



National  
Construction  
Code

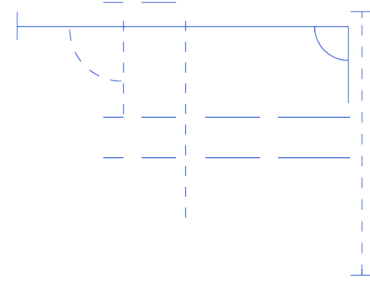
# Livable housing design handbook



Australian  
Building  
Codes Board



2025



# Livable housing design handbook

## The Australian Building Codes Board

The Australian Building Codes Board (ABCB) is a standards writing body responsible for the National Construction Code (NCC), WaterMark and CodeMark Certification Schemes.

The ABCB is a joint initiative of all levels of government in Australia, together with the building and plumbing industry. Its mission is to oversee issues relating to health, safety, amenity, accessibility and sustainability in building.

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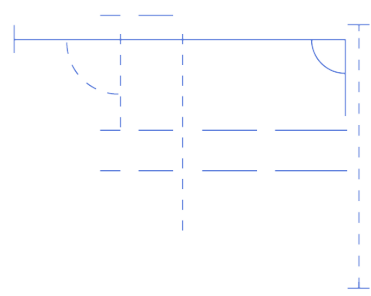
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## Version history

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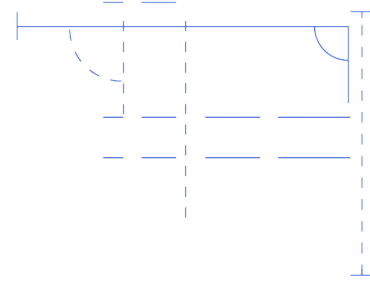


# Preface

This handbook is one of a series by the ABCB. Handbooks expand on areas of existing regulation or relate to topics that are not regulated by the National Construction Code (NCC). They provide advice and guidance.

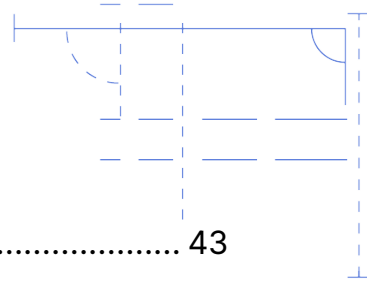
The *Livable Housing Design* handbook assists in understanding Part G7 of NCC Volume One, Part H8 of NCC Volume Two and the [ABCB Standard for Livable Housing Design](#).

It addresses issues in generic terms and is not a document that sets out specific compliance advice for developing solutions to comply with the requirements in the NCC. It is expected that this handbook will guide readers to develop solutions relevant to specific situations in accordance with the generic principles and criteria contained herein.



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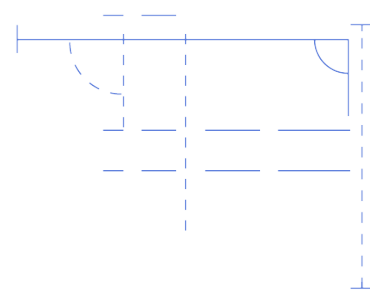


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## Reminder

This handbook is not mandatory or regulatory in nature. Compliance with it will not necessarily discharge a user's legal obligations. The handbook should only be read and used subject to, and in conjunction with, the general disclaimer at page i.

The handbook also needs to be read in conjunction with the NCC and the relevant legislation of the appropriate state or territory. It is written in generic terms and it is not intended that the content of the handbook counteract or conflict with the legislative requirements, any references in legal documents, any handbooks issued by the administration or any directives by the appropriate authority.



# 1 Introduction

## 1.1 Intent of livable housing design

The intent of the livable housing design requirements is described in the Objectives, available at Clause G7O1 (Volume One) and H8O1 (Volume Two). These Objectives are:

*[...] to ensure that housing is designed to meet the needs of the community, including older people and those with a mobility-related disability.*

The initial reference to *community* emphasises that these requirements are intended to benefit all home occupants. The reference to *mobility-related disability* reflects how the requirements address the needs of people with reduced mobility.

It is important to note that the requirements may not fully cover everyone's needs. In some cases, further design changes or home modifications may be necessary to meet specific needs or preferences.

The term *Livable Housing Design* comes from the *Livable Housing Design Guidelines*, a voluntary guide published by [Livable Housing Australia](#). These guidelines formed the basis of the requirements now included in the NCC.

## 1.2 ABCB Voluntary Standard for Livable Housing Design

The ABCB has published the [ABCB Voluntary Standard for Livable Housing Design: Beyond Minimum](#) (the Voluntary Standard) as an alternative Deemed-to-Satisfy (DTS) Solution to the [Livable Housing Design](#) Standard (the Standard). It offers solutions that exceed the minimum requirements of the Standard while remaining consistent with them. Regardless of the chosen standard, all other relevant NCC requirements must be met.

Each Part of the Standard is explained in this handbook with examples and, where relevant, information on other applicable NCC provisions.

### Note

There are no changes to the livable housing provisions in NCC 2025. For compliance with NCC 2022, either the ABCB Voluntary Standard for Livable Housing 2022 or the ABCB Voluntary Standard for Livable Housing Standard 2025 may be used. Both versions are available on the ABCB website.

For compliance with the livable housing provisions of NCC 2025, the referenced standard is the 2025 version, which this handbook has been aligned with.

