

WET AREAS USING PLASTERBOARD

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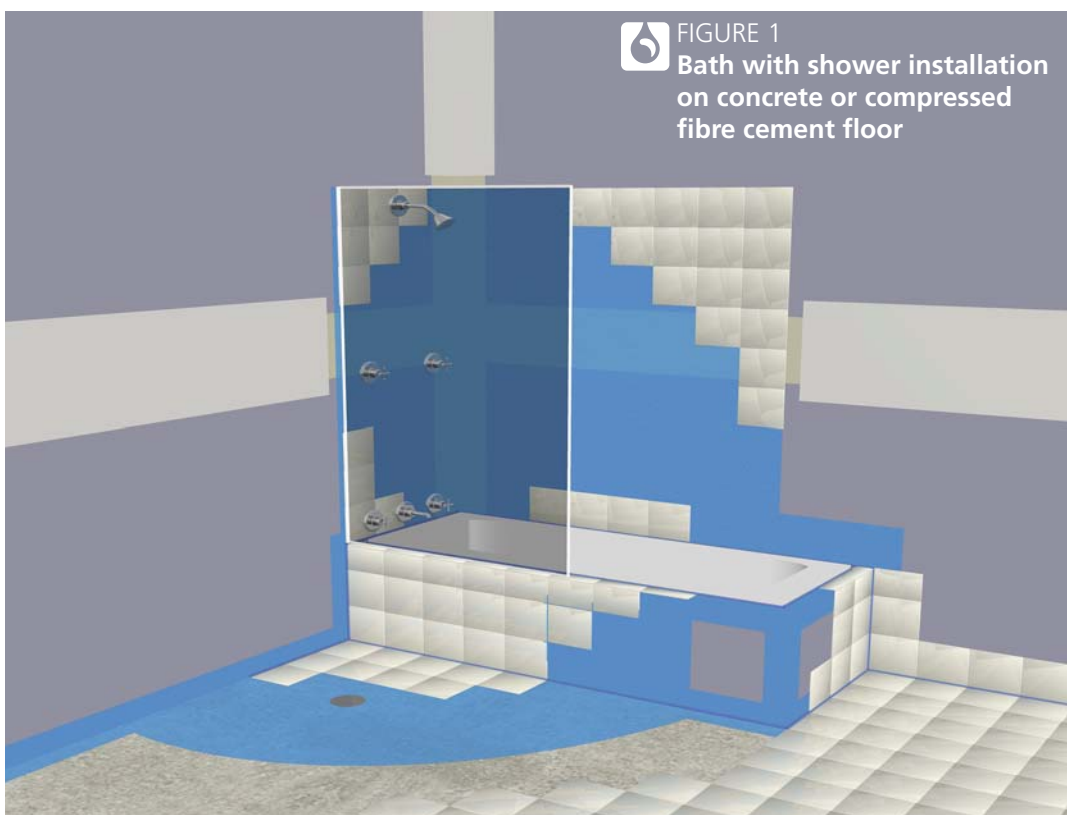


FIGURE 1
Bath with shower installation
on concrete or compressed
fibre cement floor

Australian Standard AS 3740 – *Waterproofing of Wet Areas within Residential Buildings* defines a wet area as ‘an area within a building supplied with water from a water supply system and includes bathrooms, showers, laundries and sanitary compartments.’ Waterproofing of wet areas may be achieved by systems using water resistant plasterboards such as **WaterShield**, **MultiShield** or **SafeShield**.

This section contains:

- › Wall systems incorporating **WaterShield** or **SafeShield**.
[FOR **MultiShield** SYSTEMS, REFER TO SECTION 4.1.1 AND 4.1.2, AS **MultiShield** HAS RESISTANCE TO BOTH WATER AND FIRE].
- › Installation instructions for wet area walls.
[FOR INSTALLATION ON WATERSHIELD CEILINGS, REFER TO SECTION 4.4].
- › Waterproofing treatment methods for **WaterShield**, **SafeShield** and **MultiShield** walls.
- › Construction details for wet areas.

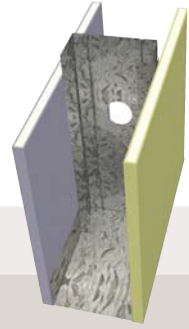
Some elements of wet area installation will be carried out by a plasterer, and other elements will be completed by trades such as plumbers and tilers. All waterproofing must be carried out by an approved applicator.

[REFER TO SECTION 3.3 FOR MORE INFORMATION ON WET AREAS].

LSW34

WALL LINING: [SIDE 1] 1 layer of 10mm **WaterShield** (bathroom side)
[SIDE 2] 1 layer of 10mm **SoundShield**

FRAME: Steel studs at maximum 600mm centres
[10mm WaterShield can be substituted with 10mm SafeShield]



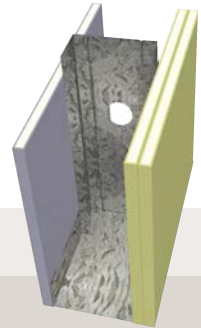
	STUD SIZE (mm)		MAX HEIGHT UDL 0.25kPa (m)		WIDTH (mm)	ACOUSTICS R _w (R _w + C _{tr})			
	Stud Depth	Stud BMT	Non-Load Bearing Studs at 600mm	Non-Load Bearing Studs at 450mm		No Insulation	50mm Glasswool	65mm Polyester ISB3	75mm Polyester Polycoustic
FRL - / - / -	51	0.5	2.77	3.02	71	33 (26)	41 (32)	40 (32)	-
		0.75	2.91	3.20					
	64	0.5	3.33	3.58	84	34 (26)	41 (32)	41 (32)	-
		0.75	3.93	4.18					
		1.15	4.17	4.46					
	76	0.55	3.70	4.02	96	35 (27)	42 (33)	42 (33)	42 (33)
		0.75	4.43	4.78					
		1.15	4.65	5.07					
	92	0.55	4.54	4.85	112	35 (27)	43 (33)	43 (33)	43 (33)
		0.75	4.83	5.27					
		1.15	5.11	5.62					
	150	0.75	6.55	7.14	170	37 (27)	45 (36)	45 (36)	45 (36)
1.15		7.22	7.75						

Day Design 3094-33

LSW35

WALL LINING: [SIDE 1] 1 layer of 10mm **WaterShield** (bathroom side)
[SIDE 2] 2 layer of 10mm **SoundShield**

FRAME: Steel studs at maximum 600mm centres
[10mm WaterShield can be substituted with 10mm SafeShield]



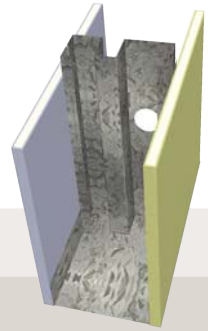
	STUD SIZE (mm)		MAX HEIGHT UDL 0.25kPa (m)		WIDTH (mm)	ACOUSTICS R _w (R _w + C _{tr})			
	Stud Depth	Stud BMT	Non-Load Bearing Studs at 600mm	Non-Load Bearing Studs at 450mm		No Insulation	50mm Glasswool	65mm Polyester ISB3	75mm Polyester Polycoustic
FRL - / - / -	51	0.5	2.77	3.02	81	39 (31)	45 (36)	45 (36)	-
		0.75	2.91	3.20					
	64	0.5	3.33	3.58	94	40 (31)	47 (37)	46 (37)	-
		0.75	3.93	4.18					
		1.15	4.17	4.46					
	76	0.55	3.70	4.02	106	40 (31)	47 (37)	47 (37)	47 (37)
		0.75	4.43	4.78					
		1.15	4.65	5.07					
	92	0.55	4.54	4.85	122	41 (32)	48 (38)	48 (38)	48 (38)
		0.75	4.83	5.27					
		1.15	5.11	5.62					
	150	0.75	6.55	7.14	180	43 (32)	50 (42)	50 (42)	50 (42)
1.15		7.22	7.75						

Day Design 3094-33

LQSW34

WALL LINING: [SIDE 1] 1 layer of 10mm **WaterShield** (bathroom side)
[SIDE 2] 1 layer of 10mm **SoundShield**

FRAME: Rondo QUIET STUDS® at maximum 600mm centres
[10mm WaterShield can be substituted with 10mm SafeShield]



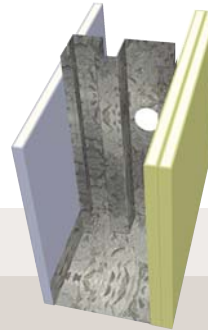
FRL - / - / -	STUD SIZE (mm)		MAX HEIGHT UDL 0.25kPa (m)		WIDTH (mm)	ACOUSTICS Rw (Rw + Ctr)				Day Design 3094-12
	Stud Depth	Stud BMT	Non-Load Bearing Studs at 600mm	Non-Load Bearing Studs at 450mm		No Insulation	50mm Glasswool	65mm Polyester ISB3	75mm Polyester Polycoustic	
	92	0.55	3.70 No noggings	4.02 No noggings	112	36 (29)	45 (34)	45 (34)	46 (35)	



LQSW35

WALL LINING: [SIDE 1] 1 layer of 10mm **WaterShield** (bathroom side)
[SIDE 2] 2 layers of 10mm **SoundShield**

