3.4 Internal Wet Areas using Plasterboard

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 area walls may be achieved by using water resistant plasterboards such as **water**shield, **multi**shield, **tru**rock or **tru**rock hd. Wet area ceilings may be non-water resistant plasterboard.

This section contains:

- Installation instructions for wet area walls
- Waterproofing treatment methods over plasterboard 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 2.3 for more information on wet areas].

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.

Table 1 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 WC's	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.

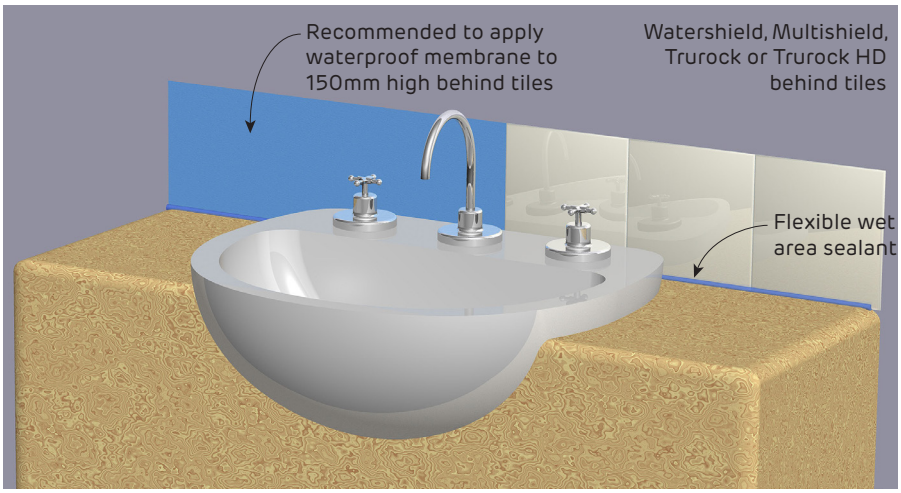


FIGURE 1 Basin

Waterproofing Requirements by Area

Water Resistant Walls
Use **water**shield, **multi**shield, **tru**rock or **tru**rock hd covered with a waterproof membrane and tiles.
For all plasterboard joints, corners and fastener heads use masta**base** or masta**longset**.
[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 have tiles over water resistant plasterboard 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.

