



**Australian
Building
Codes Board**

Livable Housing Design ABCB Standard



**National
Construction
Code**



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Introduction

Background

This ABCB Standard provides a set of technical provisions that if complied with will enable dwellings to better meet the needs of the community, including older Australians and people with mobility limitations.

This ABCB Standard has been adapted from the 'Silver' level requirements of the Livable Housing Design Guidelines (LHDG), fourth edition, 2017, which were first published by Livable Housing Australia.

It is important to note that this ABCB Standard is not an exact replication of the LHDG. There are instances where adjustments have been made in order to convert the LHDG — which was drafted as a voluntary guideline — into a document suitable for use as a regulatory standard. There are also instances where adjustments have been made in response to stakeholder feedback provided through one or more of the consultation processes that occurred in the development of this document.

Scope

This ABCB Standard is intended as a set of minimum necessary provisions, rather than as an exemplar of best practice. This is consistent with the role of the National Construction Code (NCC) which calls up this ABCB Standard.

This ABCB Standard is not intended for use in designing specialist accommodation, nor is it intended to achieve equivalence with AS 1428.1. Therefore, its provisions may not accommodate the needs and abilities of all home occupants. Nonetheless, the features described herein are considered to be of most widespread benefit and use in the majority of circumstances.

Application

In this ABCB Standard, generic references are made to 'dwellings'. The specific application of this ABCB Standard to particular types of dwelling is determined according to the particular regulation or guideline in which the ABCB Standard may be referenced.

In general, the provisions of this ABCB Standard are designed for application to Class 1a buildings (houses and the like) and Class 2 *sole-occupancy units* (apartments), as defined in the NCC.

This ABCB Standard is referenced in the *Deemed-to-Satisfy Provisions* of Part G7 of NCC Volume One and Part H8 of NCC Volume Two.

The ABCB will also publish a non-mandatory version of this ABCB Standard based on the LHDG 'Gold' level requirements, which can be applied on a voluntary basis to achieve a higher level of livability.

Terms with a specific meaning

In this ABCB Standard, terms shown in italicised text have the meaning that they have in the NCC.

Referenced documents

The documents listed in Table 1 are referenced in this Standard.

Table 1: Referenced documents

<u>Number</u>	<u>Date</u>	<u>Title</u>	<u>References</u>
<u>AS/NZS 1170.1</u>	<u>2002</u>	<u>Structural design actions – Permanent and imposed actions (including Amendments 1 and 2)</u>	<u>1.1</u>
<u>AS 1684 (series)</u>	<u>2010</u>	<u>Residential timber-framed construction</u>	<u>1.1</u>
<u>AS 3740</u>	<u>2010</u>	<u>Waterproofing of domestic wet areas (including Amendment 1)</u>	<u>5.2, 5.3</u>

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Livable Housing Design

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Part 1 Dwelling access

1.1 Step-free access path

1. A safe, continuous path to a dwelling entrance door must be provided from—
 - a. the pedestrian entry at the allotment boundary; or
 - b. an appurtenant Class 10a garage or carport; or
 - c. a car parking space within the allotment and provided for the exclusive use of the occupants of the dwelling.
2. The access path required by (1) must—
 - a. have no steps; and
 - b. have a maximum gradient of 1:14 in the direction of travel; and
 - c. if crossfall is provided, have a crossfall not exceeding 1:40; and
 - d. have a minimum width of 1000 mm; and
 - e. if it incorporates a section suspended above finished ground level, take loading forces in accordance with AS/NZS 1170.1; and
 - f. connect to a dwelling entrance door that complies with Section 2.
3. For the purposes of (2), the following applies:
 - a. Any gates along the access path must have a minimum clear opening width of 820 mm, measured as if the gate were an entrance door.
 - b. A deck or boardwalk-style path constructed in accordance with AS 1684 would satisfy the requirements of (2)(e).
4. Where one or more ramps are used, the following applies:
 - a. The aggregate length of ramping (excluding landings) must not exceed—
 - i. 9 m for a 1:14 gradient; or
 - ii. 15 m for a 1:20 gradient; or
 - iii. a length determined by linear interpolation for ramps with a gradient between 1:14 and 1:20.
 - b. At each end of a ramp there must be a landing that is—
 - i. not less than 1200 mm long; and
 - ii. at least as wide as the ramp to which it connects.
 - c. The landing space required by (b) must be measured exclusive of the swing arc of any door or gate that opens on to the landing.
5. The access path may incorporate one step ramp having a—
 - a. height of no more than 190 mm; and
 - b. gradient not exceeding 1:10; and
 - c. width of at least 1000 mm or equivalent to that of the access path, whichever is the greater; and
 - d. maximum length of 1900 mm, irrespective of the gradient.

Applications

Clause 1.1 only applies to a Class 1a building.

Information access via a garage, carport or parking space

Where step-free access is provided from a garage, carport or parking space, this can be through a connecting door between the garage, carport or parking space and the dwelling. The connecting door need not be the main entrance door (sometimes referred to as the 'front' door) but would need to comply with Section 2.

