mm x 50mm	3000mm	1 length	11206
	<b>Tile Adhesive</b> – Use to bond tiles to Constructafloor sheets, mortar bed, waterproofing membrane or floor surface.			
	• Compatible products available from Ardex, Bostik, Davco, Crommelin and Parchem.		Supplied by others	
	<b>Vinyl Adhesive</b> – Use to bond vinyl to Constructafloor sheets and floor substrate.			
	• Fibre cement compatible products include Holdfast 1906, Dunlop Vinyl Adhesive and Polymer Engineering Vinyl Adhesive.		Supplied by others	
	<b>Adhesive Fulaprene 303</b> – Used for fixing PVC angle to slab, timber or fibre cement flooring.			
	• Adhesive Fulaprene 303		Supplied by others	
	<b>Flexible Sealant</b> – Wet area sealant used for joints in tiles and other substrates, and other sealants for joints in Constructafloor substrate and fastener heads. Prime surfaces as recommended by the manufacturer.			
	• Gyprock Wet Area Acrylic Sealant	450g tube	1 each	10902
	• Sikaflex Pro (Grey)	310mL tube	1 each	11378
	• Sikaflex Pro (Black)	310mL tube	1 each	39488

## 05

## COMPONENTS + ACCESSORIES

Note: Codes can change from time to time. Refer to the website for the current list of components prior to ordering.

Accessories	Description	Size / Colour	Quantity	Product Code
<b>OTHER TOOLS</b>				
	<b>Countersinking Tool</b> – A tungsten carbide tipped tool specifically designed for drilling and countersinking.		1 each	22116
	<b>Backing Rod</b> – Used to enable correct filling of joints with sealant. The diameter of backing rod must be appropriate for the width of the gap being filled.	10mm diameter x 50m roll	1 each	11177
<b>CUTTING TOOLS</b> – *Cemintel recommends the cutting tools in the table below. Appropriate dust extraction methods should also be used.				
	<b>Makita Plunge Saw Kit (1300W) includes 1400mm guide rail and bonus 165mm fibre cement saw blade</b> – excellent for cutting cement based sheets.	165mm	1	165485
	<b>Makita 165mm Fibre Cement Saw Blade</b> – ideal for use with the Makita Plunge saw and other 165mm circular saws fitted with vacuum extraction systems.	165mmx20x4T	1	165486
	<b>FESTOOL DSC-AGP 125</b> – Diamond Blade Cutting and Grinding Tool. Used to provide neat and accurate bevelled edges.	125mm	1	107207
	<b>FESTOOL TS 55 EBQ Plunge Cut Saw</b> – with 1400mm Guide Rail. Precise plunge cuts in materials up to 55mm thick.	160mm	1	121400
	<b>FESTOOL Diamond Tipped Blade for TS 55</b> – for cutting all fibre cement sheet products.	160mm	1	112647





SYSTEM ENGINEERING, INSTALLATION  
+ CONSTRUCTION DETAILS



## SYSTEM ENGINEERING, INSTALLATION + CONSTRUCTION DETAILS

### Design, Detailing and Performance Responsibilities

Cemintel engages independent testing laboratories to test and report on the performance of a wall in accordance with the relevant Australian Standards. Consultants use these reports as the basis for opinions (estimates of laboratory performance) they issue for variations or different arrangements to the tested system. Using their experience, the consultant will make judgement about on-site installed performance of various walls.

#### Project Consultants

##### (Structural, Fire, Acoustic, Façade etc.)

These consultants are typically responsible for the following:

- Opinions on expected laboratory performance of wall configurations that vary from actual test configuration, such as substitution of products and components;
- Judgements about expected field performance using laboratory test reports and practical experience;
- Design, specification and certification of structural, fire, acoustic, durability, weather tightness and any other required performance criteria for individual projects.

The design and selection of building elements, such as wall and floors and their integration into the building considering the following:

- Interface of different building elements including the structure/ substrate;
- Wall and floor junctions;
- Penetrations;
- Flashing issues;
- Room / building geometry; and
- Acoustic and water penetration field-testing.

#### Design Responsibility

Cladding, air barrier, battens and top hats, and structural framing are required to resist wind and earthquake loads that are specific to the building and the site. Additional 'local pressure factors' can apply to cladding and the supporting battens and top hats in accordance with the Australian Standard AS 4055 - Wind loads for housing or AS/NZS 1170.2 - Wind actions. It is recommended that the Architect/Building Designer assigns the responsibility for the façade design to the Project Engineer. Once loads have been determined, the battens and top hat spans, fastener spacing, air barrier construction details, and cladding fixing details may be selected from the appropriate tables in this guide and in the 'Cemintel Facades & Cladding Design Guide'. It is also the responsibility of the Architect / Building Designer to select the appropriate corrosivity category. Refer to appropriate details in this guide.

