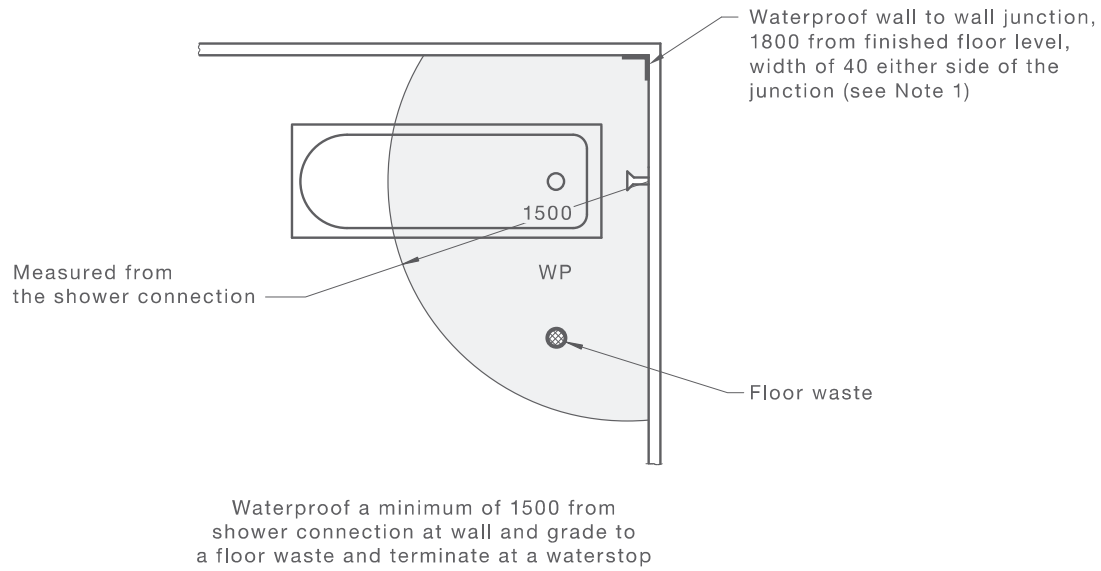
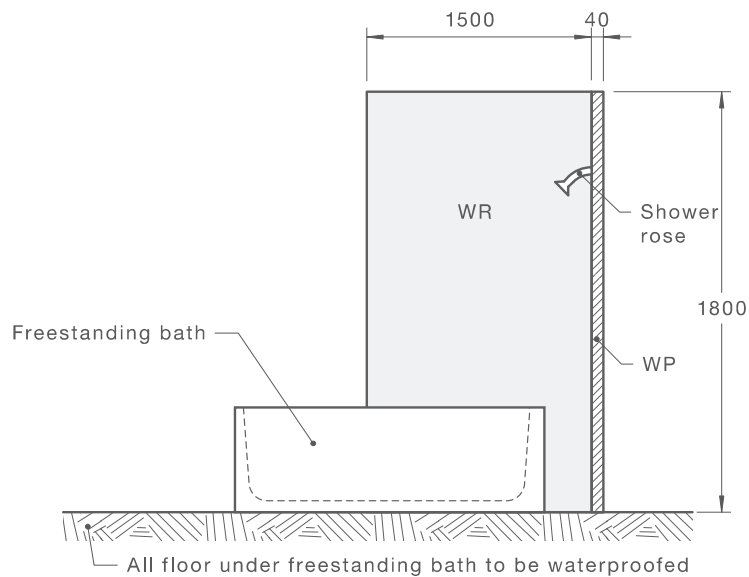


A1



(a) Plan view



(b) Elevation

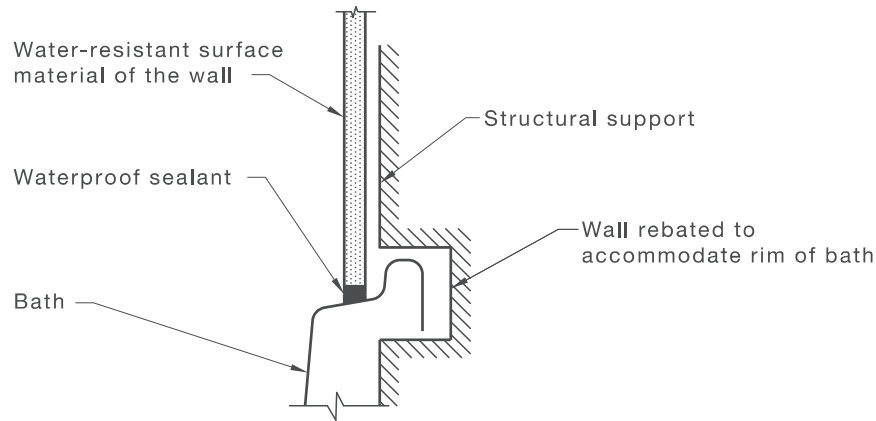
NOTES:

- 1 Waterproofing of all wall junction is only required if shower rose is located within 1500 from junction.
- 2 All floor waterproofing to terminate at a waterstop.
- 3 For timber floors, entire floor to be waterproofed.

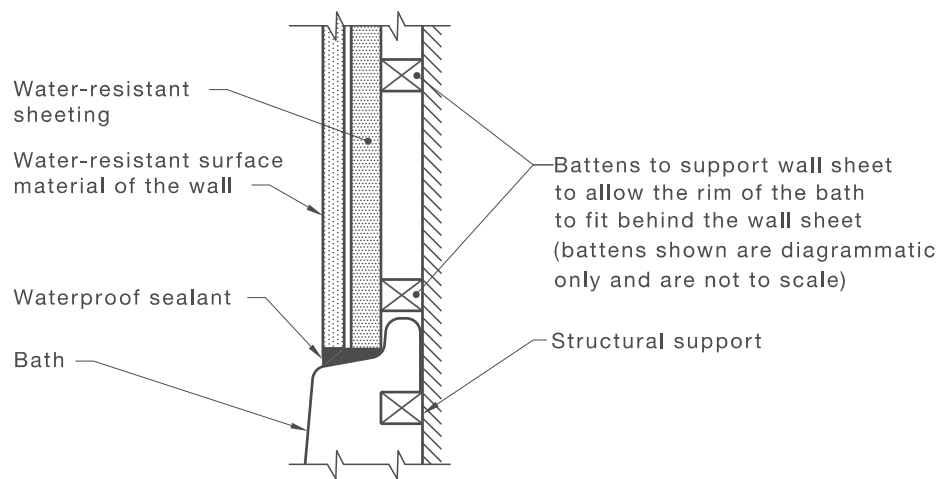
DIMENSIONS IN MILLIMETRES

FIGURE 3.1A FREESTANDING BATHS

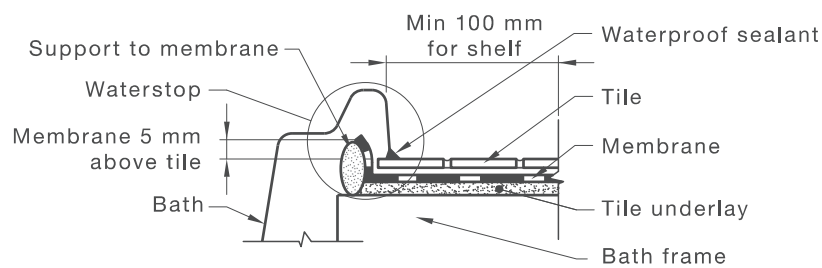
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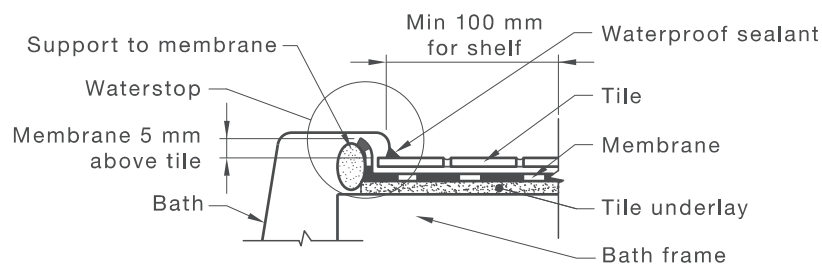
(a) Bath/wall junction—Recessed



(b) Bath/wall junction—Battened



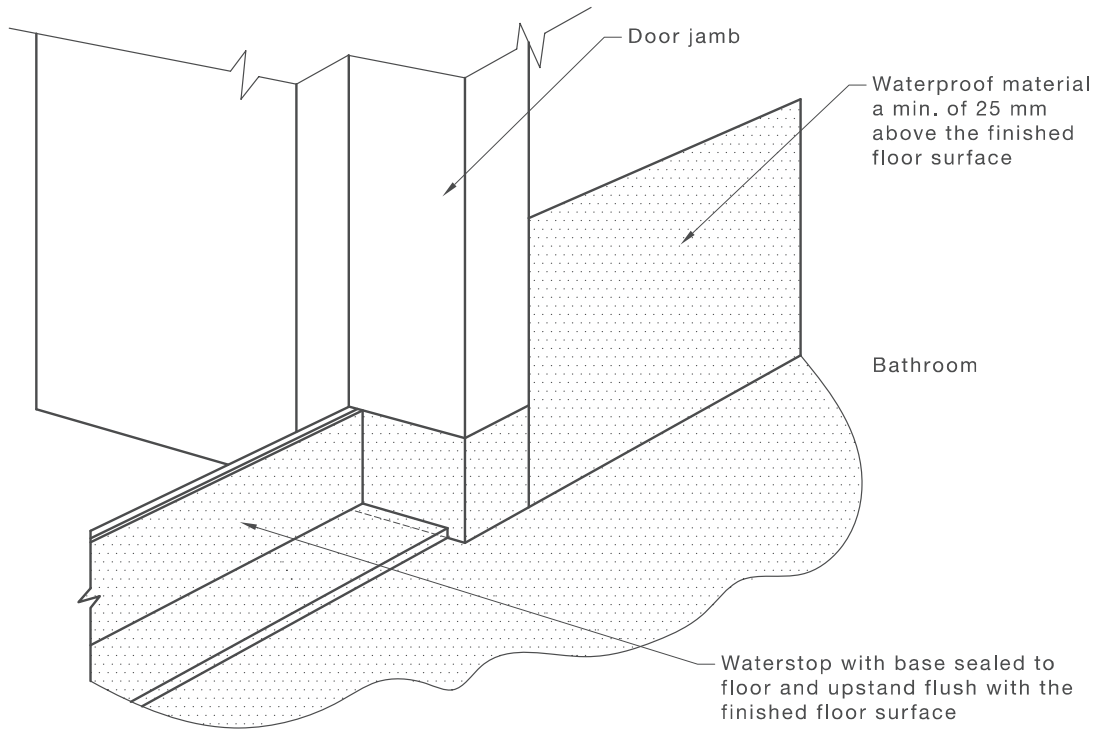
(i) Bath with rim



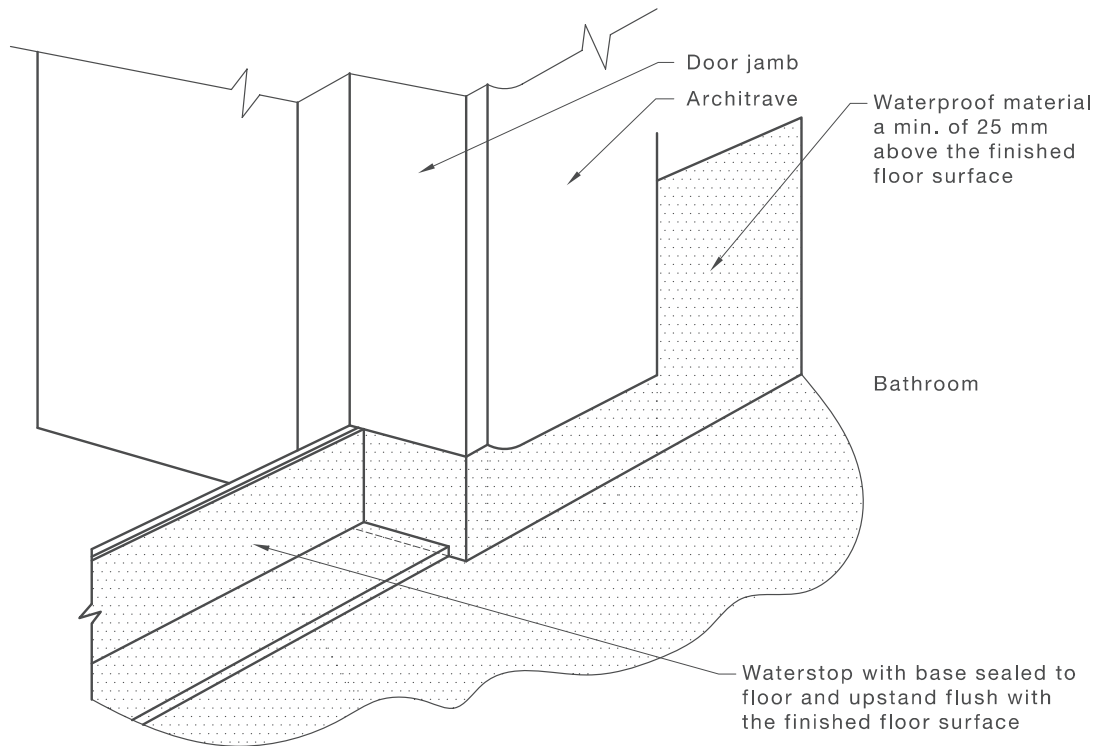
(ii) Bath without rim

(c) Bath/shelf junction (insert bath)