Information Class 2 buildings

For a Class 2 building, requirements for a step-free access path are provided in Section D of NCC Volume One and the 'Disability (Access to Premises — Buildings) Standards 2010'. Therefore, Clause 1.1 only applies to Class 1a buildings.

1.2 Parking space incorporated into step-free access path

1. Where one or more car parking spaces are connected to or form part of a required access path, at least one of the car parking spaces must have—
 - a. a minimum unobstructed space of 3200 mm wide x 5400 mm long; and
 - b. a gradient not exceeding 1:33 for bitumen, or 1:40 for any other surface material.
2. For the purposes of (1), a required access path means—
 - a. for a Class 1a building, an access path provided for the purposes of compliance with Clause 1.1; and
 - b. for a Class 2 building, an accessway that is required by Section D of NCC Volume One.

Applications

1. Clause 1.2 only applies to a car parking space provided for the exclusive use of the occupants of the dwelling.
2. Clause 1.2 does not apply if the dwelling is not provided with any car parking spaces for the exclusive use of the occupants of the dwelling.

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Part 2 Dwelling entrance

2.1 Clear opening width

1. At least one entrance door to the dwelling must have a minimum clear opening width of at least 820 mm.
2. The minimum clear opening width required by (1) must be measured in accordance with Figure 2.1.
3. If the swing arc of the door does not extend far enough to enable door hardware to be outside of the clear opening width when the door is in the fully open position, any door hardware installed on the door leaf must be set at a height of not less than 900 mm above finished floor level.

Figure 2.1: Measurement of clear opening width

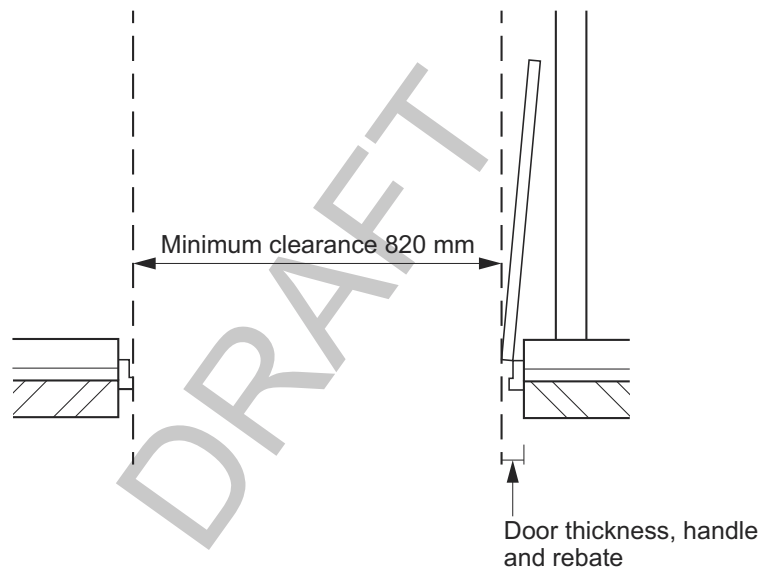


Figure Notes:

1. Double doors, bi-fold doors and other types of swinging door sets may use a smaller leaf provided the overall clear opening width with the doors fully open is not less than 820 mm.
2. Clear opening width for sliding doors must be measured with the door panel installed and in the fully open position.

Information Door leaf dimensions

An 850 mm clear opening width, for a single swinging door, can generally be achieved using a 920 mm door leaf.

2.2 Threshold

The threshold of an entrance door that is subject to Clause 2.1 must—

- (a) be level; or
- (b) have height not exceeding 5 mm if the lip is rounded or bevelled; or

- (c) have a ramped threshold that—
- (i) does not exceed 56 mm in height; and
 - (ii) has a gradient not exceeding 1:8; and
 - (iii) is at least as wide as the minimum clear opening width of the entrance door; and
 - (iv) does not intrude into the minimum dimensions of a landing area that is required by Clause 2.3.

Information Water ingress

For slab on ground construction, NCC referenced document AS 2870 requires a minimum slab height of 150 mm above finished ground level. However, AS 2870 also allows this height to be reduced to 50 mm at door openings if an adjoining paved surface slopes away from the building, and further reduced if the door opening is shielded from the weather. This reduced height enables a ramped threshold to be used as part of a *Deemed-to-Satisfy Solution* under the NCC.

Information Termite management

For termite management, where *required* by the NCC, the NCC referenced document AS 3660.1 includes solutions for termite management in cases where there is no step-up into a dwelling: see clauses 2.2, 2.3, 4.4 and 6.5 of AS 3600.1. AS 3660.1 is referenced in the NCC, therefore an appropriate solution for termite management that complies with AS 3660.1 can be used as part of a *Deemed-to-Satisfy Solution* under the NCC.