FRAME: Rondo QUIET STUDS® at maximum 600mm centres
[10mm WaterShield can be substituted with 10mm SafeShield]



FRL - / - / -	STUD SIZE (mm)		MAX HEIGHT UDL 0.25kPa (m)		WIDTH (mm)	ACOUSTICS Rw (Rw + Ctr)				Day Design 3094-12
	Stud Depth	Stud BMT	Non-Load Bearing Studs at 600mm	Non-Load Bearing Studs at 450mm		No Insulation	50mm Glasswool	65mm Polyester ISB3	75mm Polyester Polycoustic	
	92	0.55	3.70 No noggings	4.02 No noggings	122	41 (34)	50 (40)	50 (40)	51 (41)	



LTW34

WALL LINING: [SIDE 1] 1 layer of 10mm **WaterShield** (bathroom side)
[SIDE 2] 1 layer of 10mm **SoundShield**

FRAME: Timber studs at maximum 600mm centres
[10mm WaterShield can be substituted with 10mm SafeShield]



FRL - / - / -	STUD SIZE (mm)		MAX HEIGHT UDL 0.25kPa (m)		WIDTH (mm)	ACOUSTICS Rw (Rw + Ctr)			
	Stud Depth	Stud Width	Non-Load Bearing MGP10 Timber Studs at 600mm	Non-Load Bearing MGP10 Timber Studs at 450mm		No Insulation	R1.5 Glasswool	R2.0 Glasswool	R1.5 Polyester
70	35	3.74	3.90	90	34 (27)	41 (31)	-	41 (31)	
	45	3.88	4.07						
90	35	4.54	4.77	110	36 (28)	41 (32)	41 (33)	41 (32)	
	45	4.74	5.01						

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LTW35

WALL LINING: [SIDE 1] 1 layer of 10mm **WaterShield** (bathroom side)
[SIDE 2] 1 layer of 10mm **SoundShield**

FRAME: Timber studs at maximum 600mm centres
[10mm WaterShield can be substituted with 10mm SafeShield]



FRL - / - / -	STUD SIZE (mm)		MAX HEIGHT UDL 0.25kPa (m)		WIDTH (mm)	ACOUSTICS Rw (Rw + Ctr)			
	Stud Depth	Stud Width	Non-load bearing MGP10 timber studs at 600mm	Non-load bearing MGP10 timber studs at 450mm		No Insulation	R1.5 Glasswool	R2.0 Glasswool	R1.5 Polyester
70	35	3.74	3.90	100	39 (32)	44 (35)	-	44 (35)	
	45	3.88	4.07						
90	35	4.54	4.77	120	40 (32)	44 (37)	45 (37)	44 (37)	
	45	4.74	5.01						

Day Design 3094-44

DEFINITIONS

Waterproof Membrane

Waterproof membranes are a layer of material impervious to water that are usually liquid applied. They must comply with AS/NZS 4858:2004, *Wet Area Membranes* and be applied according to the manufacturer's instructions.

Flashing

Flashing is a strip or sleeve of impervious material such as metal angle, or a liquid applied product such as a waterproof membrane. It must provide a barrier to moisture movement.

Shower Area

Shower areas consist of enclosed and unenclosed areas:

- ▶ Unenclosed shower areas extend 1500mm horizontally from the shower connection on the wall, up to a height of 1800mm from the finished floor.
- ▶ Enclosed shower areas are bounded by walls or screens up to a height of 1800mm from the finished floor. Walls or screens include hinged or sliding doors that control the spread of water to within the enclosure.



A shower fitted with a frameless glass shower screen or screen over a bath less than 1500mm long is not an enclosed shower.

WET AREA REQUIREMENTS

Different wet areas require different levels of treatment to protect them from moisture.

WET AREA INSTALLATION REQUIREMENTS

AREA	LEVEL OF RISK	WALLS	JUNCTIONS	PENETRATIONS +
Shower area	High	Water Resistant	Waterproof	Waterproof
Bathrooms	Medium	–	Waterproof ^	–
Areas adjacent to baths and spas	Medium	Water Resistant	Waterproof	Waterproof *
Walls adjoining other vessels	Low	Water Resistant	Waterproof	Waterproof *
Laundries and WCs	Low	–	Waterproof ^	–
Bathrooms and laundries requiring a floor waste	High	–	Waterproof ^	Waterproof

+ Including mechanical fixings or fasteners.

^ Applies to wall/floor junctions only.

* Horizontal surface waterproof, vertical surface water resistant.

FIGURE 2
Basin



WATERPROOFING REQUIREMENTS BY AREA

WATER RESISTANT WALLS

Use **WaterShield**, **SafeShield**, or **MultiShield** covered with tiles.

For all plasterboard joints, corners and fastener heads use **MastaBase** or **MastaLongset** and cover with a waterproof membrane.

For long term durability, the application of a waterproof membrane over the entire area is recommended where water resistant walls are required.

[REFER TO WATERPROOF MEMBRANE MANUFACTURER FOR APPLICATION INSTRUCTIONS].

WALLS ADJOINING OTHER VESSELS

Ensure walls within 75mm of a vessel such as a sink, basin or laundry tub are water resistant to a height of 150mm minimum above the vessel.

Seal all edges where the vessel is fixed to the wall.

WATERPROOF PENETRATIONS

Use a waterproof sealant or a proprietary flange system to waterproof penetrations.

WATERPROOF VERTICAL JUNCTIONS (WHERE REQUIRED)

Use a waterproof membrane as vertical flashing that has a minimum overlap of 40mm to the wall sheeting for each leg.

WALL/FLOOR JUNCTIONS IN SHOWER AREAS AND ADJACENT TO BATHS AND SPAS

Use a waterproof membrane on walls to:

- › 150mm minimum above the finished shower floor level or lip of bath
- › And 25mm minimum above the maximum retained water level
- › And with the horizontal leg width a minimum of 50mm.

WALL/FLOOR JUNCTIONS OUTSIDE SHOWER AREAS

Use a waterproof membrane or metal angle as flashing with a vertical leg a minimum of 25mm above the finished floor level with the horizontal leg width a minimum of 50mm.

 **FIGURE 3**
Bath (without shower) installation on timber flooring

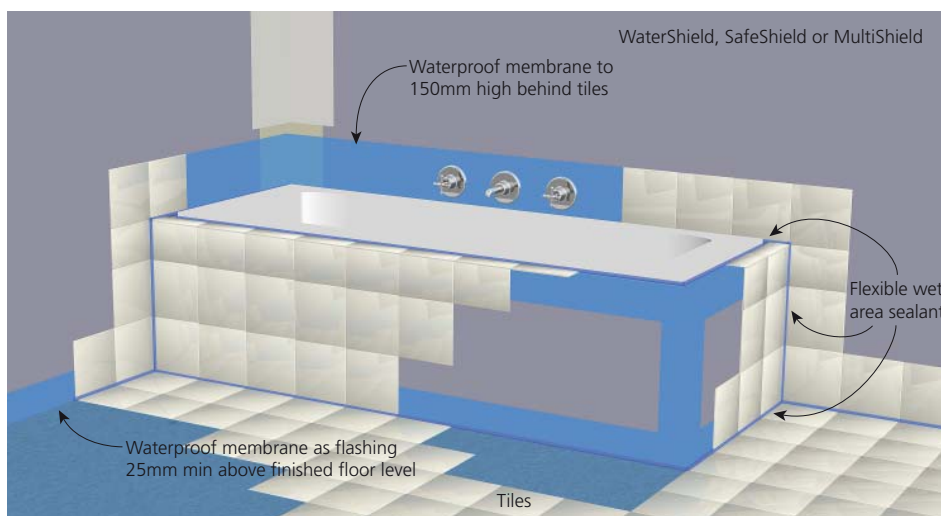




FIGURE 4

Internal in-situ tray for unenclosed shower on concrete or compressed fibre cement floor