FIGURE 3.2 TYPICAL BATH JUNCTIONS



(a) Prior to installation of architrave



(b) After installation of architrave

FIGURE 3.3 TYPICAL BATHROOM DOOR DETAIL FOR WHOLE BATHROOM WATERPROOFING

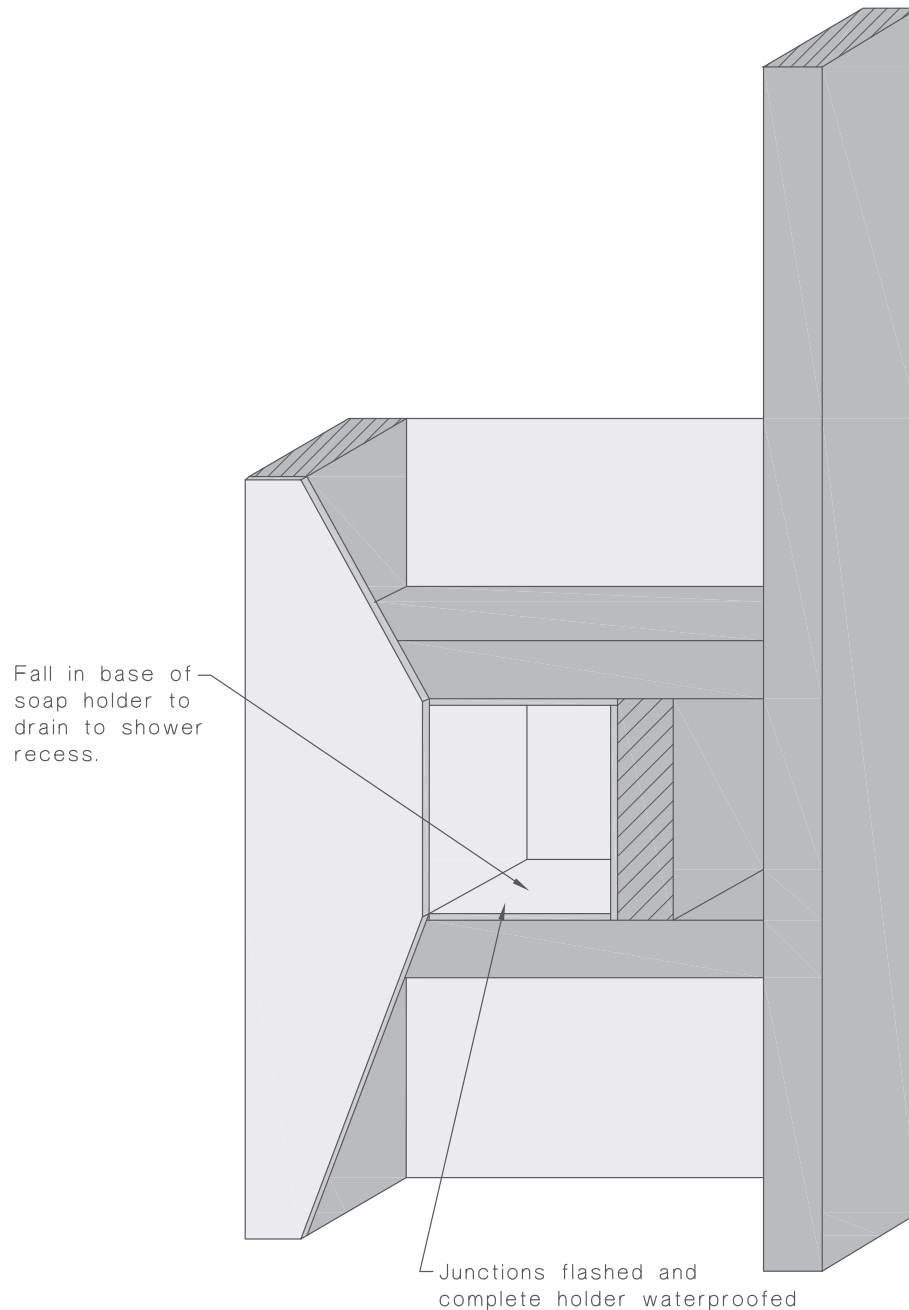


FIGURE 3.4 TYPICAL DETAIL FOR RECESSED SOAP HOLDERS

3.10.2 Tap penetrations through horizontal surfaces

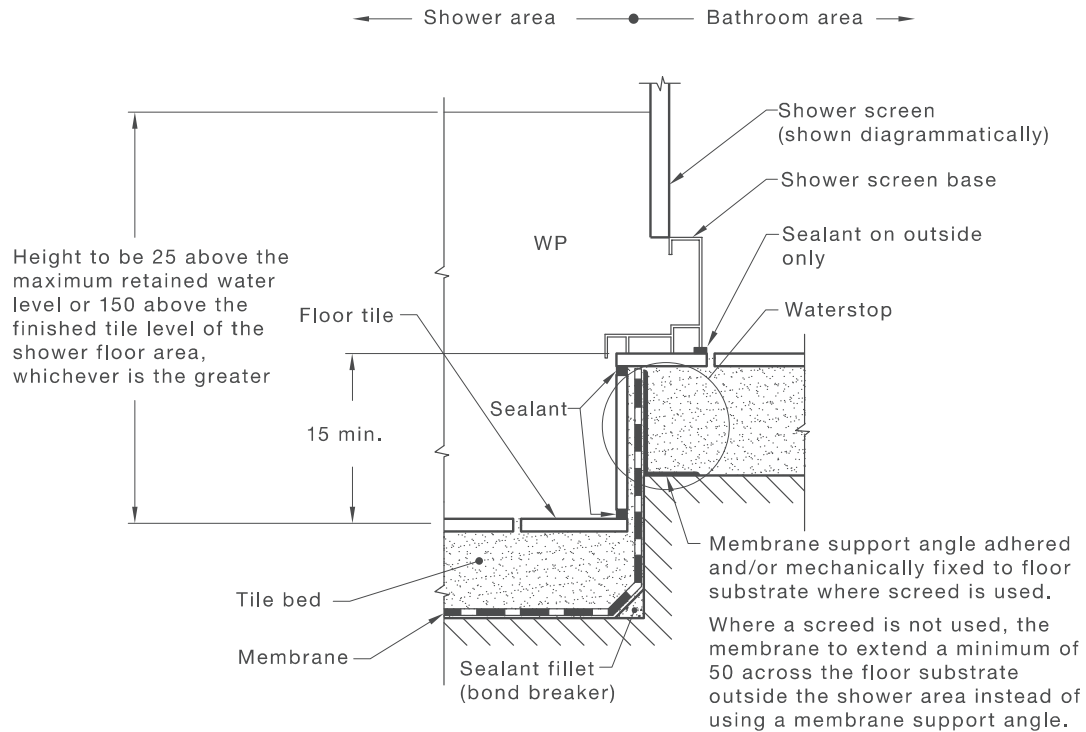
Tap penetrations on horizontal surfaces surrounding baths and spas shall be waterproofed by sealing with proprietary flange systems or the tap body to the membrane, or substrate where a membrane is not required.

3.11 REQUIRED FLOOR WASTES FOR WET AREA FLOORS

Where a floor waste is required, the floor finish shall be constructed so that water flows to the waste without water being retained on the finished surface with the exception of residual water remaining due to surface tension.

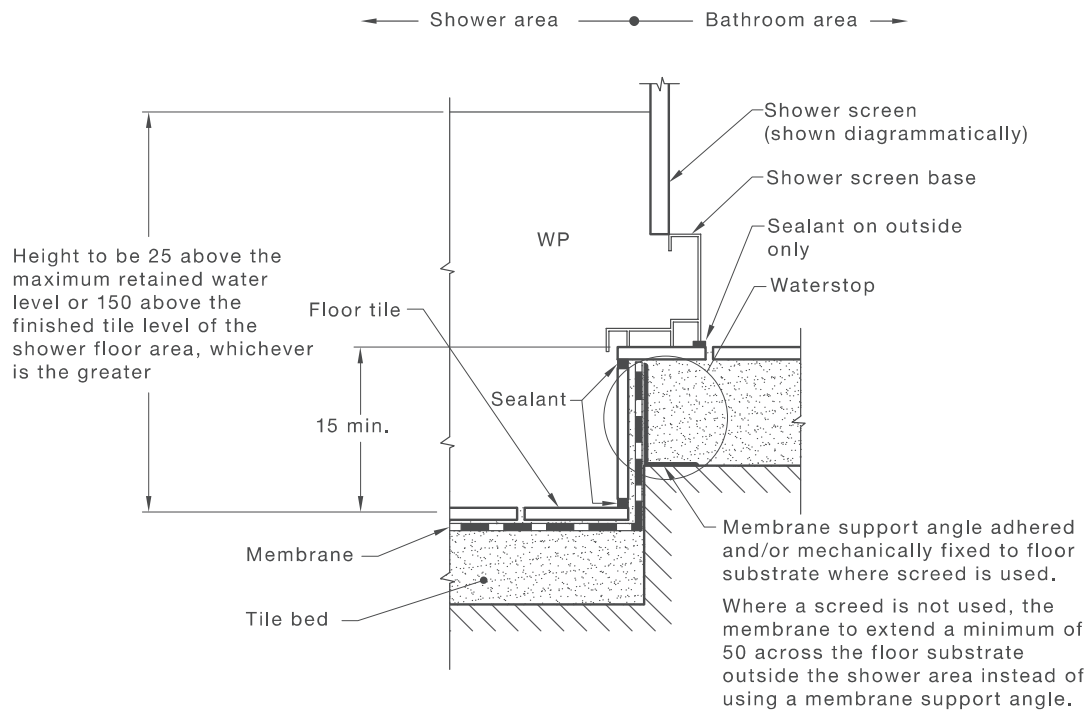
NOTE: For additional information on floor gradients, see Appendix B.