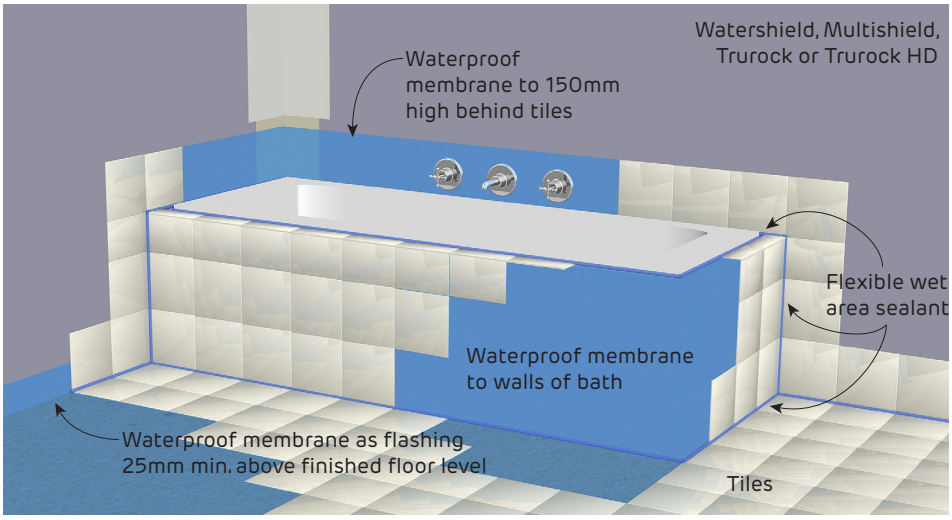


FIGURE 2 Bath (without shower) installation on timber flooring

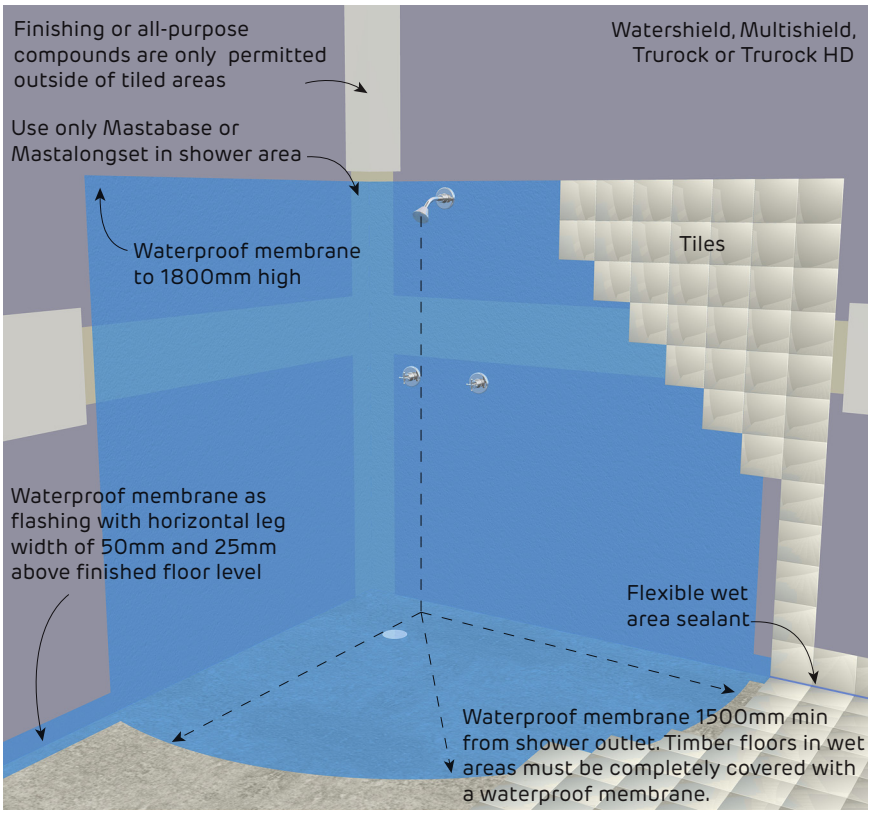


FIGURE 3 Internal in situ tray for unenclosed shower
On concrete or compressed fibre cement floor

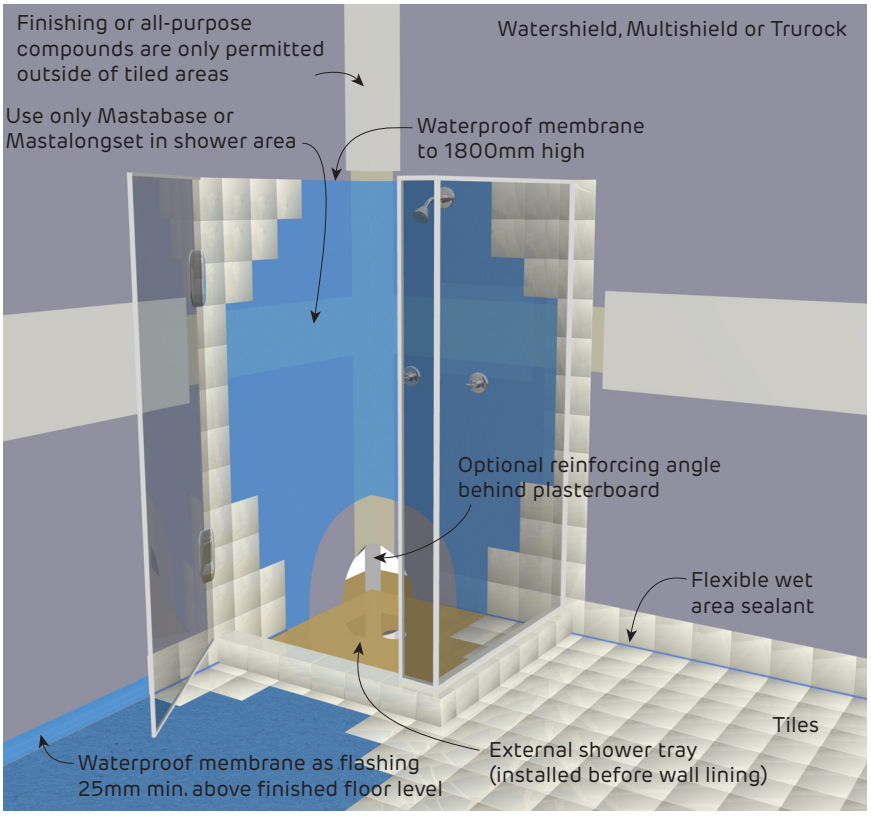


FIGURE 4 External tray for unenclosed shower
On timber flooring

General Requirements

For **water**shield refer to Section 3.1 non-fire rated requirements.
Waterproof all cut edges of **water**shield, **multi**shield, **tru**rock or **tru**rock hd that may be affected by moisture, including all penetrations and the bottom edge over a preformed shower base.
Only use paper tape and masta**base** or masta**longset** for jointing in tiled areas to strengthen the joint and provide a continuous surface for the waterproof membrane.
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.

- Masonry adhesive and stud adhesive are not permitted in tiled areas
- Frame movement should be limited at junctions in high risk areas such as showers. For this purpose use a minimum 35x35mm x 0.7mm BMT steel backing angle fixed to the frame in internal corners.