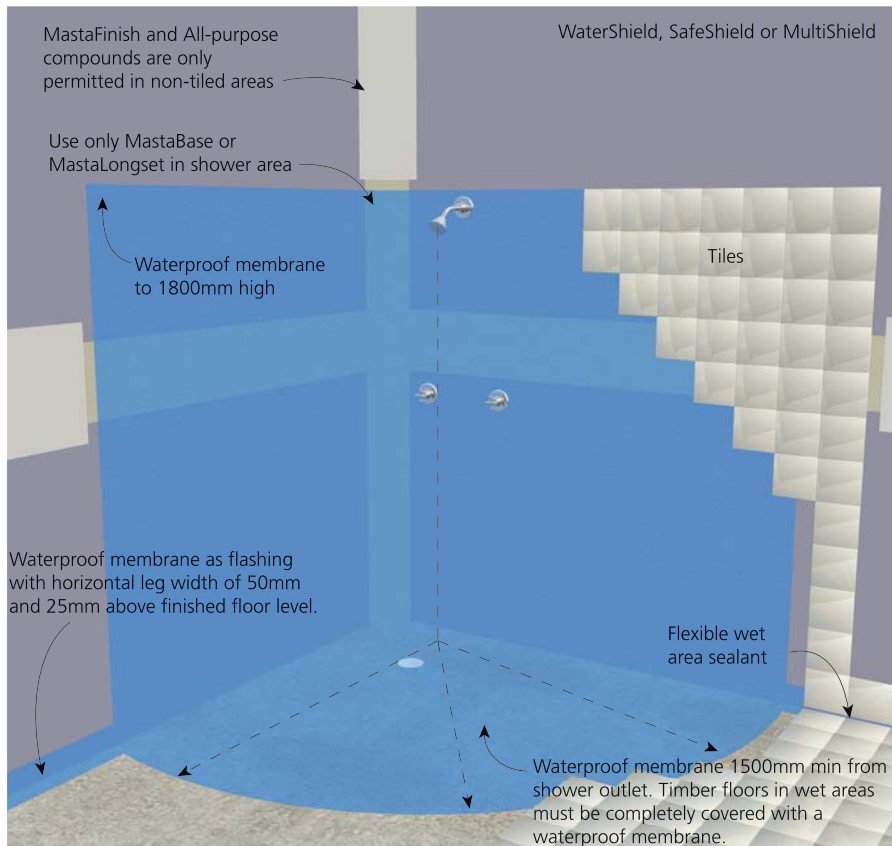
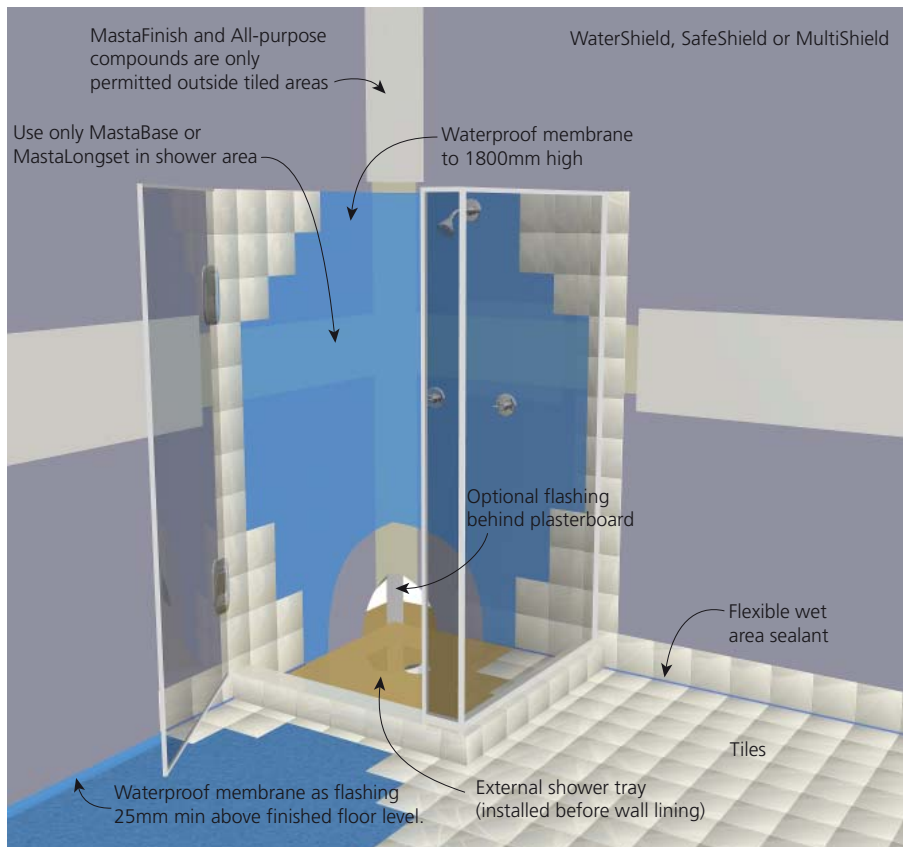


FIGURE 5

External tray for enclosed shower on timber flooring



GENERAL REQUIREMENTS

For **WaterShield** or **SafeShield** [REFER TO SECTION 4.1.1 OR 4.1.2 NON-FIRE RATED REQUIREMENTS].

For **MultiShield** [REFER TO SECTION 4.1.1 OR 4.1.2 FIRE RATED REQUIREMENTS].

Waterproof all cut edges of **WaterShield**, **SafeShield** or **MultiShield** that may be affected by moisture, including all penetrations and the bottom edge over a preformed shower base.

Only use paper tape and two coats of **MastaBase** or **MastaLongset** for jointing in tiled areas.

Recess pre-formed shower bases, baths and spas sufficiently into the wall to allow the tiles to pass down the inside perimeter rebate of the shower base [REFER TO CONSTRUCTION DETAILS].

After the installation of tiles, apply a waterproof sealant to all wall/floor junctions and vertical corner joints.

Attach fixtures to framing members only.

Insulation must not come in contact with plumbing pipes.



Masonry adhesive and stud adhesive are not permitted in tiled areas.

WaterShield, **SafeShield** and **MultiShield** are not suitable in constant high humidity areas.

Frame movement should be limited at junctions in high risk areas such as showers. For this purpose the installation of a 0.7mm BMT metal angle fixed to the frame in internal corners is recommended.

To prevent condensation forming, insulation in the wall cavity should not come in contact with plumbing pipes.

FRAMING

For internal steel walls [REFER TO SECTION 4.1.1]. For internal timber walls [REFER TO SECTION 4.1.2].

Masonry walls lined with tiles on **WaterShield** or **MultiShield** must use the furring channel method. For masonry walls with plasterboard [REFER TO SECTION 4.1.3].

PLASTERBOARD LAYOUT

For **WaterShield** or **SafeShield** [REFER TO SECTION 4.1.1 OR 4.1.2 NON-FIRE RATED REQUIREMENTS].

For **MultiShield** [REFER TO SECTION 4.1.1 OR 4.1.2 FIRE RATED REQUIREMENTS].

PLASTERBOARD FIXING

Use the Fastener Only Method in tiled or fire rated areas. Masonry or stud adhesives are not permitted.

Drive fasteners to just below the sheet surface, taking care not to break the paper linerboard.

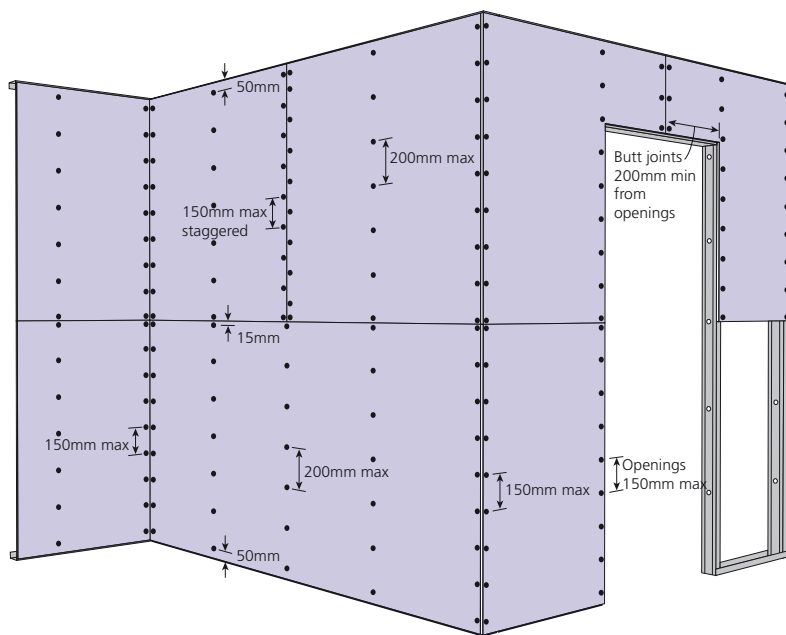
Do not fix plasterboard to steel more than 2mm BMT.

Laminating screws can be used to fix butt joints in the second and third layer.

Reduce all fastener spacing to 100mm max centres for tiles above 12 kg/m² up to a maximum of 30kg/m².

FIGURE 6

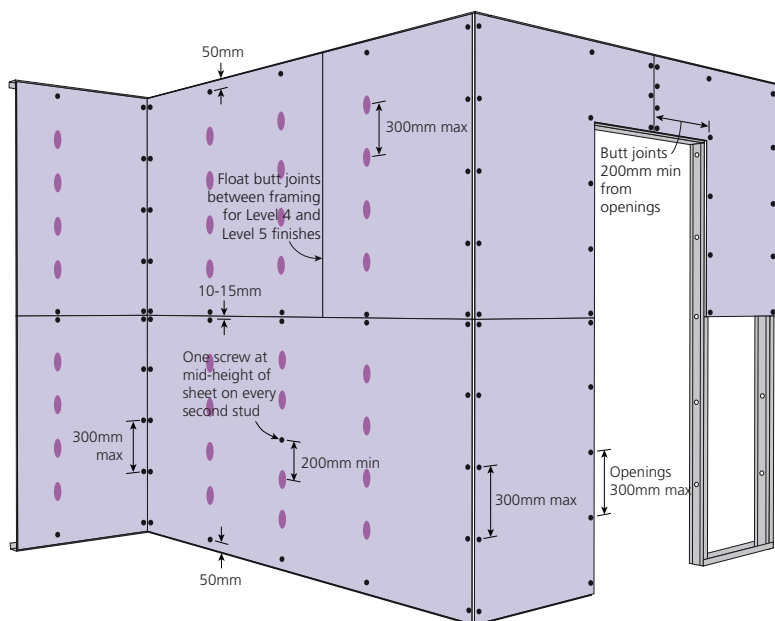
WaterShield in tiled areas 1 layer - Horizontal Screw Only Method to steel frame



Fixing	SCREW ONLY METHOD
Sheet Layout	Horizontal
Perimeter	Perimeter screws 10-15mm from sheet edges except at top and bottom tracks. Plasterboard must not be fixed to top and bottom tracks.
Field	Fix at 200mm max centres.
Recessed Edges	Fix on each stud.
Butt joints	Fix at 150mm max centres and stagger screws. Stagger butt joints by 600mm min on adjoining sheets and on opposite sides of the wall.
Internal and External corners	Fix at 150mm max centres.
Openings	Fix at 150mm max centres.
Sealant	Use wet area sealant on all gaps and around perimeter to maintain acoustic integrity. [REFER TO CONSTRUCTION DETAILS]
Tile Weight	Reduce all fastener spacing to 100mm max centres for tiles above 12 kg/m ² up to a maximum of 30kg/m ² .