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(a) Enclosed shower—Membrane below tile bed

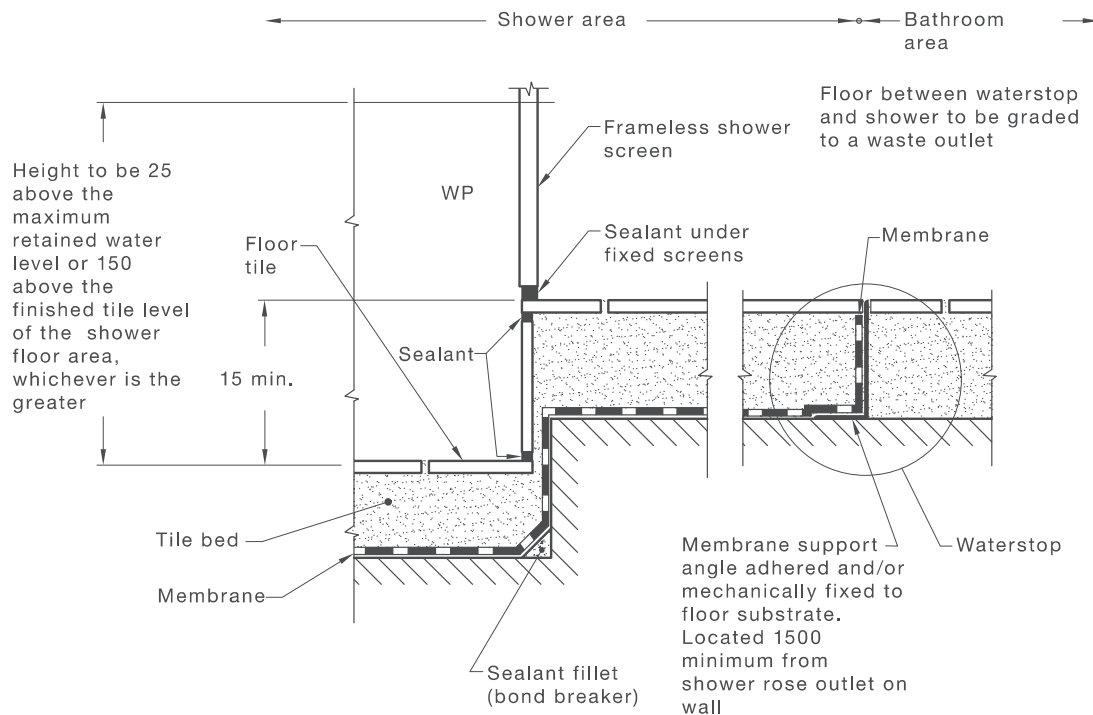
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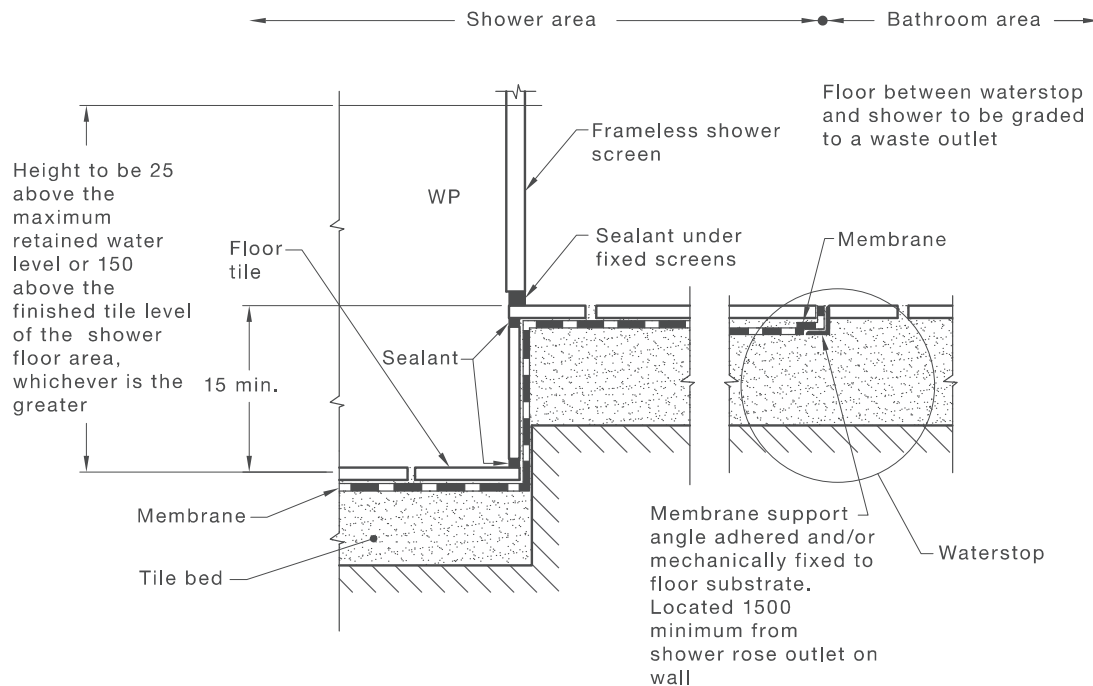
(b) Enclosed shower—Membrane above tile bed

DIMENSIONS IN MILLIMETRES

FIGURE 3.5 (in part) TYPICAL STEPPED DOWN SHOWER CONSTRUCTION



(c) Unenclosed shower—Membrane below tile bed



(d) Unenclosed shower—Membrane above tile bed

DIMENSIONS IN MILLIMETRES

FIGURE 3.5 (in part) TYPICAL STEPPED DOWN SHOWER CONSTRUCTION

3.13.3 Hob construction

Substrate for hobs shall be constructed of masonry, concrete, corrosion-resistant metal or similar material. Autoclaved aerated concrete may be used for internal membrane systems but shall not be used for external membrane systems. Where used, autoclaved aerated concrete shall be primed before the application of the membrane. All gaps, joints and intersections of the hob substrate shall be made flush before application of the membrane. The hobs shall be adequately secured to the floor and sealed against the wall prior to applying an internal membrane.

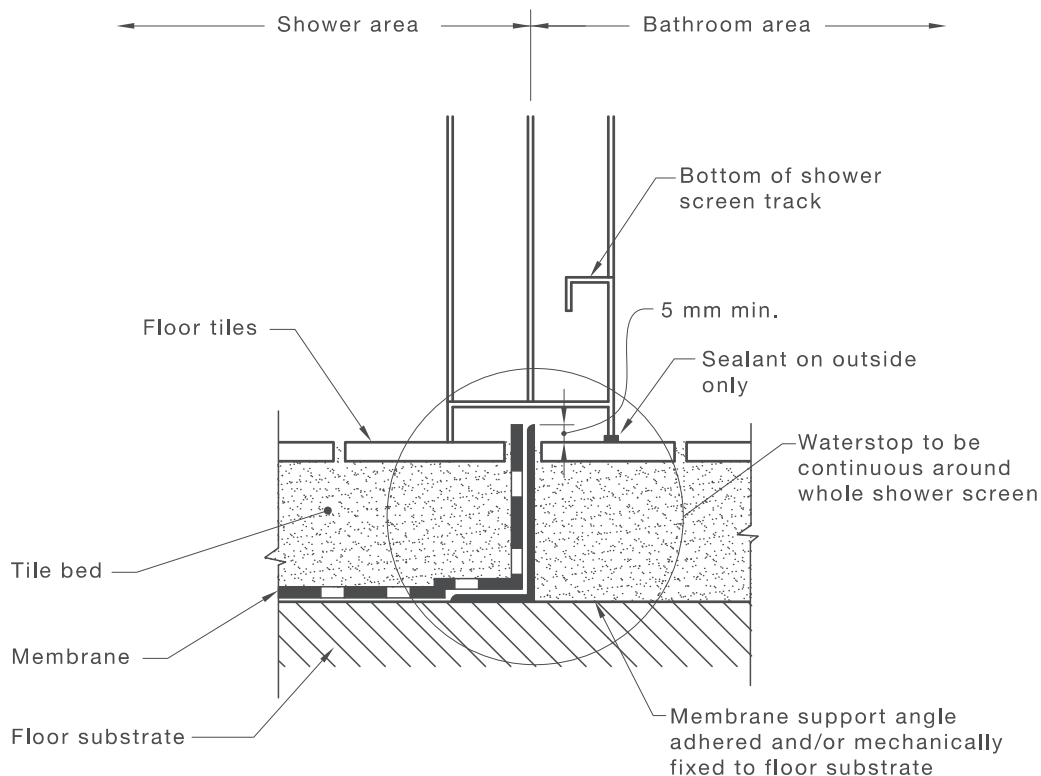
Timber shall not be used for hob construction.

3.13.4 Enclosed showers without hobs or set-downs

At the extremity of the shower area—

- (a) where a shower screen is to be installed, a water stop shall be positioned so that its vertical leg will finish a minimum of 5 mm above the finished floor level (see Figure 3.6); and
- (b) where the water stop intersects with a wall or is joined, the junction shall be waterproof.

NOTE: For a typical hobless construction, see Figure 3.6.



NOTE: Some shower screen extrusions may not permit the water stop extending into a rebate. A channel section may be needed to be installed over the water stop angle with the shower screen placed on top of the channel including return panels.

FIGURE 3.6 TYPICAL HOBLESS CONSTRUCTION

3.13.5 Unenclosed showers

This Clause sets out requirements for two types of unenclosed showers, as follows.

NOTE: See also Clause 3.18.1.1.

- (a) *Type 1* A Type 1 unenclosed shower has a device that will restrict splashing during use (see Note 1).

A water stop shall be placed under the device and across the opening of the shower of a Type 1 shower screen.

NOTES:

- 1 A example of a Type 1 unenclosed shower is a frameless glass shower screen.
- 2 It is advisable to have either the screed drained or a membrane placed on the top of the screed to prevent water retention in the screed beyond the water stop.

- (b) *Type 2* A Type 2 unenclosed shower does not have a device that will restrict splashing.

NOTE: An example of a Type 2 unenclosed shower is a shower for people with disabilities.

The water stop of a Type 2 shower shall be a distance of a minimum of 1500 mm from the wall connection of the shower rose.

For Type 1 and Type 2 unenclosed showers, the water stop shall have the vertical leg finish flush with the finish surface of the floor and, where the water stop intersects with or joins a wall, the junction shall be waterproof.

NOTE: If absorbent types of stone are used for flooring, they may discolour from shower water out to 1500 mm water stop. Efflorescence may also form in tile joints outside the shower area, and building elements such as vanity skirtings on the floor within the water stop area may deteriorate.

3.13.6 Additional requirements for bath end walls abutting a shower

Where a bath end wall is within a shower area, it shall be treated as a shower area wall.

3.13.7 Bond breaker installation for bonded membranes

Bond breakers shall be included at all wall/floor, hob/wall junctions and at movement joints where the membrane is bonded to the substrate. Bond breakers shall be of the type compatible with the flexibility class of the membrane to be used.

NOTES:

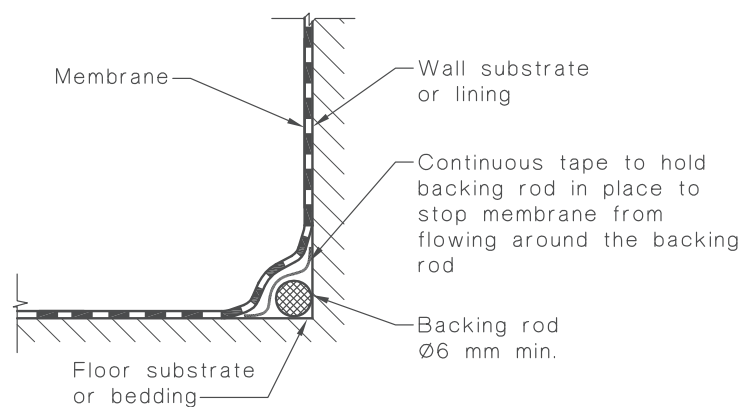
- 1 For appropriate bond breakers, see Table 3.2.
- 2 Typical details for bond breakers are shown in Figure 3.7.
- 3 Additional information on bond breakers is given in Appendix A.

