CEMINTEL®

WET AREA SYSTEMS

Internal Installation

01

INTRODUCTION

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Introduction

CeminSeal® Wallboard features an embedded micro waterblock technology that prevents water penetrating into the sheet, repelling water and providing a more stable sheet.

Ideal for lining areas such as bathrooms, laundries and semi-exposed ceilings, and for construction of impact resistant walls.

CeminSeal Wallboard has a recess on both long edges so that sheets may be taped and set with CSR Gyprock® and Cemintel Jointing materials. Once jointed it may be tiled, painted or wall papered as desired.

Advantages CeminSeal Wallboard Offers:

- Waterblocking technology
- 95% stronger joint and compound adhesion
- 100% paint adhesion
- Simple and quick to install
- Fewer call backs, less risk

Applications

The wet area details provided in this installation guide are based on AS 3740:2021 'Waterproofing of domestic wet areas' covering Class 1 buildings. These drawings should be read in conjunction with current NCC and be considered as preliminary and is not intended to replace the responsibility of the building professionals. The project certifier and designers must ensure that the drawings adopted from this installation guide is fit for purpose and satisfy project's design criteria.

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. Each wet area is classified as having a high, medium or low level of risk. Certain walls and junctions in each of the levels are required to be waterproof or water resistant.

Water resistant walls are those areas enclosing and within a shower compartment, and walls adjacent to fixed vessels such as baths, spas and tubs, i.e., part wall areas within bathrooms, ensuites and laundries.

Waterproof areas are junctions between walls and between floors and walls in showers and bathrooms, and near baths, spas, sinks etc.

Cemintel Wet Area Lining Systems offer proven, reliable and cost effective solutions to all residential wet areas.

Water Resistant Areas

CeminSeal Wallboard is used as a substrate for ceramic tiles and must be fastened with nails or screws only. CeminSeal Wallboard sheets are then jointed with CSR Gyprock™ Wet Area Base Coat and tape.

General Wet Areas

CeminSeal Wallboard is installed into these areas in a similar manner to that used for fixing standard Gyprock™ plasterboard. CeminSeal Wallboard sheets to be used as a substrate for tiling must be fixed with nails or screws only.

Material Properties

CeminSeal Wallboard Sheet conforms to the requirements of AS 2908.2: 1992 'Cellulose-cement products Part 2: Flat Sheets'. Type B, Category 3.

Manufacturing Properties

Mass 6mm thickness (nominal)	9.7kg/m^2
Mass 9mm thickness (nominal)	14.3kg/m^2
Mass 12mm thickness (nominal)	18.8kg/m^2
Length	+0 to -4mm
Width	+0 to -3mm
Thickness	+0.5 to -0mm
Diagonals Difference (max)	3mm

Fire Properties

In accordance with the National Construction Code (NCC) Volume 1 and Volume 2, fibre cement sheets can be used wherever non-combustible material is required by the codes and specification.

Fire Hazard Properties

Ignitability	0
Spread of Flame	0
Heat Evolved	0
Smoke Developed	0
Group Number	1
Average Specific Extinction Area	<250m^2/kg

02

DESIGN CONSIDERATIONS

Loading

Under NCC and relevant Australian Standards building elements must be designed to withstand, but not limited to self weight, live loads, wind, seismic and impact loads.

Relevant Australian Standard for design of framing are:

- AS 1170 Loading Code series.
- AS 1720 Timber Structures.
- AS 1684 Residential Timber Framed Construction.
- AS 4100 Steel Structures.
- AS/NZS 4600 Cold Formed Steel.
- AS 3623 Domestic Metal Framing.
- NASH Standard for Residential and low-rise Steel Framing Part 1.

Framing

CeminSeal Wallboard may be fixed to either timber or steel framing.

Timber framing must comply with AS 1684 : 1992 'Residential Timber Framed Construction'.

Steel framing must comply with AS 3623 : 1993 'Domestic Metal Framing'.

Studs shall be plumb and true, and spaced at maximum 600mm centres.

When an external shower tray or perimeter angle flashing is used, it is not permitted to fix the wallboard sheet to the bottom plate. An additional row of noggings must be placed 25mm above the tray or flashing to allow the wallboard to be fastened.

Similarly, noggings are to be placed 25mm above a preformed shower base, sink or bath tub. Also provide suitable noggings to support the bath and other fixtures such as soap holders and towel rails.

Wall framing may be checked-out to a maximum depth of 20mm to accommodate the bath or shower base flange. Alternatively, provide furring channels to ensure the face of the CeminSeal Wallboard will finish in front of the upturn on the receptacle.

For masonry substrates, wallboard must be fixed to furring channels in both tiled and non-tiled areas.

Control Joints

Control joints are to be installed in large spans of wall to allow for structural movement, and are to be positioned:

1. In non-tiled areas at no more than 7.2m spacings.
2. In tiled areas at no more than 4.2m spacings and at internal corners.
3. To coincide with control joints in the supporting frame.
4. At changes of framing type. Control joints are to be constructed with a double stud, and allowance for expansion/contraction is to be made in both the wallboard and tiles.

Fixtures

Light weight fixtures such as picture frames may be attached to walls with proprietary fixings. Check with the fixing manufacturer for allowable loadings. Heavier loads such as shelves, basins and appliances must be fixed through the linings to the studs.

Tiling

All tiling must be installed in accordance with the requirements of AS 3958.1. Additional information on tiling may be obtained from the BRANZ publication 'Good Tiling Practice'. Where a waterproof membrane is used, ceramic tiles are recommended. A tile adhesive that is compatible with the membrane and that complies with AS 4992 - 'Ceramic Tiles - grouts and adhesives', must be used. For appropriate tile weights, CSR recommends the use of flexible style adhesives and tile grouts to relieve imposed tensile stress in tiles due to differential movement.

03 COMPONENTS + ACCESSORIES

Components

CeminSeal Wallboard is manufactured in the following sizes, with the two long edges recessed to allow seamless jointing.

Thickness (mm)	Width (mm)	Length (mm)
6	1200	1800
6	1200	2400
6	1350	2400
6	1200	2700
6	900	3000
6	1200	3000
6	1350	3000
6	1200	3600

Thickness (mm)	Width (mm)	Length (mm)
6	1350	3600
6	1200	4200
6	1350	4200
9	1200	2400
9	1200	2700
9	1200	3000
12	1200	3000

Accessories

	Description		Size/Colour	Qty	Product Code
	CeminSeal Wallboard Nails Hot-dip galvanised for softwood and hardwood framing.	For 6mm	2.8mmx30mm	2kg	77257
		For 9-12mm	2.8mmx40mm	2kg	77258
	**Needle Point Class 3**		8x20mm	1000 loose	109243
	Buildex Fibre Teks self-embedding CSK Rib head, Phillips drive, Climaseal 4 finish. For steel BMT 0.5mm min		9-18x25mm	1000 loose	125651
			10-18x30mm	1000 loose	125614
	**Gyprock Acrylic Stud Adhesive** Coloured blue and used in temperatures not less than 5ºC		900g sausage	1	95082
			1kg bucket	1	10090
			5.5kg bucket	1	10091
	**Gyprock Wet Area Acrylic Sealant** Used to seal the edge of the Wallboard against other surfaces such as a preformed shower base or bath and around plumbing fixtures.		450g/300ml	1	10902
	**Sikaflex Pro** Used for joints in fibre cement substrate		310mm tube	1	11378
	External Vertical Flashing Angle. Zinc coated steel or PVC angle. For use in corners and with external shower trays.				By others
	Internal Vertical Flashing. A liquid applied membrane assessed and classified in accordance with AS/NZS 4858, for use with internal shower trays				By others
	Perimeter Flashing Angle. Zinc coated steel or PVC angle 75 x 50mm.				By others
	Insitu Membrane/Internal Tray. Proprietary impervious barrier assessed and classified in accordance with AS/NZS 4858.				By others
	Perimeter Flashing for Step-Down Slab. Proprietary product				By others
	**Fulaprene 303** Adhesive for fixing angle to slab, timber or fibre cement flooring		300g		By others
	Gyprock and Cemintel Wet Area Base Coat		15kg bucket		10146
	Gyprock Paper joint reinforcing		75m		10589
			150m		10586
	Gyprock Easytape		90m		10584
	Gyprock Finishing compound				
	**Backing rod**		10mm x 50m	1	11177
	**Cemintel Power Saw Blade**		1.5mm x 125mm	1	134449

04 INSTALLATION

INSTALLATION 04

Cemintel Wallboard sheets may be installed horizontally or vertically. Sheet orientation should be chosen so that any critical light falls along the recessed joints, or to minimise the number of butt joints. As a general rule, walls with a paint finish are installed horizontal while tiled walls should be installed vertically with all sheet joints supported by framing.

Cutting

Cemintel Sheets may be cut on-site using any of the following methods.

Tungsten Tipped Score and Snap Knife

1. Score face of sheet 4 to 5 times using a tungsten tipped knife against a straight edge.
2. Support the scored edge with the straight edge and snap the sheet upwards for a clean break.

Hand Saw

Preferably use an old handsaw. A quick jabbing action is best. Work with sheet face up to prevent burrs forming on the face.

Power Saw Blade

When it is necessary to use power tools for cutting Cemintel Sheets, CSR recommends using the Cemintel Power Saw Blade. This blade is specifically designed for cutting cement based sheets. Ideal for use with dustless circular saws fitted with vacuum extraction systems (1500RPM maximum).

On-Site Recessing

Where it is necessary to produce a ground recess on-site, a dustless angle grinder should be used. CSR recommends using the Hitachi Easy Bevel with vacuum extraction system, which fits most 125mm grinders, and produces a superior finish.

The recess should be 1.5mm to 2mm deep and should be approximately 35mm wide.

Sheet Fixing

Installation recommendations are as follows:

Install the bottom sheet first, with the lower edge a minimum 6mm clear of the finished floor.

Fasteners are to be positioned a minimum of 12mm from the edge of the sheet and a minimum 50mm from sheet corners. Fasteners are to be left a maximum of 0.5mm below the sheet surface.

Where CeminSeal Wallboard is used as a substrate for tiles, the sheets must be fastened with screws and nails only. Adhesive/ fastener fixing is not acceptable.

In non-tiled areas, sheet ends and cut edges within the field of the wall section are to be machined to form a recess.

Joints are not to coincide with the edge of openings over doorways, windows, and vents except where they form a control joint. Sheets are to be laid so that any joint falls a minimum of 200mm from the edge of an opening. Avoid butt joints over single doorways and cavity sliding doors wherever possible.

Butt joints must be staggered a minimum of 600mm in adjacent sheets.

In acoustic rated systems, all outer layer joints and corners, including those in non-visible areas, such as ceiling voids, must be finished with a minimum of base coat and paper tape.

04 INSTALLATION

FIGURE 4.01 CeminSeal Wallboard Layout

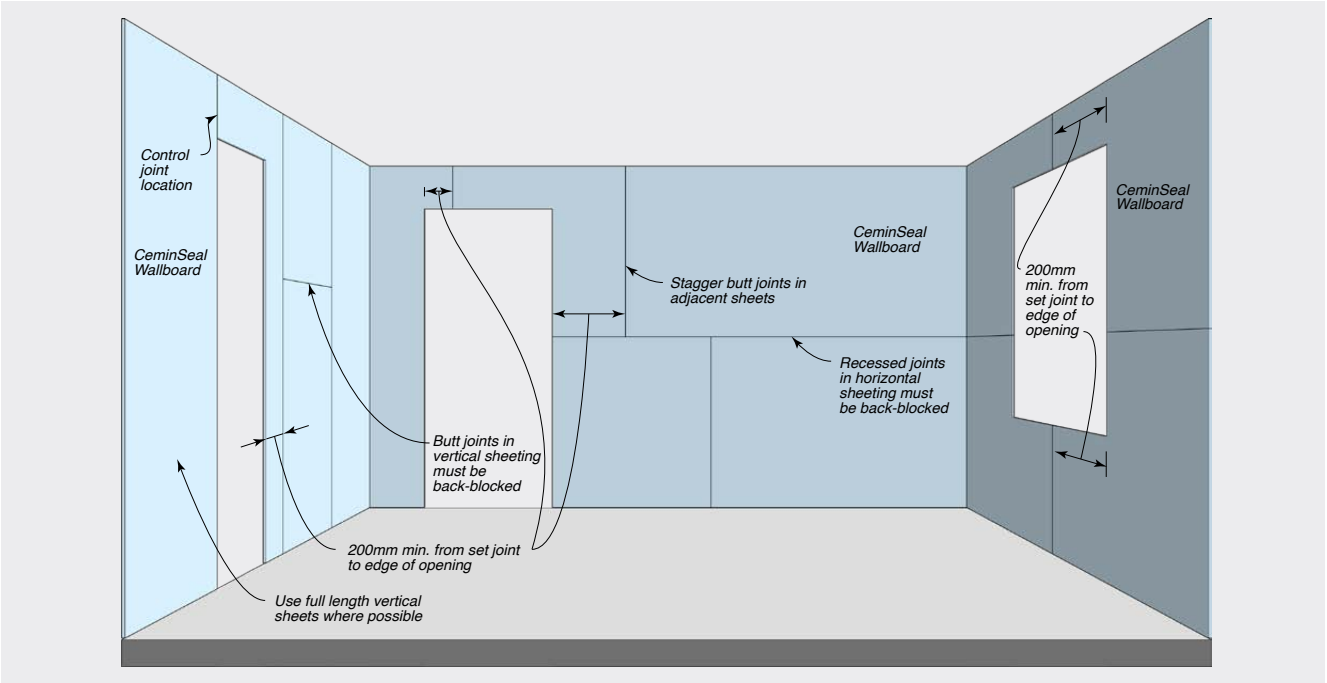


FIGURE 4.02 Fastener Driving

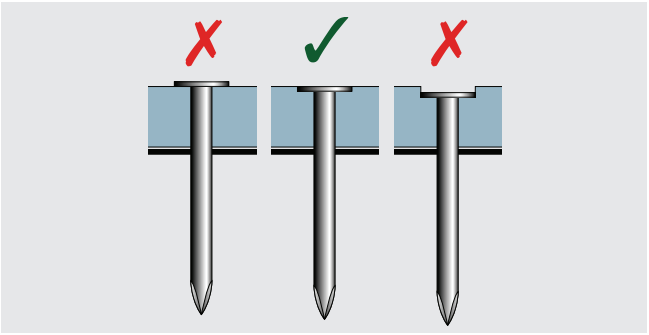


FIGURE 4.03 Fastener position for recessed joint or butt joint

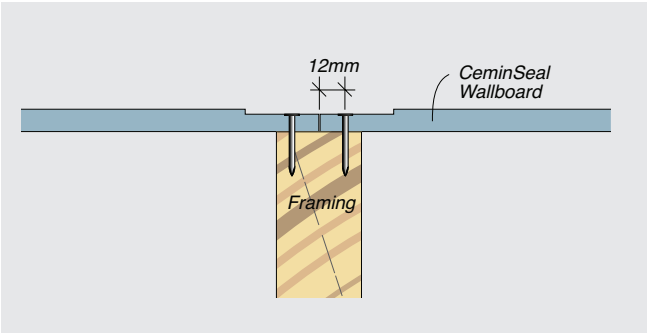
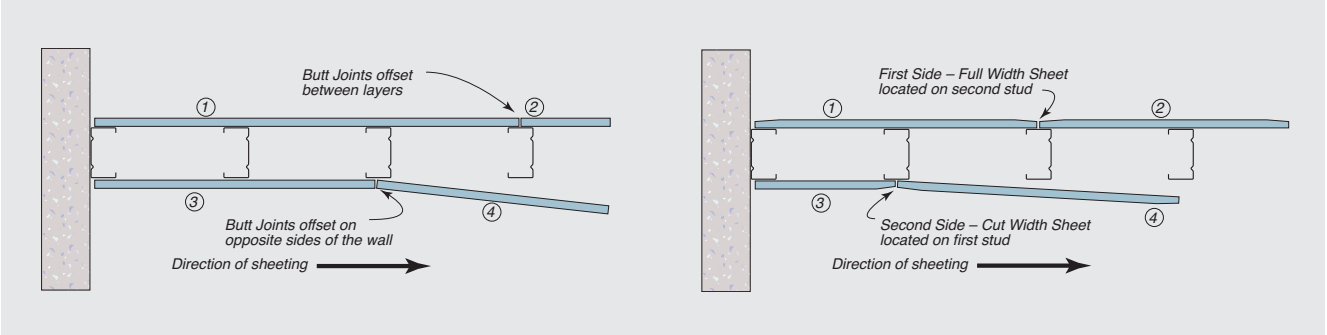