Framing

For internal steel framed walls refer to Section 3.1. For internal timber walls refer to Section 3.3.
For masonry walls lined with moisture resistant plasterboard and tiles, use the furring channel method. Refer to Section 3.4

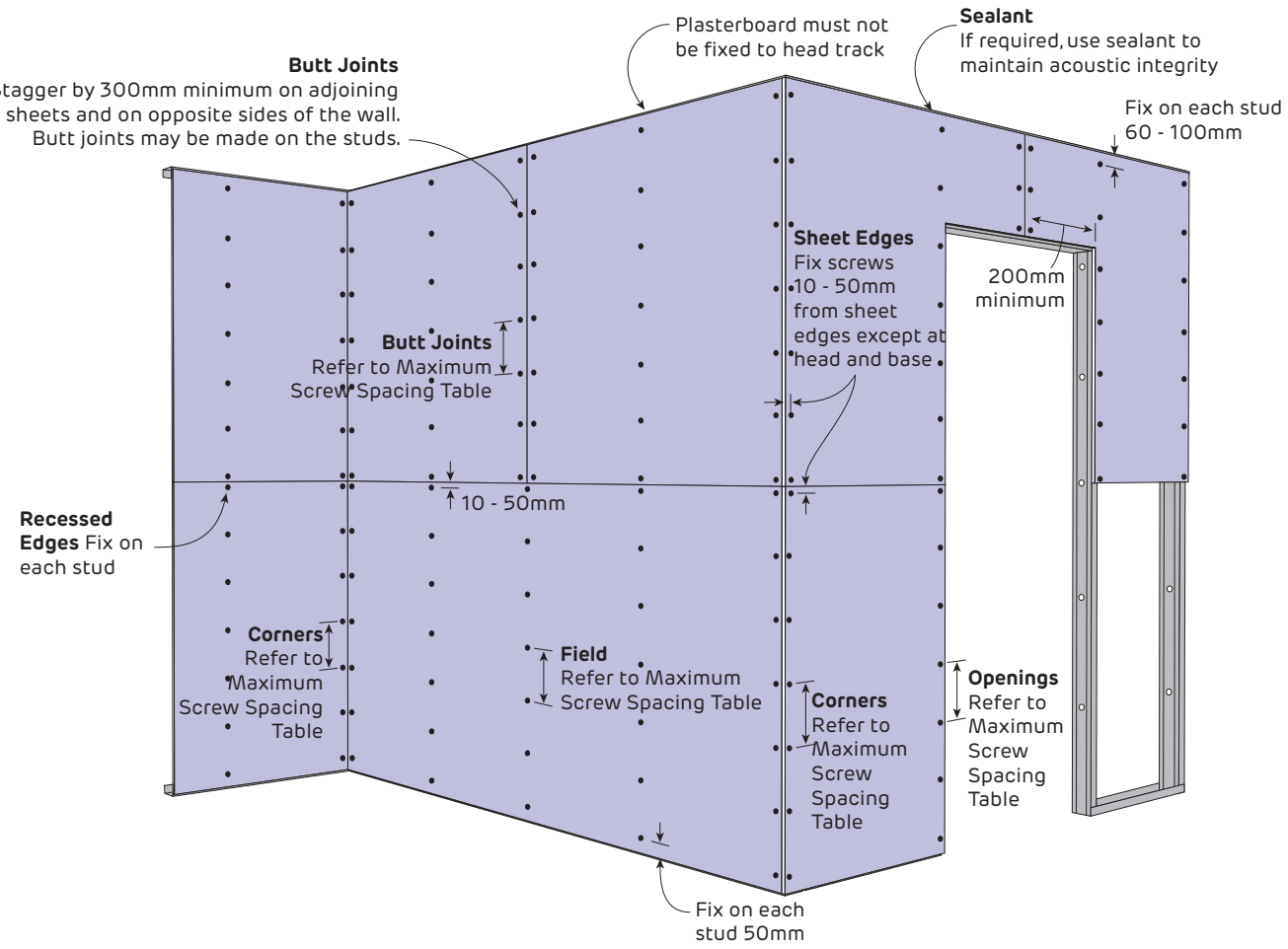
Plasterboard Layout

For **water**shield refer to Section 3.1 or 3.2 non-fire rated requirements.
For **multi**shield, **tru**rock or **tru**rock hd refer to Section 3.1 or 3.2 fire rated requirements.

Plasterboard Fixing

Use the 'Screw Only Method' in tiled or fire rated areas. Masonry or stud adhesives are not permitted.
Drive screws to just below the sheet surface, taking care not to break the paper linerboard. For over-driven screws, install another screw 20mm away. Leave or remove the over-driven screw and patch.
Laminating screws can be used to fix butt joints in the second and third layer.
Tiles weighing up to 22 kg/m² (porcelain 9mm thick) may be installed when fasteners are spaced at 200mm maximum centres.
Tiles weighing from 22 to 32 kg/m² may be installed when fasteners are spaced at 200mm maximum centres on studs at 450mm centres, or fasteners spaced at 100mm centres on studs at 600mm maximum centres.