TABLE 3.2
APPROPRIATE BOND BREAKER

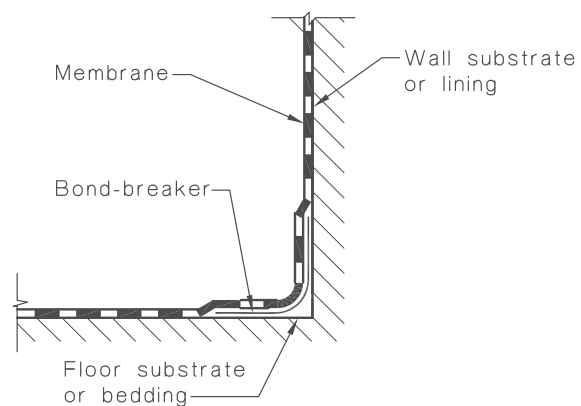
Membrane class	Elongation at break	Minimum bond breaker/tape width to bridge joints opening up by 5 mm
I	<60%	75 mm with backing rod
II	60% to 300%	35 mm
III	>300%	12 mm

NOTES:

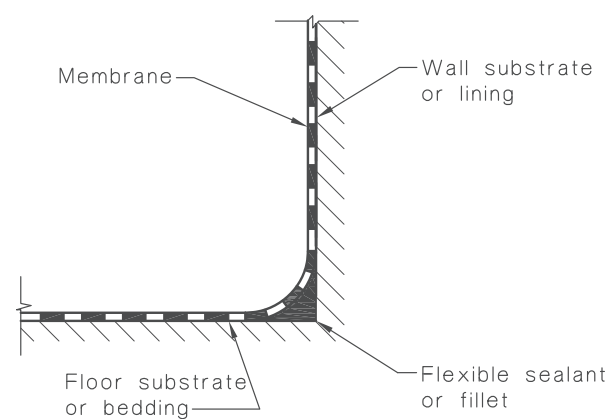
- 1 Bond breakers for Class I membranes (low extensibility) allow the membrane to flex rather than stretch.
- 2 Bond breakers for Class II membranes (medium extensibility) allow the membrane to stretch. If a tape is used as a bond breaker, either the membrane will not bond to the tape or the tape will have elastic properties similar to the membrane; for example, for a Class II membrane, a 35 mm wide bond breaker/tape should be applied over a joint to accommodate the joint opening up by up to 5 mm.
- 3 Bond breakers for Class III membranes (high extensibility) allow the membrane to have even thickness.



(a) Class I membrane



(b) Class II membrane



(c) Class III membrane

FIGURE 3.7 TYPICAL BOND BREAKER DETAILS

3.13.8 Vertical membrane termination

The membrane shall be applied over the floor substrate and up the vertical face of the wall—

- (a) for showers with hobs and step-downs, a minimum height of 150 mm above the finished tile level of the floor or 25 mm above the maximum retained water level, whichever is the greater;
- (b) for hobless showers, a minimum height of 150 mm above the highest finished tile level of the floor within the shower area; and
- (c) for vertical flashing in shower areas, as specified in Clause 3.9.2.

3.14 MEMBRANE TO DRAINAGE CONNECTION

3.14.1 Termination to a drainage flange

For membrane drainage connections in other floors, any one of the following shall apply:

- (a) A drainage flange shall be installed with the waterproofing membrane terminated at/in the drainage flange to provide a waterproof connection.

NOTES:

- 1 For typical membrane termination at drainage outlet, see Figure 3.8.
 - 2 Drainage flanges may be set into the floor or fixed to the top surface of the floor substrate or tile bed.
- (b) Where a prefabricated shower tray is used, provision shall be made to drain the tile bed and provide a waterproof connection to the drain.

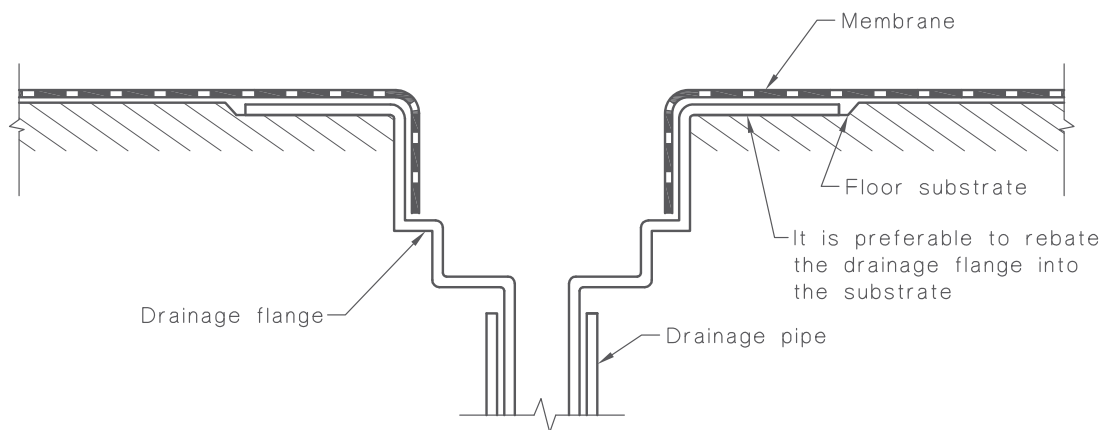


FIGURE 3.8 TYPICAL MEMBRANE TERMINATION AT DRAINAGE FLANGE

3.14.2 Floor waste

The floor waste shall be of sufficient height to suit the thickness of the tile and tile bed at the outlet position. The drainage flange/floor waste shall drain at the membrane level.

3.14.3 Termination to a drainage channel

The waterproof drainage shall be continuous for the membrane into the drainage outlet. Where the drainage channel does not have an integral horizontal surface of 50 mm for termination of the membrane, the membrane shall be continuous underneath the drainage channel, terminating at a recessed drainage flange.

NOTE: For a typical application of a membrane termination to a drainage channel, see Figure 3.9.

When the drainage channels are installed against a wall, they shall not compromise the waterproofing requirements of the wall/floor junctions.

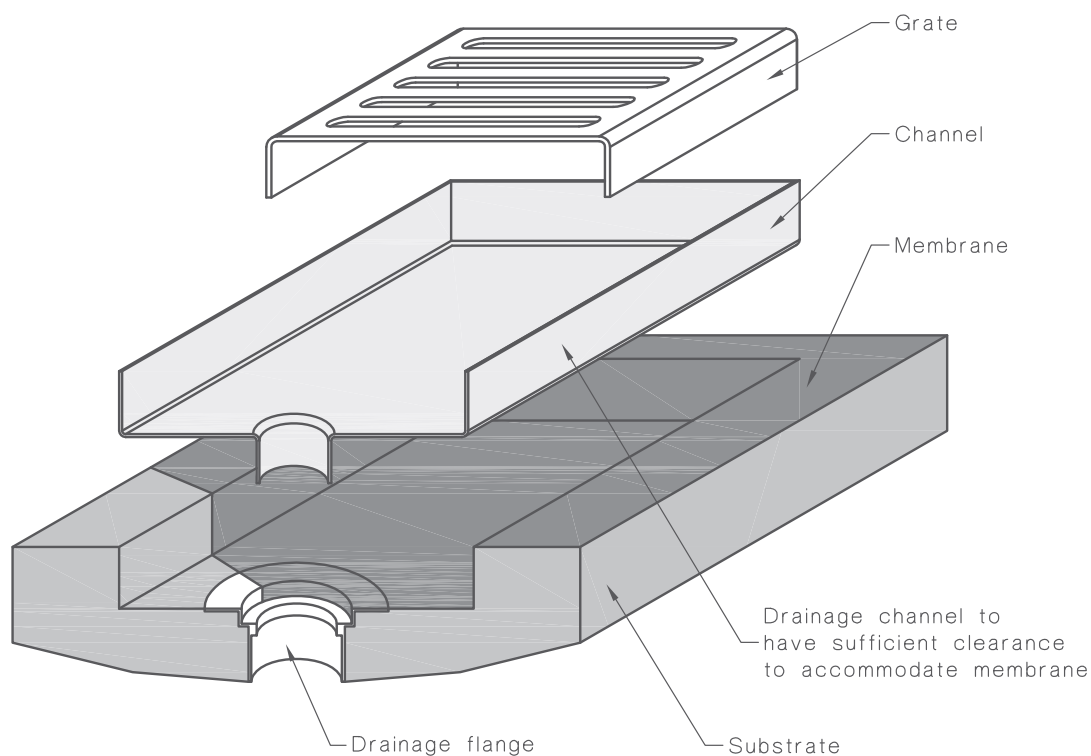


FIGURE 3.9 TYPICAL MEMBRANE TERMINATION AT DRAINAGE CHANNEL

3.15 INSTALLATION OF AN INTERNAL MEMBRANE

3.15.1 Membrane application

3.15.1.1 General

In addition to the requirements of Clauses 3.12 and 3.13, the requirements of this Clause shall apply also for internal membranes.

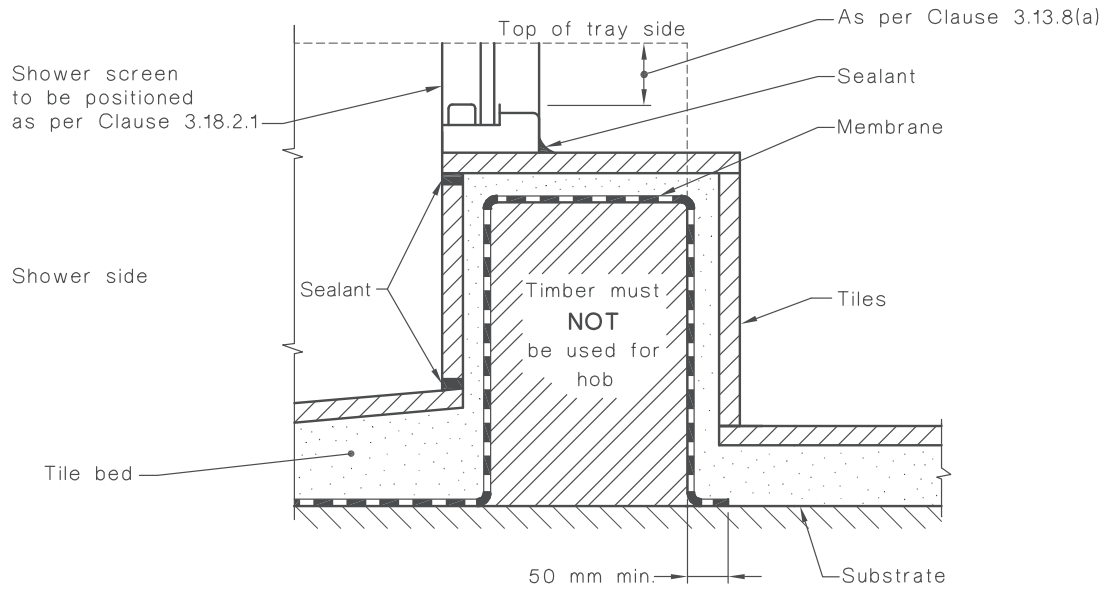
3.15.1.2 Termination of membranes at showers with hobs

With the exception of metal angle hobs, the membrane shall be brought up over the top of the hob, down the outside face and terminate a minimum 50 mm onto the floor.