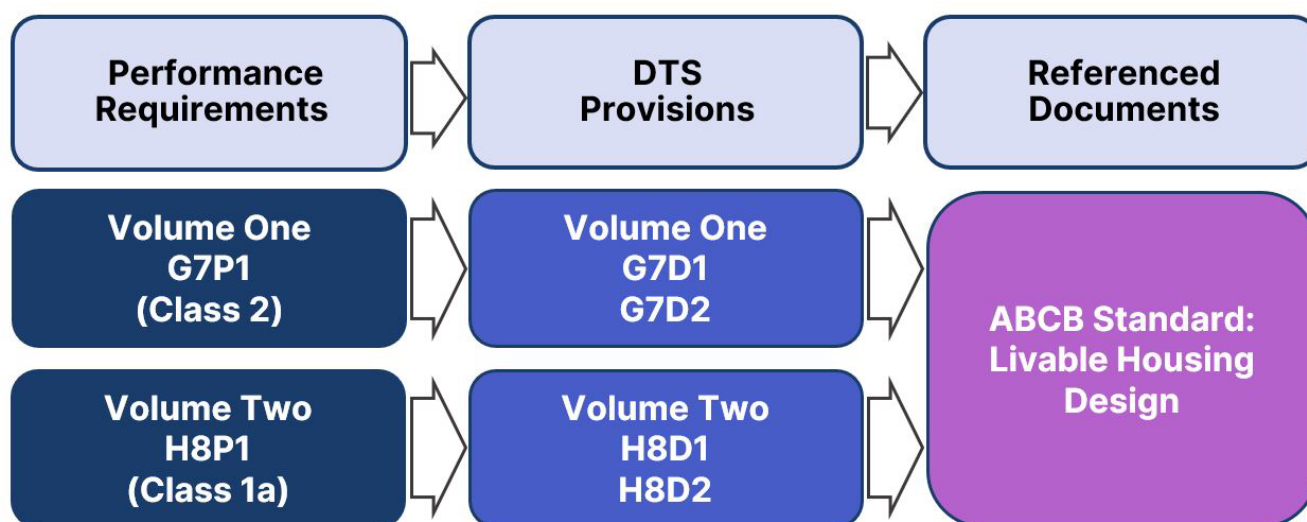
## 2 Application of livable housing provisions

The livable housing provisions apply to houses and apartments, with relevant Performance Requirements in NCC Volumes One and Two. DTS Provisions provide a compliance pathway to satisfy the Performance Requirements (see [Appendix C](#)).

DTS Provisions in Part G7 of NCC Volume One and Part H8 of NCC Volume Two reference the Standard. The Standard details technical provisions for DTS compliance for Class 1a buildings (dwellings not above another classification, other than a private garage) and sole-occupancy units (SOUs) in Class 2 buildings (apartments). This is shown in Figure 2.1.

As an NCC referenced document, the Standard must be read in conjunction with the NCC.

Figure 2.1 Livable Housing Design Standard as a referenced document

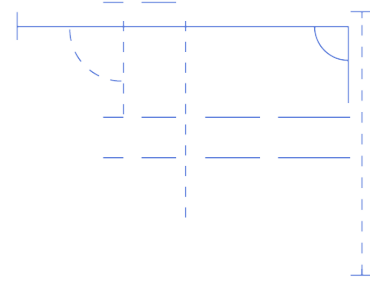


The livable housing design provisions do not apply to houses and apartments in Class 3, Class 4, and Class 9 residential care buildings. This is because Class 3 and Class 9 buildings are subject to existing accessibility requirements and Class 4 dwellings are generally occupied by people without mobility impairment (for example a caretaker).

### 2.1 The Standard

The Standard has 6 Parts covering:

- **Dwelling access** – getting to the entrance from the allotment boundary
- **Dwelling entrance** – ease of access through a step-free entrance
- **Internal doors and corridors** – ease of movement within the dwelling
- **Sanitary compartment** – ease of movement to use a toilet pan



- **Shower** – ease of movement by way of a step-free shower
- **Reinforcement of bathroom and sanitary compartment walls** – providing the ability to add supports such as grabrails if needed.

The NCC already includes access provisions for people with a disability in Part D4 of Volume One, which apply to common areas of Class 2 apartment buildings. Therefore, the dwelling access provisions of the Standard do not apply to Class 2 apartments. However, all other parts of the Standard ordinarily apply, as shown in Table 2.1.

**Table 2.1 Overview of the Standard showing which parts apply to Class 2 and Class 1a dwellings**

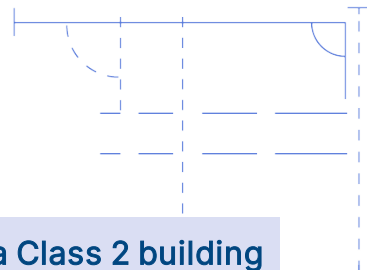
Part	Apartments (Class 2) Volume One	Dwellings (Class 1a) Volume Two
Dwelling access	X	✓ <sup>1</sup>
Dwelling entrance	✓	✓
Internal doors and corridors	✓	✓
Sanitary compartment	✓	✓
Shower	✓	✓
Reinforcement of bathroom and sanitary compartment walls	✓	✓

**Note to Table 2.1:**

- (1) Subject to concessions specified in Volume Two H8D2.
- (2) ✓ indicates the Part applies. X indicates the Part does not apply.