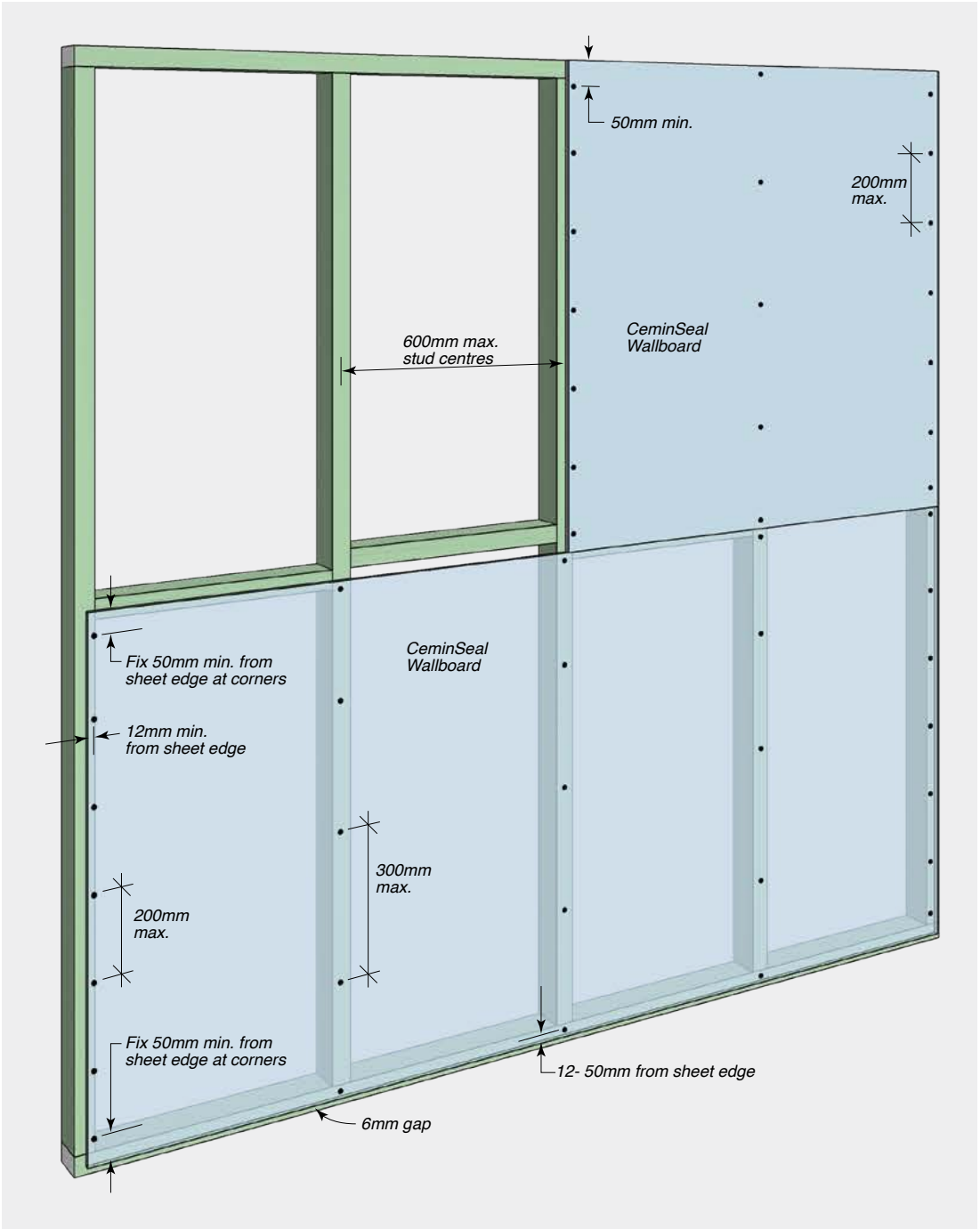
FIGURE 4.04 Sheeting direction and butt joint location



Non-Tiled Areas

For non-tiled areas, position fasteners at 300mm maximum centres in the body of the sheet, and at 200mm centres at internal angles, external angles and butt joints.

FIGURE 4.05 CeminSeal Wallboard installation - Fastener Method - Non tiled Areas



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INSTALLATION

Alternatively the adhesive/fastener system may be used. Apply 25mm x 15mm 'walnuts' of CSR Gyprock™ Stud Adhesive at 230mm maximum centres to intermediate studs.

Hold sheet against studs for 24 hours by fasteners driven through temporary fibre cement blocks in the centre of sheet at every second stud. Fasteners are to be applied at sheet edges as shown in the diagram.

Note: 'Walnuts' of adhesive must NEVER coincide with fastening points.

FIGURE 4.06 CeminSeal Wallboard installation Adhesive/fasteners Method - Non tiled Areas

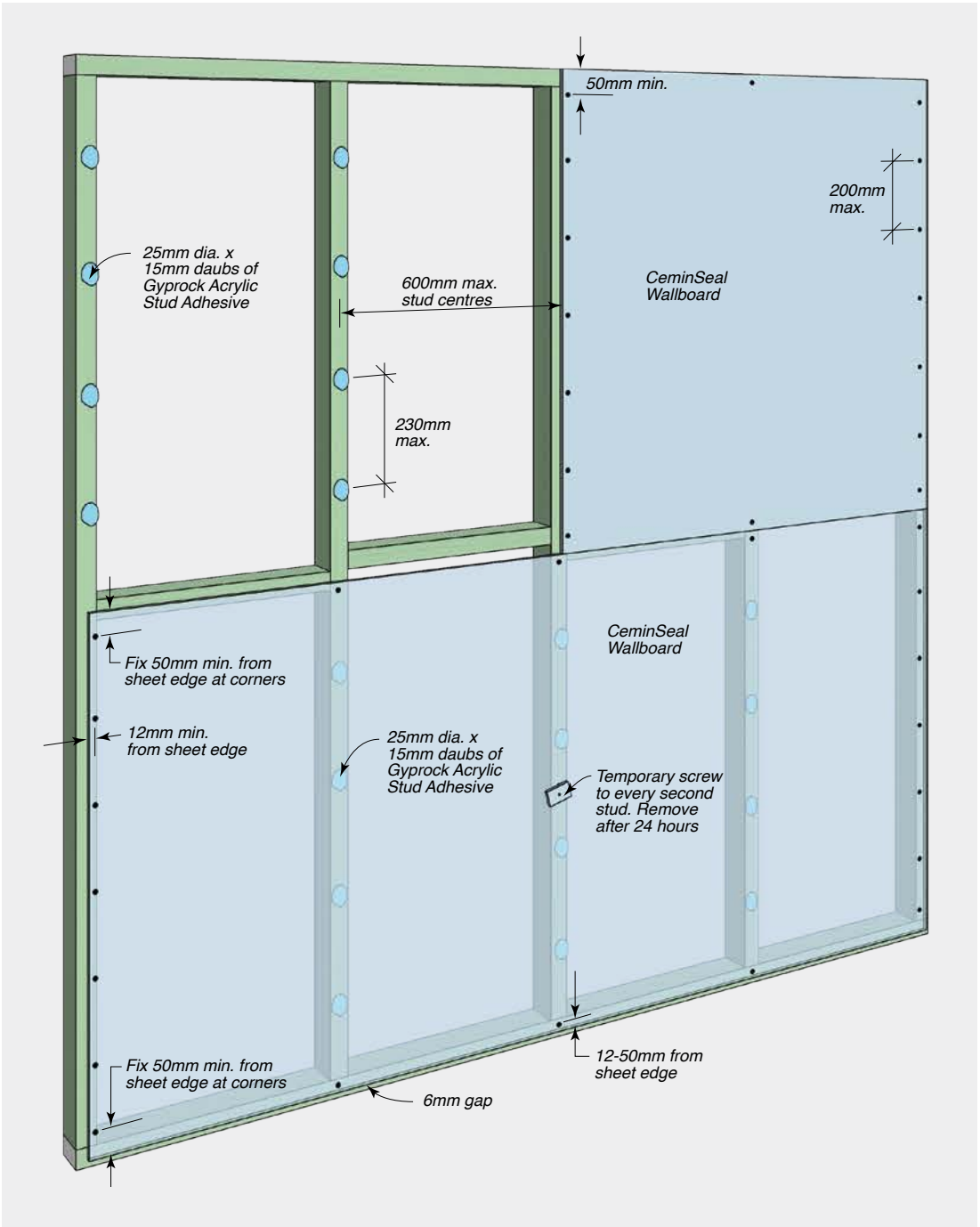
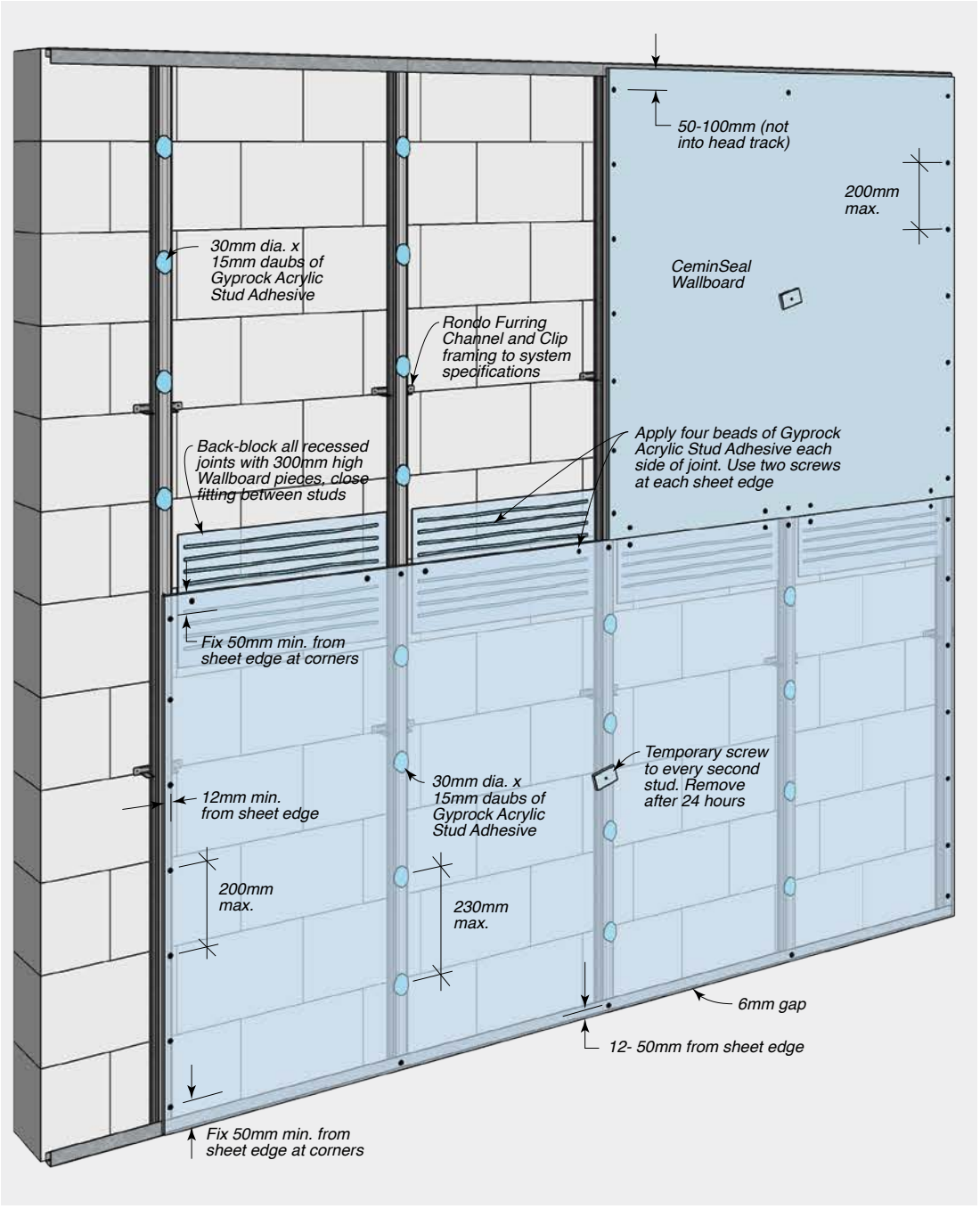


FIGURE 4.07 CeminSeal Wallboard Installation – Furring Channel and Fastener Method – Non-Tiled Areas



Note: for non-tiled areas, sheet fixing onto furring channels may be by adhesive and fasteners fixing method. Refer to Figure 4.07.

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Tiled Areas

Position fasteners at 200mm centres maximum at sheet edges and ends, internal and external angles as well as in the body of the sheet.

CeminSeal Wallboard, to be used as a substrate for tiling, must be fixed to the framing with nails or screws.

Use of stud adhesive is NOT acceptable.

These fixing details are suitable for wall tiles up to 20kg/m^2 in weight. For wall tiles up to 32kg/m^2, sheets must be fixed at 100mm maximum centres to all studs.