The performance levels of walls documented in this guide the 'Cemintel Facades & Cladding Design Guide' and CSR Gyprock® The Red Book™ publications are either what is reported in a test or the documented opinion of consultants.

#### Performance in projects is typically the responsibility of:

Project Certifier and/or Builder These professionals are typically responsible for:

- Identifying the performance requirements for the project in accordance with the NCC and clearly communicating this to the relevant parties; and
- Applicability of any performance characteristics supplied by Cemintel including test and opinions for the project.

Cemintel does not provide consulting services. Cemintel provides technical information that has been prepared in consultation with third party subject expert consultants for the presentation of information presented in this guide. This guide may be subject to amendment or change as required or as deemed necessary. The most up to date version of this guide should be referred to and shall be available at the Cemintel website [cemintel.com.au](http://cemintel.com.au).

Any party using the information contained in this guide or supplied by Cemintel in the course of a project must satisfy themselves that it is true, current and appropriate for the application, consequently accepting responsibility for its use.

It is the responsibility of the building designer, architect, engineer and project consultants to ensure that the information and details in this guide and the performance of the Constructafloor Interior flooring is suitable for the intended project application.

The recommendations in this guide are formulated along the lines of good building practice but are not intended to be an exhaustive statement of all relevant data.

Cemintel is not responsible for the performance of constructed walls, including field performance, and does not interpret or make judgements about performance requirements in the NCC.

Note: It is the responsibility of the Project Engineer/ Frame Designer to specify the connection of the structural noggings to the structural framing for any off-stud battens or top hats. It is also the responsibility of the project engineer to calculate the wind loads and earthquake loads for the cladding, air barrier and support framing of the façade on a project.

## SYSTEM ENGINEERING, INSTALLATION + CONSTRUCTION DETAILS



### Mortar Bed & Tile with Waterproof Membrane

This system has Constructafloor Interior flooring fixed directly to floor joists, with a flexible membrane installed on top to provide waterproofing.

The flexible membrane is covered with an optional separating or slip sheet, and a reinforced mortar bed is then laid to support the tiles or other finish.

Control joints in the mortar bed/tiles must be aligned with control joints in the sheets. This allows uninterrupted tile surfaces up to 9.0m x 5.4m for staggered sheets and 9.0m x 2.7m for aligned sheets between control joints to suit the tile module.

For further waterproofing construction details, refer to the 'General Area Waterproofing' and 'Shower Recess Waterproofing' sections of this guide, and the Cemintel Wet Area Systems publication.

## INSTALLATION

### Sheet & Control Joint Layout

Constructafloor Interior flooring sheets are fixed directly to the floor joists. Sheets are laid with tongue and groove joints perpendicular to the joists. Sheet ends must align with joists, and may be staggered or aligned. Sheet ends must be aligned at control joints. Leave a 10mm gap at wall junctions.

Control joints in the sheets and mortar bed/finish layers must be aligned, and are to be provided at maximum centres as detailed in Figure 4.01 and Figure 4.02.

### Fixing Constructafloor Sheet

Tongue and groove joints must be butted tightly together prior to fixing. Refer to detail.

Butt joints must be fixed to the frame leaving a 2mm minimum gap between each flooring sheet to allow for joint sealant.

Control Joints must be installed leaving a 5mm minimum gap between sheets to allow for the installation of backing rod and joint sealant. Remove the tongue and groove where necessary and provide blocking to support sheet edges and backing rod. This gap is important to accommodate movement of the building materials and structure.

Screw fix sheets at 450mm centres maximum along sheet edges and in the body of the sheet. Alternatively, where sheets are to be nail fixed, apply a continuous bead of construction adhesive below the sheet and power nail at 200mm centres maximum along sheet edges and in the body of the sheet.

Fixings must be kept a minimum of 50mm from corners. Refer to Figure 4.04, Figure 4.05 and Figure 4.06, and installation details. Fastener heads must be countersunk below sheet surface.

Screw holes must be pre-drilled using a counter sinking tool. Screw holes must be cleaned and filled with joint sealant. Once fasteners are in place, cover heads and fill all indentations with joint sealant.

**Handy Hint:** To prevent sealant spillage, place a strip of adhesive tape over the screw hole prior to drilling, then remove once screw is in place and covered with sealant.

### Jointing

Sheets must be fixed in position ready for joints to be completed. Ensure joints are clean and clear of any dust that may prevent sealant adhering.

For control joints only, press foam backing rod into joint pressing down firmly against joist leaving approximately 6mm deep gap at top to suit sealant requirements.

Fill all joints with joint sealant, finishing level with the sheet surface. Joints must be smoothed within 10 minutes.

### Membrane

A proprietary membrane system must be used and should be installed by a specialist waterproofing contractor, and a waterproof guarantee provided.

The following third party waterproofing manufacturers have tested waterproofing systems for use on top of Constructafloor Interior flooring:

- ARDEX Australia Pty Ltd
- Bostik Australia Pty Ltd
- Crommelin Waterproofing & Sealing
- Parchem Construction Supplies Pty Ltd

Please contact these companies for further information.