2.3 Landing area

1. An entrance door that is subject to Clause 2.1 must have a space of at least 1200 mm x 1200 mm on the external (arrival) side of the door that is—
 - a. unobstructed; and
 - b. level, or has a gradient not exceeding 1:40 if a gradient is necessary to allow for drainage.
2. The space required by (1), but excluding any ramped threshold provided under Clause 2.2(c), may overlap with the same space serving the entrance door of another dwelling.

Applications

Clause 2.3 only applies to a Class 1a building.

Information Entrance doors to Class 2 sole-occupancy units

Requirements for landing areas outside the entrance door to a Class 2 *sole-occupancy unit* located on an *accessible* floor are set out in Section D of NCC Volume One and the Disability (Access to Premises — Buildings) Standards 2010.

Part 3 Internal doors and corridors

3.1 Clear opening width

Internal doors within the ground or entry level of the dwelling must provide a minimum clear opening width of 820 mm, measured in accordance with Figure 2.1.

Applications

Clause 3.1 only applies to a doorway that connects to, or is in the path of travel to, any—

- (a) habitable room; or
- (b) attached Class 10a garage or carport that forms part of an access path required by Clause 1.1; or
- (c) toilet complying with Parts 4 and 6; or
- (d) bathroom complying with Parts 5 and 6.

3.2 Threshold

The threshold of an internal door that is subject to Clause 3.1 must—

- (a) be level; or
- (b) have a height not exceeding 5 mm if the lip is rounded or bevelled.

3.3 Corridor width

Internal corridors, hallways, passageways or the like, if connected to a door that is subject to Clause 3.1, must have a minimum clear width of 1000 mm, measured between the finished surfaces of opposing walls.

Information

Skirting boards and the like may be disregarded for the purposes of compliance with Clause 3.3.

Part 4 Toilet

4.1 Location

There must be at least one *sanitary compartment* within the ground or entry level of a dwelling.

Information

The term *sanitary compartment* refers to a room or space containing a toilet. It applies equally to any type of room or space containing a toilet, such as a bathroom, ensuite, powder room or other separate room. It is used in place of the word 'toilet' for consistency with the wording of the NCC and to avoid confusion with the use of the word 'toilet' to refer to a plumbing fixture rather than the room in which that fixture is located.

4.2 Circulation space

A *sanitary compartment* that is subject to Clause 4.1 must be constructed in accordance with the following:

- For a toilet located in a separate *sanitary compartment*, there must be a clear width of not less than 900 mm between the finished surfaces of opposing walls either side of the pan.
- For a toilet located in a *sanitary compartment* that is combined with a bathroom, the pan must be located in a corner such that—
 - the wall adjacent to the pan incorporates the reinforcing required by Clause 6.1; and
 - the centre-line of the pan is between 450 mm and 460 mm from the finished surface of the wall referred to in (i).
- If a door used to access the *sanitary compartment* swings inward, a minimum circulation space of 1200 mm must be provided from the front edge of the pan to the swing arc of the door to the *sanitary compartment*.
- Compliance with (a), (b) and (c) must be determined in accordance with Figures 4.2a and 4.2b.