FIGURE 4.08 CeminSeal Wallboard installation Fastener Method Tiled Areas

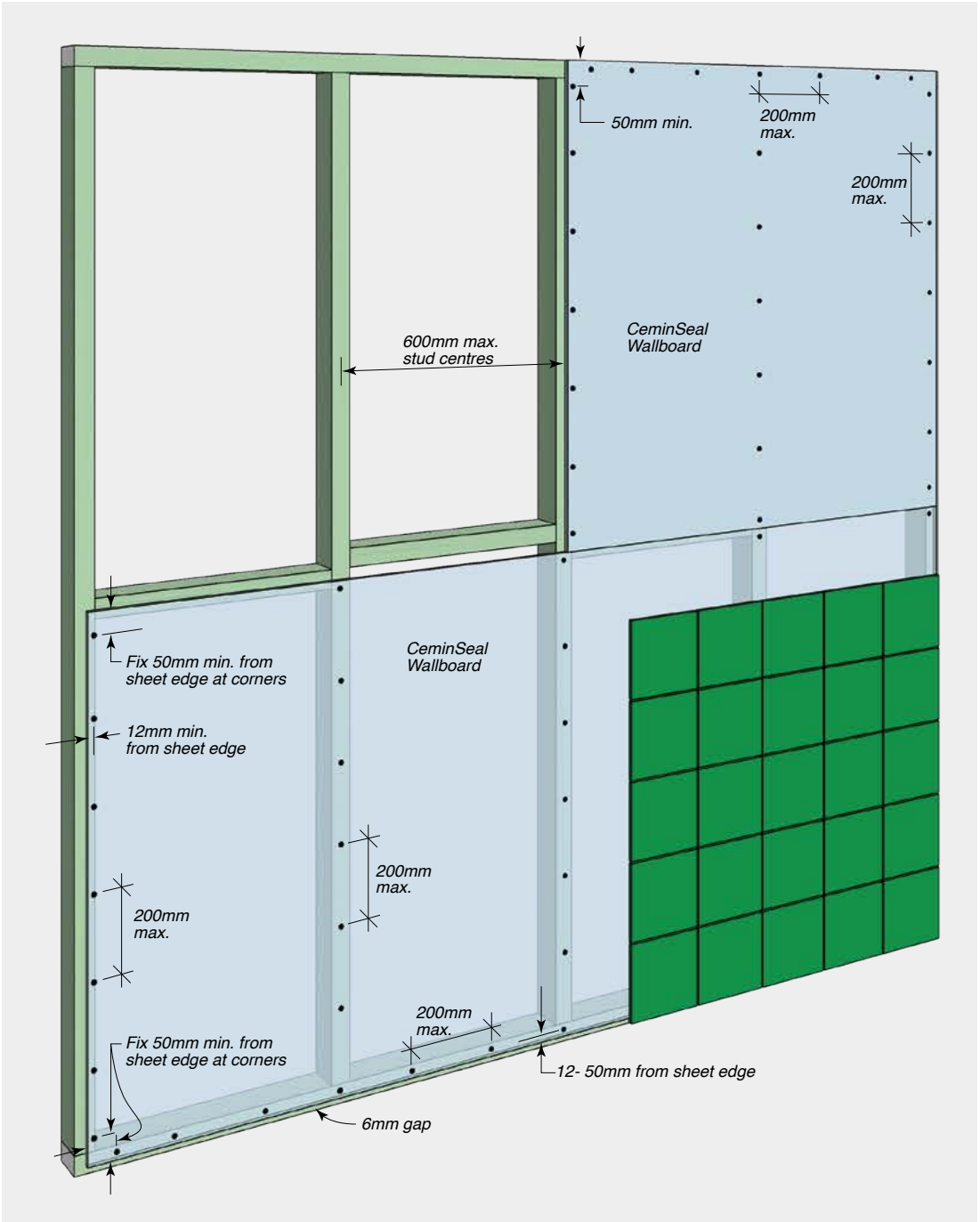
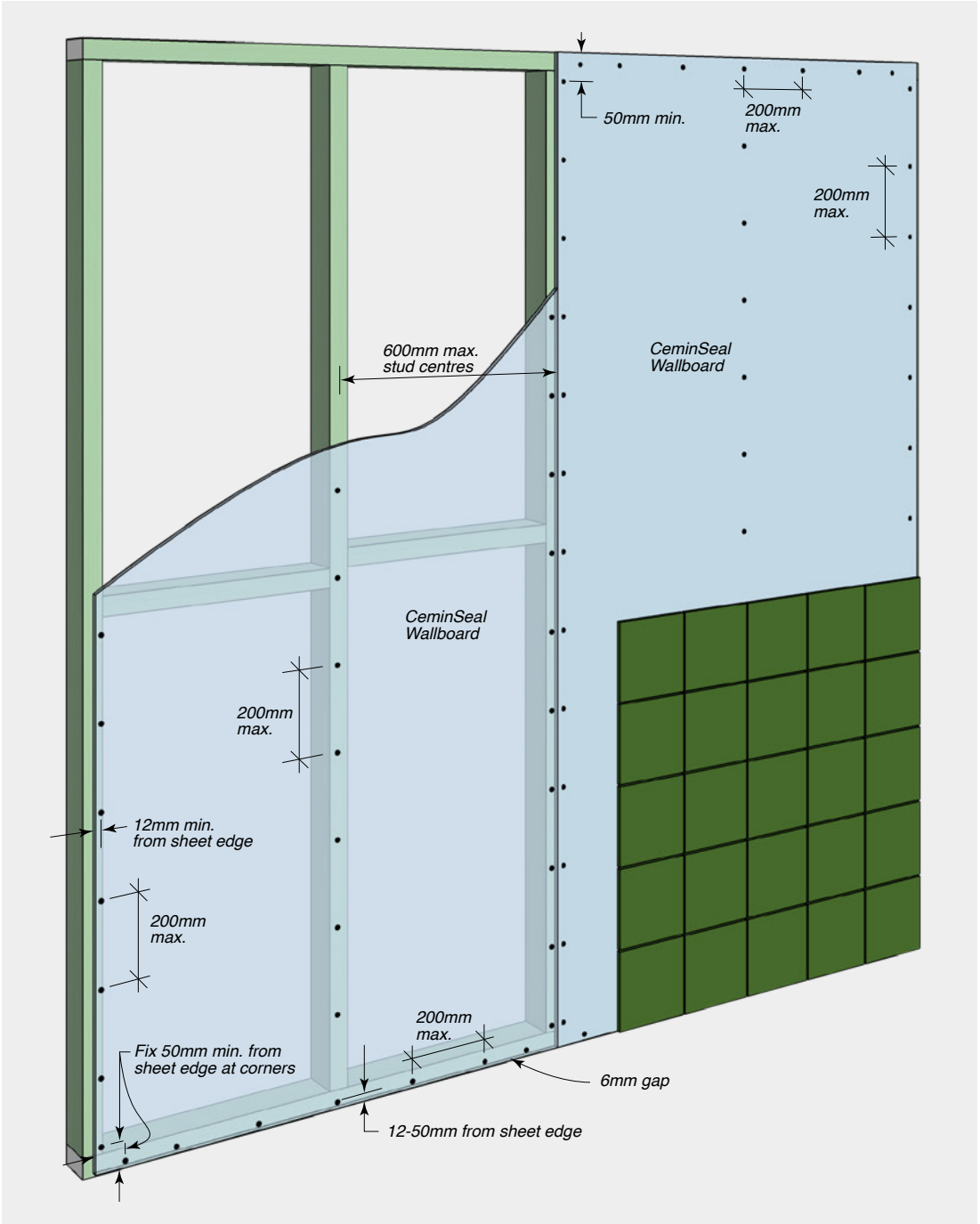


FIGURE 4.09 CeminSeal Wallboard installation Fastener Method Tiled Areas



04 INSTALLATION

FIGURE 4.10 CeminSeal Wallboard Fixing to Furring Channel Framing – Horizontal Sheeting with Back-Blocked Joints – Fastener Fixing – Tiled Areas

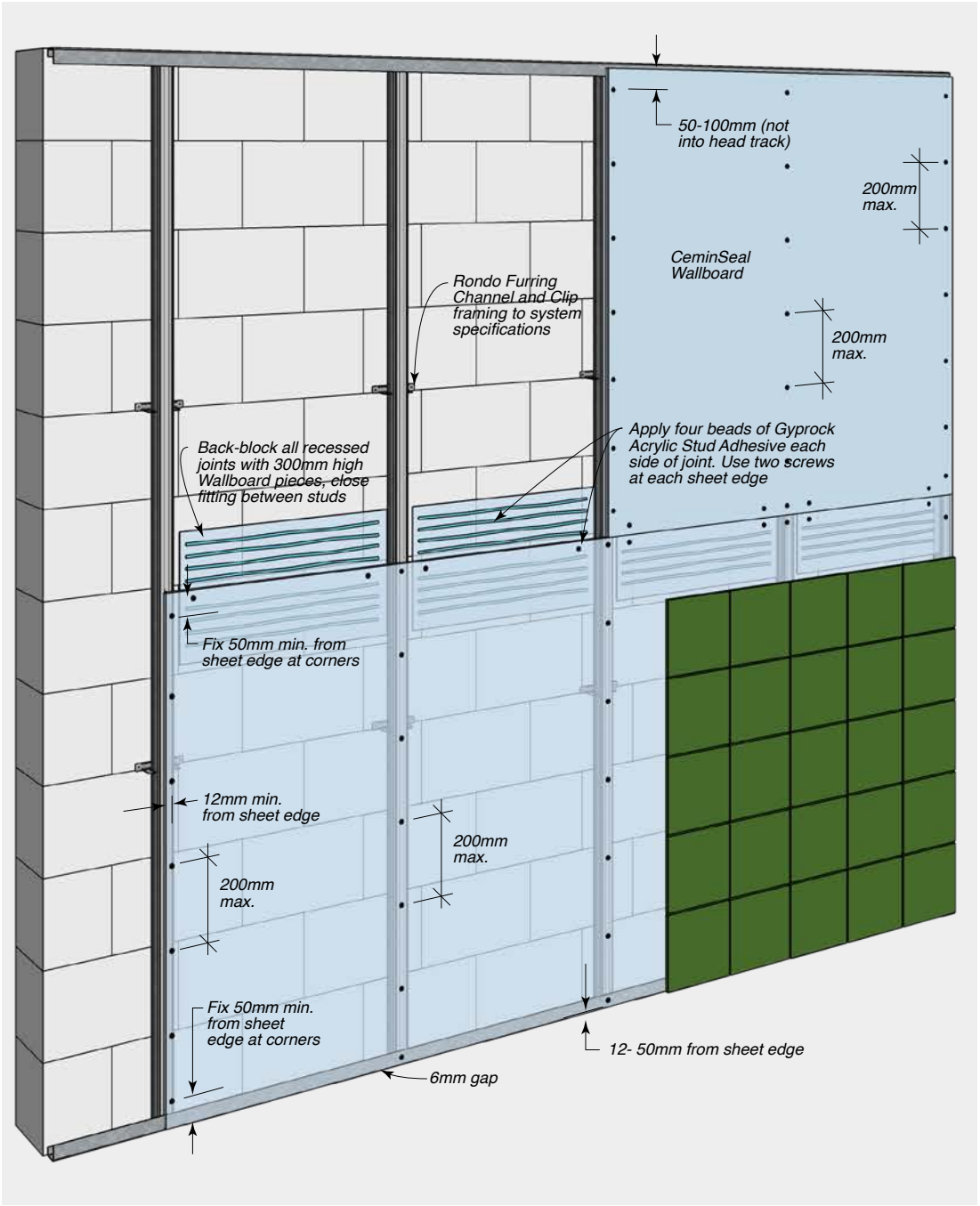
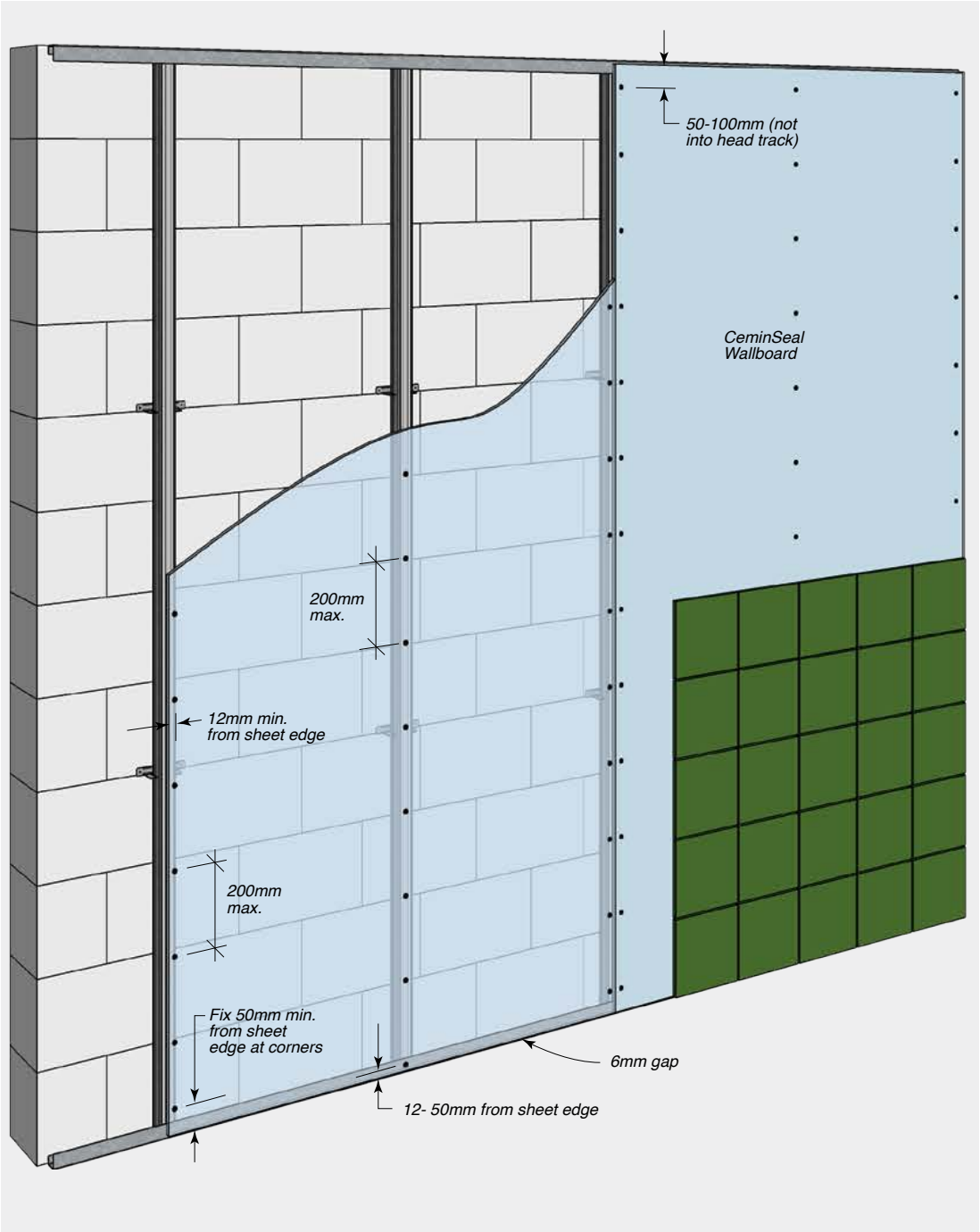


FIGURE 4.11 CeminSeal Wallboard Installation – Furring Channel and Fastener Method – Tiled Areas



Caulking

Caulk **all perimeter gaps** and penetrations to achieve stated acoustic performance. Use Gyprock Wet Area Acrylic Sealant.

Jointing & Finishing

Sheets are to be fitted together neatly at joints. Gaps up to 3mm wide must be filled with a Gyprock base coat before jointing.

Refer to the 'Jointing and Finishing' section of this guide for detailed information.

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CONSTRUCTION DETAILS SCHEDULE

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05

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CONSTRUCTION DETAILS – GENERAL AREAS

FIGURE 6.01 Tee Junction

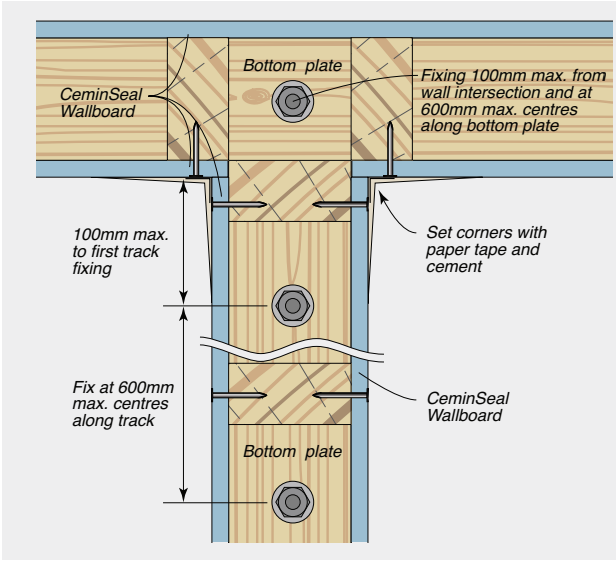


FIGURE 6.02 Wall Base Detail

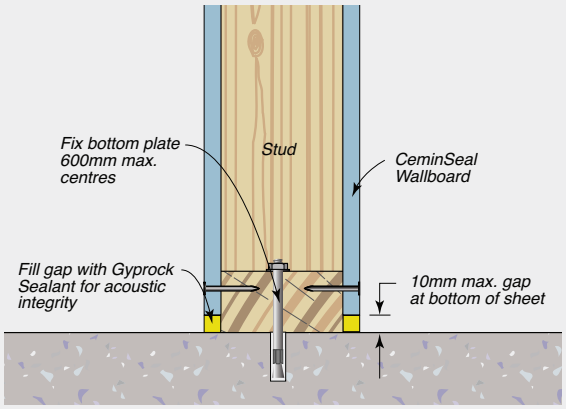


FIGURE 6.03 Vertical Control Joint – Non-Tiled Wall
(Only suitable for walls with no acoustic performance requirements)