### Slip Sheet (optional)

To protect the membrane during tiling, and to separate the movement of the substructure and the tiled surface, a heavy duty plastic sheet must be installed over the membrane.

### Mortar Bed

A mortar bed maybe laid over the waterproof membrane or an optional slip sheet, to provide a suitable surface for tiling.

If a fall to waste is required, tiles must be laid on a mortar bed. Form control joints in the mortar bed/tile layers to correspond with the control joints in sheets. Control joints must be installed at maximum spacings up to 9.0m x 5.4m for staggered sheets and 9.0m x 2.7m for aligned sheets, refer to Figure 4.01 and Figure 4.02.

For large areas of mortar bed must be 40mm minimum thickness and reinforced with galvanised steel or stainless steel mesh. The mortar bed should be allowed to cure for approximately 10 days before tiling commences. Refer to membrane manufacturer's instructions.

### Tiling

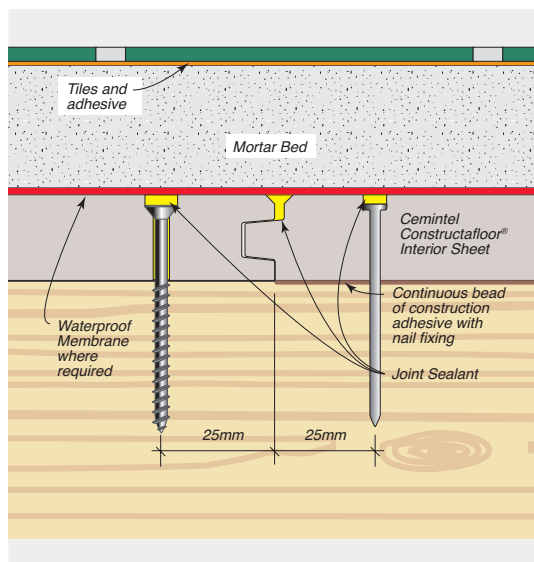
**Do not tile over control joints in the mortar bed.** When selecting tiles ensure they are suitable for use. An appropriate adhesive recommended for the application must be used. In all cases, the tile and tile adhesive manufacturer's instructions should be followed.

For further advice, refer to Australian Standard AS 3958.1 'Guide to the installation of ceramic tiles'.

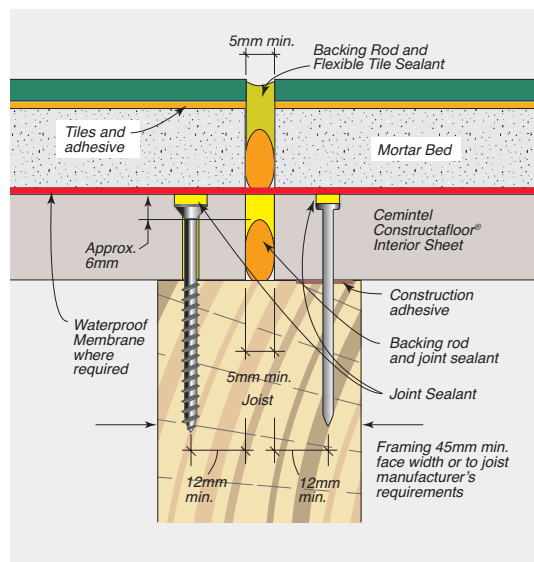


## SYSTEM ENGINEERING, INSTALLATION + CONSTRUCTION DETAILS

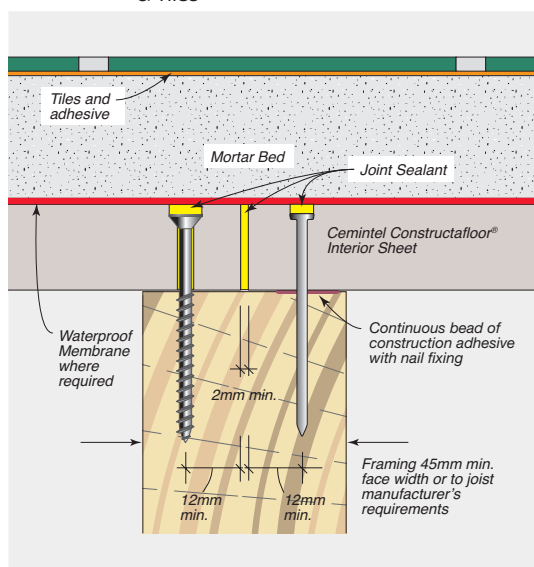
**FIGURE 6.01** Typical Joint T&G with Mortar Bed & Tiles