FIGURE 7

WaterShield in untiled areas 1 layer - Horizontal Screw and Adhesive Method to steel frame

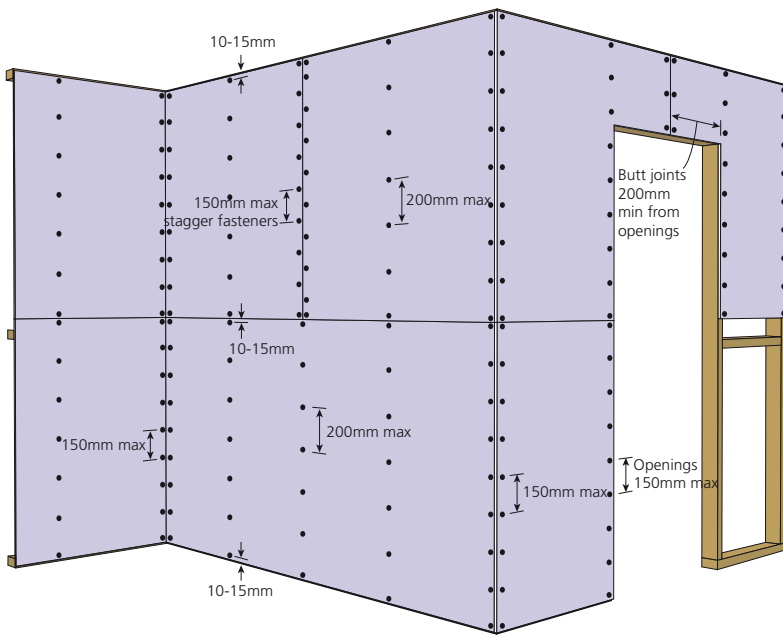


Fixing	SCREW AND ADHESIVE METHOD
Sheet Layout	Horizontal
Perimeter	Perimeter screws 10-15mm from sheet edges except at top and bottom tracks. Plasterboard must not be fixed to top and bottom tracks.
Field	Adhesive daubs 25mm diameter and spaced at 300mm max centres and 200mm min from screw points and plasterboard edges. Fix one screw at mid-height of sheet on every second stud.
Recessed Edges	Fix on each stud.
Butt joints	Float butt joints between studs and back-blocking for Level 4 and Level 5 Finishes. Butt joints permitted on a stud for Level 3 Finishes. Stagger butt joints by 600mm min on adjoining sheets and on opposite sides of the wall.
Internal and External corners	Fix at 300mm max centres.
Openings	Fix at 300mm max centres.
Sealant	Use wet area sealant on all gaps and around perimeter to maintain acoustic integrity. [REFER TO CONSTRUCTION DETAILS]

Plasterboard Width (mm)	FASTENER AND ADHESIVE PATTERN
900	S A A A S
1200	S A A A A S
1350	S A A A A A S
	S = Screw A = Adhesive

FIGURE 8

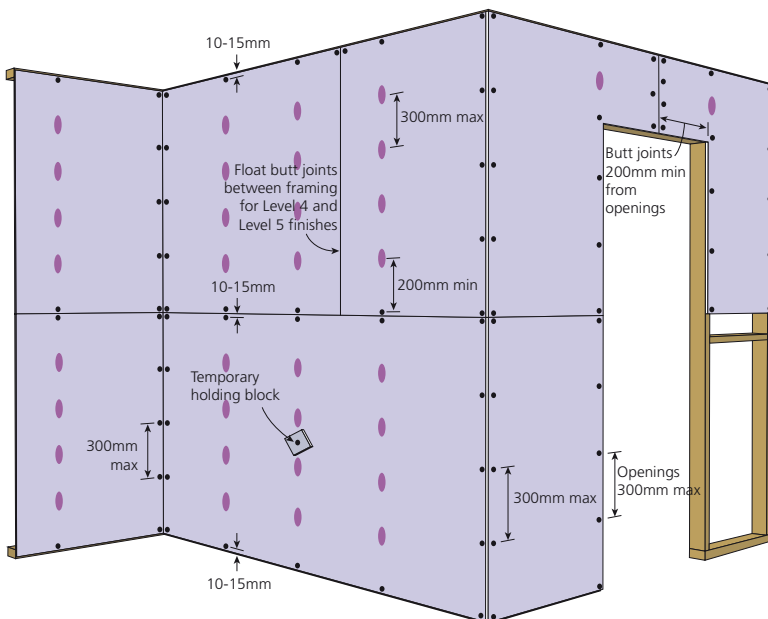
WaterShield in tiled areas 1 layer - Horizontal Fastener Only Method to timber frame



Fixing	FASTENER ONLY METHOD
Sheet Layout	Horizontal
Perimeter	Perimeter fasteners 10-15mm from sheet edges.
Field	Fix at 200mm max centres.
Recessed Edges	Fix on each stud.
Butt joints	Fix at 150mm max centres and stagger fasteners. Stagger butt joints by 600mm min on adjoining sheets and on opposite sides of the wall. 1st layer butt joints must be backed by a stud or back-blocked.
Internal and External corners	Fix at 150mm max centres.
Openings	Fix at 150mm max centres.
Sealant	Use wet area sealant on all gaps and around perimeter to maintain acoustic integrity. [REFER TO CONSTRUCTION DETAILS]
Tile Weight	Reduce all fastener spacing to 100mm max centres for tiles above 12 kg/m ² up to a maximum of 30kg/m ² .

FIGURE 9

WaterShield in untiled areas 1 layer - Horizontal Fastener and Adhesive Method to timber frame



Fixing	FASTENER AND ADHESIVE METHOD
Sheet Layout	Horizontal
Perimeter	Perimeter fasteners 10-15mm from sheet edges.
Field	Adhesive daubs 25mm diameter and 15mm high, spaced at 300mm max centres and 200mm min from fasteners and plasterboard edges. Temporary holding blocks or fastener on every second stud.
Recessed Edges	Fix on each stud.
Butt joints	Float butt joints between studs and back-blocking for Level 4 and Level 5 Finishes. Butt joints permitted on a stud for Level 3 Finishes. Stagger butt joints by 600mm min on adjoining sheets and on opposite sides of the wall.
Internal and External corners	Fix at 300mm max centres.
Openings	Fix at 300mm max centres.
Sealant	Use wet area sealant on all gaps and around perimeter to maintain acoustic integrity. [REFER TO CONSTRUCTION DETAILS]

Plasterboard Width (mm)	FASTENER AND ADHESIVE PATTERN
900	F A A A F
1200	F A A A A F
1350	F A A A A A F
	F = Fastener (Screw or Nail) A = Adhesive

NON-FIRE RATED
SHOWER WALL BASE IN WET AREAS - ELEVATION

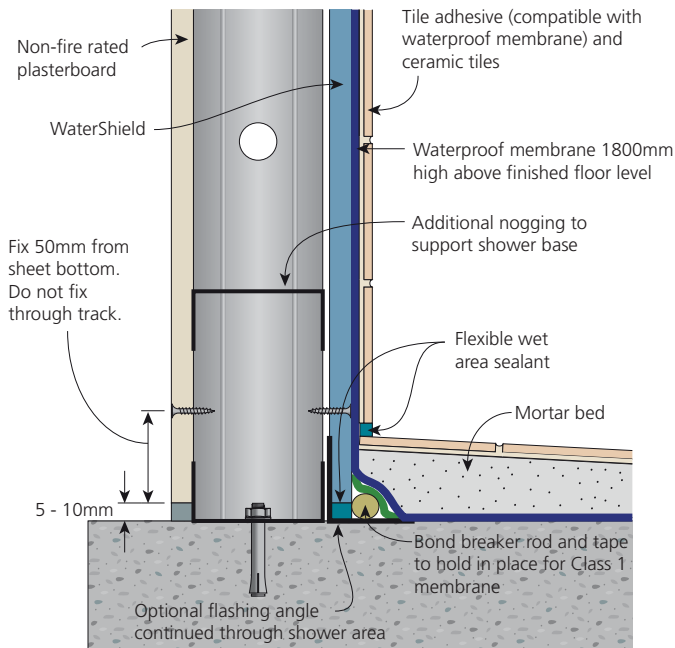


FIGURE 10
Wall base in shower area
 Internal insitu shower tray - Class 1 membrane

