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 areas may be achieved by systems using water resistant plasterboards such as WaterShield or TruRock.

This section contains:
- Installation instructions for wet area walls.
- Waterproofing treatment methods for WaterShield and TruRock 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.

**WET AREA INSTALLATION REQUIREMENTS**

<table>
<thead>
<tr>
<th>Area</th>
<th>Level of Risk</th>
<th>Walls</th>
<th>Junctions</th>
<th>Penetrations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shower area</td>
<td>High</td>
<td>Water Resistant</td>
<td>Waterproof</td>
<td>Waterproof</td>
</tr>
<tr>
<td>Bathrooms</td>
<td>Medium</td>
<td>–</td>
<td>Waterproof*</td>
<td>–</td>
</tr>
<tr>
<td>Areas adjacent to baths and spas</td>
<td>Medium</td>
<td>Water Resistant</td>
<td>Waterproof</td>
<td>Waterproof*</td>
</tr>
<tr>
<td>Walls adjoining other vessels</td>
<td>Low</td>
<td>Water Resistant</td>
<td>Waterproof</td>
<td>Waterproof*</td>
</tr>
<tr>
<td>Laundries and WCs</td>
<td>Low</td>
<td>–</td>
<td>Waterproof*</td>
<td>–</td>
</tr>
<tr>
<td>Bathrooms and laundries requiring a floor waste</td>
<td>High</td>
<td>–</td>
<td>Waterproof*</td>
<td>Waterproof</td>
</tr>
</tbody>
</table>

* Including mechanical fixings or fasteners.

*^ Applies to wall/floor junctions only.

* Horizontal surface waterproof, vertical surface water resistant.

![FIGURE 1 Basin](https://www.knaufmetal.com.au)

Waterproof membrane to 150mm high behind tiles

WaterShield or TruRock

Flexible wet area sealant
Waterproofing Requirements by Area

**Water Resistant Walls**

Use **WaterShield** or **TruRock** covered with a waterproof membrane and tiles.

For all plasterboard joints, corners and fastener heads use **MastaBase** or **MastaLongset**.

[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.

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**FIGURE 2 Bath (without shower) installation on timber flooring**
3.1.4 WET AREAS USING PLASTERBOARD

Waterproofing Requirements

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

**FIGURE 4** External tray for enclosed shower on timber flooring
General Requirements

For **WaterShield** [Refer to Section 3.1.1 non-fire rated requirements]

For **TruRock** [Refer to Section 3.1.1 fire rated requirements]

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

Only use paper tape and **MastaBase** or **MastaLongset** 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.

**Framing**

For internal steel walls [Refer to Section 3.1.1].

Masonry walls lined with tiles on **WaterShield** or **TruRock** must use the furring channel method.

For masonry walls with plasterboard [Refer to Section 3.1.3]

**Plasterboard Layout**

For **WaterShield** [Refer to Section 3.1.1 non-fire rated requirements]

For **TruRock** [Refer to Section 3.1.1 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.

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.
3.1.4 WET AREAS USING PLASTERBOARD
Plasterboard Fixing

FIGURE 5 WaterShield in Tiled Areas 1 Layer – Horizontal
Screw Only Method

Butt Joints Fix at 200mm max centres. Stagger by 300mm min on adjoining sheets and on opposite sides of the wall.

Recessed Edges Fix on each stud.

Sheet Edges Fix screws 10 - 50mm from sheet edges except at head and base tracks.

Corners 200mm max

Openings 200mm max vertical screw spacing.

Field 200mm max

Sealant If required, use sealant to maintain acoustic integrity

Fix on each stud 60 - 100mm

Fix on each stud 50mm

FIGURE 6 WaterShield in Untiled Areas 1 Layer – Horizontal
Screw and Adhesive Method

Butt Joints Stagger by 600mm min on adjoining sheets and an opposite sides of the wall.

Recessed Edges Fix on each stud.

Sheet Edges Fix screws 10 - 50mm from sheet edges except at head and base tracks.

Corners 300mm max

Openings 300mm max vertical screw spacing.

Field Adhesive daubs 25mm diameter, 15mm high and 300mm max spacing

Adhesive daubs 200mm min from screw points and plasterboard edges

Temporary holding block, if required

Tile Weights
Tiles weighting up to 22 kg/m² (porcelain 9mm thick) use, screws at 200mm maximum centres when studs are at 400mm centres.
Tiles weighing from 22 to 32 kg/m² use, screws at 200mm maximum centres when studs are at 450mm centres, or screws at 100mm maximum centres when studs are at 600mm centres.

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

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NON-FIRE RATED

SHOWER WALL DETAILS

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

- Sealant, if required to maintain acoustic integrity
- Flexible wet area sealant
- Additional nogging to support shower base
- Tiles and tile adhesive (compatible with waterproof membrane)
- Knauf WaterShield

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

- Sealant, if required to maintain acoustic integrity
- Flexible wet area sealant
- Additional nogging to support shower base
- Tiles and tile adhesive (compatible with waterproof membrane)
- Knauf WaterShield

FIGURE 9 Shower Base
Pre-formed shower tray - Section

- 2 layers of Knauf WaterShield used to prevent recessing pre-formed shower base into stud work
- Flexible wet area sealant
- Sealant, if required to maintain acoustic integrity
- Knauf WaterShield

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

- Sealant, if required to maintain acoustic integrity
- Flexible wet area sealant
- Furring channel
- Additional horizontal furring channel along shower base
- Tiles and tile adhesive (compatible with waterproof membrane)
- Knauf WaterShield

Optional vertical reinforcing angle in shower area

Refer to proprietary waterproof membrane manufacturer for specific application instructions.
3.1.4 WET AREAS USING PLASTERBOARD

Construction Details

NON-FIRE RATED

BATH DETAILS

- Fix angle to stud at 100mm max centres and 50mm max from ends.
- Notch stud 35mm max and insert minimum 50x25, 1.15mm BMT top hat.
- 400mm long 35x35, 0.7mm BMT steel angle for stud support.
- Steel stud frame to support bath.
- Mortar bed: 5-10mm clearance to plasterboard.
- Sealant, if required to maintain acoustic integrity.

Tiles and tile adhesive (compatible with waterproof membrane)

Flexible wet area sealant

Waterproof membrane

FIGURE 12 Bathtub Section

NON-FIRE RATED

GENERAL WET AREA DETAILS

- Fix 50mm from sheet bottom.
- Refer to proprietary waterproof membrane manufacturer for specific application instructions.

Tiles and tile adhesive (compatible with waterproof membrane)

Flexible wet area sealant

Waterproof membrane

FIGURE 13 Wall Base in General Wet Area

Outside shower - Class 3 membrane shown

Section
FIRE RATED

SHOWER WALL DETAILS

Refer to propriety waterproof membrane manufacturer for specific application instructions.

For fire rated penetration details, refer to Section 3.1.1