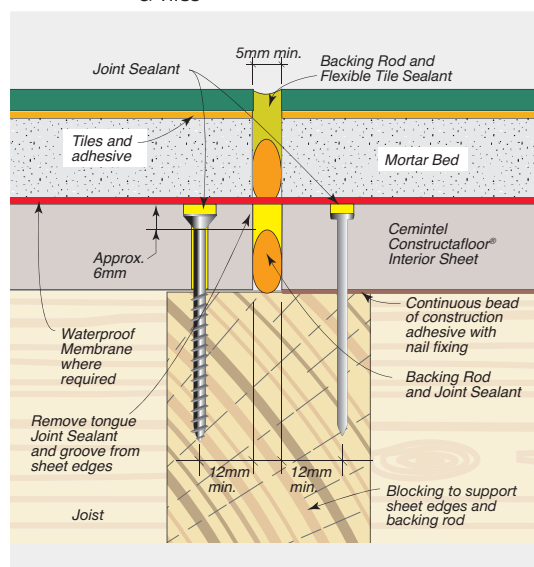
**FIGURE 6.03** Control Joint at Butt Joint with Mortar Bed & Tiles



**FIGURE 6.02** Typical Butt Joint with Mortar Bed & Tiles



**FIGURE 6.04** Control Joint at T&G Joint with Mortar Bed & Tiles



## SYSTEM ENGINEERING, INSTALLATION + CONSTRUCTION DETAILS



### Direct Fixed Tile with Liquid Membrane

This system has no mortar bed and are of minimum thickness, which is an advantage where threshold step height is low, and are also light weight to reduce the load on floor joists.

If a fall to waste is required, the support framing of the Constructafloor Interior sheets will need to create the fall in the floor surface.

### INSTALLATION

#### Sheet & Control Joint Layout

Constructafloor Interior flooring sheet are fixed directly to the floor joists. Sheets are laid with tongue and groove joints perpendicular to the joists with sheet ends aligned. Sheet ends must align with joists. Sheets may be laid in either direction relative to the slope. Leave a 10mm gap at wall junctions.

Control joints in tiles must be aligned with control joints in sheets, and are to be provided at maximum centres as detailed in Figure 4.01 and Figure 4.02.

#### Fixing Sheets

Tongue and groove joints must be butted tightly together prior to fixing. Refer to detail.

Control Joints must be installed leaving a 5mm minimum gap between sheets to allow for the installation of backing rod and joint sealant. Remove the tongue and groove where necessary and provide blocking to support sheet edges and backing rod. This gap is important to accommodate movement of the building materials and structure.

Screw fix sheets at 450mm centres maximum along sheet edges and in the body of the sheet. Alternatively, where sheets are to be nail fixed, apply a continuous bead of construction adhesive below the sheet and power nail at 200mm centres maximum along sheet edges and in the body of the sheet.

Fixings must be kept a minimum of 50mm from corners. Refer to Figure 4.04, Figure 4.05 and Figure 4.06, and installation details. Fastener heads must be countersunk below sheet surface. Screw holes must be pre-drilled using a counter sinking tool. Screw holes must be cleaned and filled with joint sealant. Once fasteners are in place, cover heads and fill all indentations with joint sealant.

**Handy Hint:** To prevent sealant spillage, place a strip of adhesive tape over the screw hole prior to drilling, then remove once screw is in place and covered with sealant.

#### Jointing

Sheets must be fixed in position ready for joints to be completed.

Ensure joints are clean and clear of any dust that may prevent sealant adhering. Place a strip of masking tape along both sides of the joint to ensure a neat finish is achieved.

For control joints only, press foam backing rod into joint pressing down firmly against joist leaving approximately 6mm deep gap at top to suit sealant requirements.

Fill all joints with joint sealant, finishing level with the sheet surface. Joints must be smoothed within 10 minutes. Remove masking tape and allow sealant to dry for approximately 24 hours.

#### Liquid Membrane

A proprietary membrane system must be used. This should be installed by a specialist waterproofing contractor, and a waterproof guarantee provided.

The following third party waterproofing companies have tested waterproofing systems for use on Constructafloor:

- ARDEX Australia Pty Ltd
- Bostik Australia Pty Ltd
- Crommelin Waterproofing & Sealing
- Parchem Construction Supplies Pty Ltd

Please contact these companies for further information.

A bond breaker tape must be provided at the liquid membrane directly above all sheet control joints in accordance with waterproofing system instructions, prior to tiling.

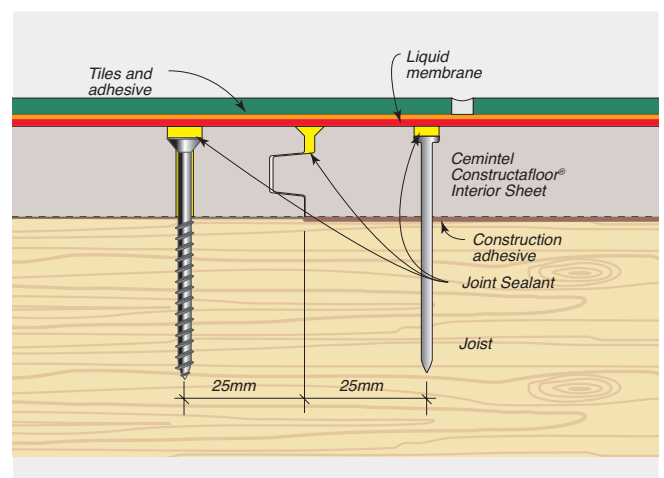
#### Finishes

Do not tile over control joints.