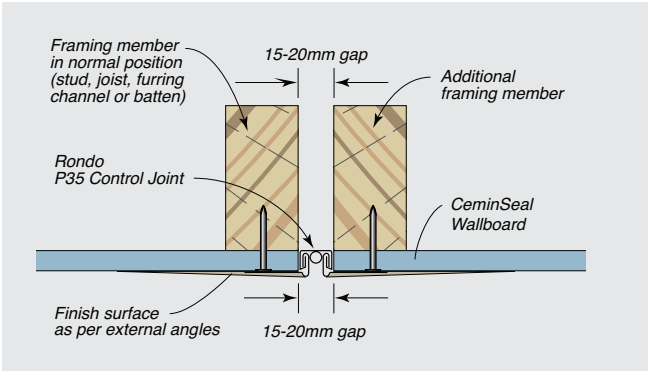


FIGURE 6.04 Vertical Control Joint – Tiled Wall

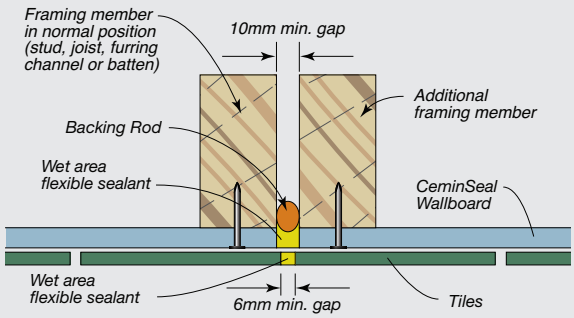


FIGURE 6.05 Base Plate Fixing

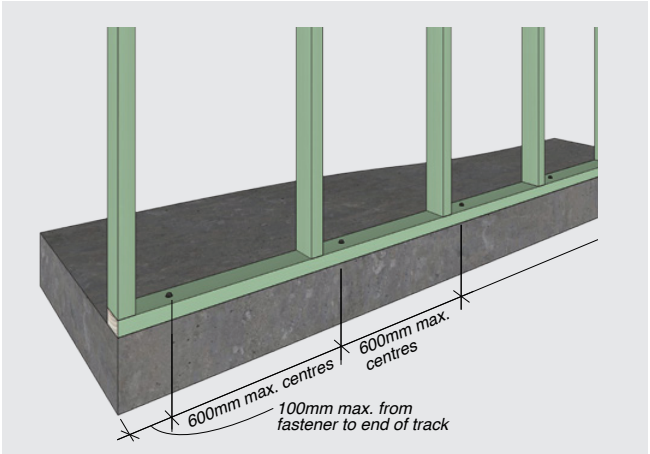
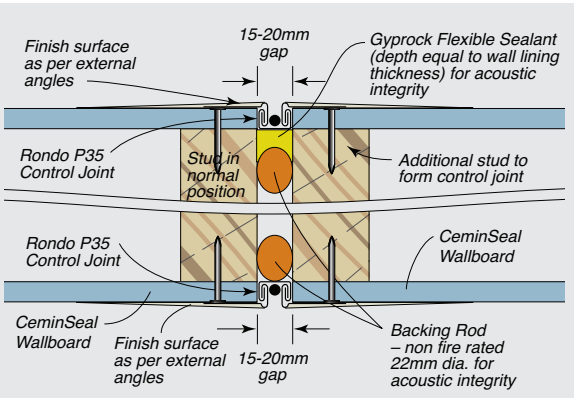


FIGURE 6.06 Vertical Control Joint – Steel Stud Wall System
(Maintains acoustic integrity of the wall system in which it is installed).
For R_w up to 40, use backing rod only detail.
For R_w greater than 40, use backing rod and sealant detail.



07

CONSTRUCTION DETAILS – SHOWER/BATH WET AREAS

General Wet Area

Wall areas enclosing and within a shower compartment, and walls adjacent to vessels, such as baths, spas, and basins will require a waterproofing system treatment. Typically the wall construction consists of a water-resistant Wallboard substrate, waterproofing treatment of critical areas, and an appropriate covering of water-resistant surface material tiles and adhesive. Waterproof treatment areas are junctions between walls, junctions between floors and walls, joints in the sheeting and fastener penetrations that may compromise the waterproofing system in showers and bathrooms, and near baths, spas, sinks etc. Wet area membranes for waterproof areas are classified as Class I, Class II or Class III, with Class III having the greatest elongation capabilities. Only Class II or Class III membranes are recommended at wall-to-wall junctions due to their ability to span small gaps between the wall linings.

Flashing of General Wet Areas

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.

A number of methods can be used:

Perimeter Angle Flashing: PVC flashing, 75x50mm, adhered to floor only to allow for frame movement. Refer to Figure 7.01

Perimeter Flashing for Step-Down Concrete Slab: For example approved Flashing Strip 130mm minimum width. Refer to Figure 7.02

Nail flashing to the bottom plate at a minimum 25mm above bottom of wall plate. Ensure flashing extends down to cover slab recess. Leave a 6mm gap between the wallboard sheet and the mortar bed and fill with flexible sealant.

Perimeter Insitu Membrane: A proprietary impervious barrier assessed and classified in accordance with AS 4858. Where appropriate and/or where required by building regulations, the membrane is to extend across the entire floor and into the waste. Refer to Figure 7.03

FIGURE 7.01 Perimeter Angle Flashing

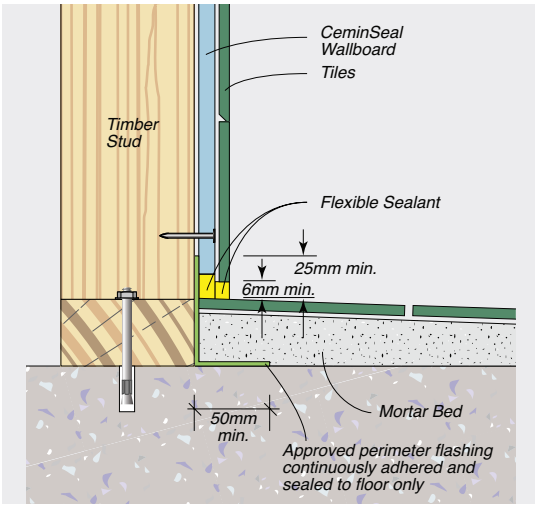


FIGURE 7.02 Hob or Set-Down Slab and Perimeter Flashing

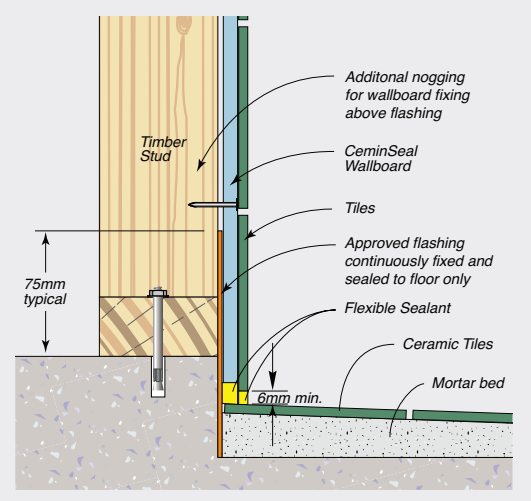
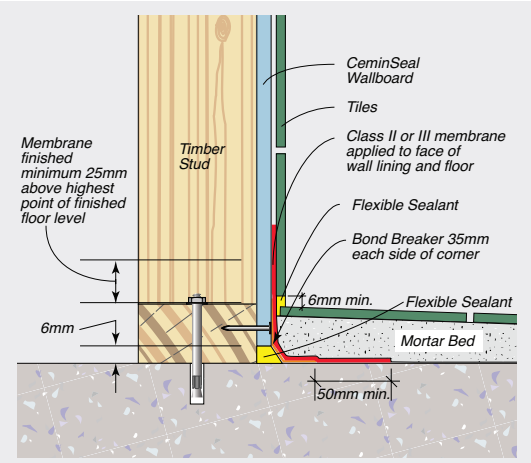


FIGURE 7.03 Perimeter Insitu Membrane



Preformed Shower Base

A preformed shower base has the advantage of being easy to install over floors of timber, compressed fibre cement sheet and concrete slabs, as well as ensuring that the wall linings are kept clear of any free water likely to accumulate on the shower floor.

A preformed shower base must be installed before the wall linings.

Cut and install PVC angle to internal corner, fixing the angle to studs at 600mm centres. Carry angle down over the shower base lip, stopping 6mm above shower base. PVC angle is to extend a minimum height of 1800mm from the finished floor surface or 50mm above the shower rose whichever is the higher.

Cut and fix the CeminSeal Wallboard, leaving a 6mm gap between the bottom edge of the sheet and the shower base, between the sheet and the floor, and between sheets forming internal corner.

Neatly cut holes for plumbing penetrations.

Caulk around plumbing penetrations, the gap between the CeminSeal Wallboard and the shower base, and up internal corner of shower with flexible sealant.

Note: Australian Standard AS 3740 states that – The height of the sides of a shower tray above the highest point of the finished floor surface shall be the greater of –

i) 75mm; or

ii) 25mm above the maximum possible water level in the shower compartment.

FIGURE 7.04 Typical Detail for Preformed Shower Base

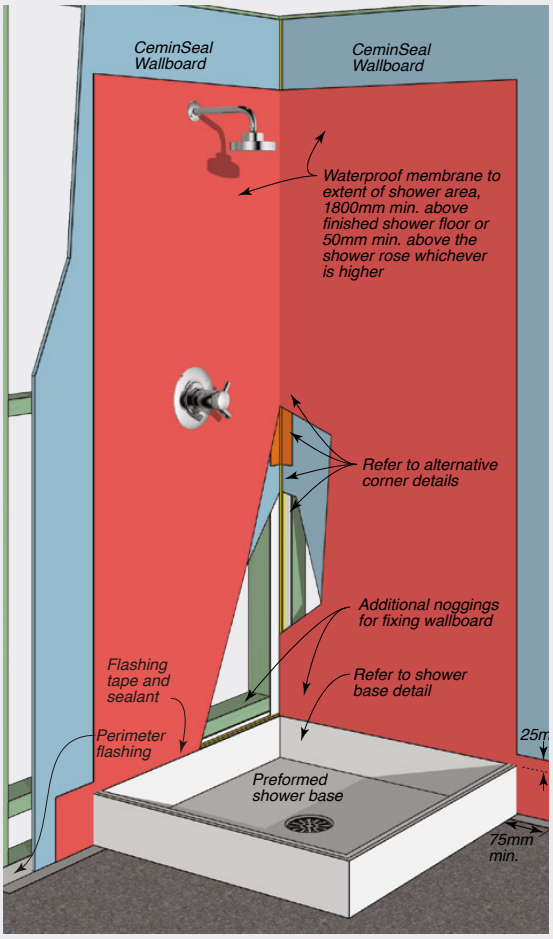


FIGURE 7.05 Preformed Shower Base – Compressed Sheet

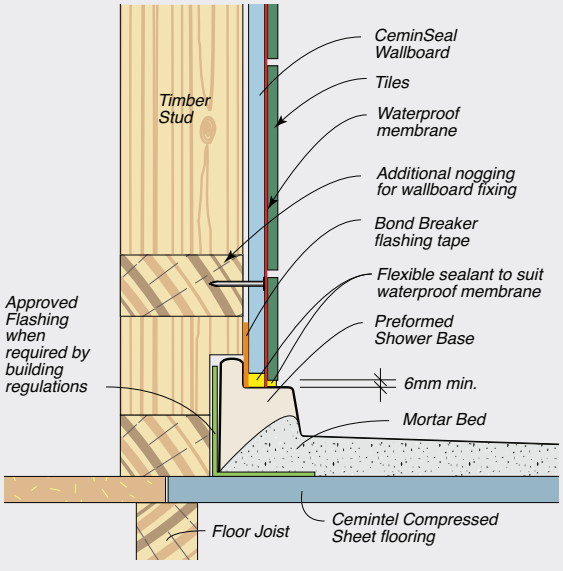
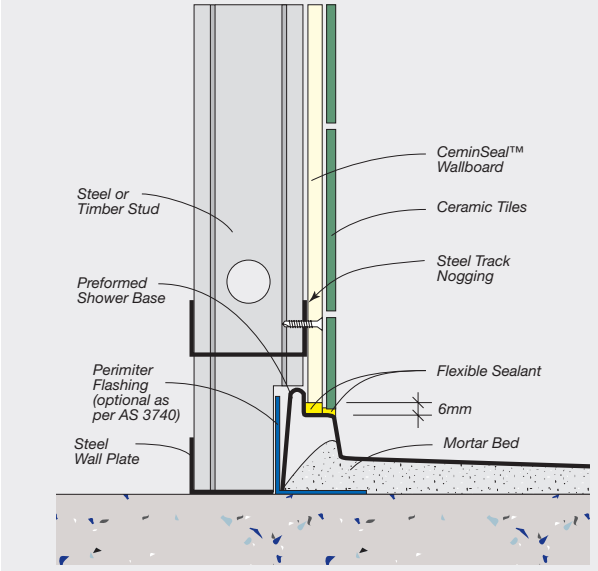


FIGURE 7.06 Preformed Shower Base – Concrete Slab



External Shower Tray

Install the shower tray, as per the regulations, prior to the installation of CeminSeal Wallboard.

Cut and install PVC angle to internal corner, fixing the angle to studs at 600mm centres. Carry angle down inside the shower tray, stopping as detailed in FIG 7.07. PVC angle is to extend a minimum height of 1800mm from the finished floor surface.

Cut and fix the CeminSeal Wallboard, leaving a 6mm gap between the sheet and the floor, and between sheets forming the internal corner.

Neatly cut holes for plumbing penetrations. Caulk around plumbing penetrations, the gap between the CeminSeal Wallboard and the shower tray (or mortar bed), and up the internal corner of shower recess with flexible sealant.

FIGURE 7.07 Typical Detail for Preformed Shower Tray

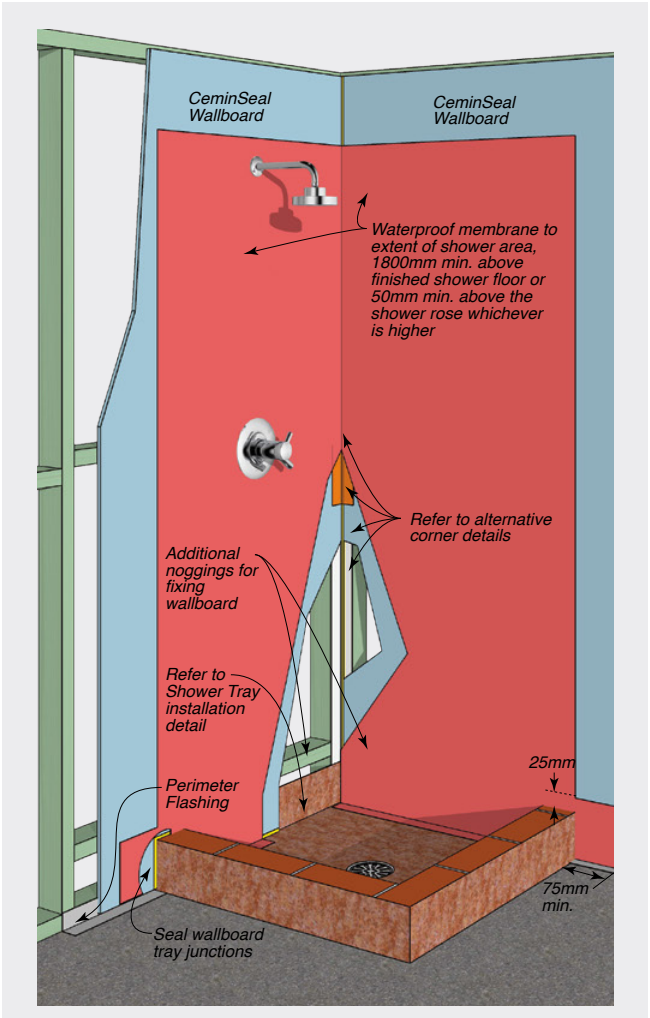


FIGURE 7.08 Preformed Shower Tray – Compressed Sheet

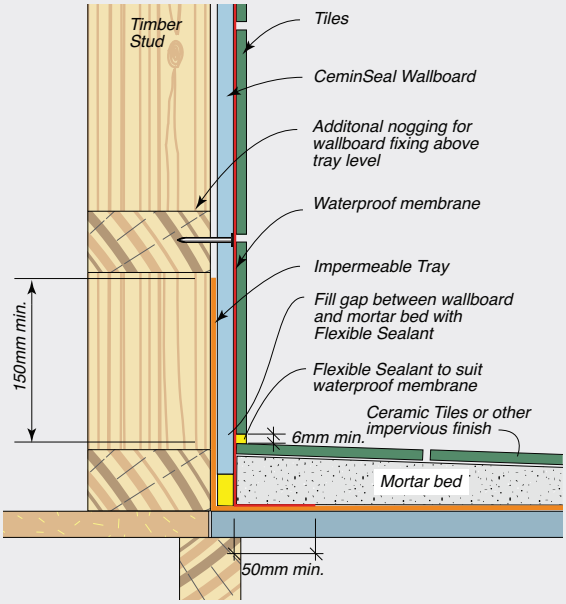
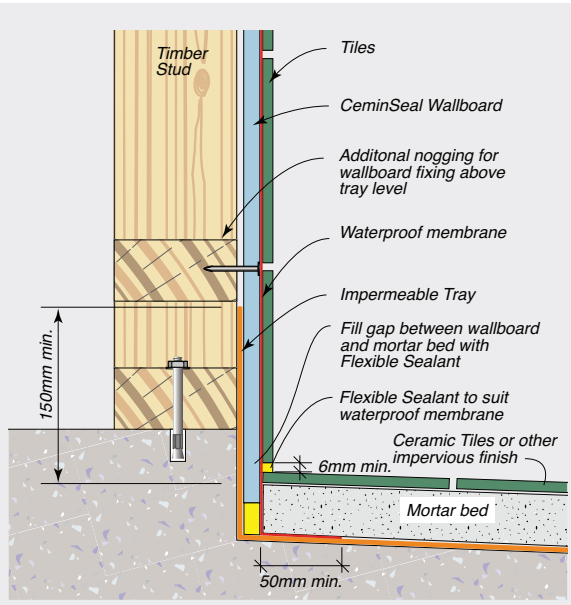


FIGURE 7.09 Preformed Shower Tray – Concrete Slab



Insitu-Formed Shower Membrane

Shower floors may be formed with a mortar bed and waterproof membrane. A number of treatments for the shower wall and floor junctions are available depending on the class of membrane. Membranes of Class II or Class III, are recommended at junctions.