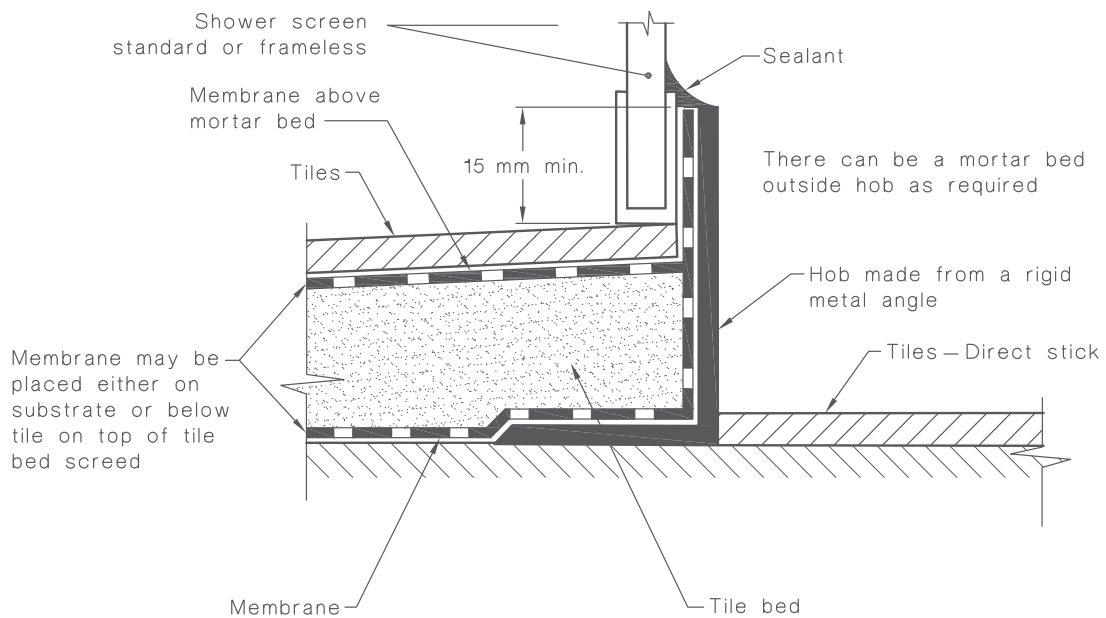
NOTE: For a typical application, see Figure 3.10.

For metal angle hobs, the membrane shall be terminated within 5 mm from the top of the angle, and any gap between the shower screen and the angle shall be filled with a sealant.

The extent of the membrane for an internal shower tray shall be as shown in Figure 3.11(a).



(a) Enclosed shower with hob



(b) Enclosed shower on flat substrate

NOTE: Membrane shown on substrate and above the tile bed for diagrammatic purposes only.

FIGURE 3.10 TYPICAL HOB CONSTRUCTION—INTERNAL MEMBRANE

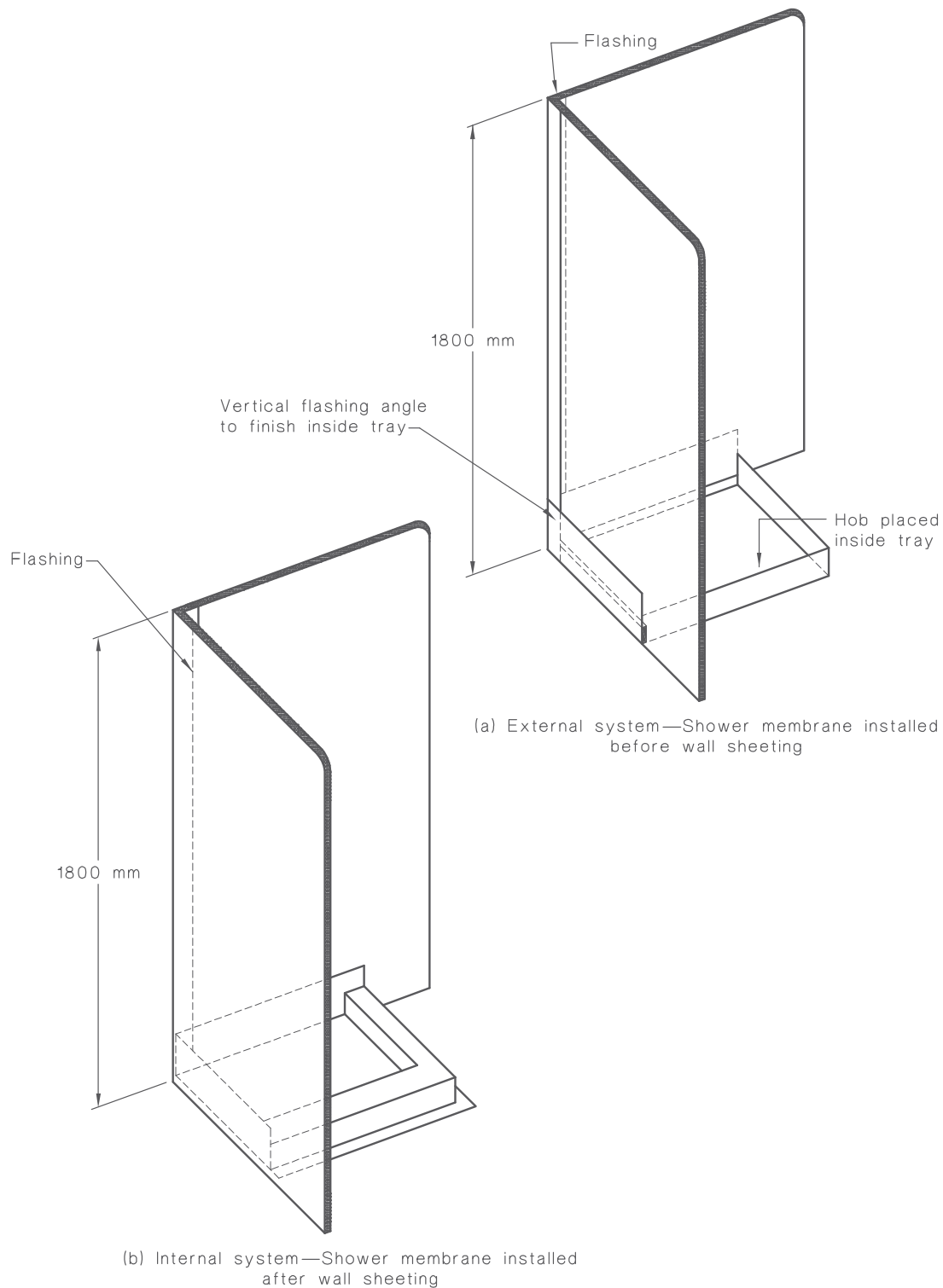


FIGURE 3.11 SHOWER CONSTRUCTION

3.15.1.3 *Termination of membranes at enclosed showers without hobs*

The membrane shall be brought to the top of the floor finish, except where it is under a shower screen where it shall terminate a minimum of 5 mm above the finished tile surface.

NOTE: For a typical application, see Figure 3.6.

3.16 INSTALLATION OF AN EXTERNAL MEMBRANE

3.16.1 Membrane application

3.16.1.1 General

Where the membrane is fabricated from a flexible material, the top edges shall be fixed to the wall. Fixing penetrations shall be a minimum of 100 mm above the finished tile level of the shower area. All fixings shall be compatible with the membrane and shall be non-corrosive.

3.16.1.2 Showers with hobs

The hob shall be included within the finished size of the shower membrane and the membrane shall finish at the underside of the tile that forms the top of the hob.

NOTE: Typical hob construction for an external membrane is shown in Figure 3.12.

The extent of the membrane for an external shower tray shall be as shown in Figure 3.11.

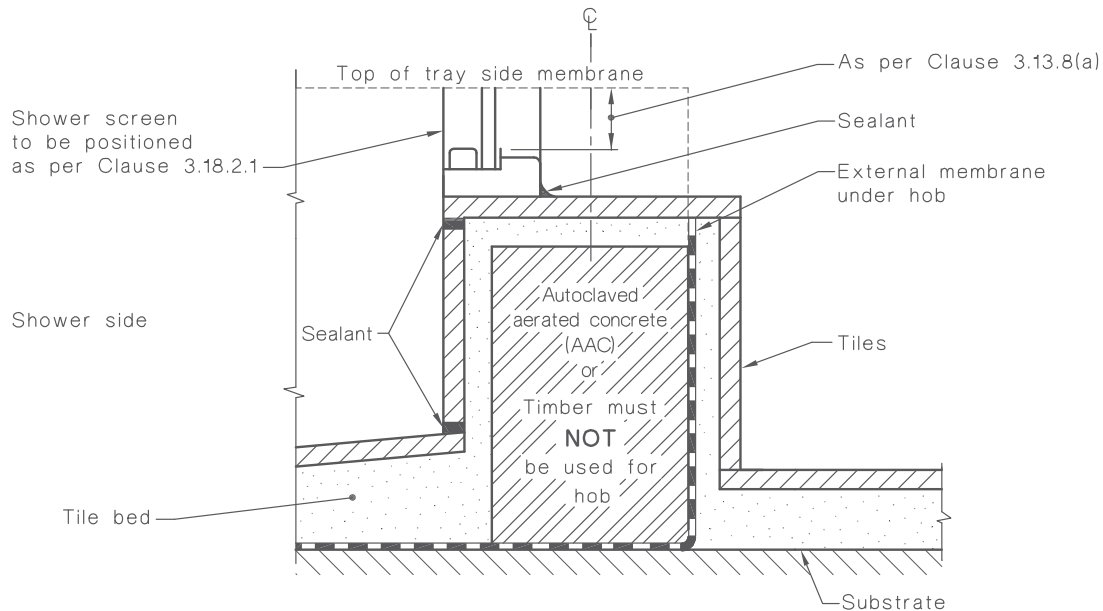


FIGURE 3.12 TYPICAL HOB CONSTRUCTION—EXTERNAL (PREFORMED) MEMBRANE

3.16.2 Base termination of vertical flashing

Vertical flashings in internal corners shall extend into the external membrane by a minimum of 25 mm.

3.16.3 Drainage riser connection

3.16.3.1 Preformed trays

The drainage riser shall be connected to the tray with a waterproof joint.

3.16.3.2 Made in situ shower trays

A drainage flange shall be installed with the waterproofing membrane terminating in the drainage flange at not less than 20 mm.

The membrane shall be able to form a permanent seal to the drainage flange.

NOTE: For a typical membrane extension, see Figure 3.8.

3.17 DOORJAMBS AND ARCHITRAVES

Where the bottom of doorjambs and architraves do not finish above the floor tiling, the portion of the doorframes and architraves below the floor tiling shall be waterproofed to provide a continuous seal between the perimeter flashing and the water stop.

NOTES:

- 1 For typical door detail, see Figure 3.3.
- 2 Where possible, the doorjambs and architraves should be installed above the floor tiling.

3.18 SHOWER SCREEN

3.18.1 General

3.18.1.1 *Unenclosed shower screen*

An unenclosed shower screen consists of—

- (a) a frameless shower screen, unless the shower screen is fitted with seals and deflectors, all of which control the spread of water from the shower area; or
- (b) a shower screen less than 900 mm long over a bath; or
- (c) a shower area where a curtain is hung on a rod.

Unenclosed shower areas are not suitable for use directly adjacent to doorways unless the doorway is protected against water exiting through the doorway.

3.18.1.2 *Enclosed shower screen*

For an enclosed shower, the shower screen shall be designed and installed to prevent the spread of water from the shower enclosure.

An enclosed shower screen consists of—

- (a) a fully framed (including sill) shower screen where the water from the shower rose is controlled to within the shower area; or
- (b) a partly or semi frameless shower screen where the vertical edges of the unframed panels are fitted with suitable seals or where panels overlap one another (and where a sill is included); or
- (c) a frameless shower screen that is fitted with seals and deflectors, to control the spread of water within the shower area.

NOTE: Where a shower screen is classified as unenclosed, the water stop and the positioning of the waterproofing of the floor should be as specified in Clause 3.13.5.

3.18.2 Enclosed shower screen placement

3.18.2.1 *Showers with hobs*

The shower screen shall be installed so as to ensure it is—

- (a) flush with the shower area side of the hob;
- (b) overhanging in to the shower area; or
- (c) inside the hob.

NOTE: A self-draining sub-sill is considered to be part of the shower screen.

3.18.2.2 *Showers with step-downs*

The shower screen shall be installed so as to ensure it is—

- (a) flush with the finished vertical surface of the step-down
- (b) overhanging into the shower area; or
- (c) inside the step-down of the shower area.