When selecting tiles ensure they are suitable for use and an appropriate adhesive is selected. In all cases the tile and tile adhesive manufacturer's instructions should be followed.

For further advice, refer to Australian Standard AS 3958.1 'Guide to the installation of ceramic tiles'.

**FIGURE 6.05** Typical T&G Joint with Membrane and Tiles





## SYSTEM ENGINEERING, INSTALLATION + CONSTRUCTION DETAILS

### Direct Fixed Tile

If a fall to waste is not required, in a non-wet area the tiles may be fixed directly to Constructafloor Interior flooring (or over a waterproof membrane).

### INSTALLATION

#### Sheet & Control Joint Layout

Constructafloor Interior flooring sheet are fixed directly to the floor joists. Sheets are laid with tongue and groove joints perpendicular to the joists with sheet ends aligned. Sheet ends must align with joists. Sheets may be laid in either direction relative to the slope. Leave a 10mm gap at wall junctions.

Control joints in tiles must be aligned with control joints in sheets, and are to be provided at maximum centres as detailed in Figure 4.03.

#### Fixing Sheets

Tongue and groove joints must be butted tightly together prior to fixing. Refer to detail.

Butt joints must be fixed to the frame leaving a 2mm minimum gap between each flooring sheet to allow for joint sealant.

Control Joints must be installed leaving a 5mm minimum gap between sheets to allow for the installation of backing rod and joint sealant. Remove the tongue and groove where necessary and provide blocking to support sheet edges and backing rod. This gap is important to accommodate movement of the building materials and structure.

Screw fix sheets at 450mm centres maximum along sheet edges and in the body of the sheet. Alternatively, where sheets are to be nail fixed, apply a continuous bead of construction adhesive below the sheet and power nail at 200mm centres maximum along sheet edges and in the body of the sheet.

Fixings must be kept a minimum of 50mm from corners. Refer to Figure 4.04, Figure 4.05 and Figure 4.06, and installation details. Fastener heads must be countersunk below sheet surface. Screw holes must be pre-drilled using a counter sinking tool. Screw holes must be cleaned and filled with joint sealant. Once fasteners are in place, cover heads and fill all indentations with joint sealant.

**Handy Hint:** To prevent sealant spillage, place a strip of adhesive tape over the screw hole prior to drilling, then remove once screw is in place and covered with sealant.

### Jointing

Sheets must be fixed in position ready for joints to be completed.

Ensure joints are clean and clear of any dust that may prevent sealant adhering. Place a strip of masking tape along both sides of the joint to ensure a neat finish is achieved.

For control joints only, press foam backing rod into joint pressing down firmly against joist leaving approximately 6mm deep gap at top to suit sealant requirements.

Fill all joints with joint sealant, finishing level with the sheet surface. Joints must be smoothed within 10 minutes. Remove masking tape and allow sealant to dry for approximately 24 hours.

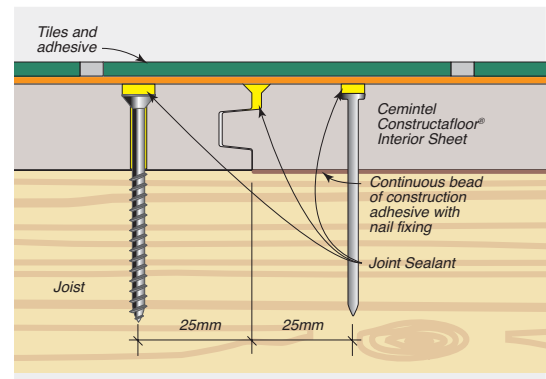
### Finishes

Do not tile over control joints.

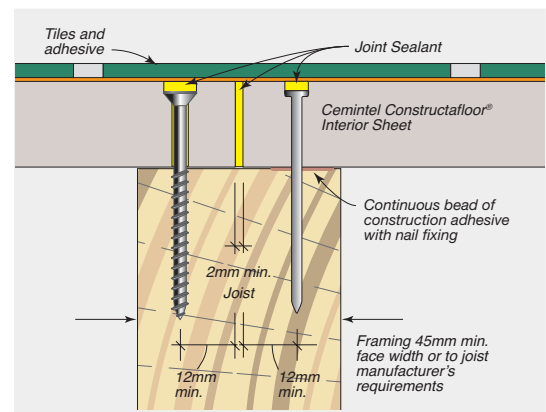
When selecting tiles ensure they are suitable for use and an appropriate adhesive is selected. In all cases the tile and tile adhesive manufacturer's instructions should be followed.