FIGURE 5 Tiled Areas 1 Layer - Horizontal
Screw Only Method



Maximum Screw Spacing Table For Wet Area Walls (mm)

Tile Weight	Internal Wall Stud Spacing			
	600mm	450mm	400mm	300mm
Up to 22 kg/m² (9mm porcelain)	200	200	200	200
Up to 32 kg/m² (13mm porcelain)	100	200	200	200

Fixing Pattern Table

Sheet Width	Fixing Pattern for Screws at 200mm maximum	Fixing Pattern for Screws at 100mm maximum
600mm	S S S S (4)	S S S S S S S (7)
900mm	S S S S S S (6)	S S S S S S S S S S (10)
1200mm	S S S S S S S (7)	S S S S S S S S S S S S S (13)
1350mm	S S S S S S S S (8)	S S S S S S S S S S S S S S (14)
1400mm	S S S S S S S S (8)	S S S S S S S S S S S S S S S (15)

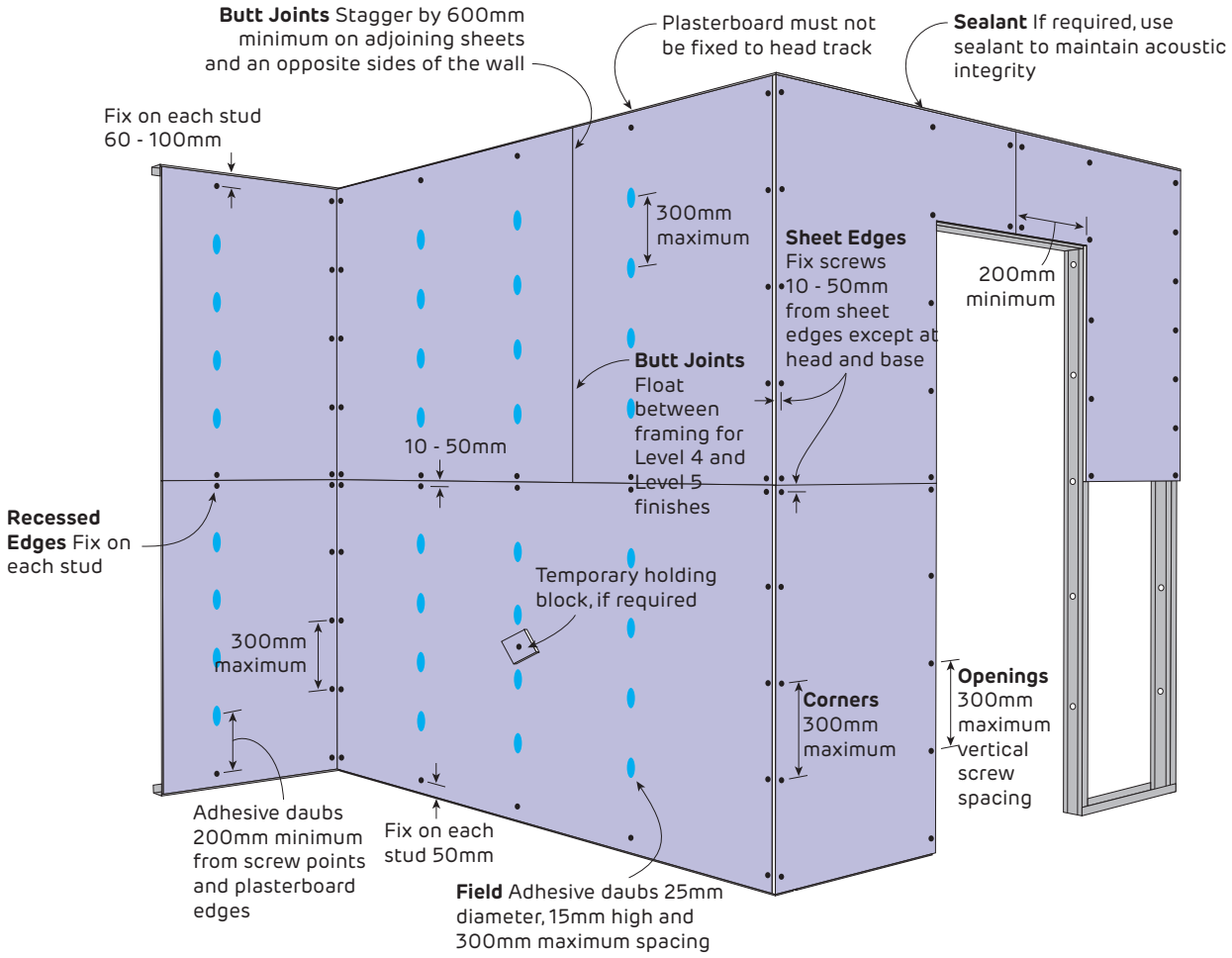
S = Screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Wall Stud Spacing			
	600mm	450mm	400mm	300mm
10mm	1.15	1.55	1.75	2.35
13mm	1.30	1.75	1.95	2.60
16mm	1.30	1.75	1.95	2.60