Figure 4.2a: Circulation space for a toilet located in a separate room

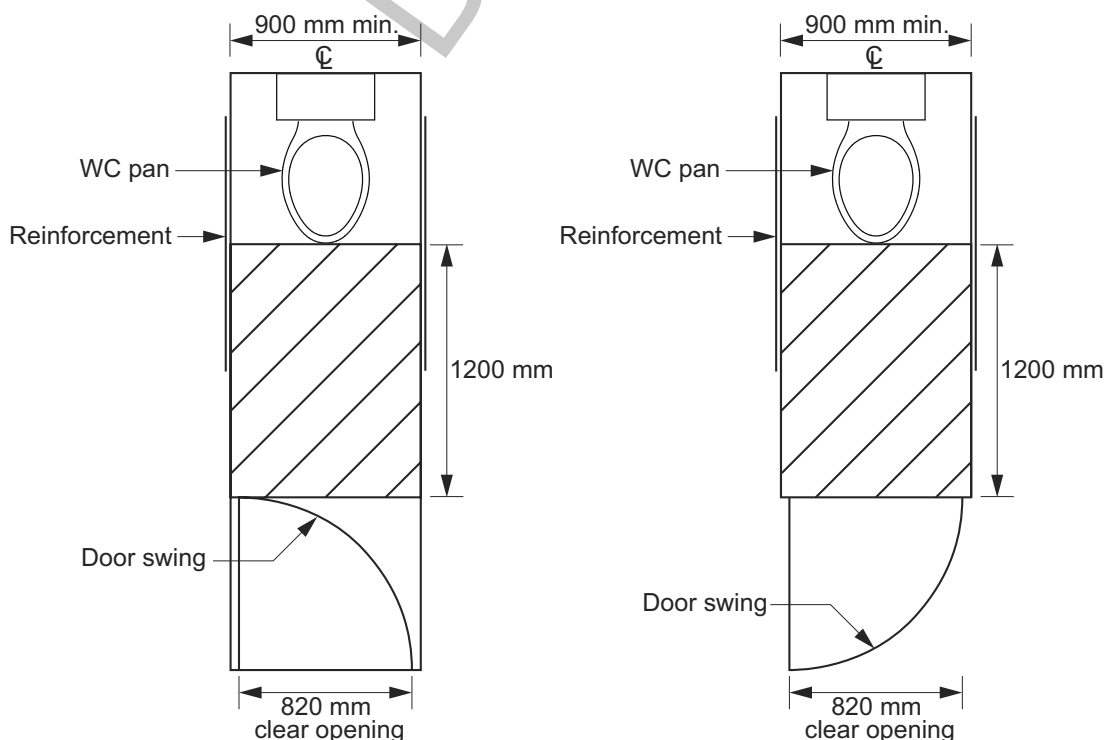
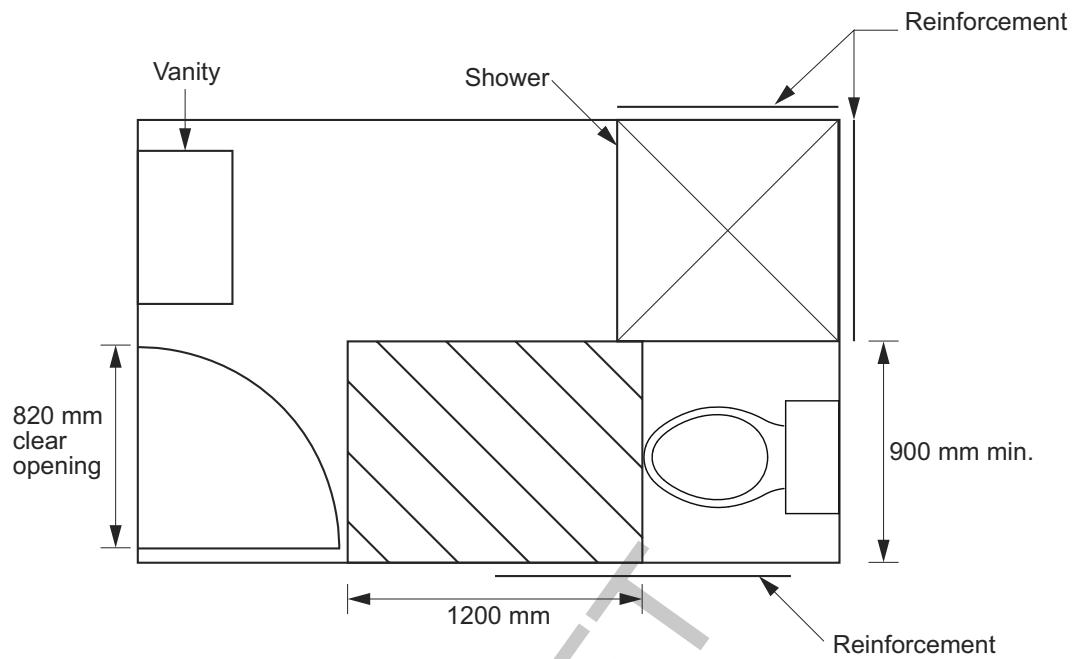


Figure 4.2b: Circulation space for a toilet located in a bathroom



Information

1. [NCC Volumes One and Two also contain provisions applicable to the location and construction of *sanitary compartments*.](#)
2. [NCC Volume Three contains provisions applicable to plumbing and drainage installations in *sanitary compartments*.](#)
3. [Skirting boards and the like may be disregarded when determining compliance with Clause 4.2.](#)

Part 5 Shower

5.1 Application

At least one shower within the dwelling must comply with each of the applicable clauses in this Part.

Information

The intent of Clause 5.1 is to ensure that the same shower has all of the required features, rather than, for example, one shower in the dwelling having a hobless entry and a different shower having the required circulation space.

“At least one shower” means that in a dwelling with two or more showers, only one of the showers needs to comply with the requirements of this Part.

5.2 Hobless and step-free entry

1. At least one shower must have a hobless and step-free entry.
2. A lip not exceeding 5 mm in height may be provided for water retention purposes if it is constructed in accordance with the specification given in Clause 3.13.4 and Figure 3.6 of AS 3740.

Information Hobless and step-free

Clause 5.2(1) refers to a shower entry being ‘hobless’ and ‘step-free’; because those two terms have different meanings. A shower where the floor within the shower compartment is level with the floor adjacent to its entry would be ‘step-free’ but could still have a hob. Conversely, a shower with a step-down into the shower recess does not have a ‘hob’ (i.e. ‘hobless’), but would not be ‘step-free’. Therefore, to achieve the intent of Clause 5.2(1), it is necessary to specify that the shower is both ‘hobless’ and ‘step-free’.

Information Waterproofing

AS 3740 includes specific requirements for waterproofing a hobless, step-free shower area. AS 3740 is referenced in the NCC *Deemed-to-Satisfy Provisions* for general waterproofing of *wet areas*.