3.18.2.3 *Showers without hobs or step-downs*

The shower screen shall incorporate or be mounted on an inverted channel, and positioned over the top of the water stop that defines the shower area.

NOTE: For a typical hobless construction, see Figure 3.6.

3.18.2.4 *Bath end walls and nib walls abutting a shower*

The shower screen shall be positioned so that the bottom edge within the shower area is either flush with the outside edge of the bath or overhanging into the shower area.

NOTE: A self-draining sub-sill is considered to be part of the shower screen.

A1

APPENDIX C

EXTENT OF WATERPROOFING

(Informative)

This Appendix is based on Table F1.7 (BCA, Volume 1) and Table 3.8.1.1 (BCA, Volume 2) of the National Construction Code (NCCA).

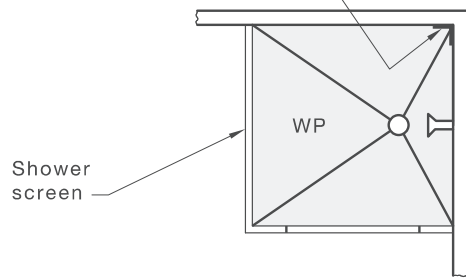
Table C1 is reproduced from Table F1.7, which lists the NCC requirements for waterproofing and water resistance for building elements in wet areas. Figures C1 and C4 provide a diagrammatic representation of the extent of waterproofing stipulated in Tables F1.7 and 3.8.1.1 of the NCC.

Where the shower shown in the Figures is not enclosed, the wet area is to be taken as 1500 mm from the shower connection.

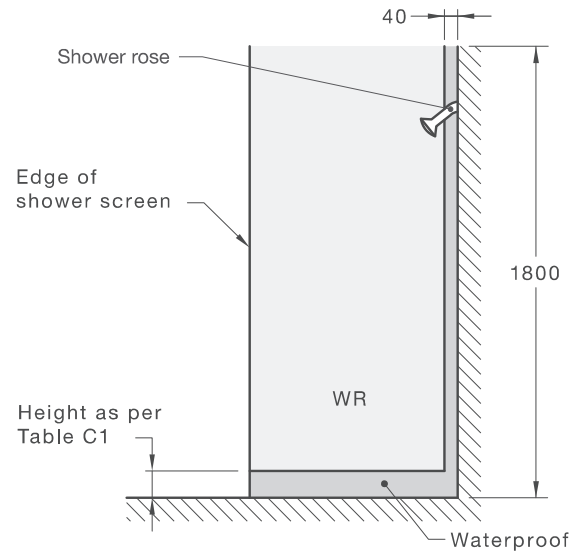
NOTE: User of this Standard should refer to the current edition of the NCC for any changes to the Tables.

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Waterproof corner to 1800 high from finished floor level, minimum width of 40 either side of the junction

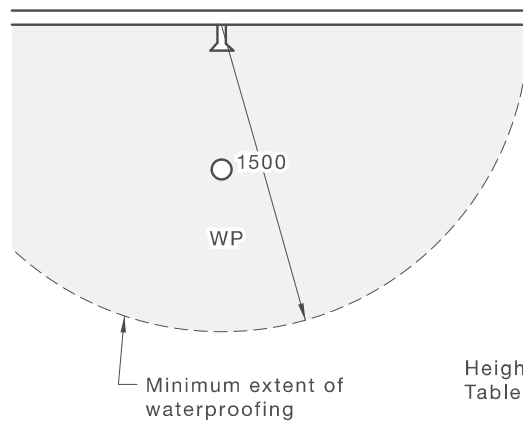


(i) Plan view

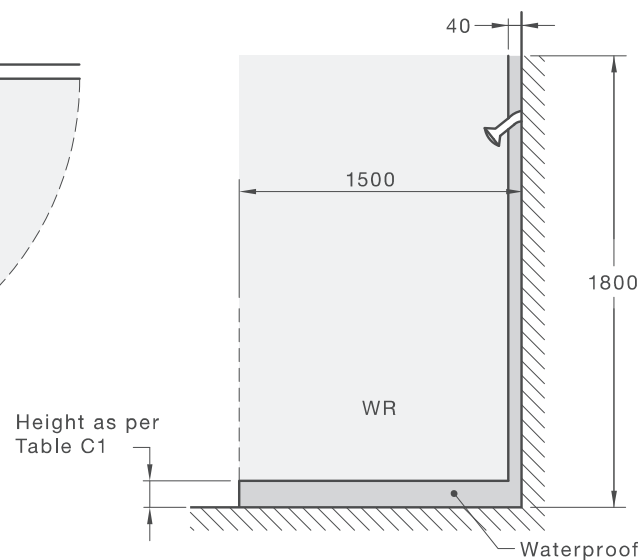


(ii) Side view

(a) Enclosed shower



(i) Plan view



(ii) Side view

(b) Unenclosed showers—Concrete and compressed fibre cement sheet floors

NOTE: All floor waterproofing to terminate at a waterstop.

DIMENSIONS IN MILLIMETRES

FIGURE C1 EXTENT OF THE TREATMENT FOR SHOWER AREAS—CONCRETE AND COMPRESSED FIBRE-CEMENT SHEET FLOORS

A1

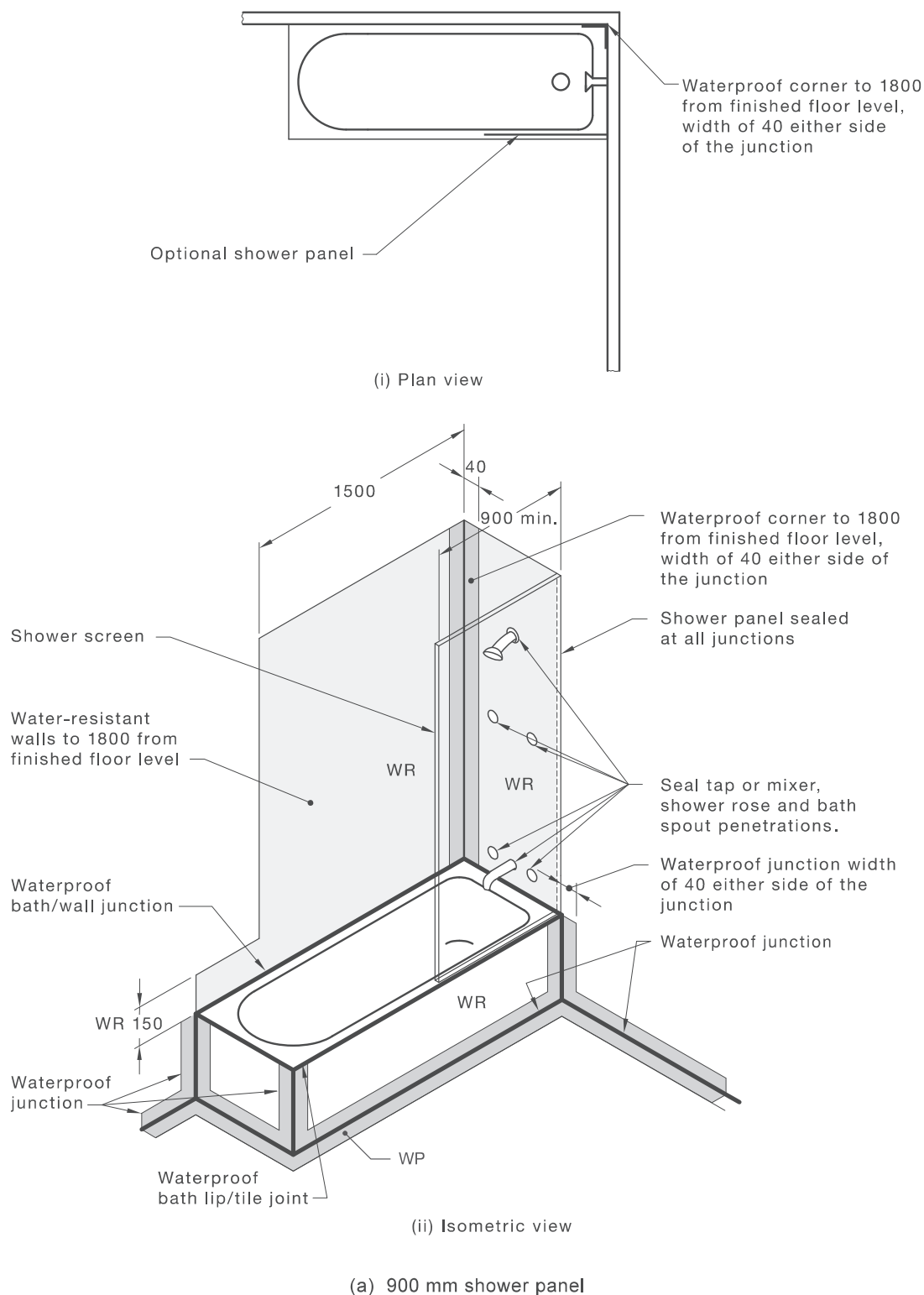
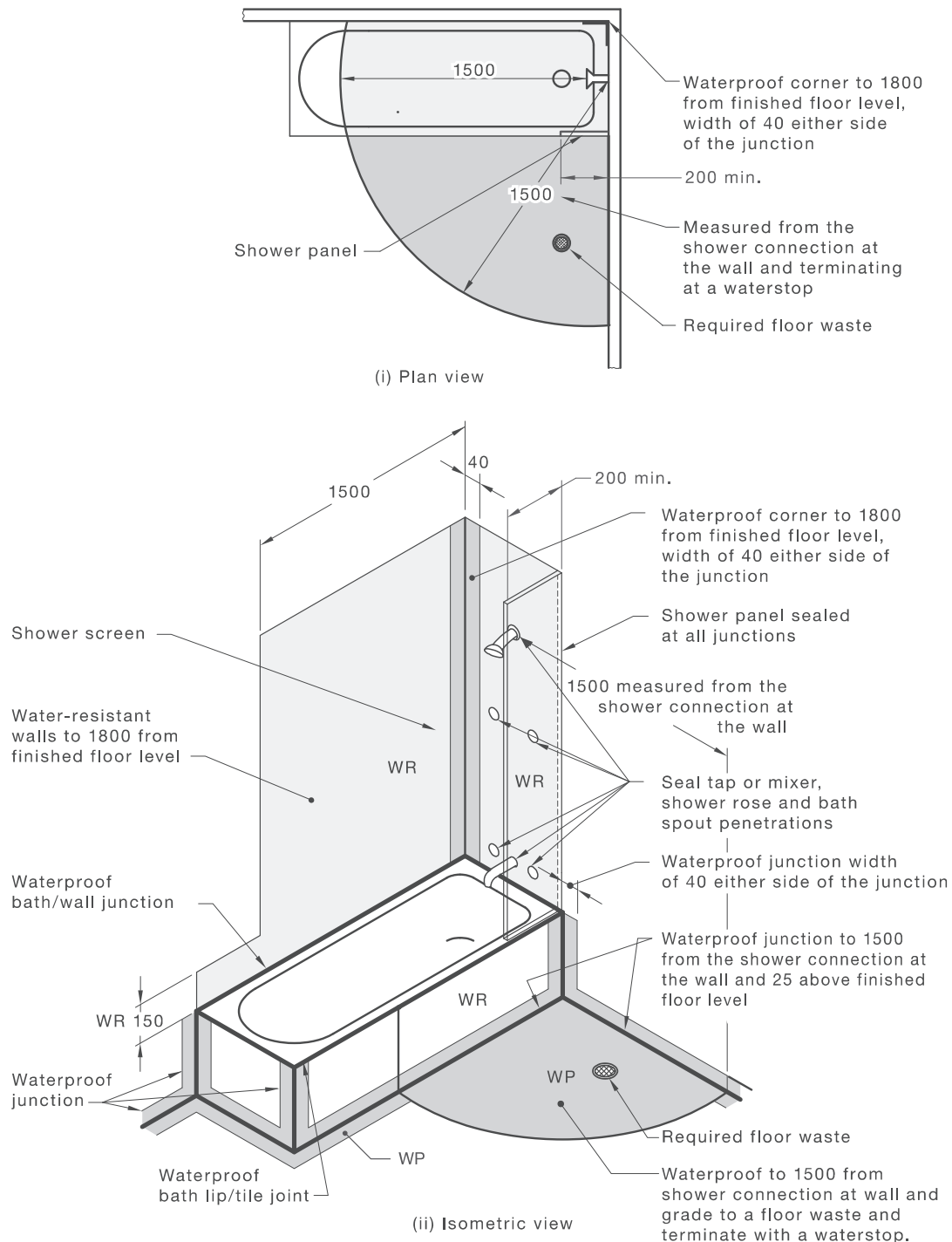