- Cut and install flashing angle to the wall/floor junction if required by building regulations. Fix to floor only.
- Install flashing vertically to internal corners from 1800mm above finished floor surface or 50mm above the shower rose, whichever is higher, stopping 6mm above floor level. Fix to studs at 600mm vertical centres where appropriate.
- Cut and fix the Wallboard, leaving a 6mm gap between the bottom edge of the sheet and the shower floor, and where detailed, between sheets forming an internal corner. Neatly cut holes for plumbing penetrations. Refer to wall system fixing details appropriate for the installation.
- Caulk around plumbing penetrations and where detailed, at sheet bases and internal corners with an appropriate flexible wet area sealant that is compatible with the other materials, i.e., waterproof membrane, other sealants and tile adhesive.
- Joint sheets with a wet area base coat and tape.
- An appropriate waterproof membrane is applied to the face of the Wallboard and floor to form an in-situ tray before tiling at the specified locations, and in accordance with the respective manufacturer's instructions. The extent of waterproof coverage is project specific and specified by the designer. A 'best practice' solution is the application of the membrane to the entire shower area to a minimum height of 1800mm from the finished floor surface or 50mm above the shower rose, whichever is higher. The membrane should extend 50mm minimum outside the shower area. Refer to appropriate detail.
- A compatible tile adhesive must be used to fix tiles to the membrane.
- Refer to appropriate junction details.

FIGURE 7.10 Insitu-Formed Shower Recess with Hob

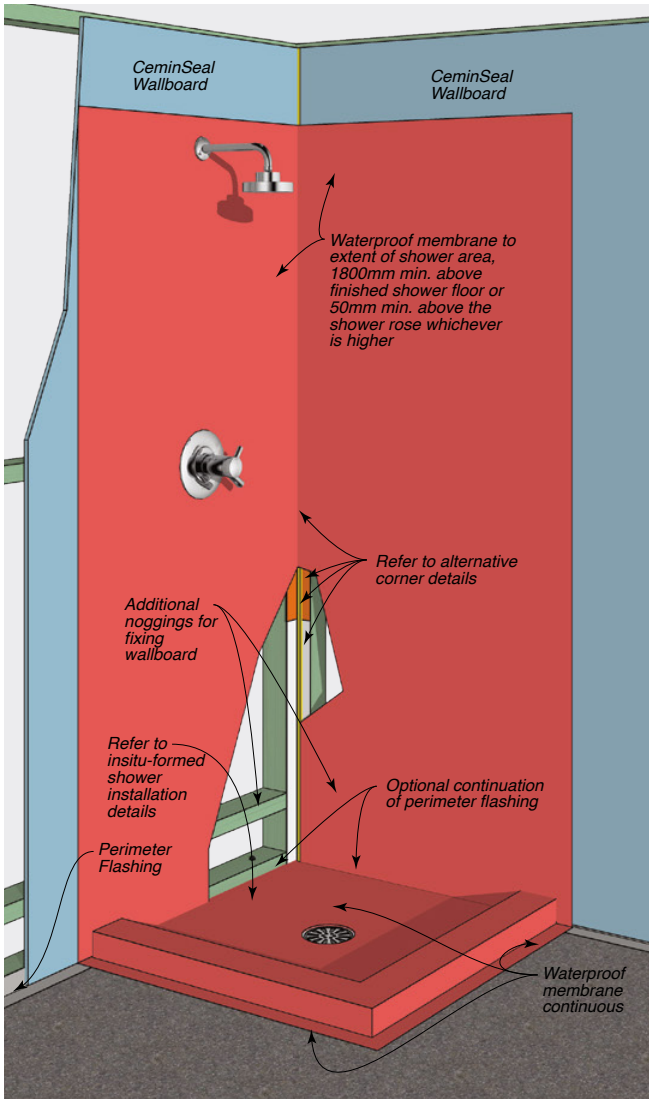


FIGURE 7.11 Insitu-Formed Shower Recess Class II or III Membrane

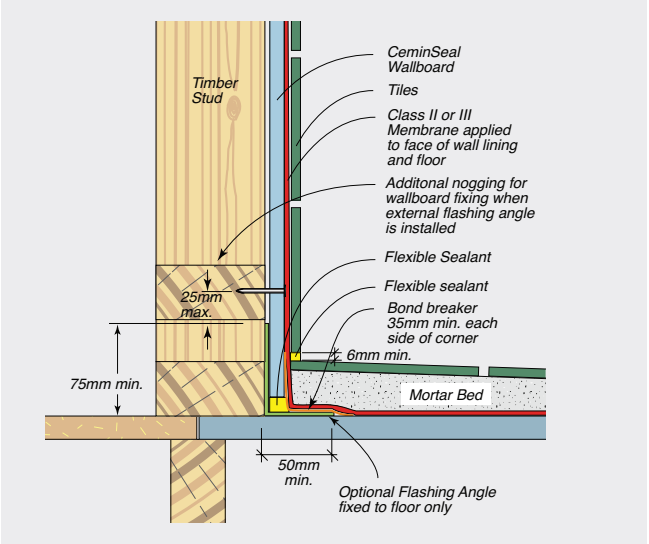


FIGURE 7.12 Insitu-Formed Shower Recess – Class III Membrane

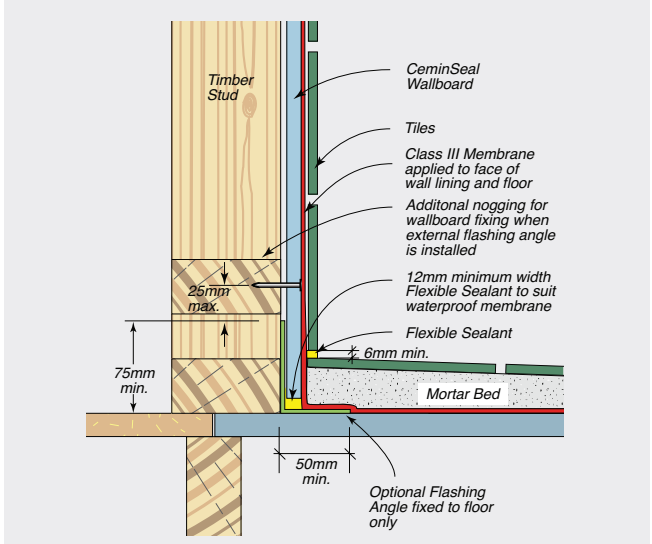
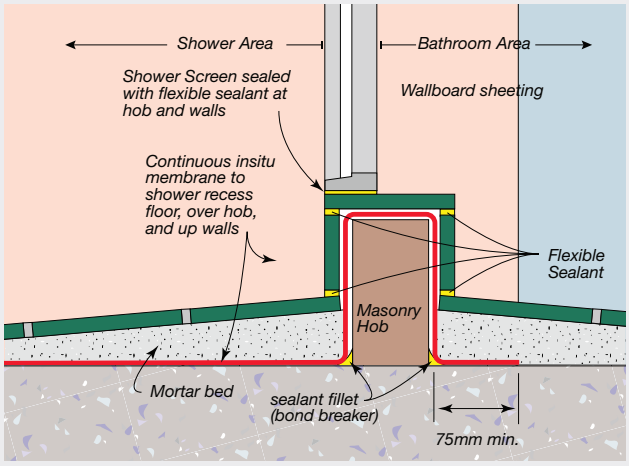


FIGURE 7.13 Insitu-Formed Shower Recess with Hob



Shower Area – Masonry Walls

Shower areas formed against masonry wall will require a steel furring channel system fixed to the masonry to support the Wallboard.

- Install vertical furring channels at maximum 600mm centres using clips and appropriate masonry fixings.
- Place J-Tracks as shown to support the edges of sheets.
- Provide suitable framing to support the bath and other fixtures such as soap holders and towel rails.
- Fix Wallboard to metal furring.
- Refer to appropriate junction details.

FIGURE 7.14 Preformed Shower Base – Masonry Walls

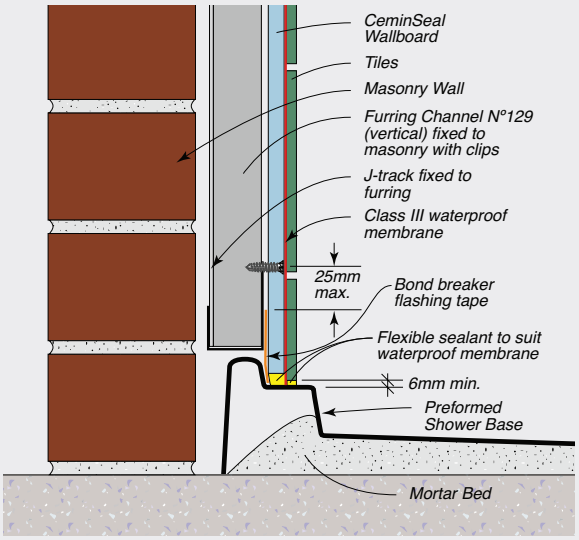
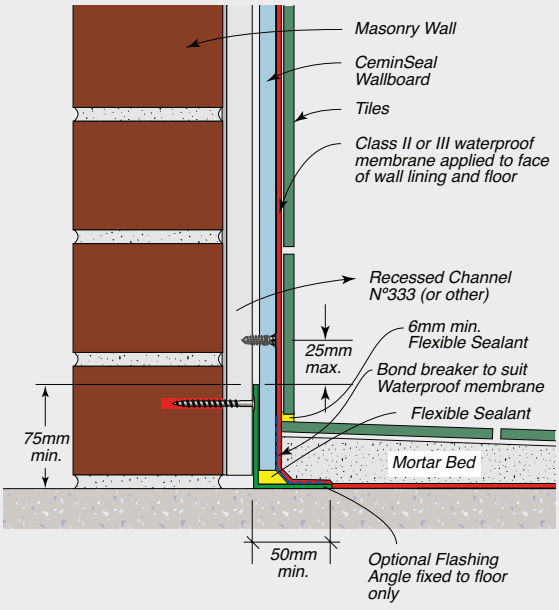


FIGURE 7.15 Insitu-Formed Shower Recess – Masonry Walls



Shower Over Bath – Unenclosed or Partially Enclosed

Cut and install flashing angle to the wall/floor junction if required by building regulations. Fix to floor only.

Install flashing vertically to internal corners from 1800mm above the finished floor surface or 50mm above the shower rose, whichever is higher stopping 6mm above floor level. Fix to studs at 600mm vertical centres where appropriate.

Cut and fix the Wallboard, leaving a 6mm gap between the sheet and the floor, between the sheet and the bath, and between sheets forming internal corner. Neatly cut holes for plumbing and bath penetrations. Refer to wall system fixing details appropriate for the installation.

FIGURE 7.16 Membrane Detail for a Semi-Enclosed Shower Over Bath or Shower Area

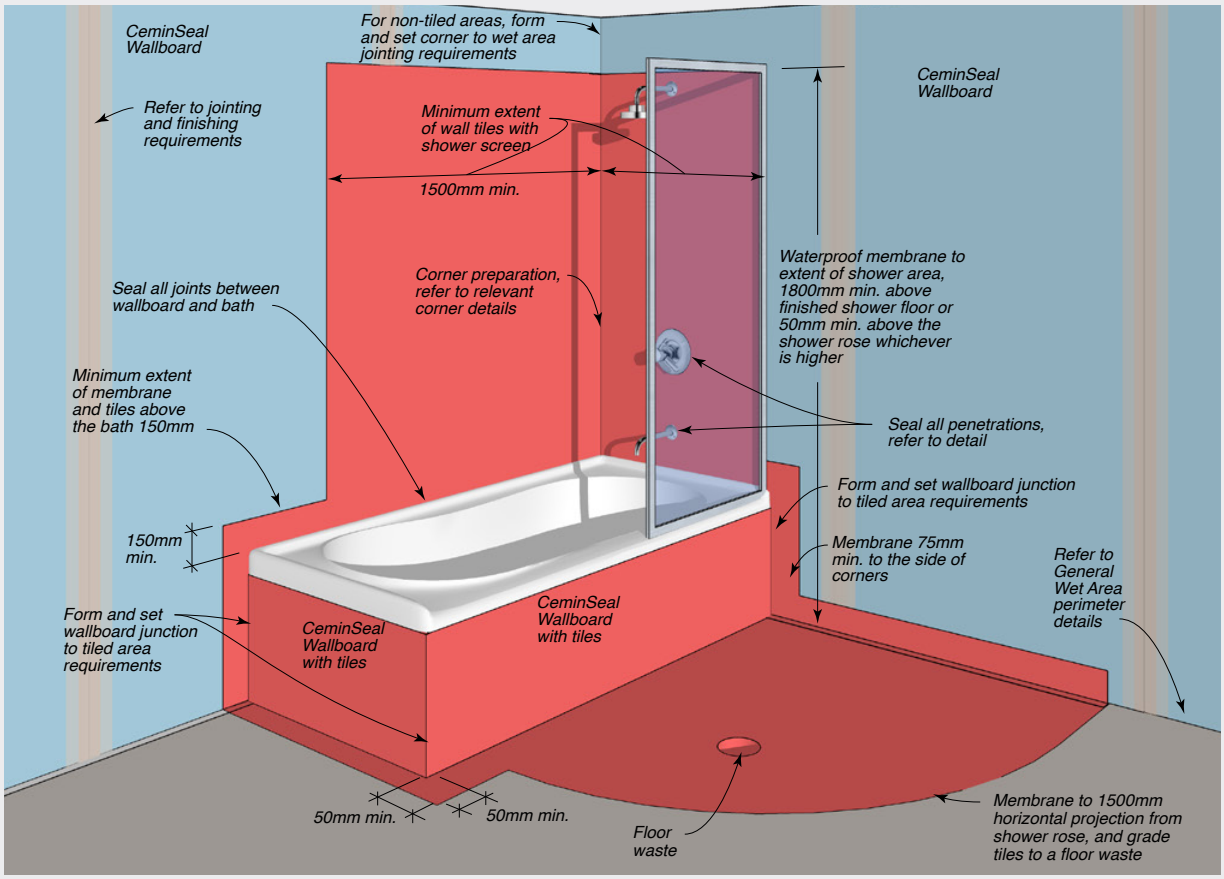
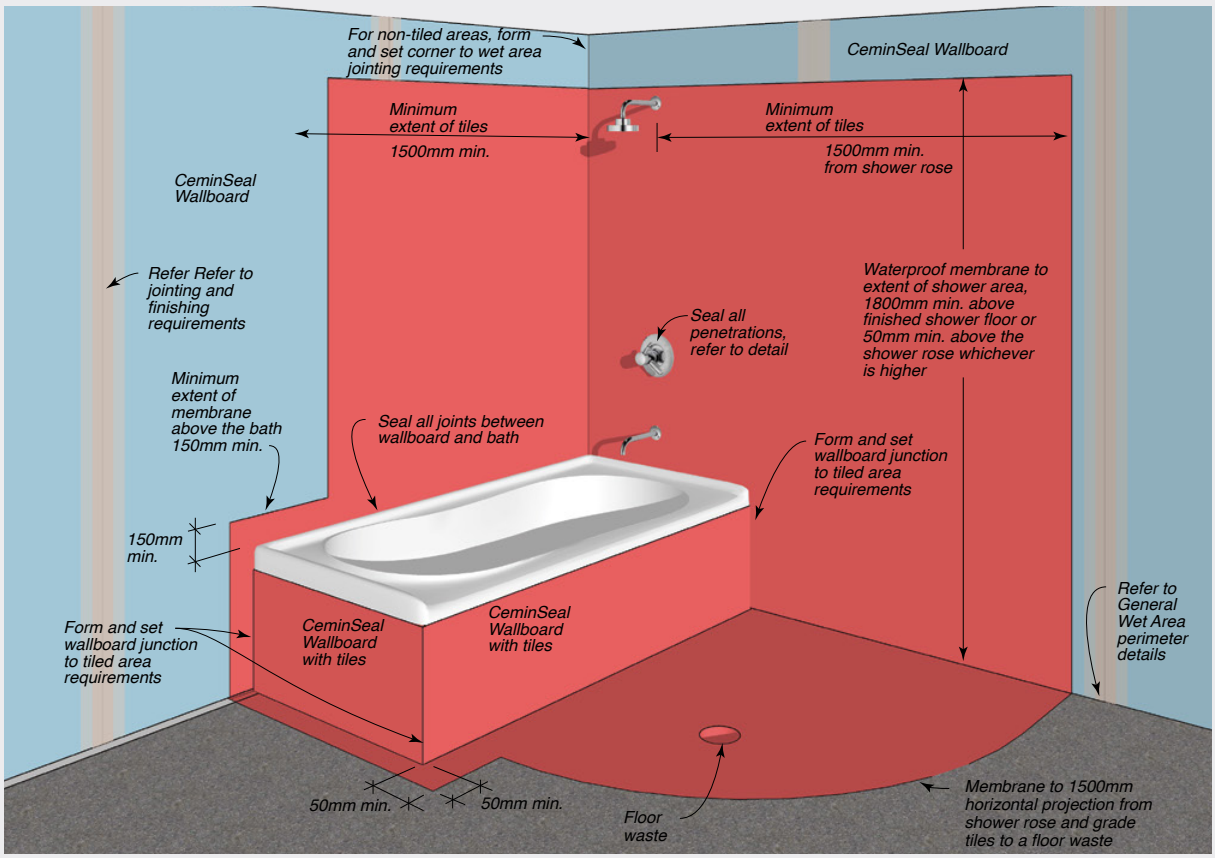