## 2.2 Livable housing and NCC requirements – Apartments (Volume One)

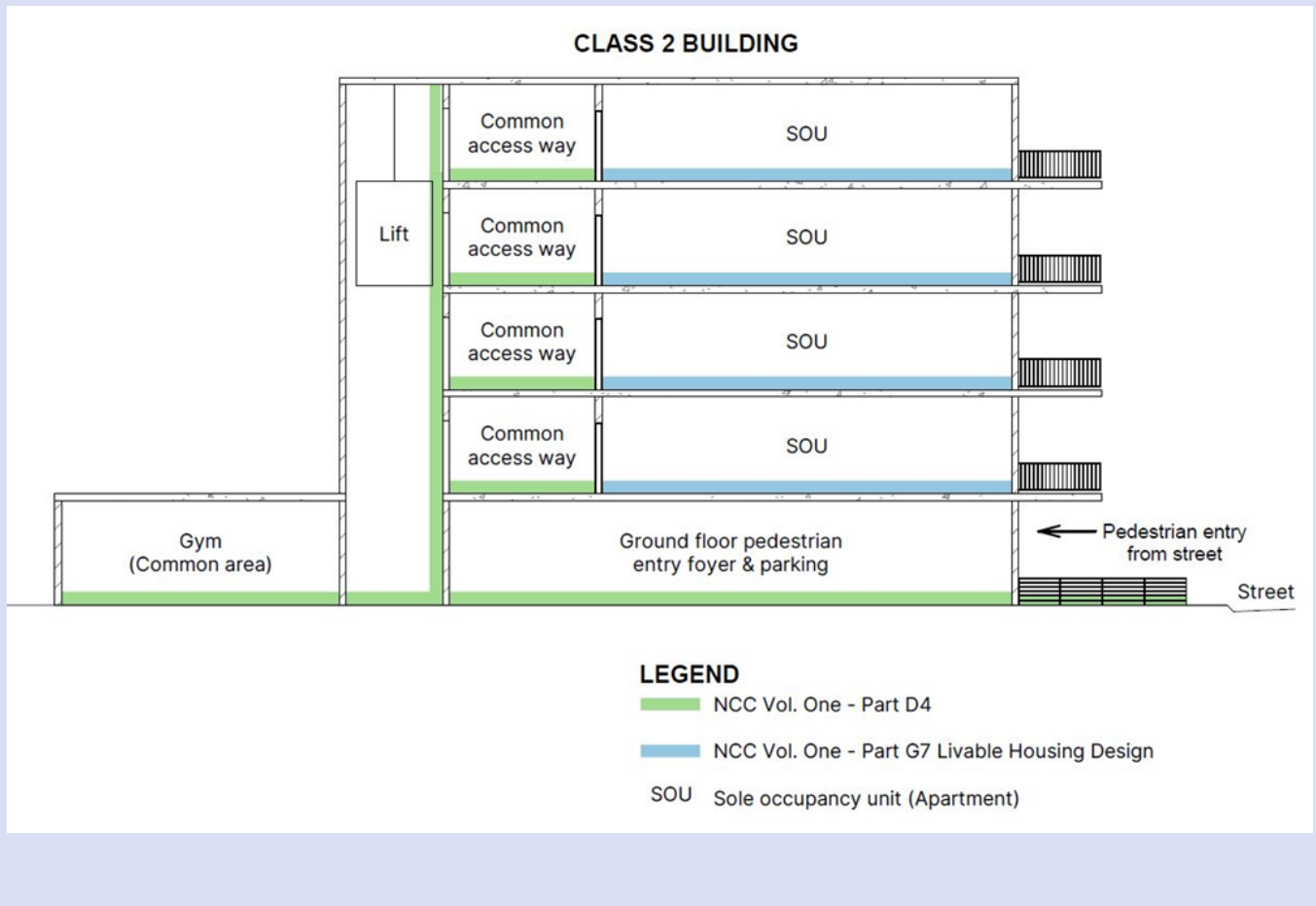
Each SOU in a Class 2 building must comply with the Standard, except for Part 1. Figure 2.2 illustrates where NCC Volume One Part D4 requires accessibility for common areas, and where Part G7 requires compliance with Parts 2 to 6 of the Standard.

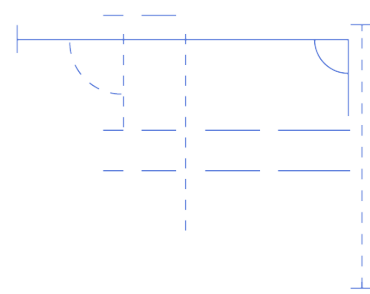


## Example: Application of Part D4 and livable housing requirements to a Class 2 building with lift access to each floor

Each SOU has an accessible floor accessed from a common area and Part D4 and Part G7 apply, as shown in Figure 2.2.

**Figure 2.2 Class 2 building where both Part D4 access provisions and Part G7 livable housing provisions apply**





## 3 Dwelling access

### 3.1 Introduction

The dwelling access requirements ensure a continuous *step-free access path* from the allotment boundary or a designated car parking space to the dwelling entrance, promoting safe and easy access for all occupants, including older adults and those with mobility disabilities.

This aim is outlined in Objective H8O1 and Functional Statement H8F1(a), which clarify the intent and application of the Performance Requirements.

### 3.2 Application

The requirements for dwelling access in livable housing design are covered by the following NCC Volume Two requirements:

- H8P1(a)
- H8D2(1) and (2)
- Part 1 of the Standard.

#### Reminder

Part 1 of the Standard does not apply to Class 2 buildings.

Clause H8D2(1) states that a Class 1a dwelling must comply with the Standard. Part 1 of the Standard has 2 components:

- continuous step-free access path
- car parking space incorporated into the step-free access path.

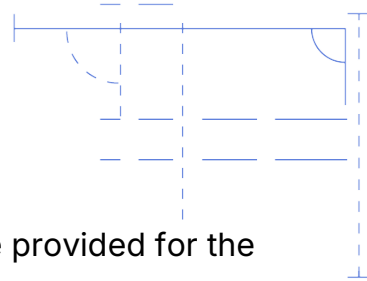
Clause H8D2(2) provides exemptions to the requirement for a step-free access path. These exemptions include:

- steep sites
- insufficient space.

### 3.3 Step-free access path

The continuous step-free access path must be provided from:

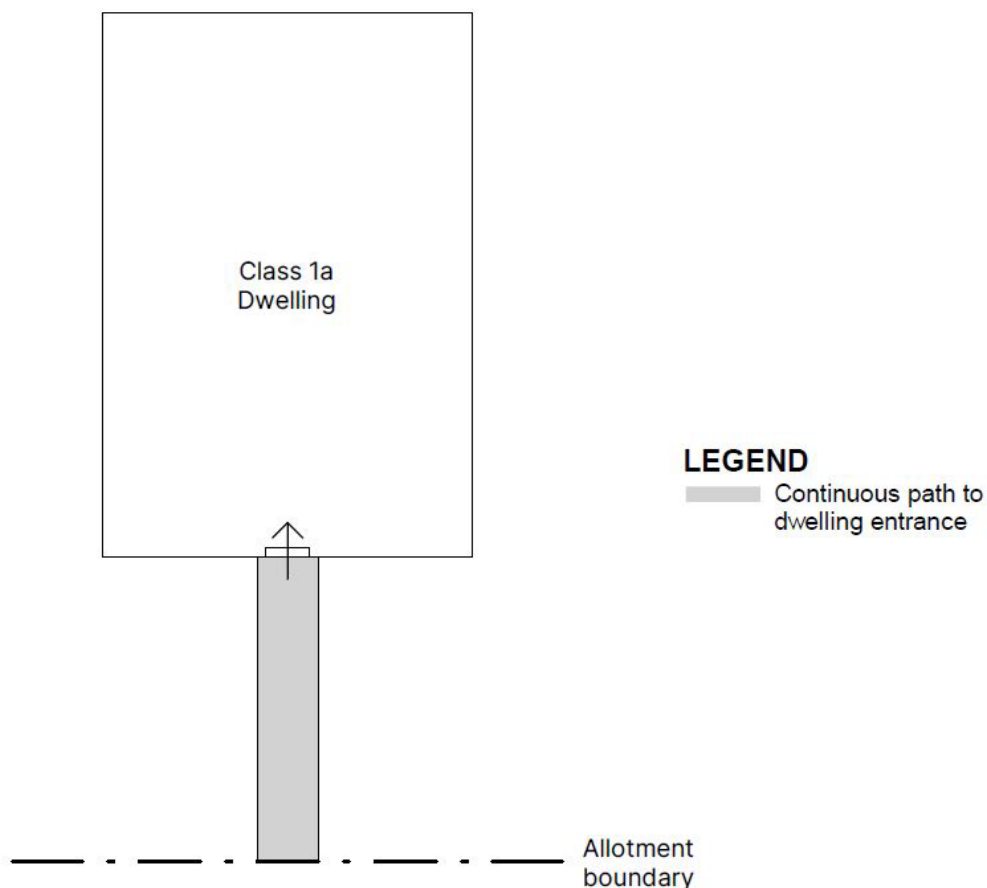
- the pedestrian entry at the allotment boundary, or



- an appurtenant<sup>1</sup> Class 10a garage or carport, or a car parking space provided for the exclusive use of dwelling occupants.

These options are shown in Figures 3.1 to 3.3 for the continuous access path.

**Figure 3.1 Continuous path to a dwelling entrance from the allotment boundary (Clause 1.1(1)(a) in the Standard)**

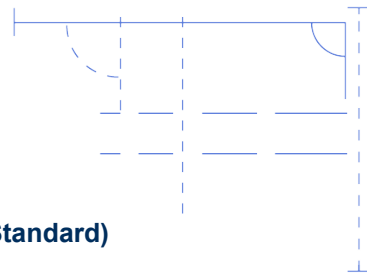


**Note to Figure 3.1:**

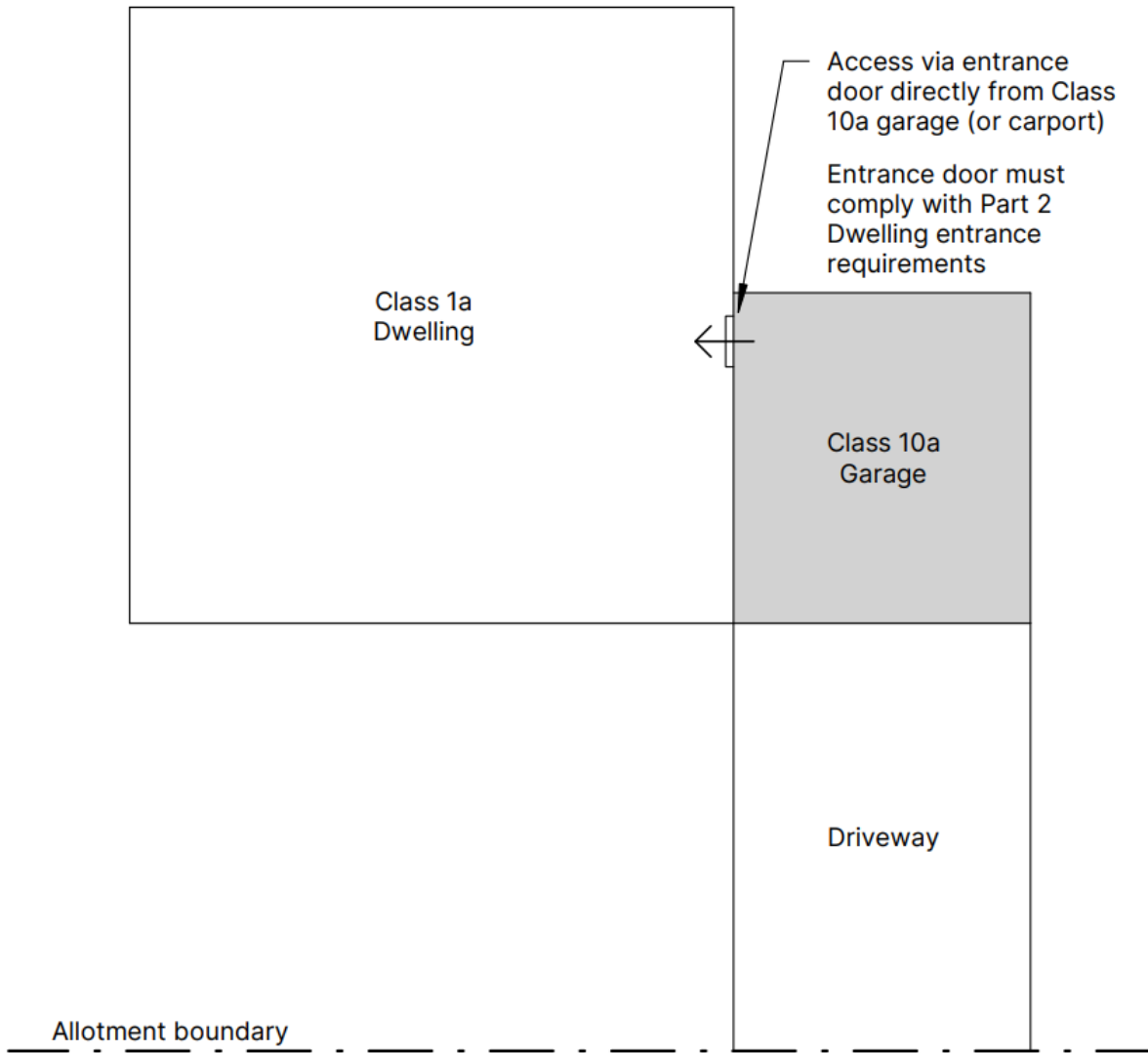
Suitable for many applications including narrow lots, small sites, and sites with minimal setbacks.