5.3 Shower screen

1. The shower screen door (if provided) must be capable of removal without causing damage to adjoining parts of the shower enclosure.
2. For the purposes of AS 3740, the bathroom floor must be graded as if the shower were an unenclosed shower.

Information Floor grading

AS 3740 includes specific requirements for grading of floors in and around an unenclosed shower.

Part 6 Reinforcement of bathroom and toilet walls

6.1 Location

1. Reinforcing in accordance with Clause 6.2 must be provided to any—
 - a. sanitary compartment that is subject to Part 4; and
 - b. bathroom containing a—
 - i. shower that is subject to Part 5; or
 - ii. bath (if provided), other than a freestanding bath.
2. The requirements of (1) need not be complied with if the walls of the room are constructed of concrete, masonry or another material capable of supporting grabrails without additional reinforcement.

Information Intent of Part 6

The intent of this Part is to ensure that walls adjacent to toilets, showers and baths provide a fixing surface able to support the future installation of grabrails, if needed. This Part does not require the installation of grabrails at the time of construction.

A freestanding bath is excluded from Clause 6.1(1)(b)(ii) because it does not have any adjoining walls to which grabrails could be fixed.

A bath with only one adjoining wall need only have reinforcing provided in the adjoining wall (unless exempted by Clause 6.1(2)).

6.2 Construction

1. Reinforcing constructed in accordance with the requirements of (3) must be provided in the locations depicted in—
 - a. Figures 6.2a or 6.2b for walls surrounding a bath; and
 - b. Figures 6.2c or 6.2d for shower walls; and
 - c. Figures 6.2e or 6.2f for a wall adjacent to a toilet.
2. Reinforcing need only be provided across the available width of the wall where a wall referred to (1)(a), (b) or (c)—
 - a. is narrower than the width of the area required to be provided with reinforcing; or
 - b. terminates at window sill lower than the height of the area required to be provided with reinforcing.
3. Reinforcing required by (1) must be constructed using one of the following materials:
 - a. 12 mm thick structural grade plywood.
 - b. Timber noggings with a minimum thickness of 25 mm.