FIGURE 7.17 Membrane and Tile Detail for an Unenclosed Shower Over Bath or Shower Area



Bathroom Without Shower

FIGURE 7.18 Installation Layout for a Bath Without Shower

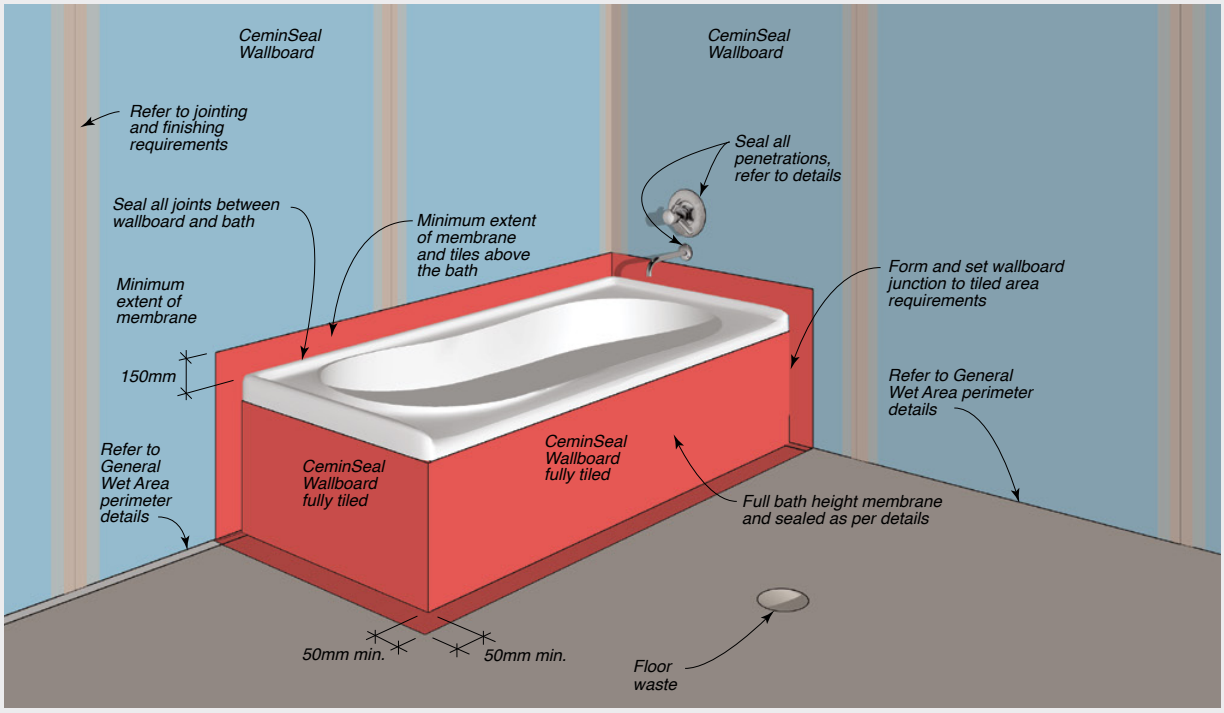


FIGURE 7.19 Bath Installation to Stud Wall

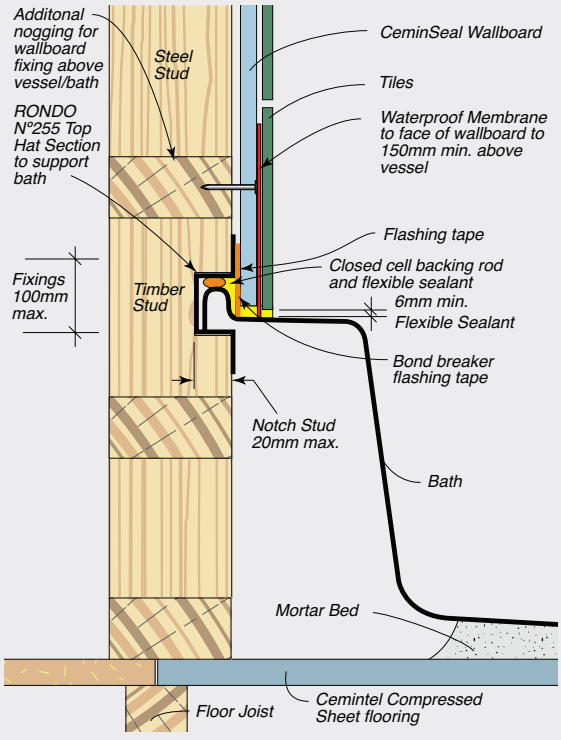
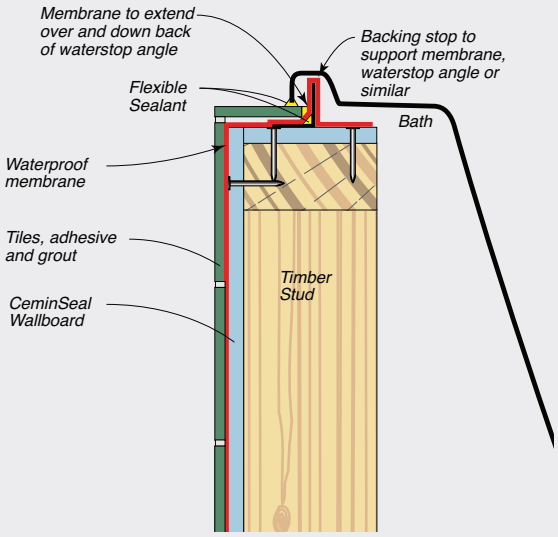


FIGURE 7.20 Bath Hob



CONSTRUCTION DETAILS – SHOWER/BATH WET AREAS

07

FIGURE 7.21 Typical Hand Basin – Membrane/Tiling Detail

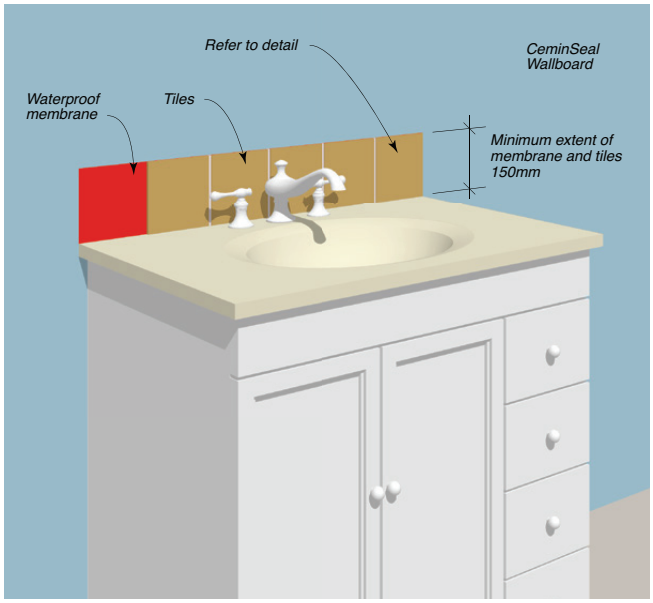


FIGURE 7.22 Laundry Tub/Sink Installation

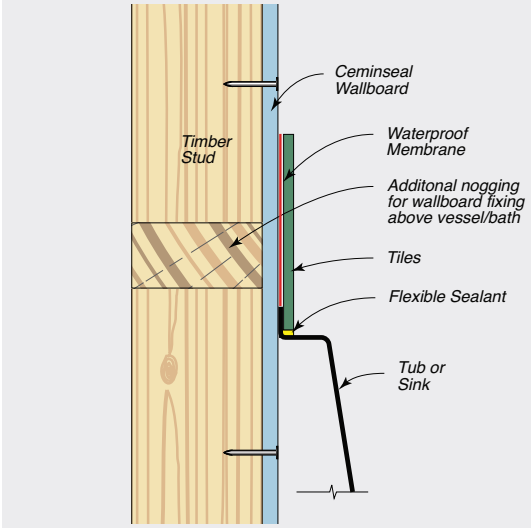
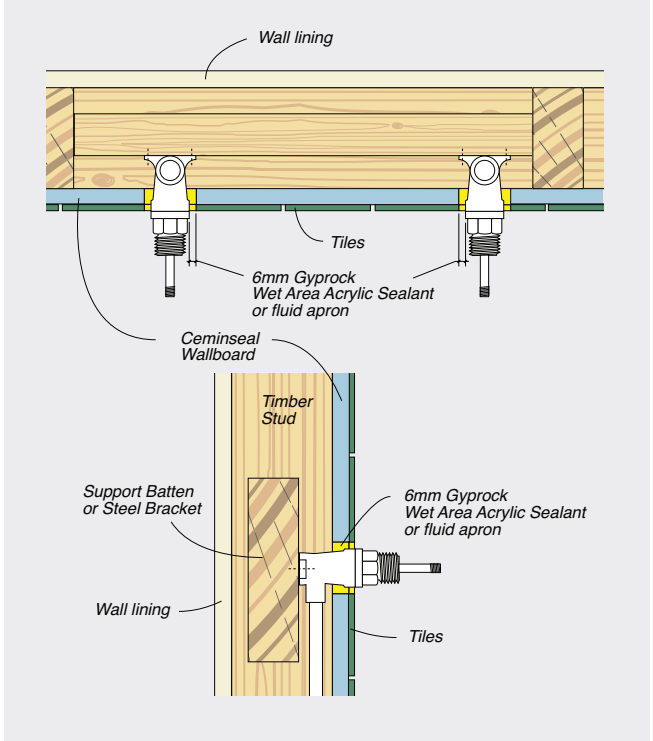


FIGURE 7.23 Plumbing Penetrations



08

CONSTRUCTION DETAILS – GENERAL WET AREAS

CONSTRUCTION DETAILS – GENERAL WET AREAS

08

Note: Drawings are interchangeable for timber or steel substrates with the exception of the fasteners.

FIGURE 8.01 Perimeter Insitu Membrane

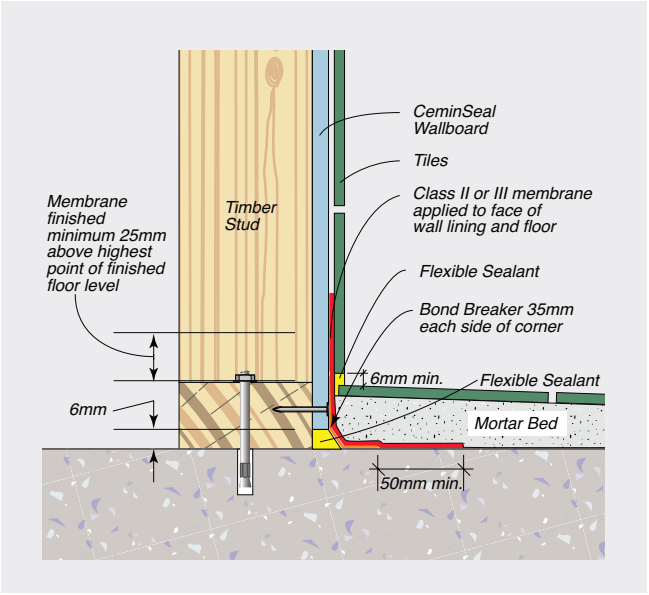


FIGURE 8.02 Hob or Set-down Slab and Perimeter Flashing

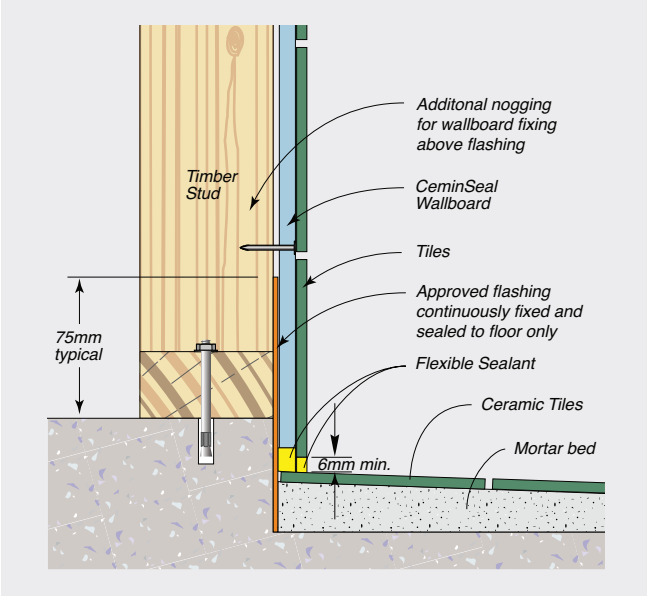


FIGURE 8.03 Perimeter Angle Flashing

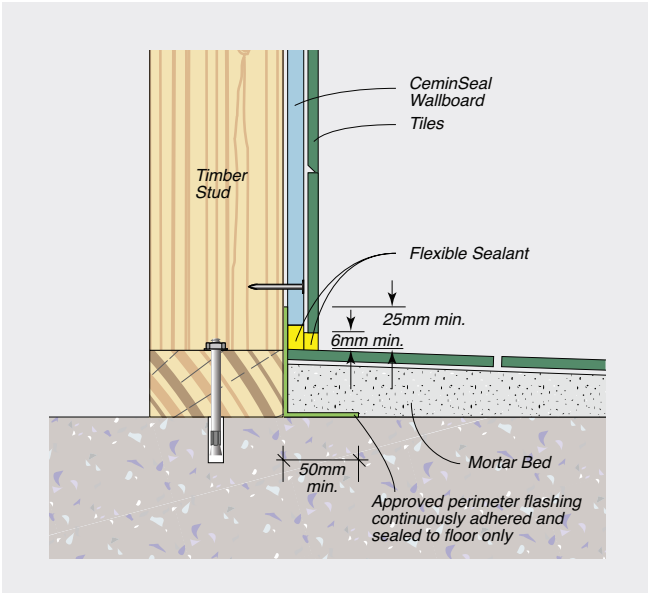
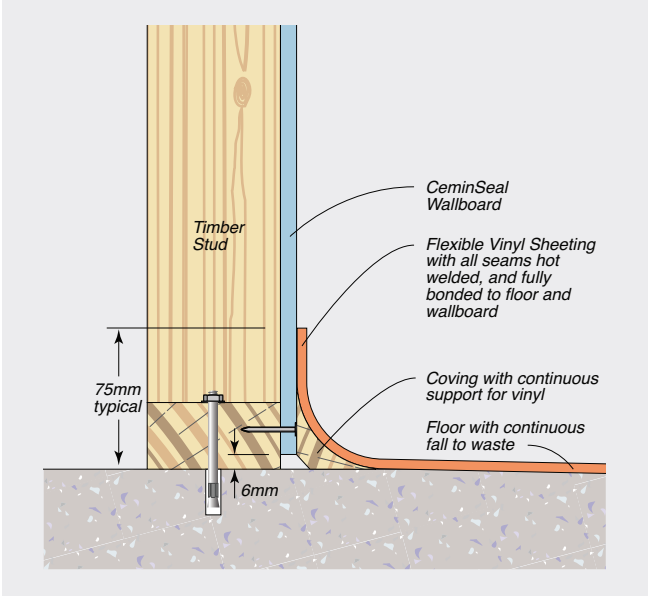


FIGURE 8.04 Perimeter Fully Bonded Vinyl Sheeting



09

JOINTING + FINISHING

Jointing and Finishing

Jointing and finishing of Cemintel Wallboard is to be carried out in accordance with the requirements of Table 9.01 (Jointing) and the following details, to reinforce joints, to protect corners, and to provide a smooth surface for decorating where required.