For further advice, refer to Australian Standard AS 3958.1 'Guide to the installation of ceramic tiles'.

**FIGURE 6.06** Typical T&G Joint with Direct Fixed Tiles



**FIGURE 6.07** Typical Butt Joint with Direct Fixed Tiles

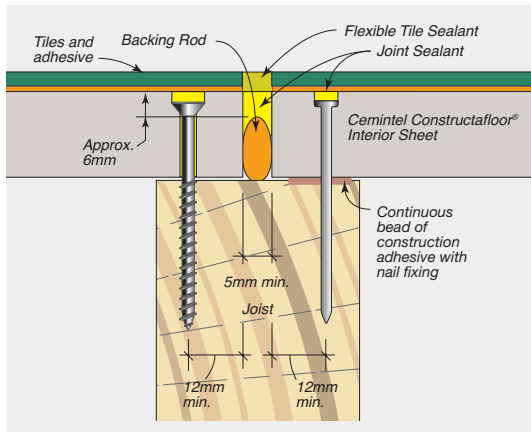




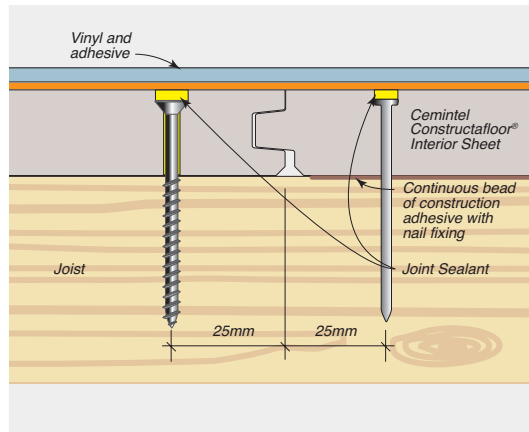
# SYSTEM ENGINEERING, INSTALLATION + CONSTRUCTION DETAILS



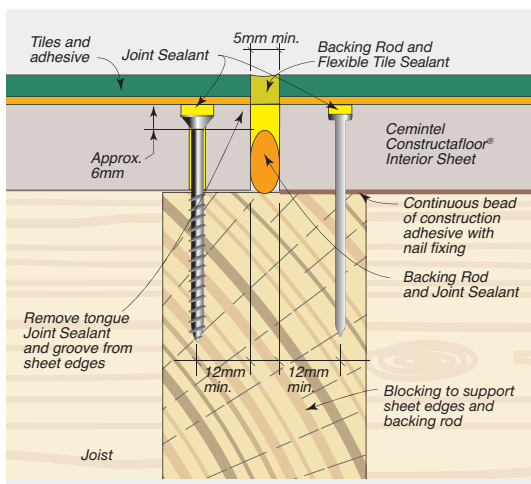
**FIGURE 6.08** Control Joint at Butt Joint with Direct Fixed Tiles



**FIGURE 6.10** Typical T&G Joint with Vinyl Finish



**FIGURE 6.09** Control Joint at T&G Joint with Direct Fixed Tiles



## Vinyl Finish

A flush surface is required to avoid blemishes in the finish. Fill minor imperfections and cover fastener heads with epoxy or polyester based builder's filler. Any joint misalignments must be filled or sanded smooth. Alternatively, a floor leveller may be used over larger areas. Ensure all movement joints and gaps in the floor are protected or filled prior to applying the floor levelling compound.

Ensure all sheets are clean, dry and free from dust. Follow adhesive manufacturer's recommendations for installing the vinyl sheeting. It is recommended that a primer be used for polymer type adhesives.

## General Area Waterproofing

## Perimeter Flashing

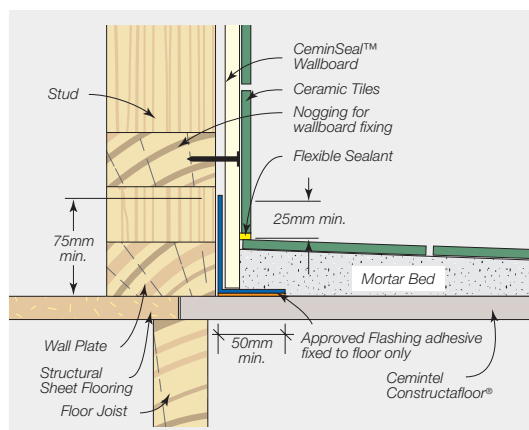
Perimeter flashing must be used at the floor/wall junctions in all general wet areas, and must extend a minimum of 25mm above finished floor level.

Note, general wet areas are not subjected to water, like a shower area. For general wet areas on the upper level of two storey construction, it is recommended that a continuous insitu membrane be applied. Refer to 'Shower Recess Waterproofing' section.