Figure 6.2a: Location of noggings for walls surrounding a bath

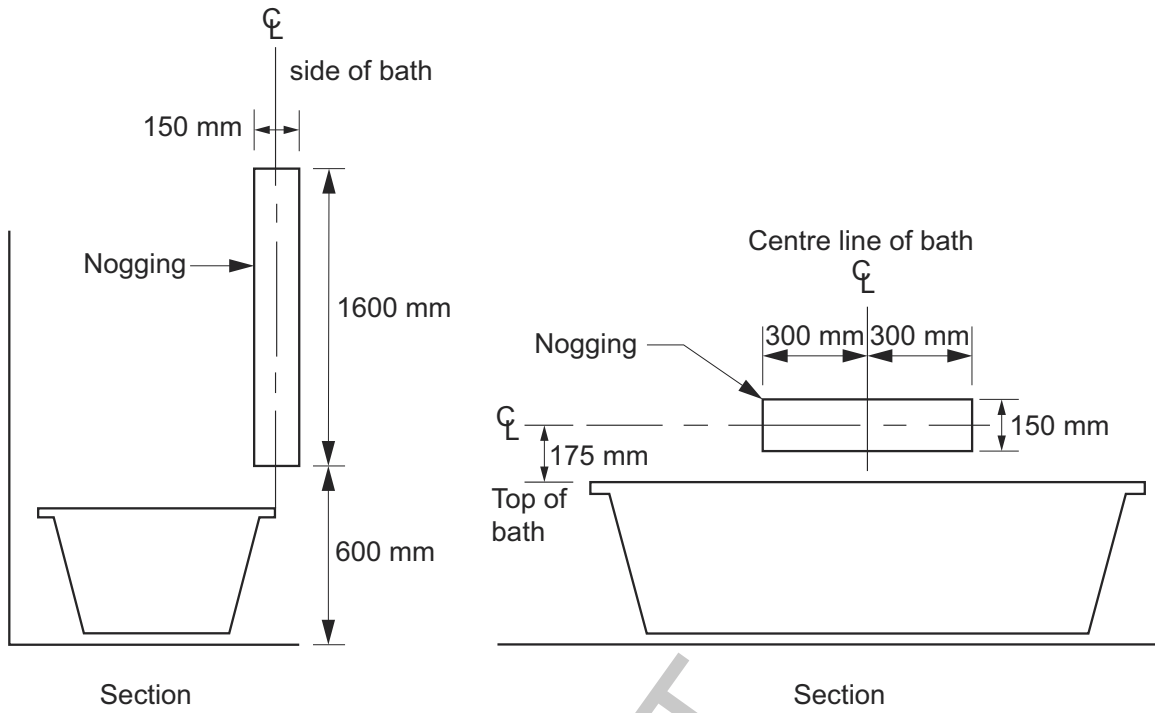


Figure 6.2b: Location of sheeting for walls surrounding a bath

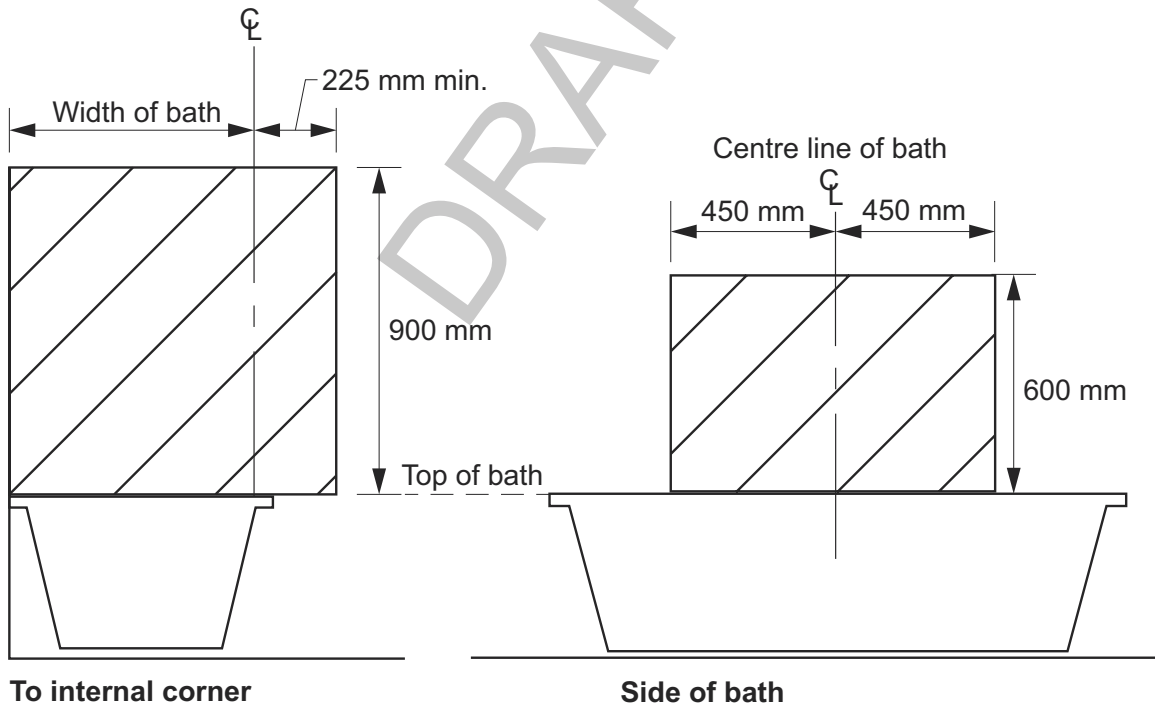


Figure 6.2c: Location of noggings for shower walls