1. Calculations do not include the framing which must be independently designed to suit the desired loads.
2. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 6 Untiled Areas 1 Layer - Horizontal
Screw and Adhesive Method



Fixing Pattern Table

Sheet Width	Fixing Pattern
600mm	S A A S
900mm	S A A A S
1200mm	S A A A A S
1350mm	S A A A A A S
1400mm	S A A A A A S

S = Screw
A = Adhesive daub

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Wall Stud Spacing			
	600mm	450mm	400mm	300mm
10mm	0.95	1.30	1.45	1.95
13mm	1.10	1.45	1.65	2.20
16mm	1.10	1.45	1.65	2.20

1. Calculations do not include the framing which must be independently designed to suit the desired loads.
2. If higher internal wind pressures are expected, please contact Siniat for specific design.

Non-Fire Rated
Shower Wall Details

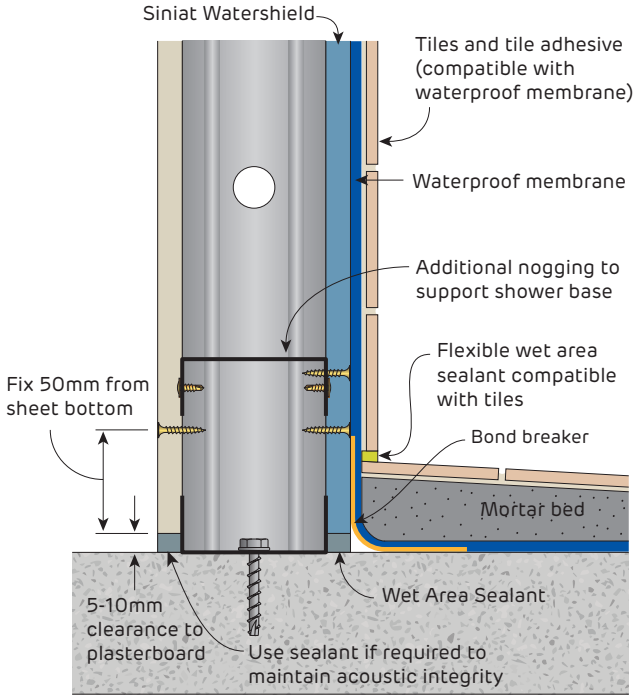


FIGURE 7 Shower Base
Internal in-situ shower tray
Class 2 membrane shown - Section

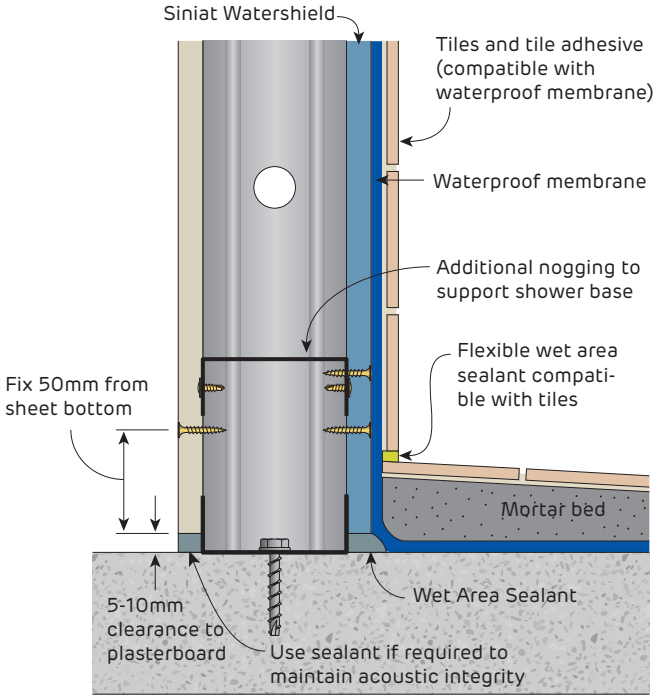


FIGURE 8 Shower Base
Internal in-situ shower tray
Class 3 membrane shown - Section