FIGURE C2 (in part) UNENCLOSED SHOWERS ABOVE BATHS—AREA PROTECTED FOR CONCRETE AND COMPRESSED FIBRE-CEMENT SHEET FLOORING

A1



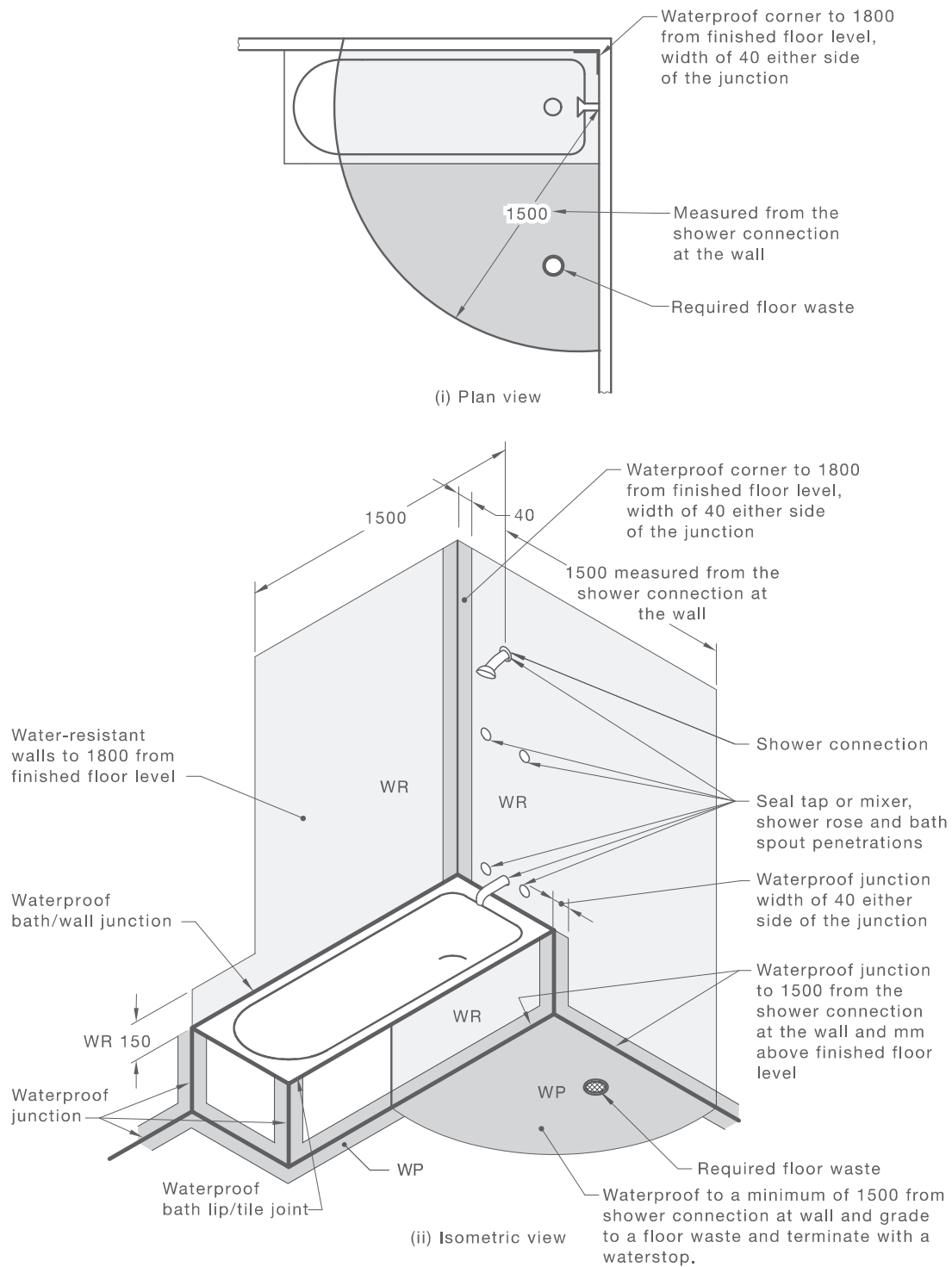
NOTE: All floor waterproofing to terminate at a waterstop.

(b) Shower panel less than 900 mm

DIMENSIONS IN MILLIMETRES

FIGURE C2 (in part) UNENCLOSED SHOWERS ABOVE BATHS—AREA PROTECTED FOR CONCRETE AND COMPRESSED FIBRE-CEMENT SHEET FLOORING

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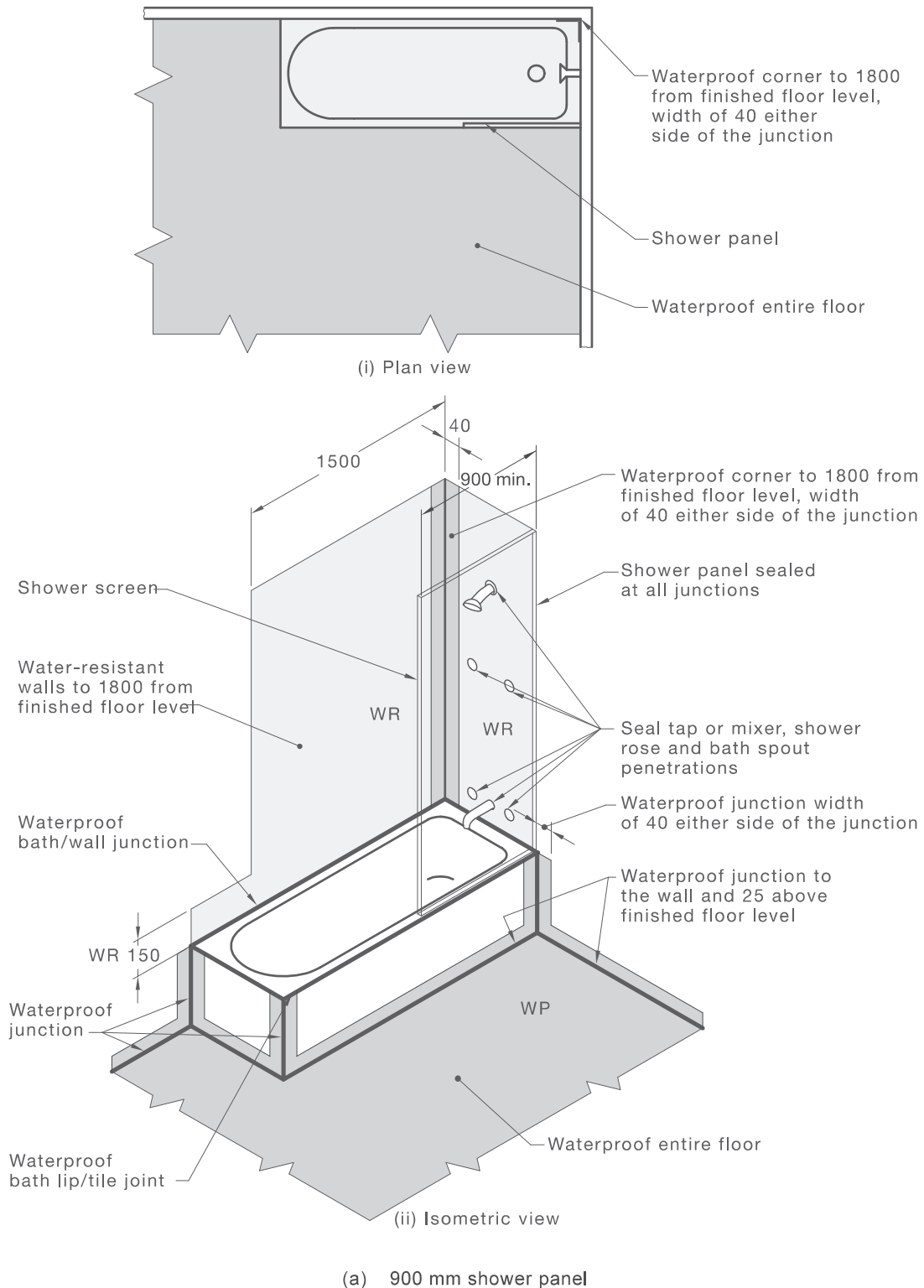
NOTE: All floor waterproofing to terminate at a waterstop.

(c) No shower panel

DIMENSIONS IN MILLIMETRES

FIGURE C2 (in part) UNENCLOSED SHOWERS ABOVE BATHS—AREA PROTECTED FOR CONCRETE AND COMPRESSED FIBRE-CEMENT SHEET FLOORING

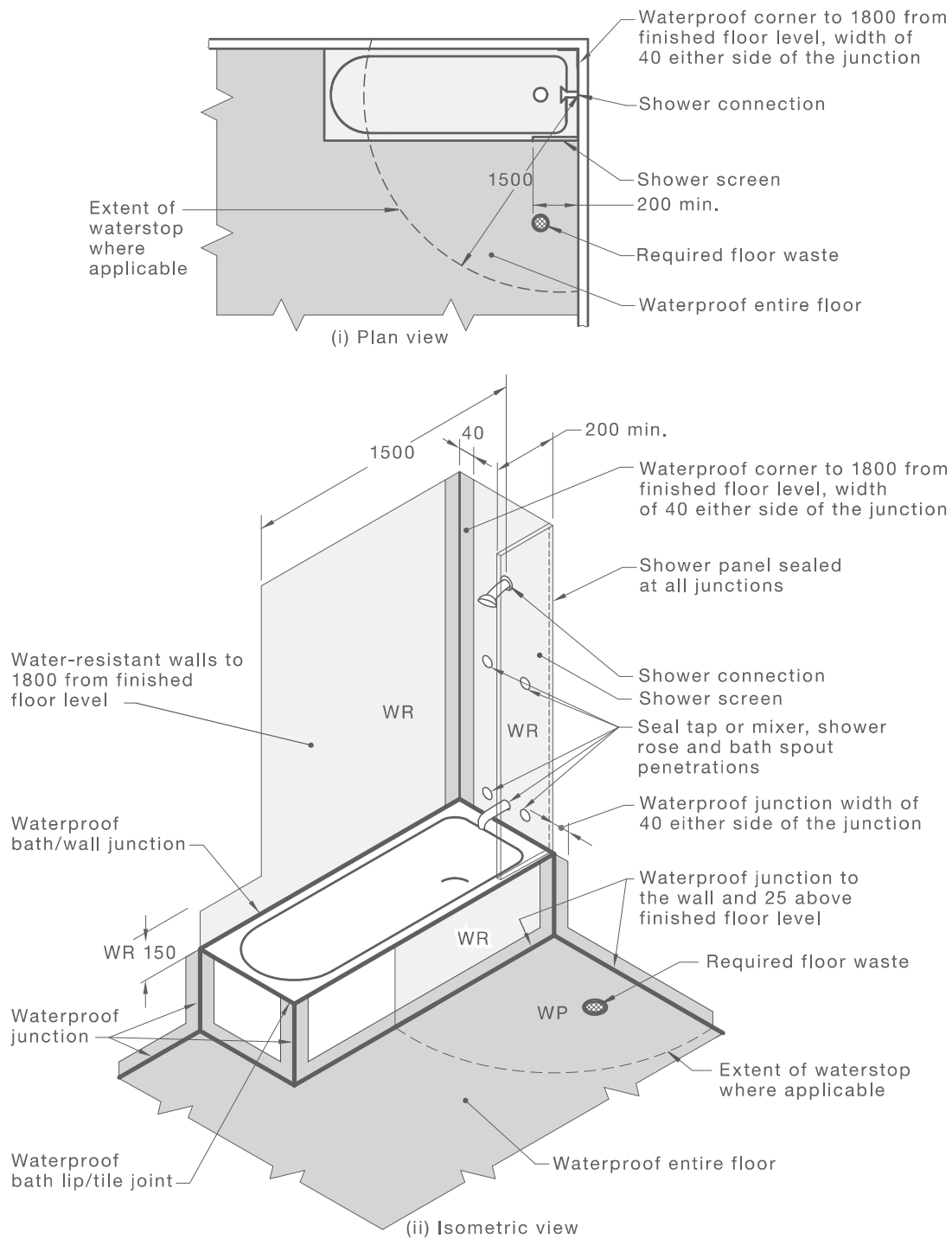
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DIMENSIONS IN MILLIMETRES