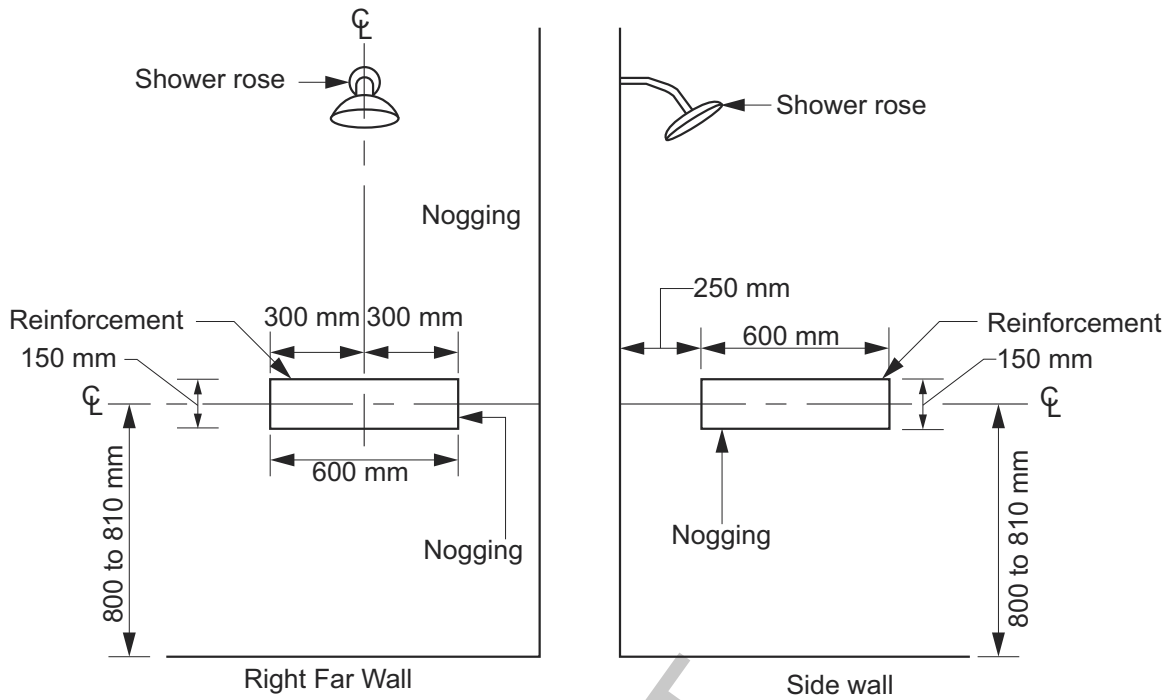


Figure 6.2d: Location of sheeting for shower walls

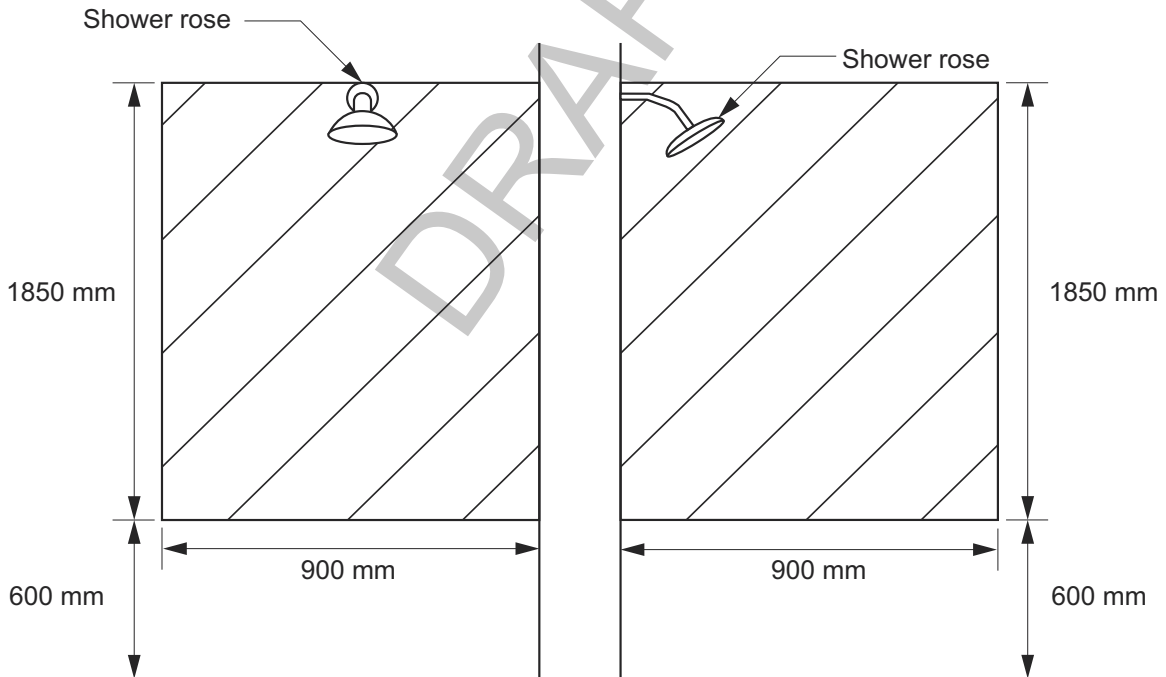


Figure 6.2e: Location of noggings for wall adjacent to a toilet

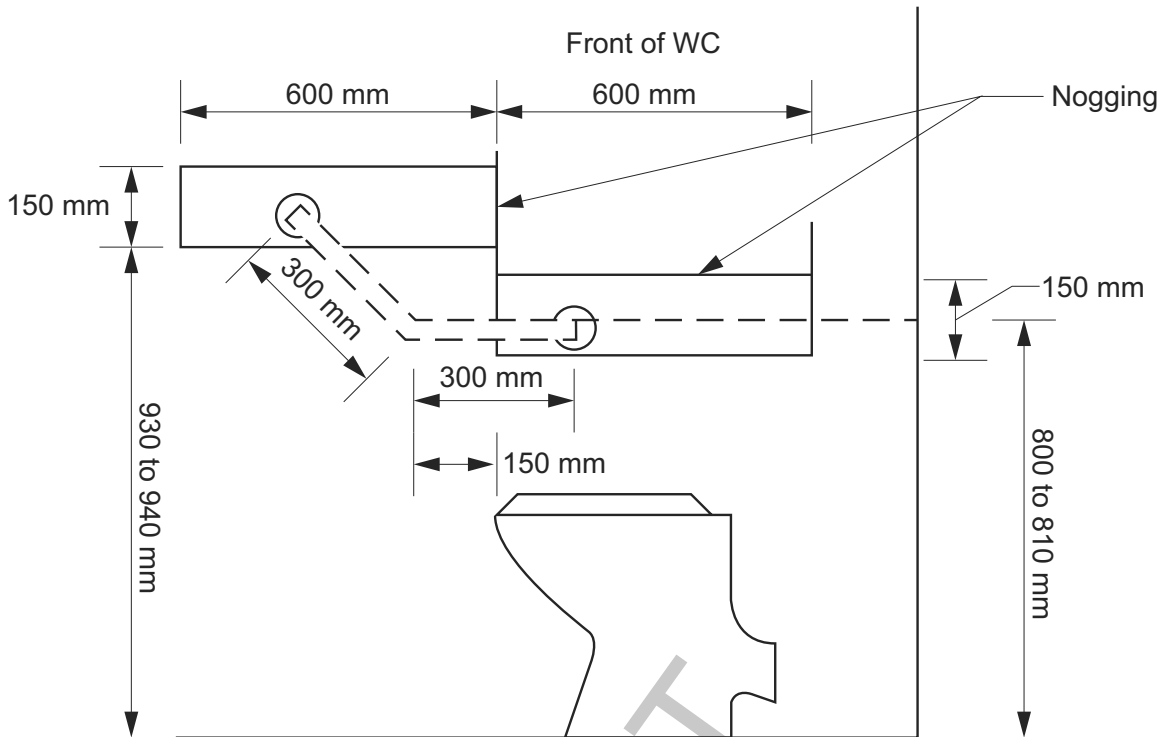
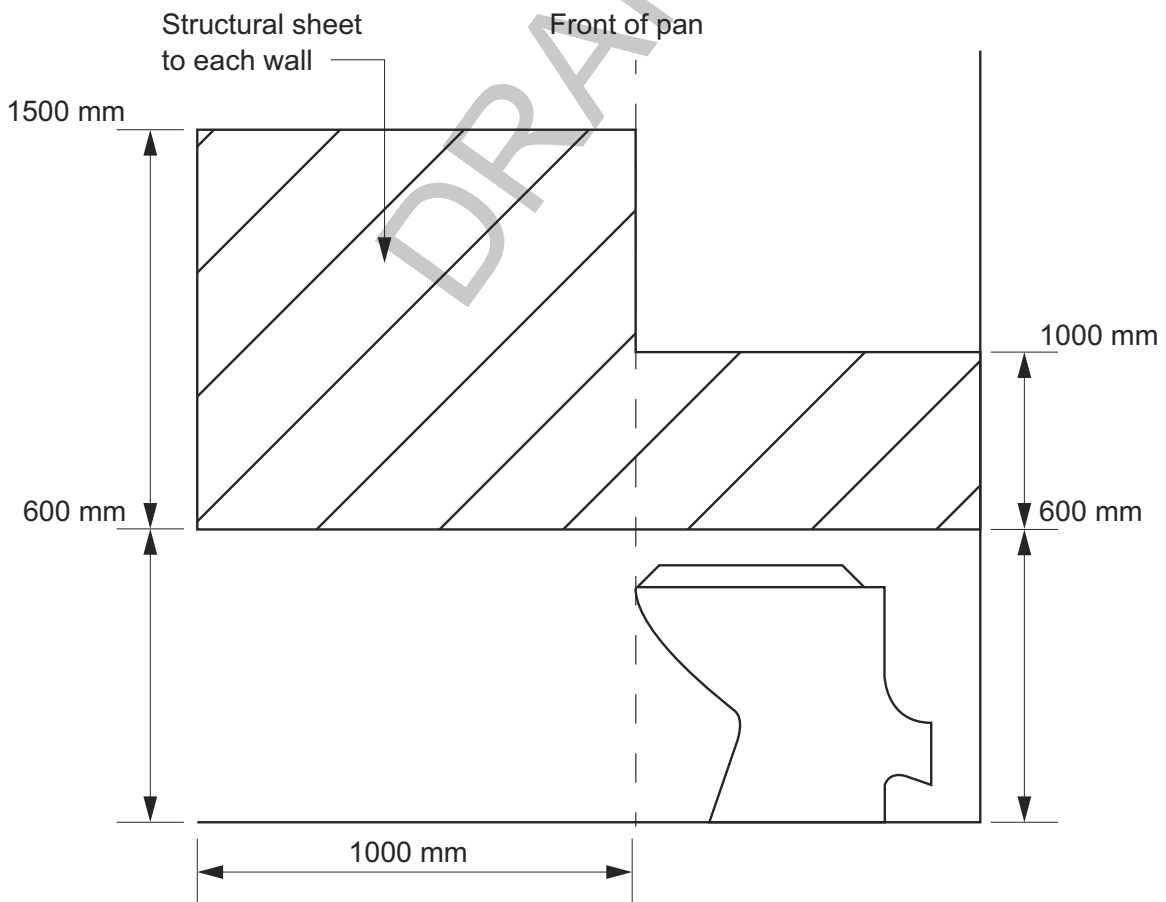


Figure 6.2f: Location of sheeting for wall adjacent to a toilet



Information

Sheeting for the full height of a wall depicted in Figures 6.2a to 6.2f would also be acceptable for compliance with

Clause 6.2(1) or (2).

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