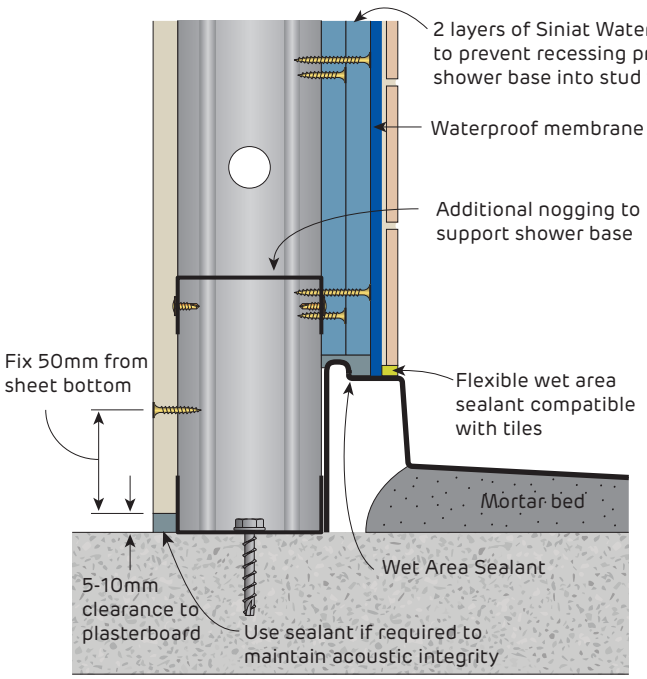


FIGURE 9 Shower Base
Pre-formed shower tray - Section

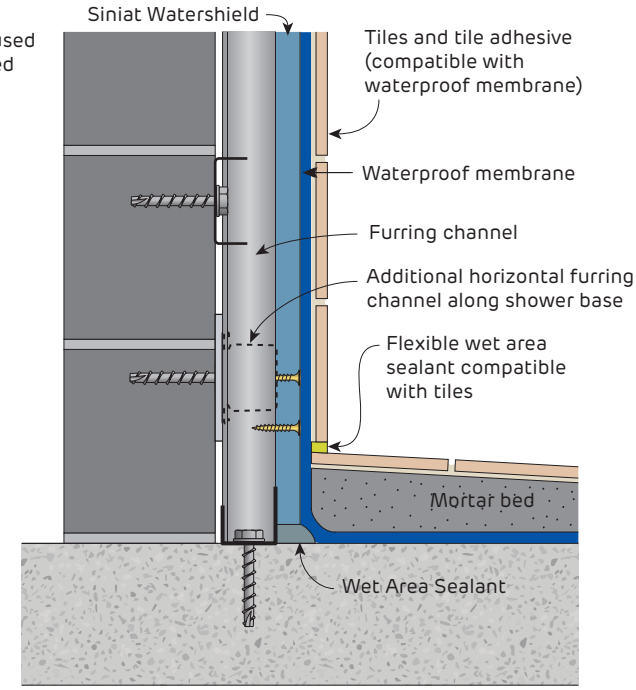


FIGURE 10 Shower Base over Masonry Wall
Internal in-situ shower tray
Class 3 membrane shown - Section

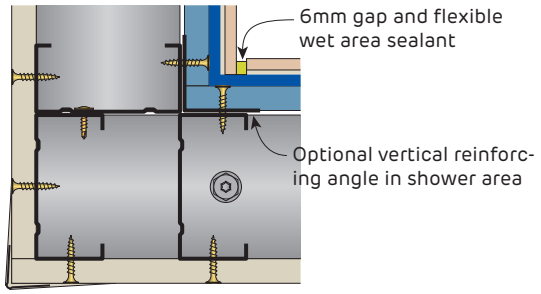


FIGURE 11 Shower Corner
Plan

Refer to proprietary waterproof membrane manufacturer for specific application instructions.