Two recommended methods are:

- PVC Flashing Angle, 75 x 50mm adhesive fixed to floor only using Fulaprene™ 303 Adhesive.
- Insitu membrane, installed to the project specification requirements for the selected class membrane and bond breaker, and up wall to 25mm minimum above highest point of finished floor level.

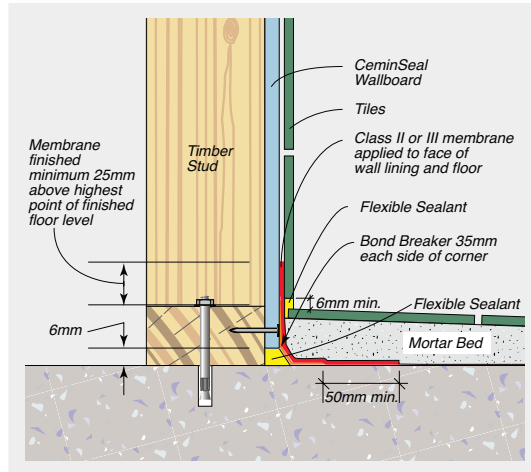
**FIGURE 6.11** Perimeter Flashing with PVC Angle





## SYSTEM ENGINEERING, INSTALLATION + CONSTRUCTION DETAILS

**FIGURE 6.12** Perimeter Flashing with Flashing Strip



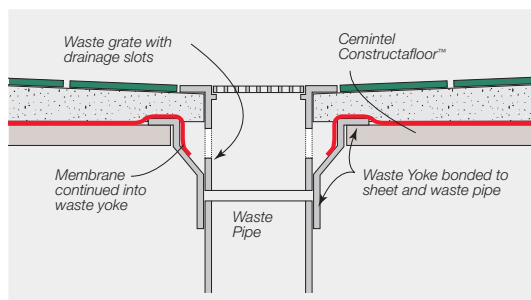
### Shower Recess Waterproofing

#### Plumbing Wastes

It is important that all plumbing wastes are sealed, particularly in a shower recess. A PVC waste yoke must be bonded to the flooring and the waste pipe before fitting grates and other fixtures.

A waste fitting incorporating a 'leak control system' is recommended to enable any moisture to drain from beneath the floor tiles.

**FIGURE 6.13** Typical Waste Detail



### Insitu Applied Membrane

A continuous insitu membrane must be applied to shower recess areas as shown in Figure 6.13, Figure 6.14, and Figure 6.15. Membranes must comply with AS/NZS 4858 and be recommended for use with a fibre cement substrate. Installation is to be in accordance with the manufacturer's recommendations.

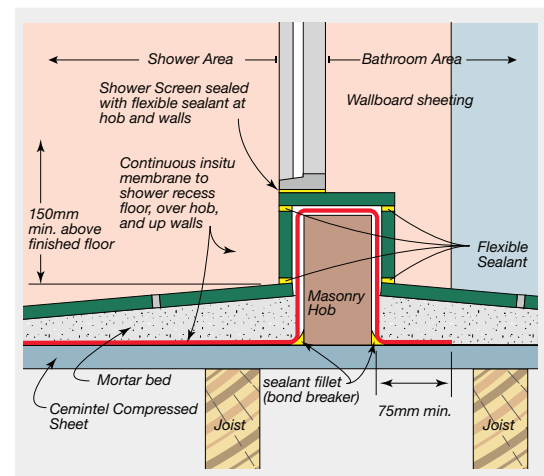
For second storey installations, it is recommended that a continuous insitu membrane be applied to the entire interior floor and up the walls to a minimum 150mm or 1800mm above the finished floor level and/or to a minimum 50mm above any shower hob and above the shower rose.

NCC 2022 Volume 2 nominates a minimum 150mm height above finished floor level or bath tub edge for the waterproof membrane on the wall of shower areas, and a waterproofing system to be provided by a combination of the wall components, such as a water resistant substrate and water resistant finish complying to AS 3740 requirements).

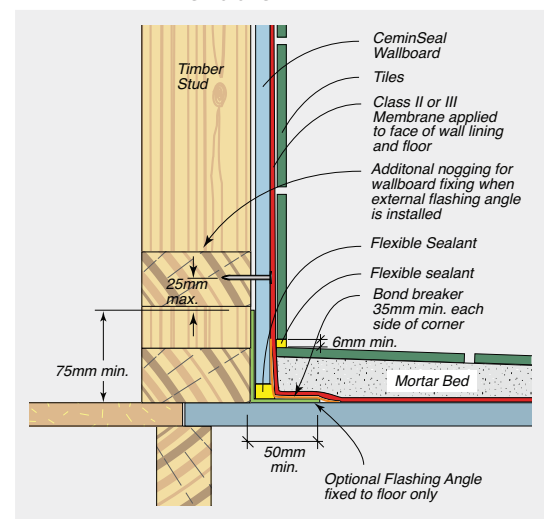
NCC 2022 Volume 1 Specification 26 nominates that a wall of an enclosed or unenclosed shower area shall be/have a waterproof material to a height of 1800mm above the finished floor level of the shower area or 50mm above shower rose, whichever is higher. CSR recommends as a minimum that a waterproofing membrane be applied to these nominated minimum heights above the finished floor level. The waterproofing requirements of the project will be specified and determined by the project designer and/or waterproofing contractor.