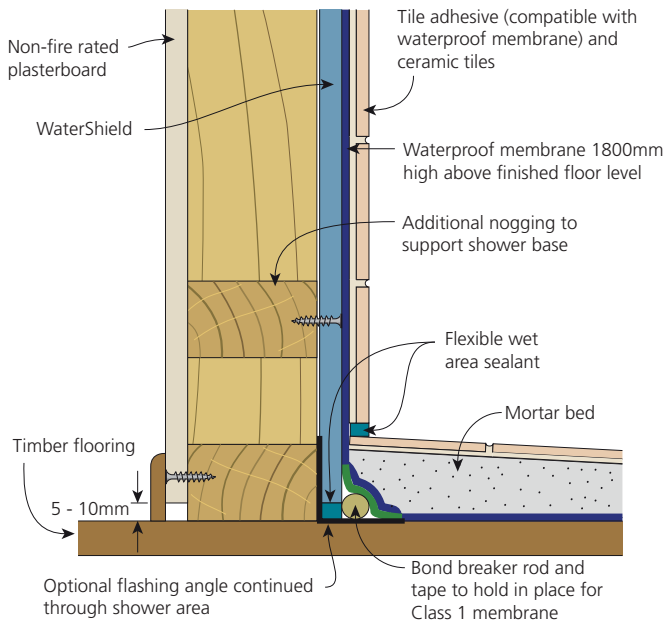


FIGURE 11
Wall base in shower area
 Internal insitu shower tray - Class 1 membrane

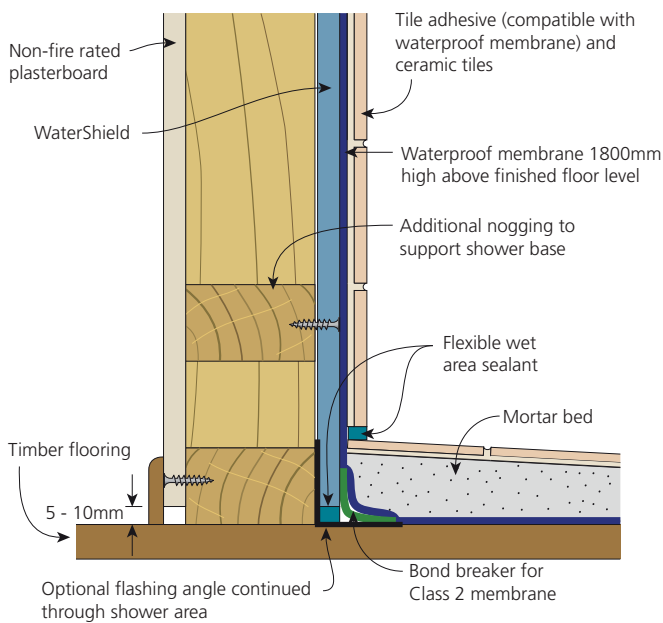


FIGURE 12
Wall base in shower area
 Internal insitu shower tray - Class 2 membrane

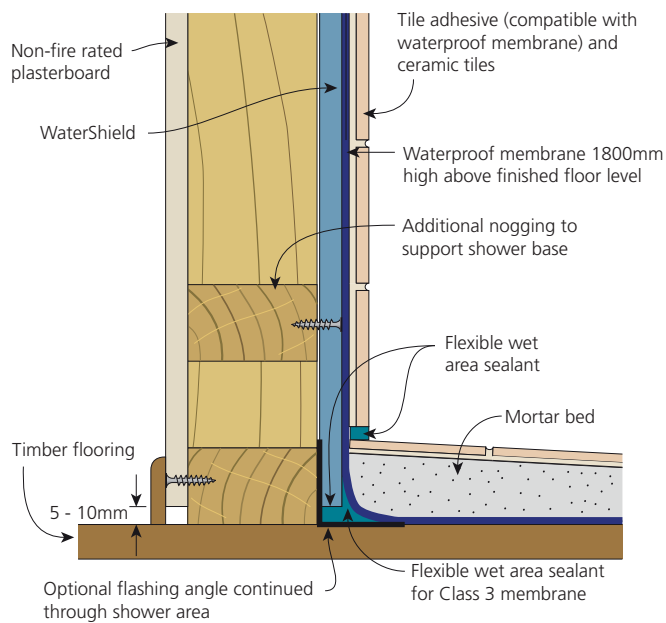


FIGURE 13
Wall base in shower area
 Internal insitu shower tray - Class 3 membrane

**NON-FIRE RATED
SHOWER WALL BASE AND INTERNAL CORNER IN WET AREAS**

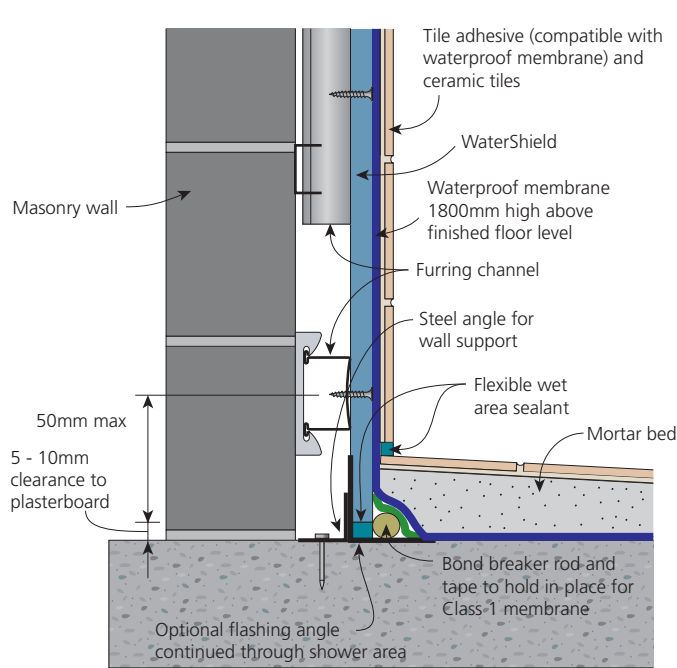


FIGURE 14
Wall base in shower area on masonry wall
Internal insitu shower tray - Elevation