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<sup>1</sup> For the definition of *appurtenant*, see [Appendix B](#).



**Figure 3.2 Direct entrance to a dwelling from a garage/carport (Clause 1.1(1)(b) in the Standard)**

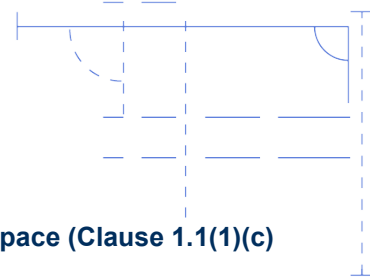


**LEGEND**

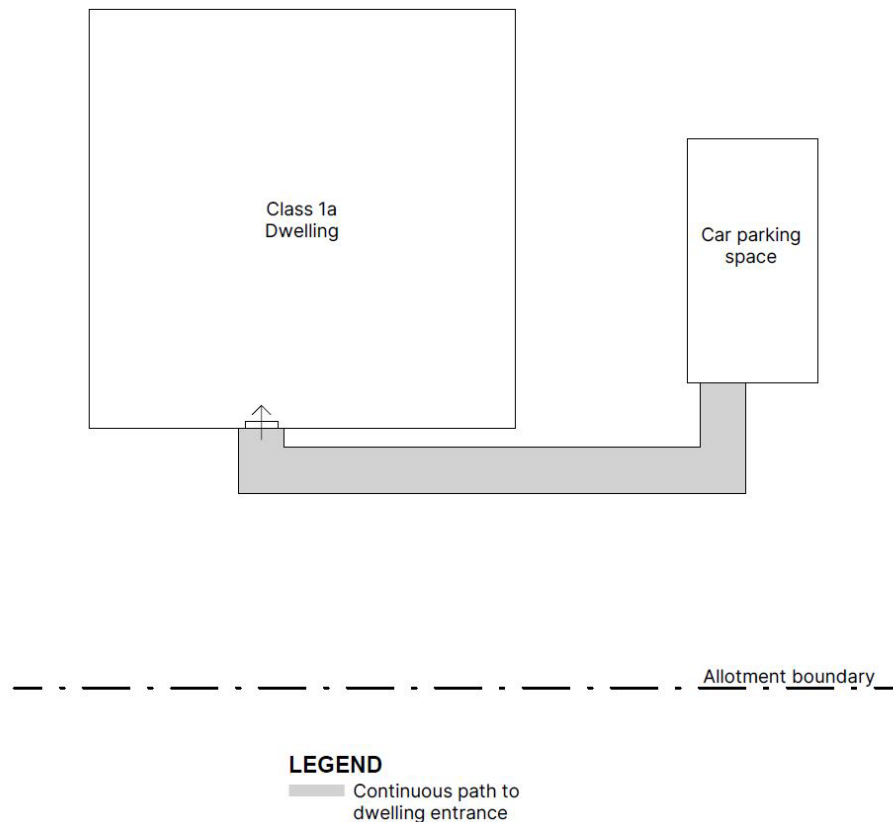
— Continous path to dwelling entrance

**Note to Figure 3.2:**

Suitable for many applications including steep sites, large allotments, small sites, and minimal setbacks.



**Figure 3.3 Continuous path to a dwelling entrance from an exclusive use car parking space (Clause 1.1(1)(c) in the Standard)**

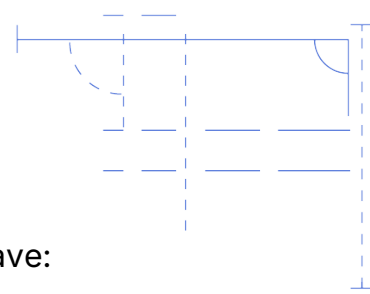


**Note to Figure 3.3:**

Suitable for many applications including steep sites and large allotments.

The requirements for a continuous step-free access path from the allotment boundary or a car parking space for the exclusive use of the occupants includes:

- a connection between the dwelling entrance door (that complies with Part 2 Dwelling entrance) and the car parking space or allotment boundary
- a continuous path that is step-free
- a minimum of 1000 mm wide
- a crossfall of 1:40 or shallower
- gates within the access path (if provided) that have a minimum clear opening width of 820 mm.
- Where a ramp (other than a step ramp) is required, it must:
  - have a minimum of 1000 mm wide
  - have a gradient between 1:14 and 1:20 (maximum distance between landings dependent on gradient)
  - have a minimum 1200 mm long landing at the top and bottom with a crossfall shallower than 1:40.



- A single step ramp may be incorporated. Where provided it must have:
  - a minimum 1000 mm wide, or the width of the access path if greater than 1000 mm
  - a maximum gradient of 1:10
  - a maximum height of 190 mm
  - a maximum length of 1900 mm.

Where a nominated step-free access is nominated to provide step-free access from an attached Class 10a garage or carport, the connecting door must comply with Part 2 Dwelling entrance. In this instance, it is not necessary to provide an additional entrance door that complies with Part 2.

### 3.3.1 Ramps on step-free access path

Clauses 1.1(4) and (5) include specific requirements for ramps including gradients, maximum length, provision and dimensions of landings, minimum width, and crossfalls.

#### Ramp length and gradient

The maximum aggregate length of ramping permitted between landings depends on the gradient as follows:

- at a gradient of 1:14, a maximum length of 9 m
- at a gradient of 1:20, a maximum length of 15 m
- at gradients between 1:14 and 1:20, a maximum length as determined by linear interpolation.

The length of the landings is not included in the distance between landings.

No maximum length is specified for ramps shallower than 1:20.

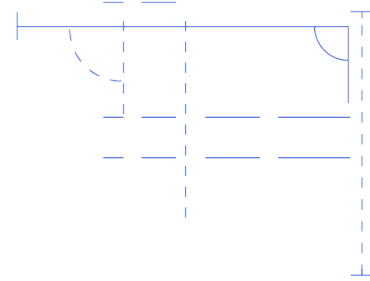
#### Alert

Should construction result in a ramp (other than a step ramp) steeper than 1:14, the ramp will not comply (see Clause 1.1(2)(a)(ii)). Designers should consider specifying ramps shallower than 1:14 to allow for factors that might prevent precise construction.