FIGURE C3 (in part) UNENCLOSED SHOWERS ABOVE BATHS—AREA PROTECTED FOR TIMBER FLOORS INCLUDING PARTICLEBOARD, PLYWOOD AND OTHER FLOOR MATERIALS

A1

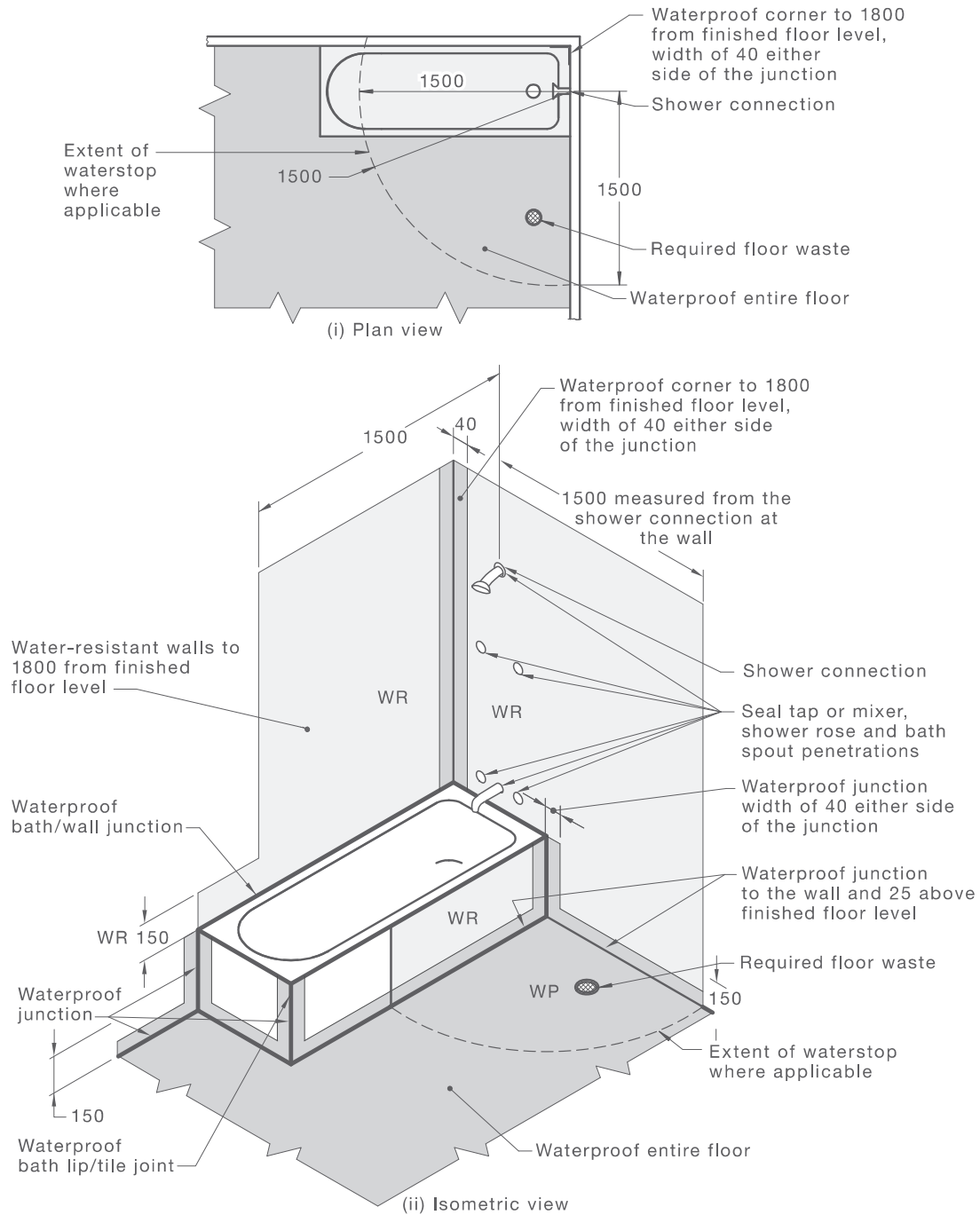


(b) Shower panel less than 900 mm

DIMENSIONS IN MILLIMETRES

FIGURE C3 (in part) UNENCLOSED SHOWERS ABOVE BATHS—AREA PROTECTED FOR TIMBER FLOORS INCLUDING PARTICLEBOARD, PLYWOOD AND OTHER FLOOR MATERIALS

A1



NOTE: All floor waterproofing to terminate at a waterstop.

(c) No shower panel

DIMENSIONS IN MILLIMETRES

FIGURE C3 (in part) UNENCLOSED SHOWERS ABOVE BATHS—AREA PROTECTED FOR TIMBER FLOORS INCLUDING PARTICLEBOARD, PLYWOOD AND OTHER FLOOR MATERIALS

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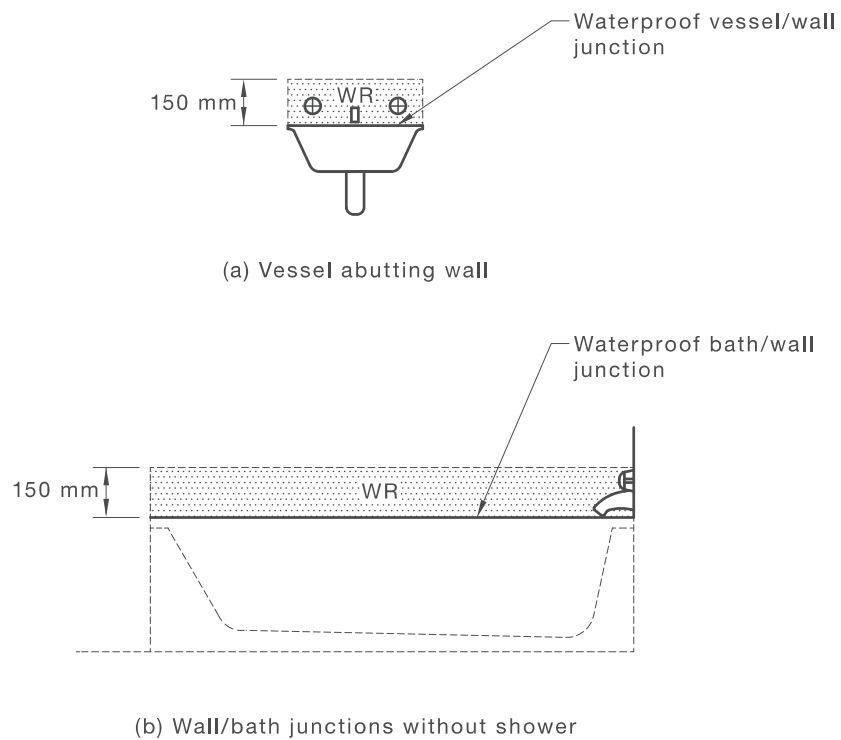


FIGURE C4 BATH AND VESSEL ABUTTING WALL—AREAS TO BE PROTECTED

TABLE C1
WATERPROOFING AND WATER RESISTANCE REQUIREMENTS FOR BUILDING ELEMENTS IN WET AREAS

Vessels or area where the fixture is installed	Floors and horizontal surfaces	Walls	Wall junctions and joints	Wall/floor junctions	Penetrations
Shower area (enclosed and unenclosed)					
With hob	Waterproof floor in shower area (including any hob or step-down)	(a) Waterproof all walls in shower area to a height the greater of— (i) not less than 150 mm above floor substrate; or (ii) not less than 25 mm above maximum retained water level; and (b) Water resistant walls in shower area to not less than 1800 mm above finished floor level of the shower	Waterproof wall junctions within shower area	Waterproof wall/floor junctions within shower area	Waterproof penetrations in shower area
With step-down					
Without hob or step-down					
With preformed shower base	N/A	Water-resistant walls in shower area to not less than 1800 mm above finished floor level of the shower	Waterproof wall junctions within shower area	Waterproof wall/floor junctions within shower area	Waterproof penetrations in shower area
Area outside shower area					
For concrete and compressed fibre-cement sheet flooring	Water-resistant floor of the room	N/A	N/A	Waterproof wall/floor junctions	N/A
For timber floors, including particleboard, plywood and other timber-based flooring materials	Waterproof floor of the room				

(continued)

TABLE C1 (continued)

Vessels or area where the fixture is installed	Floors and horizontal surfaces	Walls	Wall junctions and joints	Wall/floor junctions	Penetrations
Area adjacent to baths and spas (see Note 1)					
For concrete and compressed fibre-cement sheet flooring	Water-resistant floor of the room	(a) Water-resistant to a height of not less than 150 mm above the vessel, for the extent of the vessel, where the vessel is within 75 mm of a wall (b) Water-resistant all exposed surfaces below vessel lip	Water-resistant junctions within 150 mm above a vessel for the extent of the vessel	Water-resistant wall/floor junctions for the extent of the vessel	Waterproof tap and spout penetrations where they occur in horizontal surfaces
For timber floors, including particleboard, plywood and other timber-based flooring materials	Waterproof floor of the room				
Inserted baths and spas	(a) Waterproof shelf area, incorporating waterstop under the bath lip	(a) Waterproof to not less than 150 mm above lip of bath or spa and	(a) Waterproof junctions within 150 mm above bath or spa and	N/A	Waterproof tap and spout penetrations where they occur in horizontal surfaces
	(b) No requirement under bath	(b) No requirement under bath	(b) No requirement under bath		
Walls adjoining other vessel (e.g. sink, basin or laundry tub)	N/A	Water-resistant to a height of not less than 150 mm above the vessel, for the extent of the vessel, where the vessel is within 75 mm of a wall	Waterproof wall junctions where a vessel is fixed to a wall	N/A	Waterproof tap and spout penetrations where they occur in surfaces required to be waterproof or water resistant
Laundries and WCs	Water-resistant floor of the room	N/A	N/A	Waterproof wall/floor junctions	Waterproof penetrations where they occur in surfaces required to be waterproof

(continued)

TABLE C1 (continued)

Vessels or area where the fixture is installed	Floors and horizontal surfaces	Walls	Wall junctions and joints	Wall/floor junctions	Penetrations
Bathrooms and laundries required to provide a floor waste	Waterproof floor of the room	N/A	N/A	Waterproof wall/floor junctions	Waterproof penetrations where they occur through the floor

LEGEND:
N/A = not applicable

NOTES:

- 1 Where a shower is above a bath or spa, use requirements for shower.
- 2 This Table has been reproduced from the National Construction Code (NCC), (BCA, Volume One – 2012, Table F1.7), with the permission of the Australian Building Codes Board (ABCB).
- 3 Users of the Standard should check that the NCC Table has not changed before using its reproduction.
- 4 Where a penetration passes through waterproof or water-resistant construction, the penetration should be made waterproof.