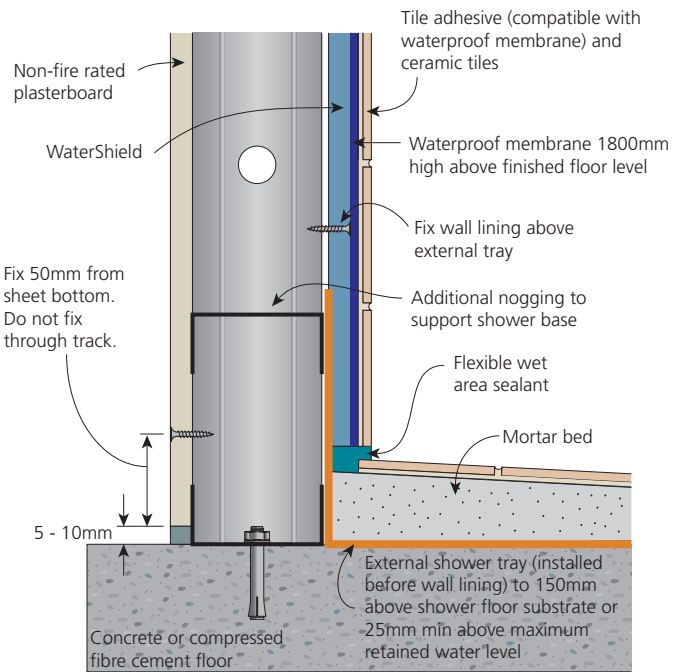


FIGURE 15
Wall base in shower area
External shower tray - Elevation

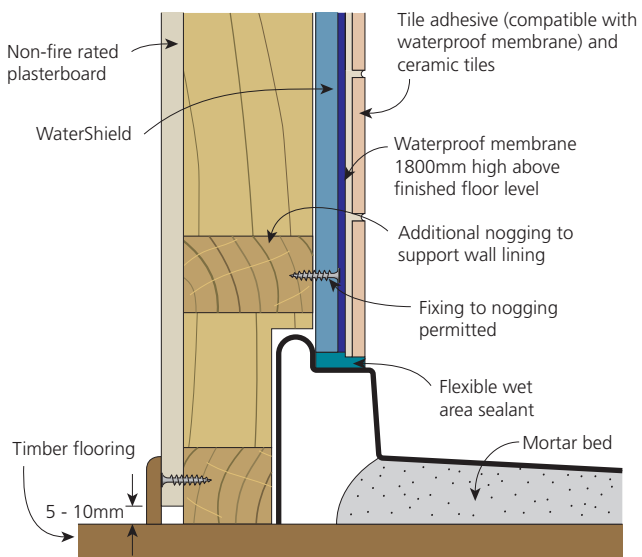


FIGURE 16
Wall base in shower area
Pre-formed external shower tray - Elevation

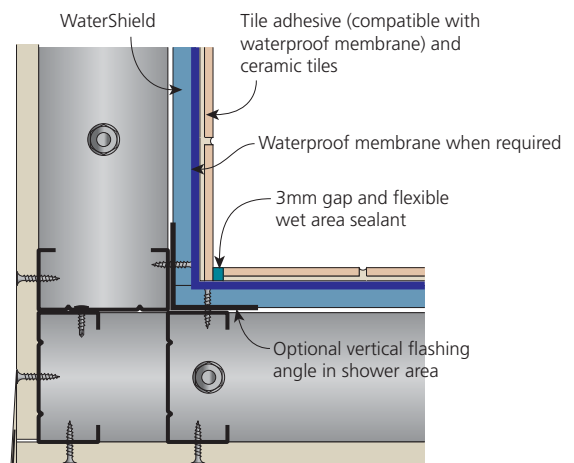


FIGURE 17
Corner detail in wet areas
Plan View

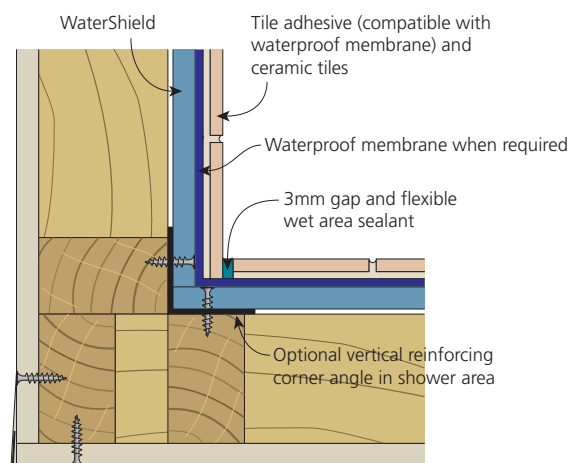


FIGURE 18
Corner detail in wet areas
Plan View

i Installation of a vertical reinforcing corner angle (minimum 35x35x0.7mm) is to reduce corner movement which may cause waterproof membrane failure.

NON-FIRE RATED
WALL BASE FOR BATH RECESS IN WET AREAS - ELEVATION

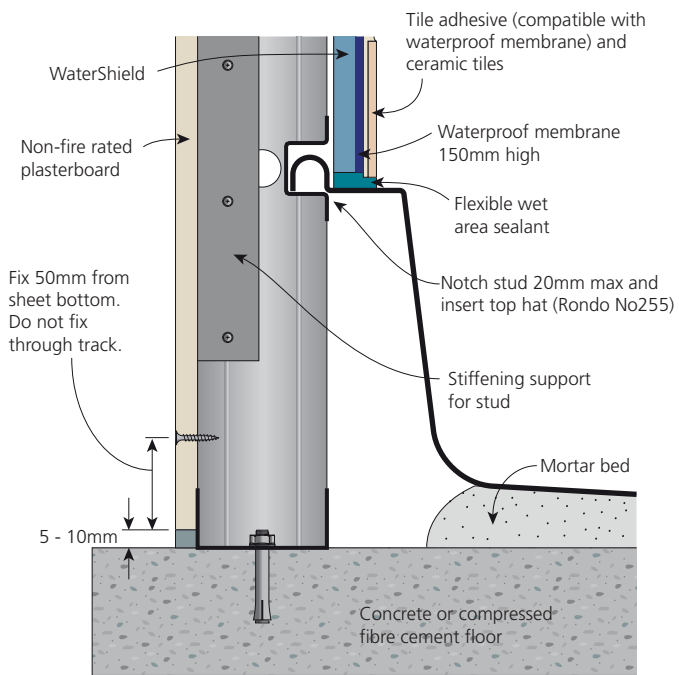


FIGURE 19
Wall detail for bath recess

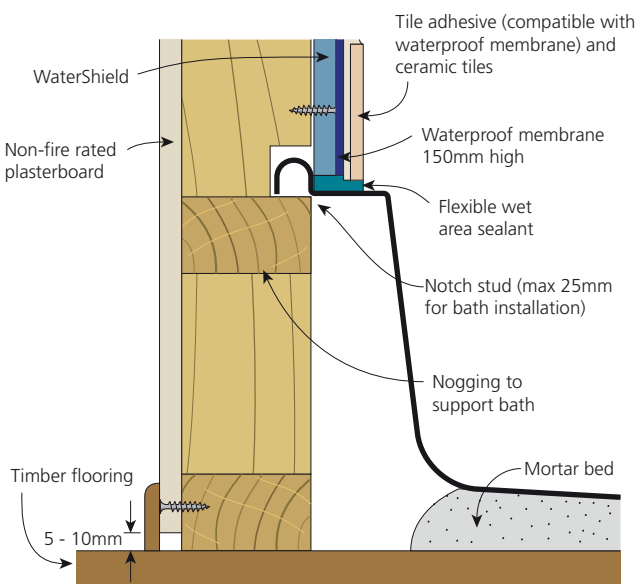


FIGURE 20
Wall detail for bath recess

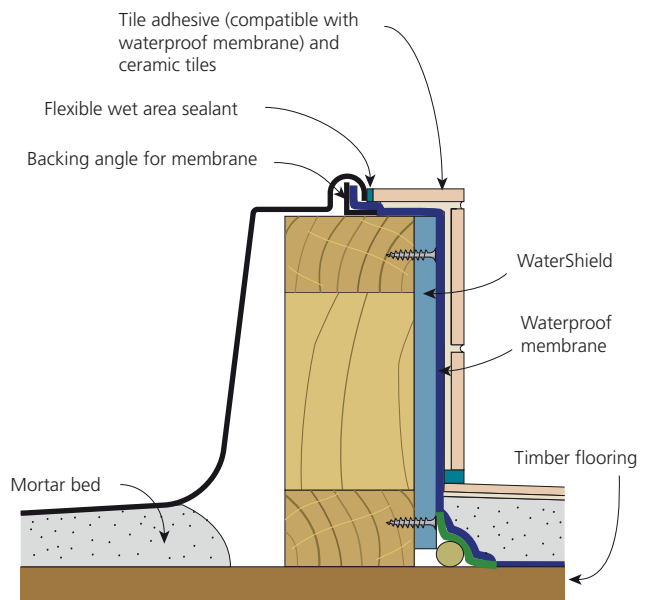


FIGURE 21
Wall detail for bath recess

**NON-FIRE RATED
WALL BASE IN WET AREAS - ELEVATION**

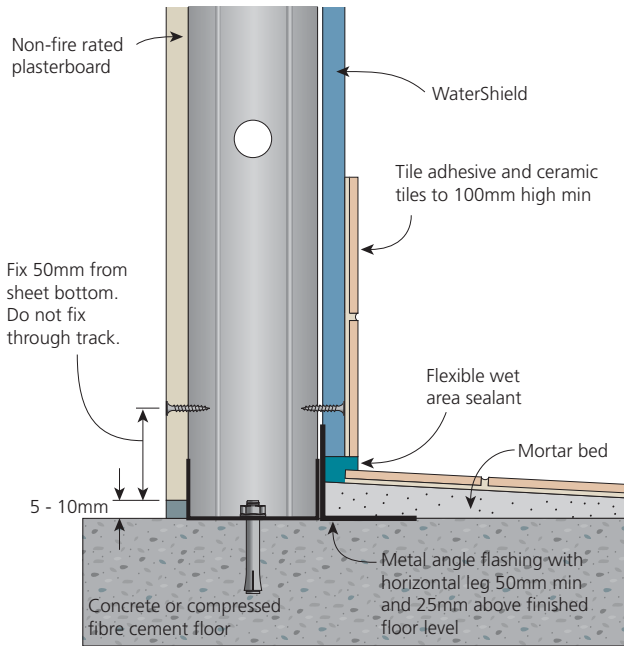


FIGURE 22
**Wall base in wet areas (outside shower)
With flashing angle**

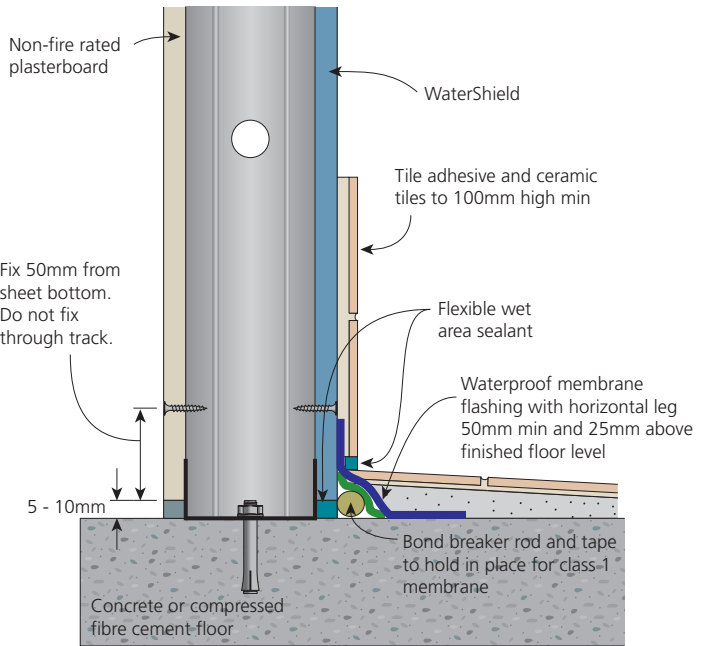


FIGURE 23
**Wall base in wet areas (outside shower)
With waterproof membrane as flashing**