#### Landings

Landings are required at the end of each ramp, providing a safe transition between a sloped surface and a level surface. The landing length must be a minimum of 1200 mm long – in line with the direction of the ramp – and at least as wide as the ramp. Where a cross-fall is provided (e.g. for drainage), the crossfall must be no steeper than 1:40.

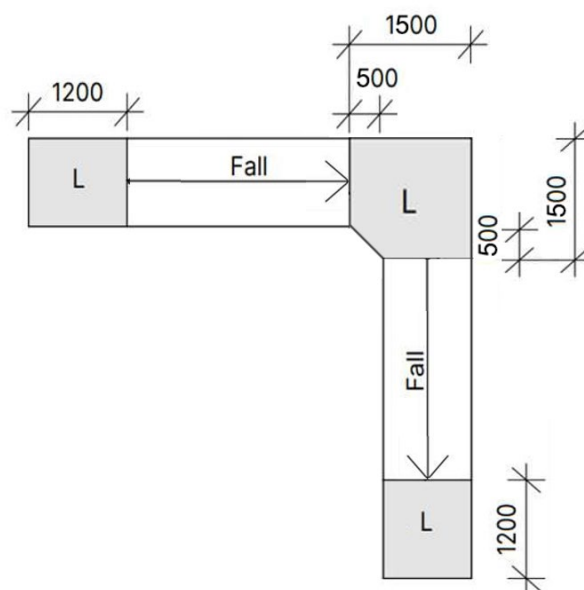
A landing provided at one end of a ramp may also be counted as a landing for the purposes of the dwelling entrance requirements in Part 2.3 of the Standard.



## Change in ramp direction

Landings can be used to provide a change in ramp direction. Where a ramp changes direction, a landing must be provided that is at least 1200 mm long in each direction (see Figure 3.4). Although not mandatory for the purposes of Part 1 Dwelling access, Australian Standard, AS 1428.1 *Design for Access and Mobility* describes methods for changing the direction of ramps and can be used as guidance when designing changes in ramp direction.

**Figure 3.4 Landing length between ramps that change direction (dimensions in mm)**



### Note to Figure 3.4:

As outlined above, the size of landing at the change in direction of the ramp is determined in accordance with AS 1428.1. This landing size is recommended, although Clause 1.1(4) of the Standard permits a smaller landing.

## Linear interpolation

Figure 3.5 shows the line of interpolation (in orange) between gradients 1:14 (maximum length 9 m) and 1:20 (maximum length 15 m). This line represents the maximum allowable ramp length (between landings) for a given gradient. For example, in the same figure, for a gradient of 1:17 the maximum ramp length is 12 m. Table 3.1 represents this same information for a selection of ramp gradients.

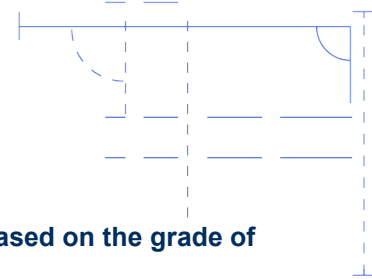


Figure 3.5 Interpolation graph illustrating maximum ramp length (between landings) based on the grade of the ramp

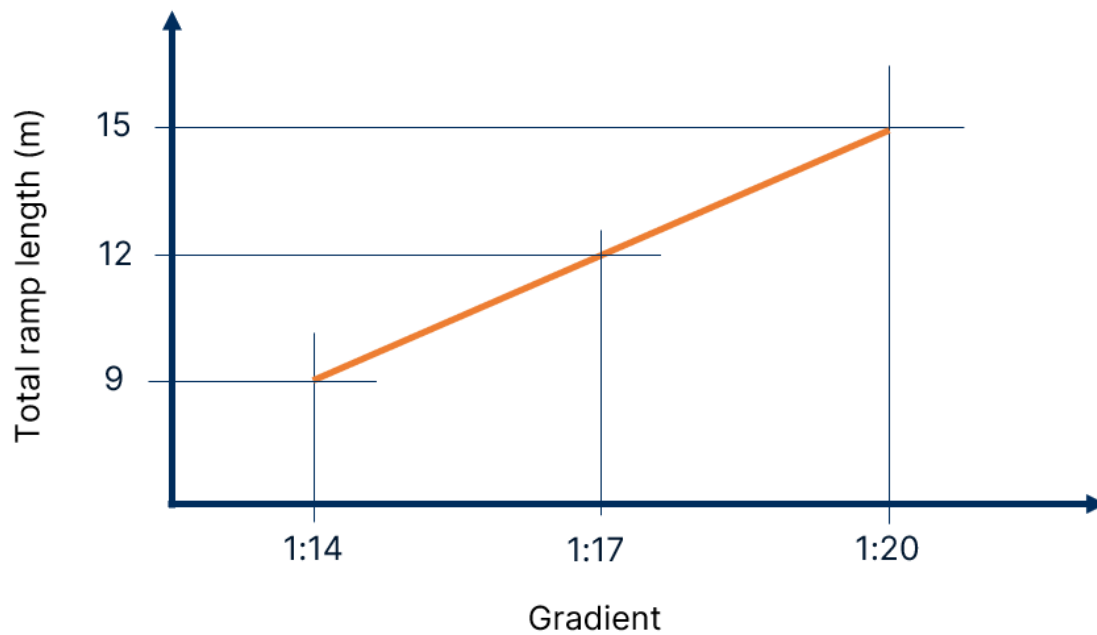
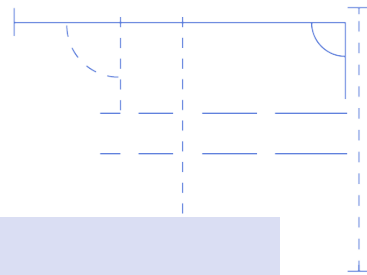


Table 3.1 Interpolation table illustrating maximum ramp length (between landings) based on the grade of the ramp