An acceptable level of finish in non-tiled areas requires a three-coat system, consisting of tape and tape coat, a second coat, and a finish (or topping) coat. In tiled areas, a two-coat system may be used.

Jointing Compounds

Jointing compounds are classified as either setting type or drying type. Setting type compounds are fast drying for early application of subsequent coats and have a defined setting time e.g., 20, 45, 60 or 90 minutes.

Setting type compounds are: Base Coat 20; Base Coat 45; Base Coat 60; Base Coat 90; and Ultra-Base MR 60.

Additional coats may be applied over setting type compounds once they have gone hard (set), usually 40 minutes to two hours. A drying type compound must be used as a finish coat and must be completely dry before sanding. This usually takes about 24 hours.

Drying type compounds are: Wet Area Base Coat; Jointmaster and Ultra-Top; and are supplied as premixed product.

Drying type compounds will shrink and harden with evaporation of water. The joints must be allowed to set and appear completely dry before re-coating or sanding. Actual drying times will be extended in low temperature and high humidity conditions. Do not use a setting type compound over a drying type compound. Note that Gyprock Wet Area Base Coat sets very hard; apply accurately to avoid the requirement to sand.

It is recommended that a water-resistant compound be used at sheet joints in areas that are required to be waterproof or water resistant. Set all joints with Gyprock Wet Area Base Coat or Ultra-Base MR 60 and Gyprock Paper Tape. When the tape coat has dried, apply a second coat of the same compound, and cover all fastener heads. Joints in wet areas that are not tiled and not required to be waterproof or water-resistant should be set with compound and tape as detailed.

Jointing Tape

Jointing tapes are used to provide strength and rigidity in the first coat of the jointing process. The tape is bedded in a base coat or all-purpose compound before the second coat and topping coat are applied. Tapes are also used in conjunction with a patching compound to repair dents, cracks and holes.

Gyprock Paper Tape and Fiba-Fuse tape have been developed to enable the preparation of strong joints and should be used on all butt and recess joints, and at internal corners. Paper Tape is creased along the centre line for better corners and performance in automatic taping tools.

09

JOINTING + FINISHING

Site Mixing of Compounds

For best results:

- Always use clean containers and mixing equipment as contamination by previously set compound will accelerate setting time.
- Always use clean water of drinking quality.
- Never mix different compounds together or mix old batches with new ones.
- Follow mixing instructions printed on each bag.
- Use compounds before the 'Best Before' date printed on the packaging.

When setting type compounds are used during hot, dry conditions, rapid evaporation of water and increased absorption by the lining surface can prevent the compound from setting correctly. This will result in the compound being soft and weak. If jointing must be carried out under severe drying conditions, use fast setting products such as Base Coat 45 and mix only small quantities of compound. The compound should then be left standing for approximately 15 minutes to ensure that it sets soon after application to the joints. Additionally, depending on the severity of the drying conditions, the surface of the area to be jointed may require wetting with a brush before applying the compound. Drying-type compounds should not be used when the interior temperature is less than 10°C or could fall below 10°C before it has set.

Preparation

Fill any voids deeper than 4mm and gaps greater than 3mm wide with base coat and allow to dry before jointing. All surfaces must be free of dirt, oil or foreign matter that could reduce bond.

TABLE 9.01 Jointing Compound Selection – Hand or Mechanical Application

Application	Base coat	Tape	Second coat	Finish coat
General areas - paint finish	Base Coat 20 Base Coat 45 Base Coat 60 Base Coat 90 Ultra-Base MR 60 Pre-Mixed Total Joint Cement	Paper Tape Fiba-Fuse	Base Coat 20* Base Coat 45* Base Coat 60* Base Coat 90* Ultra-Base MR 60* Pre-Mixed Total Joint Cement	Jointmaster Ultra-Top Pre-Mixed Total Joint Cement Easy-Finish
General ares - tile finish				Nil
Wet areas - tile finish	Wet Area Base Coat Ultra-Base MR 60	Paper Tape	Wet Area Base Coat Ultra-Base MR 60	Nil

*Setting type compound. Do not use a setting compound over a drying type compound.

TABLE 9.02 APPROXIMATE QUANTITIES PER 100m² WALLBOARD (HORIZONTAL SHEETING)^

Tape + Second Coats	Approx Qty	Finish Coat	Approx Qty
Base Coat 20/45/60/90	16kg	Jointmaster	10kg
Ultra-Base/MR60	13kg	Ultra-Top	6kg
Pre-mixed Total Joint Cement	31kg	Easy-Finish	8kg
Wet Area Base Coat	15kg		

^ Allow 20% more jointing material for vertical sheeting.

JOINTING + FINISHING 09

Jointing Procedure

Jointing with mechanical tools is the most common method in use, and the method is detailed here. Jointing by traditional hand methods may also be used. For tiled areas, only the tape and second coats are required. As butt joints and cut edges are to be recessed on site, the same method is used for all sheet joints.

Premixed compounds for taping and jointing boxes should be used directly from the bucket, but can, if necessary, be thinned down with water, used sparingly. Follow the instructions provided on the product packaging.

Tape Coat

- Using a taping machine, apply tape and compound centrally to the recessed joint.
- Using a joint knife, immediately press tape into the joint and cover the tape with a thin coat of compound. Feather the edges and clean off excess compound.

NOTE: A minimum 1mm compound is to be left under the tape.

- Cover all fastener heads and fill any surface damage with compound.
- Allow setting-type compounds or Wet Area Base Coat to set completely. Allow other drying type compounds to harden for 24 hours before proceeding.

Second Coat

- Using a 200mm plaster box, apply a second coat to the recessed joint.
- Cover fastener heads with a second coat of compound, laid in a different direction, and extending beyond the first coat by about 25mm.
- Allow compound to set/harden before proceeding.

Finish Coat

- Using a 250mm plaster box, apply a third coat to the recessed joint.
- Cover fastener heads with a third coat of compound, laid in a different direction, extending beyond the previous coat by about 25mm. Ensure that the edges of the compound are neatly feathered and that there are no trowel edge marks left in the final stopping.
- Allow compound to harden before proceeding.

Sanding

- Use a power sander to smooth the compound.

Caution: If previous coats of drying type compounds are not thoroughly dry before application of subsequent coats, imperfections can result from delayed shrinkage of the compound.

FIGURE 9.01 Jointing Recessed Edge – Tiled Areas

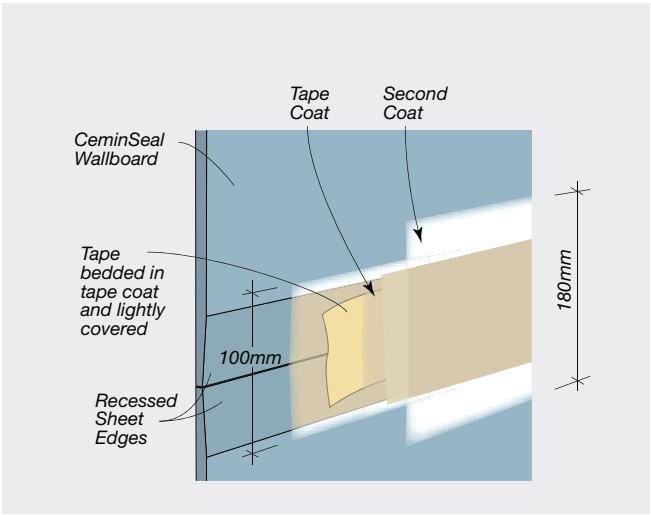
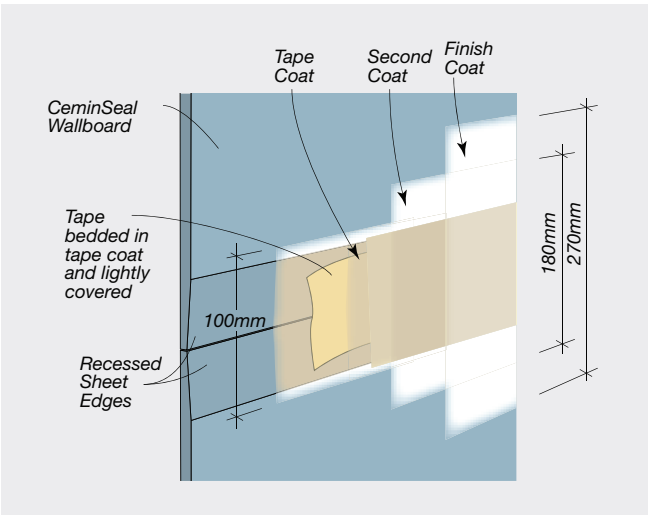


FIGURE 9.02 Recessed Edge – Non-Tiled Areas



09

JOINTING + FINISHING

Jointing of Internal Corners

Method for non-tiled areas. For tiled areas, no setting is required.

Tape Coat

- Remove debris from corner and floor.
- Using a taping machine with tape creaser in place, apply tape and compound centrally to the joint.
- Follow immediately with a corner roller, pressing tape into the joint.
- Using a corner setting tool, cover the tape with a thin coat, feather the edges and clean off excess compound.

NOTE: A minimum 1mm compound is to be left under the tape.

- Allow setting-type compounds to set completely, and drying type compounds to harden for 24 hours before proceeding.

Finish Coat

- Using a corner box with finisher attachment or corner setting tool, apply a thin coat of finishing compound over the tape coat, ensuring that the edges are well feathered.
- Smooth joint with corner setting tool.
- Allow compound to harden before proceeding.

Sanding

- Hand sand smooth with 150/180 grit paper or cloth, or with 220 grit sanding mesh and a sanding block.

Caution: If previous coats of drying type compounds are not thoroughly dry before application of subsequent coats, imperfections can result from delayed shrinkage of the compound.

FIGURE 9.03 Internal Corner – Tiled Area

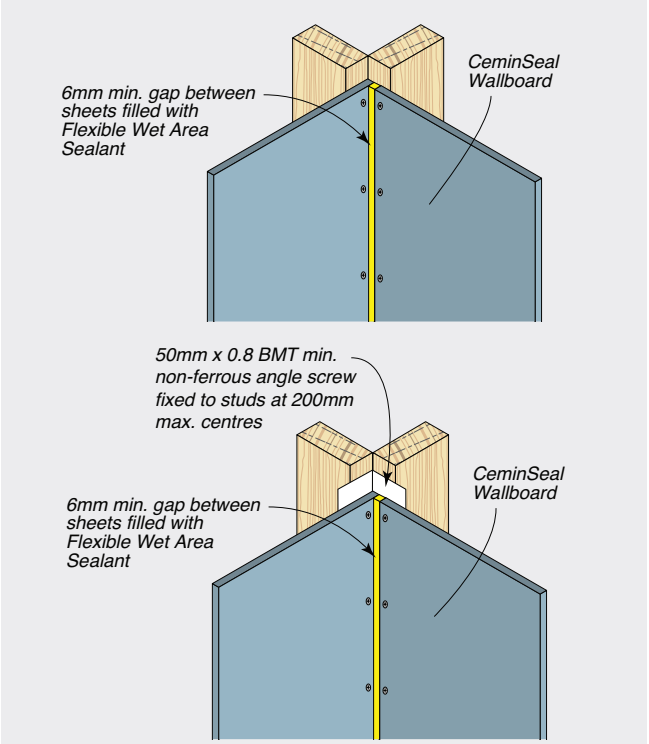
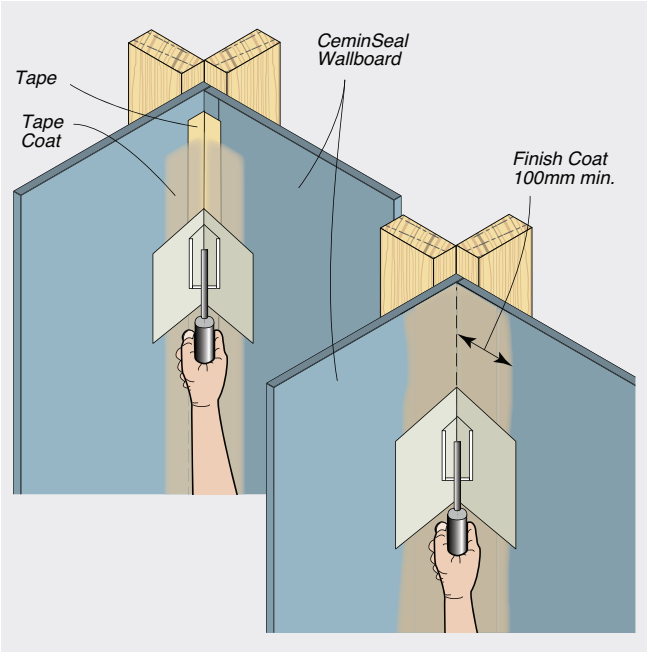


FIGURE 9.04 Internal Corner – Non-Tiled Areas



Jointing of External Corners

Apply Corner Bead

- Position external angle bead over the corner and sight it to ensure straightness before fastening both flanges at 300mm centres.
- Using a joint knife, cover the bead with a thin coat. Feather the edges and clean off excess compound.
- Allow setting-type compounds to set completely, and drying type compounds to harden for 24 hours before proceeding.

Second Coat

- Using a plaster box, with bead guide attached, apply a minimum 140mm width compound coat to each side of the corner. This will also feather the edges.
- Allow compound to set/harden and trim excess material.

Finish Coat

- Using a 250mm plaster box, with bead guide attached, apply a finish coat each side of the corner.

Sanding

- Hand sand smooth with 150/180 grit paper or cloth, or with 220 grit sanding mesh.

Caution: If previous coats of drying type compounds are not thoroughly dry before application of subsequent coats, imperfections can result from delayed shrinkage of the compound.