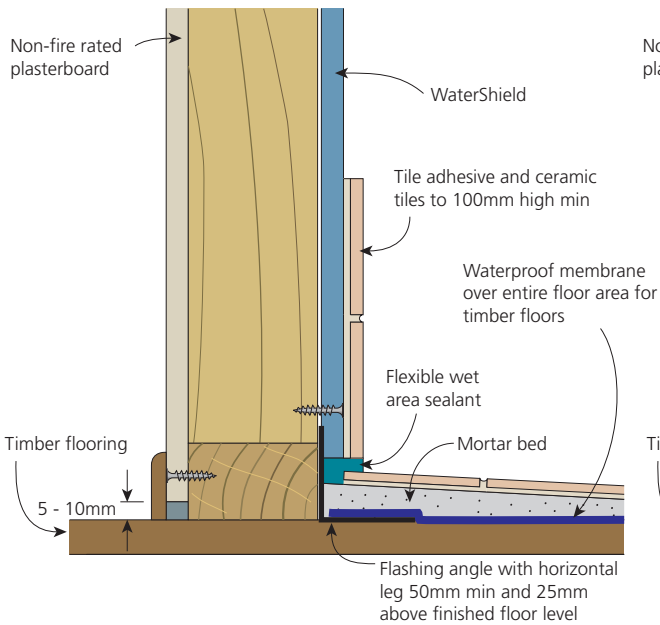


FIGURE 24
**Wall base in wet areas (outside shower)
With flashing angle and waterproof membrane**

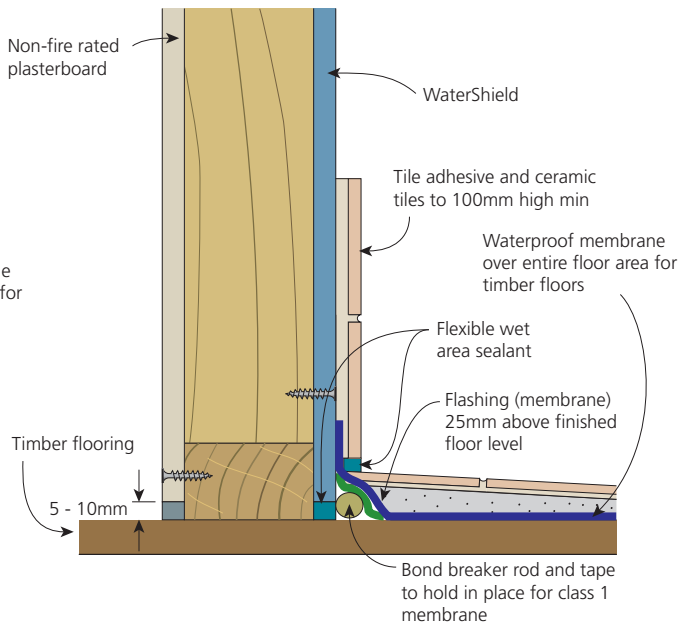


FIGURE 25
**Wall base in wet areas (outside shower)
With (Class 1) waterproof membrane as flashing**



FIRE RATED

SHOWER WALL BASE IN WET AREAS - ELEVATION

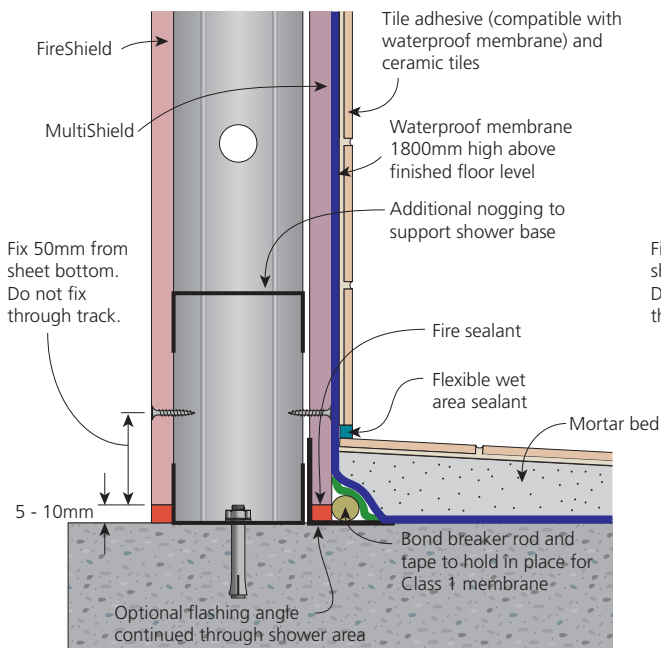


FIGURE 26
Wall base in shower area
Internal insitu shower tray - Single layer

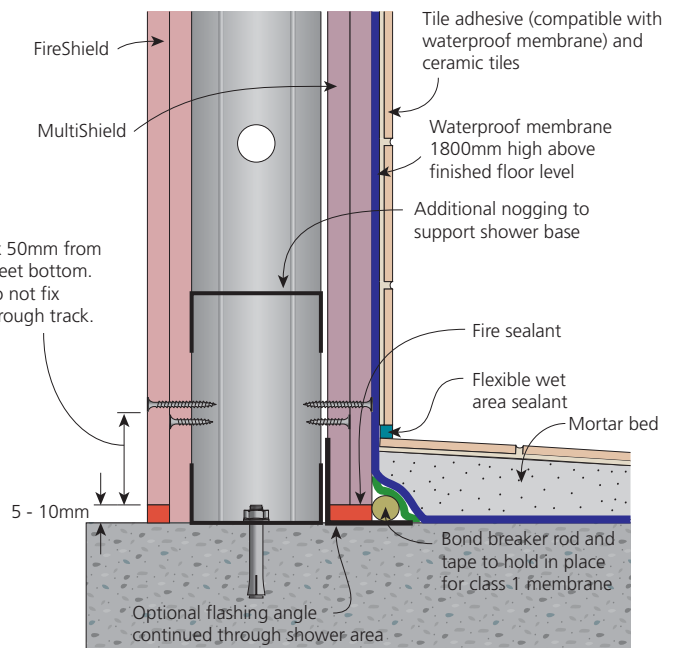


FIGURE 27
Wall base in shower area
Internal insitu shower tray - Multiple layer

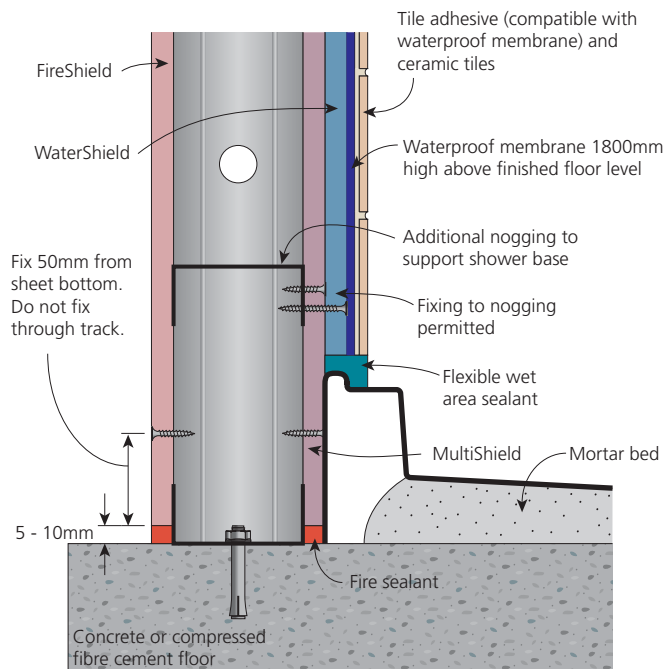


FIGURE 28
Wall base in shower area
Preformed external shower tray - Single layer

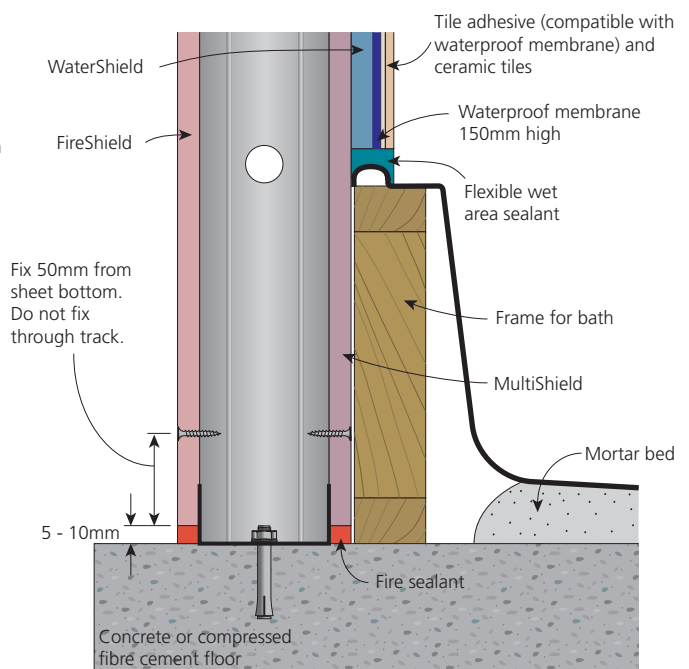


FIGURE 29
Wall detail for bath recess

FIRE RATED
SHOWER WALL BASE IN WET AREAS - ELEVATION

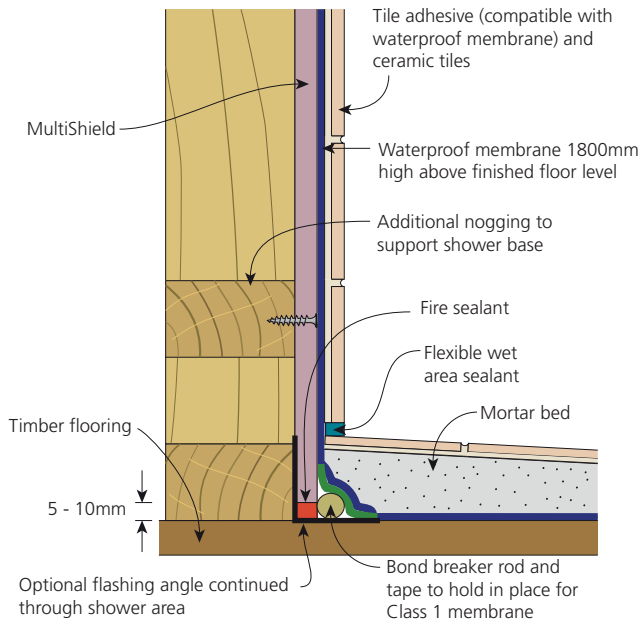


FIGURE 30
Wall base in shower area
 Internal in-situ shower tray - Class 1 membrane