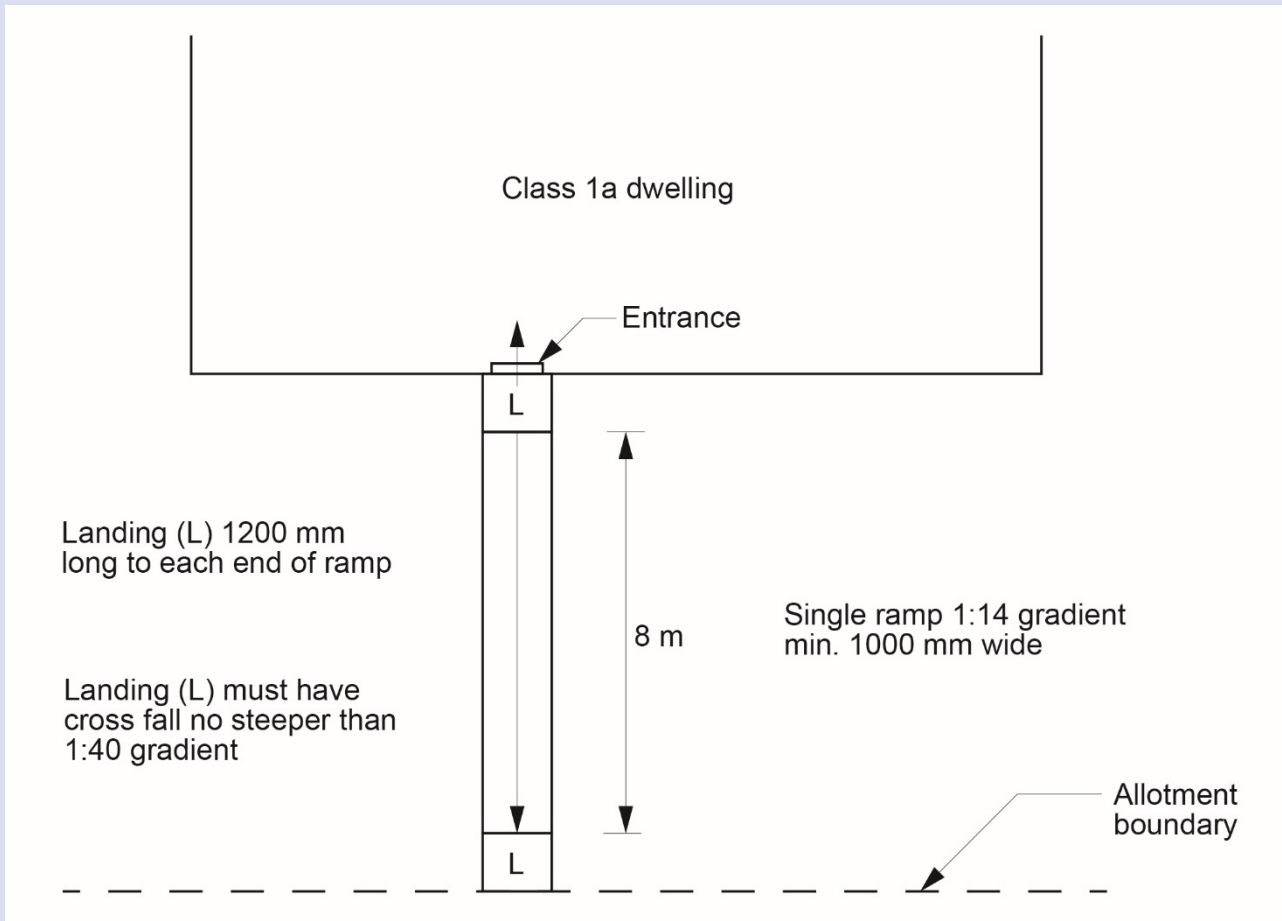
Ramp gradient	Maximum ramp length (m)
1:14	9
1:15	10
1:16	11
1:17	12
1:18	13
1:19	14
1:20	15