**NOTE:** For further details on waterproofing refer to Australian Standard AS 3740 and NCC requirements.

**FIGURE 6.14** Typical Shower Recess with Hob



**FIGURE 6.15** Insitu-Formed Shower Recess Class II or III Membrane





07  
SAFETY, HANDLING, GENERAL CARE  
+ WARRANTY



### Health, Safety and Personal Protection Equipment (PPE)

**Fibre Cement contain silicas that are harmful if inhaled. Protective clothing and breathing equipment should be worn when cutting products.**

When cutting, drilling or grinding fibre cement panels using power tools, always ensure the work area is properly ventilated.

An approved dust mask (AS/NZS 1715 and AS/NZS 1716) and safety glasses (AS/NZS 1337) must be worn. Cemintel recommends that hearing protection also be worn.

Safety Data Sheet information is available at [www.cemintel.com.au](http://www.cemintel.com.au)



### Managing Respirable Crystalline Silica Dust

Crystalline Silica is everywhere. It is found naturally in stone, rocks, sand, gravel and clay. Sand is one of the raw materials in Fibre Cement. Respirable Crystalline Silica dust is the fine dust that's created when you use power tools to cut, drill, grind, chip or sand materials and products that contain crystalline

silica. This dust is of concern due to its size as it gets caught deep in your lungs and can cause long term damage.

IF YOU USE THE CORRECT SAFETY EQUIPMENT AND PPE, FIBRE CEMENT IS SAFE TO USE.



### Cemintel Safety Requirements

1 - Cut Outdoors*	The ventilation outdoors is greater than that indoors, and therefore should reduce exposure.
2 - Use On-Tool Dust Extraction	Use on-tool dust extraction when using power tools to drill and cut Fibre Cement, with a vacuum that contains a HEPA M Class filter.
3 - Correct Saw and Blade	Use a plunge saw with a specifically designed Fibre Cement blade.
4 - Don't Sweep, Vacuum instead	When completing your work vacuum with a HEPA M Class filter, rather than a broom as sweeping creates more dust.
5 - Use Correct Respirator	Use a half face P1 or P2 respirator. It is essential that the respirators are Fit Tested and workers are cleanly shaven to obtain a good seal.

\* Even though not recommended, indoor cutting can be completed when using an onsite cutting room with exhaust ventilation and a M class filter at a minimum, on-tool dust extraction with a vacuum with a HEPA M Class filter, a Full Face P2 respirator and conducting local occupational and static air monitoring to validate effectiveness of control measures.

## Safety & Handling

### Storage

All Cemintel panels must be stacked flat, clear of the ground and supported at 300mm maximum centres on a level platform. Panels must be kept dry, preferably stored inside the building. Panels must be dry prior to fixing, hence if it is necessary to store outside, the product must be protected from the weather.

### Handling

Prefinished products and must be treated with care during handling to avoid damage to edges, ends and prefinished surface. Panels should be carried horizontally on edge by at least two people.

Consideration should be given to planning the order of other trades that might stain or damage the panels.

Any splashings of mud, cement, mortar and the like should be removed immediately.

### Cutting

Panels should be fully supported and cut from the back using a power saw. Cemintel recommends using the Makita Plunge Cut Saw with guide rail and

appropriate blade, together with the appropriate dust extraction system. All exposed cut edges MUST BE SEALED WITH CEMINTEL EDGE SEALER TO PREVENT MOISTURE ABSORPTION.

### Mitres

It is not recommended to mitre panel edges as this can cause delamination of the face.

### Penetrations

Penetrations in panels may be cut or drilled prior to installation. Cut from the back or drill from the front. Mask, prime and fill gaps with sealant in accordance with recommended methods and products.

### Warranty

Cemintel Constructafloor Interior sheets have a product warranty of 10 years.

The full product warranty is available for download at [www.cemintel.com.au](http://www.cemintel.com.au)

NOTES

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A large grid of small dots for taking notes, consisting of 20 columns and 30 rows of dots.



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It is the responsibility of the customer to ensure that CSR's products are suitable for their chosen application, including in respect of project-specific matters such as, but not limited to structural adequacy, acoustic, fire resistance/combustibility, thermal, and weatherproofing requirements. All information relating to design/installation/application of these products is offered without warranty and no responsibility can be accepted by CSR for errors and omissions, or for any use of the relevant products not in accordance with CSR's technical literature or any other relevant industry standards. For current technical and warranty documentation relating to Cemintel's products, visit Cemintel's website at [www.cemintel.com.au](http://www.cemintel.com.au).