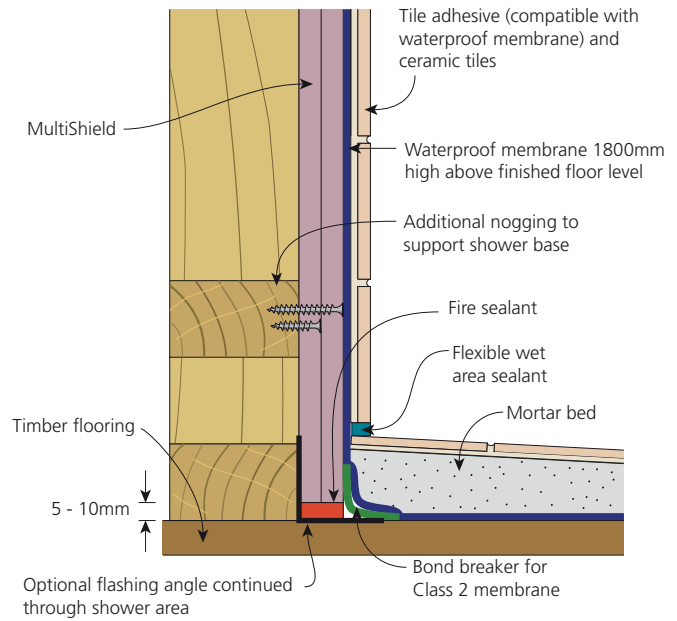


FIGURE 31
Wall base in shower area
 Internal in-situ shower tray - Class 2 membrane

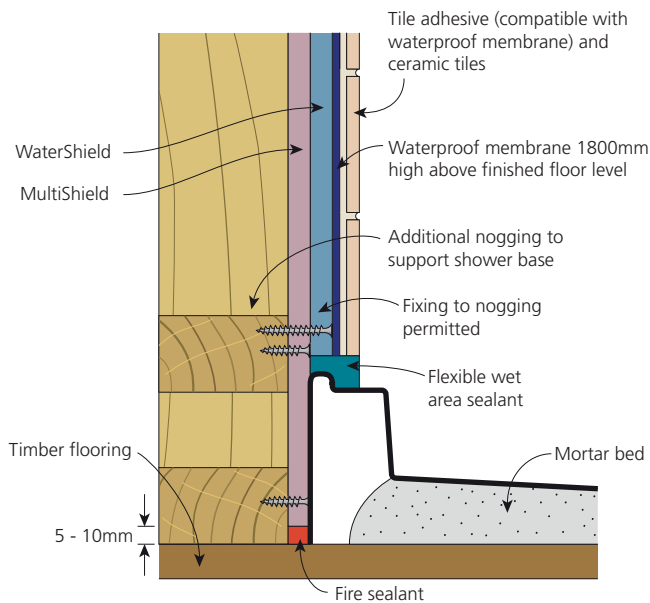


FIGURE 32
Wall base in shower area
 Pre-formed external shower tray

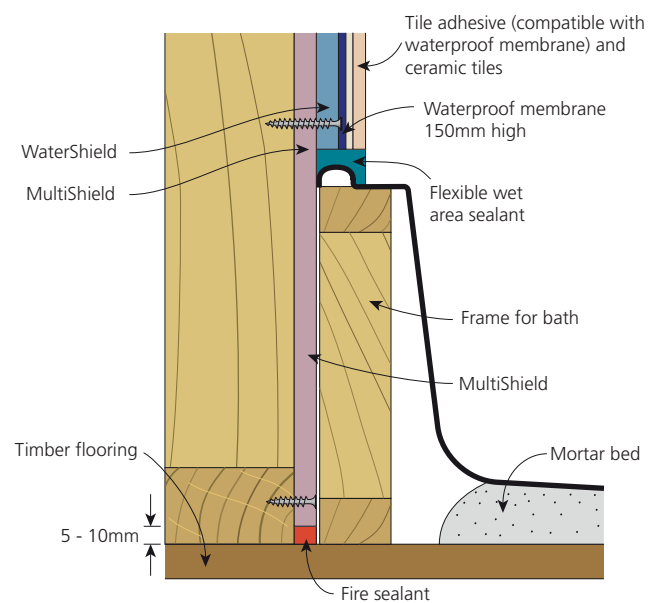


FIGURE 33
Wall base for bath recess

**FIRE RATED AND NON-FIRE RATED
PLUMBING PENETRATIONS - PLAN VIEW**

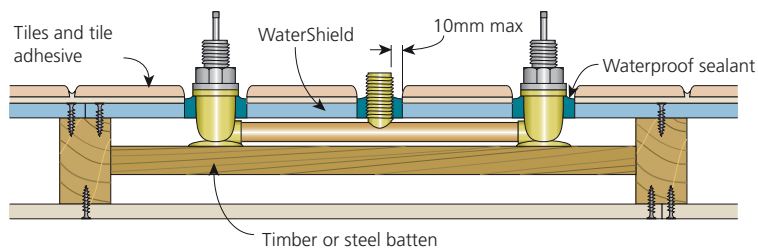


FIGURE 34
Plumbing penetrations

i Insulation must not come in contact with plumbing pipes.

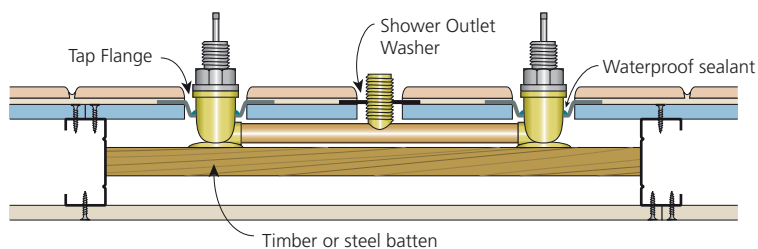


FIGURE 35
Alternate plumbing penetrations
Proprietary Tap Flange and Shower Outlet Washer

i Isolate copper and brass fittings from steel framing

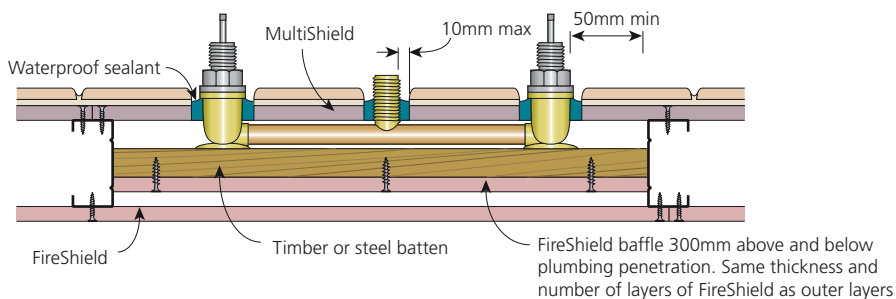


FIGURE 36
Plumbing penetrations
Fire rated single layer systems

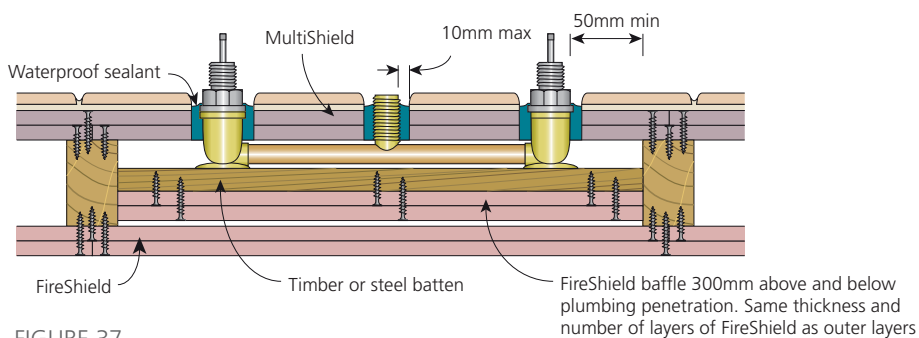


FIGURE 37
Plumbing penetrations
Fire rated multiple layer systems