Non-Fire Rated
Bath Details

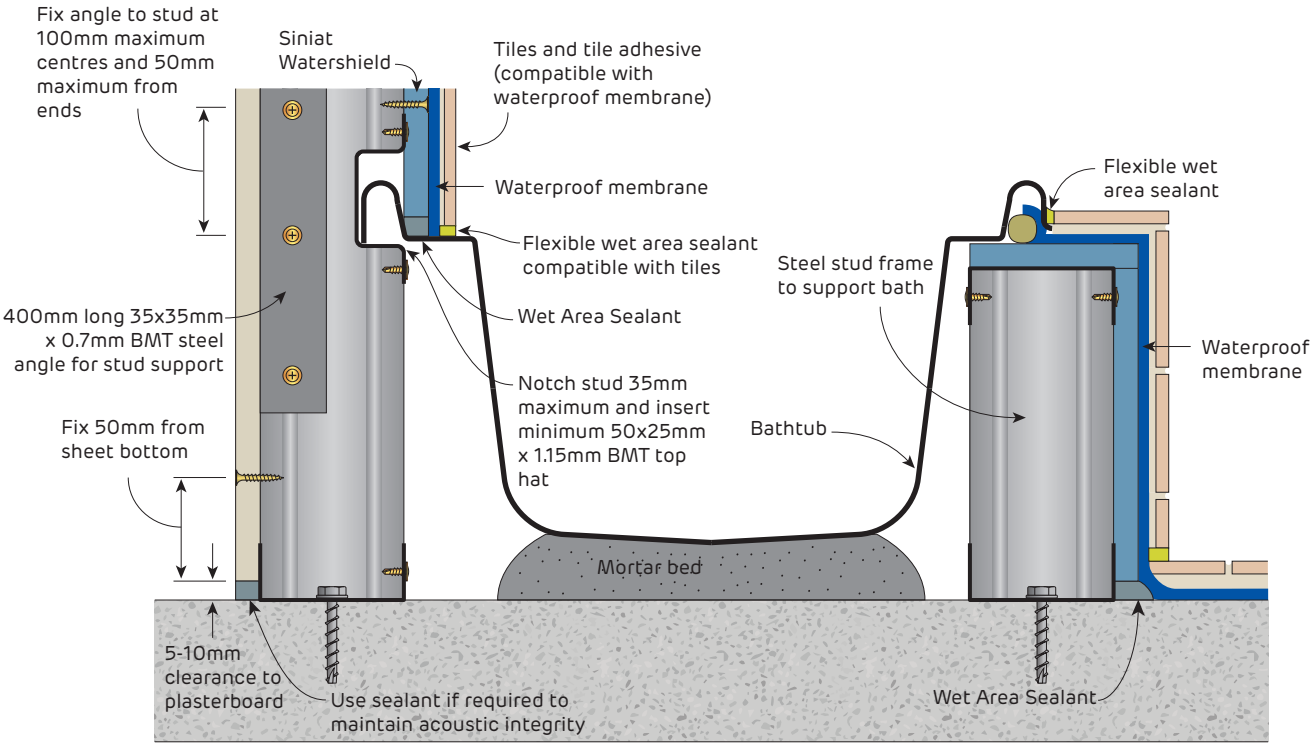


FIGURE 12 Bathtub
Section

Refer to proprietary waterproof membrane manufacturer for specific application instructions.

Non-Fire Rated
General Wet Area Details

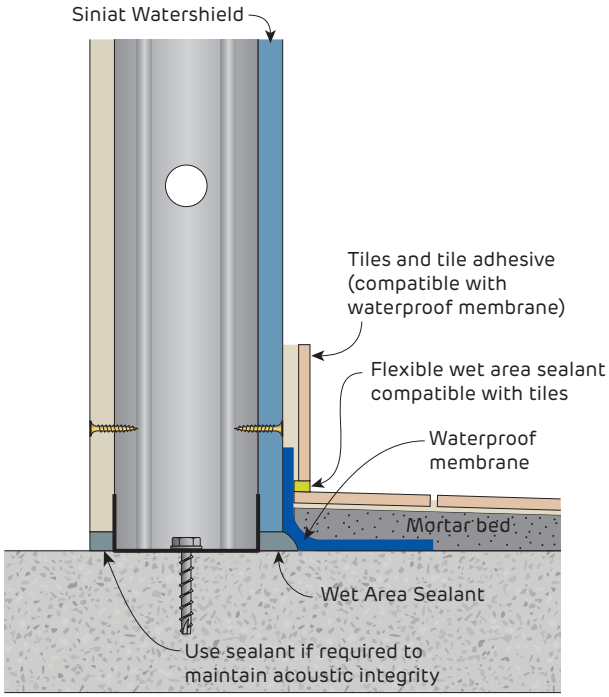


FIGURE 13 Wall Base in General Wet Area
Outside shower - Class 3 membrane shown
Section

Fire Rated
Shower Wall Details

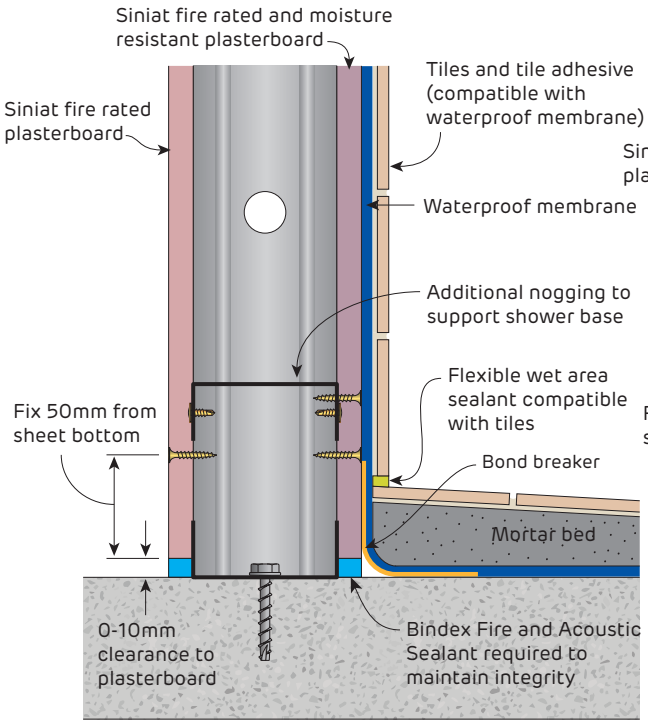


FIGURE 14 Shower Base
Internal in-situ shower tray
Class 2 membrane shown - Section