FIGURE 9.05 Finishing External Corner – Tiled Area

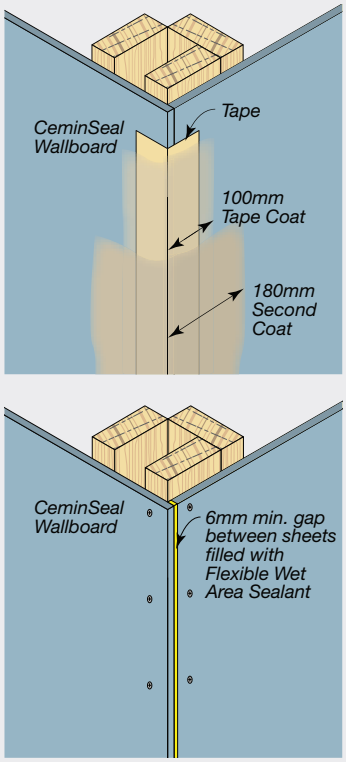
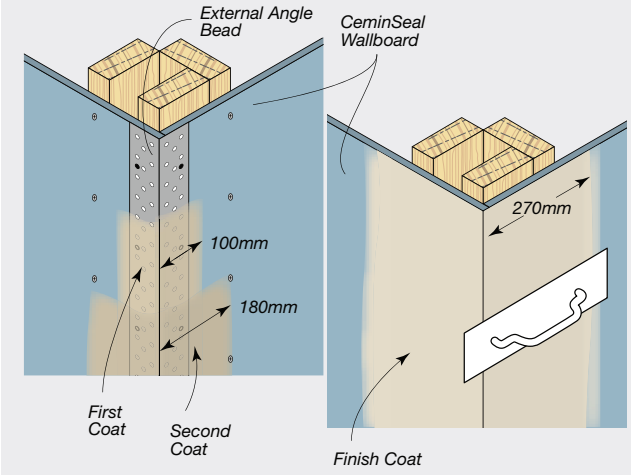


FIGURE 9.06 External Corners – Non-Tiled Areas



09

JOINTING + FINISHING

Decoration

Interior Wallboard surfaces may be decorated in any of a variety of finishes including flat, semi-gloss or gloss paint, wallpaper or vinyl, texture or stipple, or tiles.

Guidance towards a finished surface with an even texture and appearance of flatness in preparation for brush, spray or roll painting is provided in AS/NZS 2311:2017 Guide to the painting of buildings.

Surface Preparation

All joint stopping must be sanded smooth. Remove all loose dirt and dust with a soft brush or dry cloth. Ensure that the joint treatment is thoroughly dry before applying sealer or paint. Gyprock One Finish is suitable for application to the entire wall surface to assist in concealing surface imperfections and texture variations.

Wallpaper & Vinyl

To enable removal of wallpaper and vinyl without damaging the Wallboard, seal the surface with a pigmented solvent-based sealer.

Paint Finishes

Select a proprietary paint system and apply all paints strictly in accordance with the respective manufacturer's instructions. Roll coated paints generally have a greater coating thickness and create a similar texture on both the Wallboard and the jointing compounds.

The use of a preparatory coat over the entire surface is recommended prior to application of the finish coats due to the differing texture and porosity of uncoated Wallboard and areas which have received joint treatment. Recommended paint systems typically consist of one coat of sealer followed by two coats of finishing paint.

Preparatory Coat

The chosen proprietary brand sealer should be formulated to fulfil the following functions:

- Equalise variations in porosity over the entire surface.
- Provide a bonding surface or key for the finishing coats.
- Stop the migration or bleeding of chemicals from the substrate which could affect the performance of the finishing coat.
- Conceal the difference in texture between the fibre cement surface and the joints.

Important:

- In areas of high humidity such as bathrooms, kitchens, laundries and toilets, a paint system that protects the Wallboard and joints from moisture must be used. Refer to paint manufacturer's recommendations.
- When applying the preparatory coat, apply a sufficient thickness to ensure that the surface is completely covered. Do not over-spread the paint.
- To avoid paint lifting over jointed areas, do not overwork or over-roll the paint when applying the preparatory coat.
- Allow the preparatory coat to dry thoroughly. If necessary, lightly sand between coats of paint to remove any nap lift or other surface blemishes.
- In accordance with normal building practice, application of a finish is deemed to be acceptance of the substrate.

Finishing Coats

Always follow the manufacturer's instructions for application and recoating. For best results, apply the coatings with a roller. This helps to achieve a full even coat and a light, uniform texture over the entire surface. Refer to AS/NZS 2311 and/or paint manufacturer's recommendations for specific roller nap length for the desired finish.

Tiling

Tiles are typically required in waterproof and water-resistant areas. The tile adhesive must be compatible with the any waterproofing membrane used. Proprietary tile adhesives that meet the requirements of AS ISO 13007.1 are recommended. For best results, spread tile adhesive directly onto the surface to a depth of about 3mm, then 'rib' in a horizontal direction with a notched trowel having approximately 6mm x 6mm notches.

It is important to strictly follow the membrane/sealer and tile adhesive manufacturer's instructions to ensure that the system will perform satisfactorily and will provide suitable long-term performance. Some products require primers before application. Allowance must be made for movement by leaving a gap of 3mm between tiles in each vertical corner, as shown.

Cornice

Details for fixing cornice are given in GYP547, Gyprock Residential Installation Guide. When fixing cornice to fibre cement surfaces, Gyprock™ Masonry Adhesive is recommended.

10

COMPRESSED SHEET – WET AREA FLOORING SYSTEM

10

COMPRESSED SHEET – WET AREA FLOORING SYSTEM

Introduction

Cemintel Compressed Sheet can be fixed directly to structural framing to form a strong and water resistant flooring substrate for all domestic wet area applications.

Cemintel Compressed Sheet is a compressed, autoclaved cellulose fibre reinforced cement sheet.

Cemintel Compressed Sheet is a dense, high strength, durable building product which is impervious to water. It has a smooth flat surface and a square edge finish.

Advantages are as follows:

- Immune to permanent water damage and will not rot.
- Lightweight and economical building material (when compared with concrete).
- Easy to install.
- Ideal for upper storey construction.

Material Properties

Cemintel Compressed Sheet conforms to the requirements of AS 2908.2 : 1992 'Cellulose-cement products Part 2: Flat sheets'.

Manufacturing Properties

Mass 15mm thickness (nominal)	28kg/m^2
Mass 9mm thickness (nominal)	34kg/m^2
Length	+0 to -3mm
Width	+0 to -3mm
Thickness	+10% to -0%
Diagonals Difference (max)	3mm
Edge Straightness Deviation (max)	1.5mm

Fire properties

In accordance with the National Construction Code (NCC) Volume 1 and Volume 2, fibre cement sheets can be used wherever non-combustible material is required by the codes and specification.

Fire hazard properties

Ignitability	0
Spread of Flame	0
Heat Evolved	0
Smoke Developed	0
Group Number	1
Average Specific Extinction Area	<250m^2/kg

Components and Accessories

Cemintel Compressed Sheet for flooring applications is available in the following range of sizes:

Thickness (mm)	Width (mm)	Length (mm)
15	900	1500
15	900	1800
15	900	2100
15	900	2400
15	900	2700
15	900	3000
15	1200	1500
15	1200	1800
15	1200	2100
15	1200	2400
15	1200	2700
15	1200	3000

Thickness (mm)	Width (mm)	Length (mm)
18	900	1800
18	900	2400
18	900	3000
18	1200	1800
18	1200	2100
18	1200	2400
18	1200	3000

COMPRESSED SHEET – WET AREA FLOORING SYSTEM

Accessories

Description	Size/Colour	Qty	Product Code
No. 10x50mm hot-dip galvanised steel or brass, countersunk head wood screws			By others
Sikadur Combiflex 150mm or equivalent used for flashings	150mm	25m rolls	By others
HB Fullers - Fulaprene 303 adhesive and sealant fixing PVC angle to floor	300g	1	
Internal Vertical Flashing. A liquid applied membrane assessed and classified in accordance with AS/NZS 4858, for use with internal shower trays			By others
MegaPoxy P1 - is a two component high strength epoxy resin and carbonate filler and used to fill gaps between sheets	2x1L	pack	By others
Perimeter Flashing Angle - PVC angle 75x50mm			By others
Non - ferrous metal angle			By others

Framing

Cemintel Compressed Sheet may be fixed over timber or steel joist systems.

Timber framing must comply with AS 1684: 1992 'Residential Timber Framed Construction'.

Steel framing must comply with AS 3623: 1993 'Domestic Metal Framing'.

For upper storey construction, the use of durable seasoned timber or composite joists is recommended to minimise differential movement resulting from joist shrinkage.

Joists must have a minimum face width of 38mm and should be spaced as follows:

15mm sheet – 450mm maximum centres.

18mm sheet – 600mm maximum centres.

Wherever possible joist and sheet layout should be planned to ensure the long edges of compressed sheets are installed across the floor joists, and to ensure the end of the sheet is fixed on the centre line of the joist.

Sheets that are fixed parallel to the floor joists must have both long edges continuously supported along the centre line of joists. Sheet ends must also be fully supported by framing.

Sheet Preparation

When cutting or grinding fibre cement sheets using power tools, always ensure the work area is well ventilated. An approved dust mask (AS 1715 and AS 1716) and safety glasses (AS 1337) must be worn. CSR recommends that hearing protection be worn where appropriate.

Refer to Safety section of this guide for detailed information.

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COMPRESSED SHEET – WET AREA FLOORING SYSTEM

Installation

Fixing Compressed Sheets

Sheets may be fixed in place prior to or after wall framing is installed.

All compressed sheet ends must be supported by a framing member. Wherever possible plan sheet layout to avoid the need to cut sheets.

Sheets must be screw fixed at 450mm maximum centres along sheet edges and in the body of the sheet.

Screws must be kept a minimum of 12mm from the edge of sheets and 50mm from corners.

Screw holes must be pre-drilled using a masonry bit, allowing 1mm clearance over the diameter of screw. All sheet joints must be sealed using MegaPoxy P1, a two part water based epoxy adhesive, that must be mixed just prior to use. It is important to ensure sheet edges are clean and free of any dust.

Adhesive must be applied to the edge of the first sheet once it is fixed in position. Apply adhesive along sheet.

Ensure sheets are pushed together tightly for adequate adhesion, and the joint is filled.

It is not acceptable to force adhesive into the joint after both sheets have been fixed in place.

FIGURE 10.01 Sheet Fixing

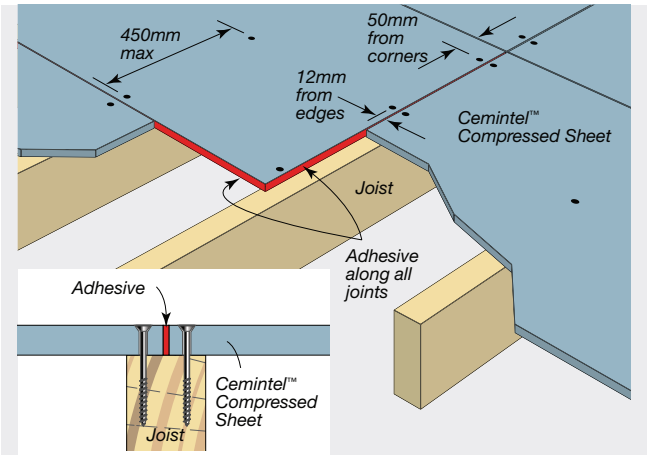
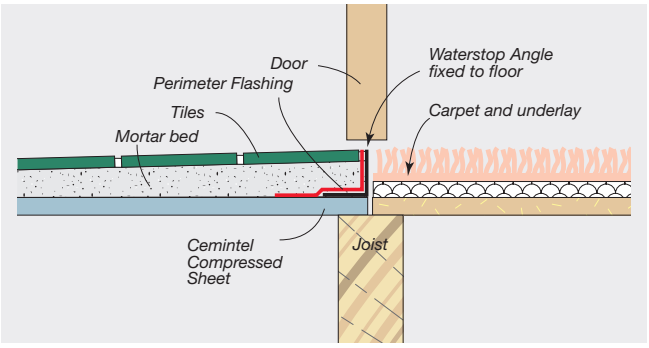


FIGURE 10.02 Doorway Flashing Detail



Waterproofing

Perimeter Flashing

Perimeter flashing must be used at the floor/wall junctions in all general wall areas, and must extend a minimum 25mm above finished floor level by having a PVC flashing 75 x 50mm adhesive fixed to the floor only by using Fulaprene 303 adhesive shown in FIG. 55 and 56.

Insitu Applied Membrane

A continuous insitu membrane must be applied to shower recess areas as shown in FIG 10.06 and 10.07.

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

Note: For further details on waterproofing refer to Australian Standard AS 3740.

FIGURE 10.03 Shower Recess with Hob

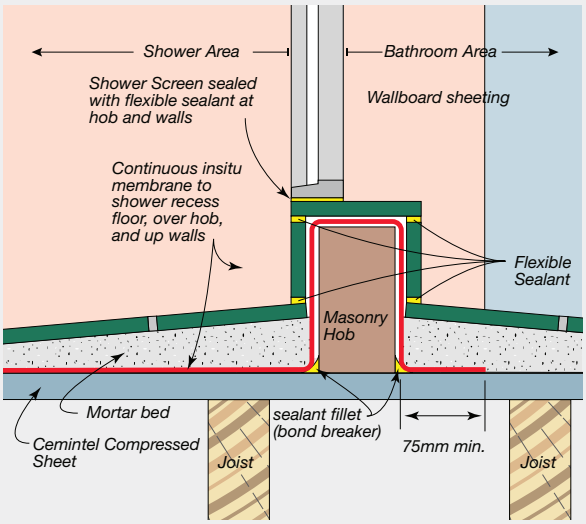
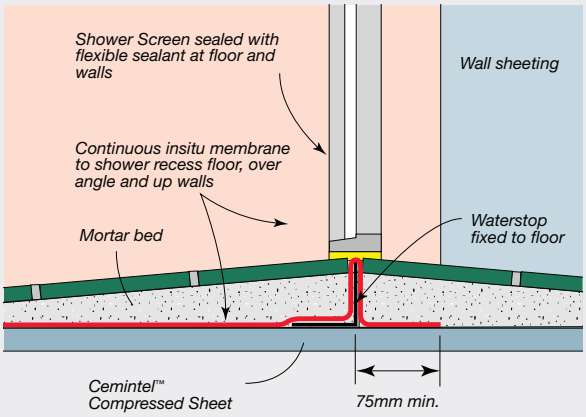


FIGURE 10.04 Hobless Shower Recess



COMPRESSED SHEET – WET AREA FLOORING SYSTEM

Plumbing Waste

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 using HydrEpoxy™ 501 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.

Tile Laying

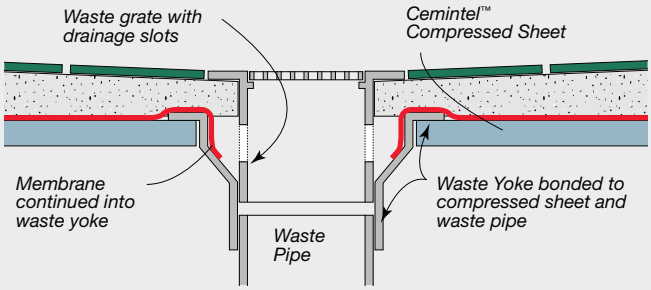
If a fall to waste is not required, tiles may be fixed directly to Cemintel Compressed Sheet.

Tile adhesive must conform to Australian Standard AS 2358 'Adhesives - for fixing ceramic tiles'.

If a fall to waste is required, tiles must be bedded into a mortar bed which is not less than 12mm thick.

In all cases the tile and tile adhesive manufacturers' instructions should be followed.

FIGURE 10.05 Waste Detail



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SAFETY, HANDLING, GENERAL CARE + WARRANTY

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.

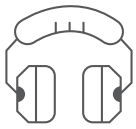
An approved dust mask (AS/NZS 1715 and AS/NZS 1716) and safety glasses (AS/NZS 1337) must be worn. Cemintel recommends that hearing protection also be worn.

Safety Data Sheet information is available at www.cemintel.com.au

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, and Maintenance

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 CeminSeal wallboard have a product warranty of 10 years.

The full product warranty is available for download at www.**cemintel.com.au**

SAFETY, HANDLING, GENERAL CARE + WARRANTY

Maintenance

Regular checks of the lining system (at least annually), as well as regular cleaning and re-painting to manufacturer's requirements is recommended to ensure they continue to perform the function which they were intended.

Cemintel Wallboard affected by smoke or fire damage is recommended to be replaced. Minor impact damage to Wallboard resulting in small holes and cracks must be patched, set and finished as originally carried out. Where the Wallboard has suffered significant impact damage, resulting in large holes or cracks, the Wallboard should be repaired using standard methods. In tiled areas any cracks or damaged areas which would allow water ingress into the wall cavity, must be repaired immediately by re-setting and repainting, or by replacing tiles, pointing or sealants. Damaged sheets are not covered by CSR's product guarantee and should be replaced.

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