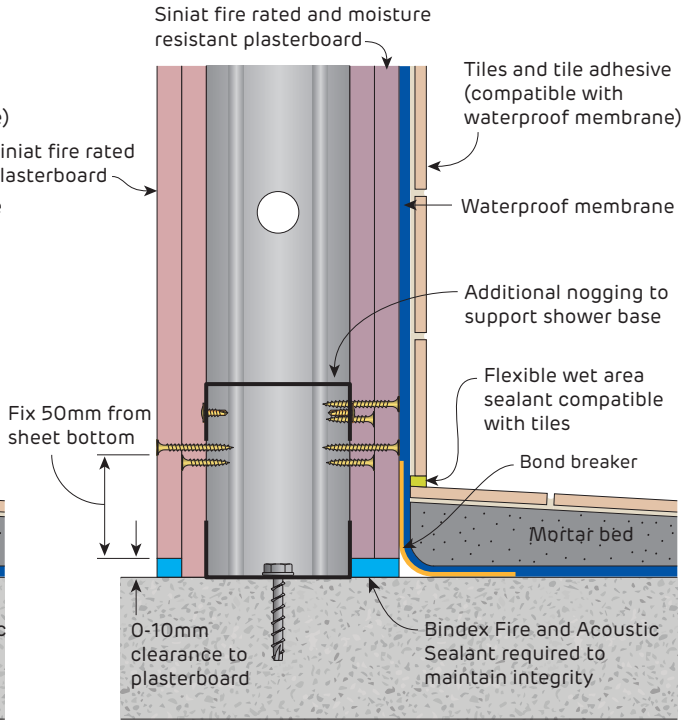


FIGURE 15 Shower Base
Internal in-situ shower tray
Class 2 membrane shown - Section

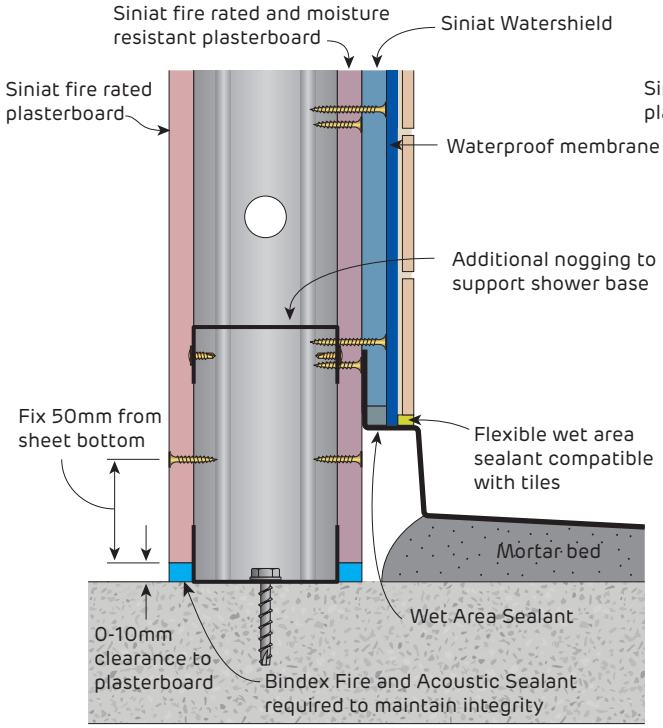


FIGURE 16 Shower Base
Pre-formed shower tray with upstand
Section

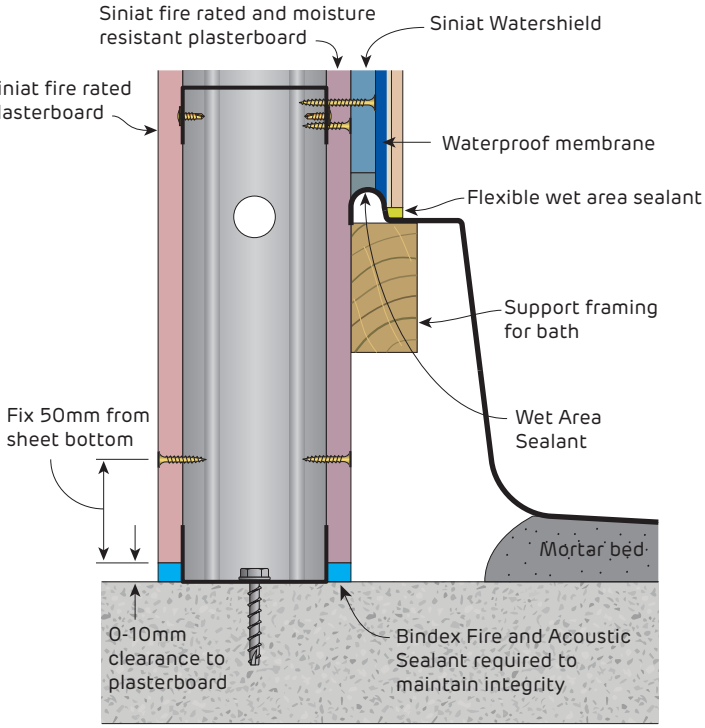


FIGURE 17 Bathtub
Section

Refer to proprietary waterproof membrane manufacturer for specific application instructions.

For fire rated penetration details, refer to Section 3.1 or 3.2