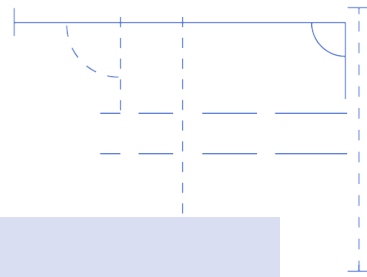


## Example: Ramp designs and lengths

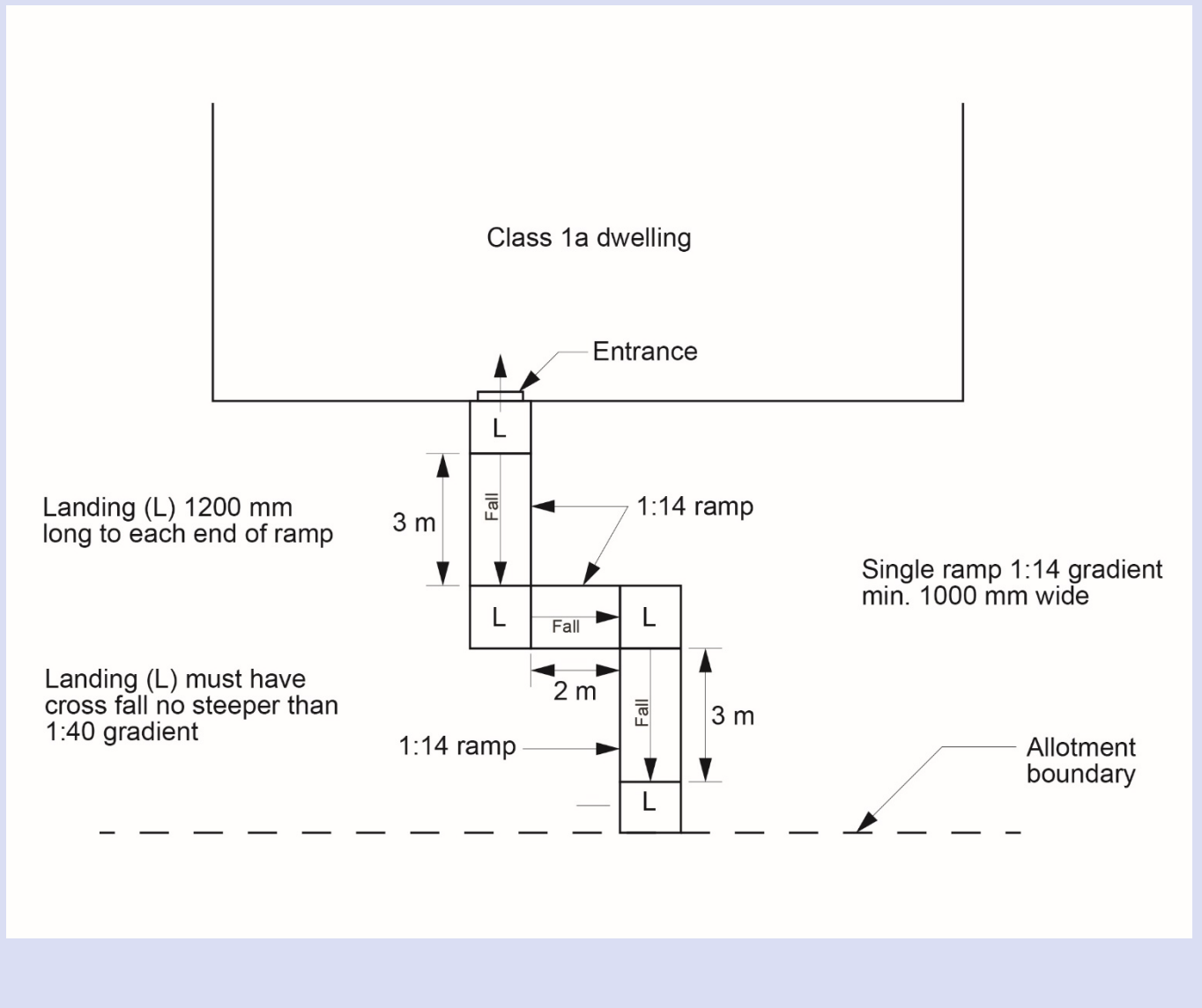
Figure 3.6 and Figure 3.7 provide examples of single and multiple ramp designs.

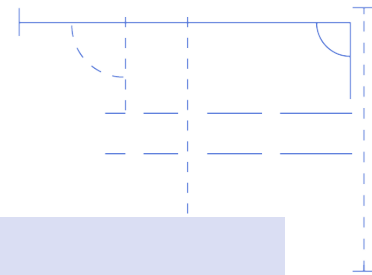
**Figure 3.6 A single ramp design with landings – ramp designs and lengths**





**Figure 3.7 Multiple ramps with landings – ramp designs and lengths**

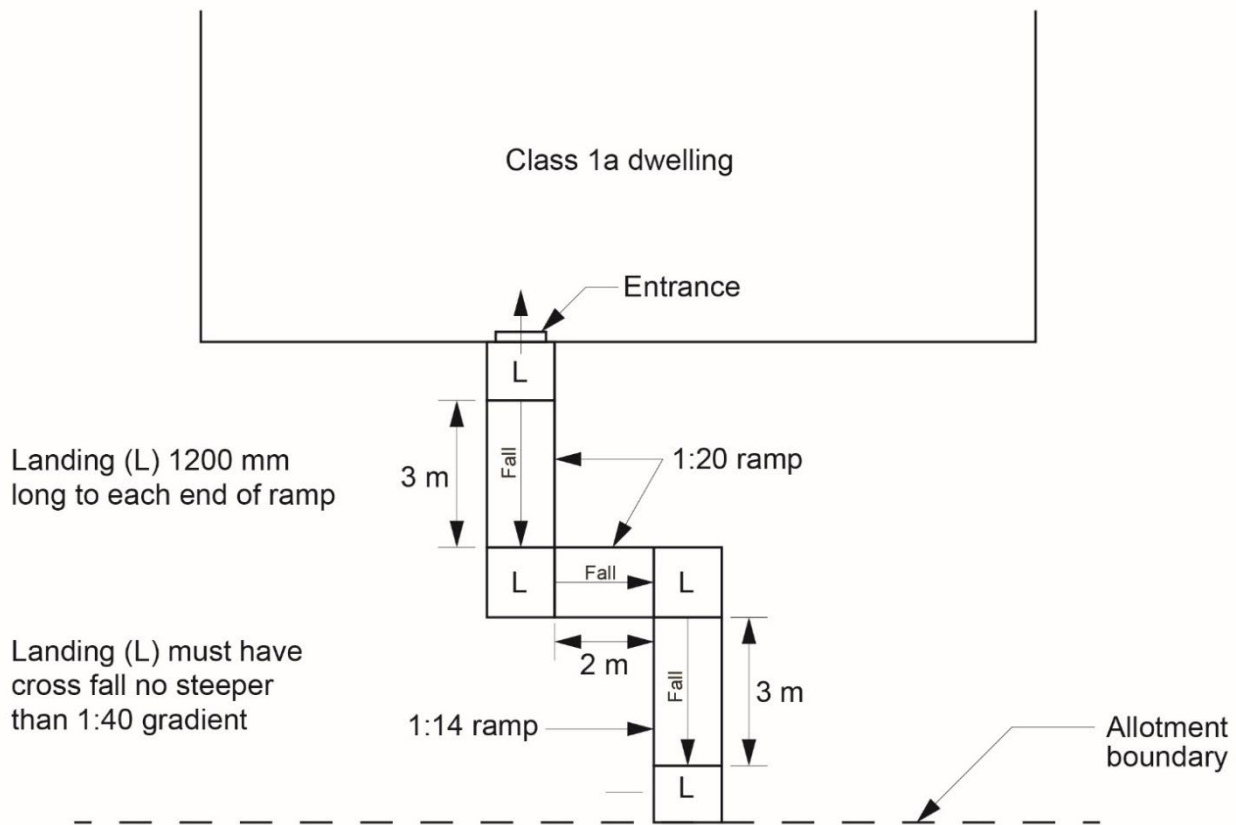




### Example: Weighted aggregate ramp length

Figure 3.8 Multiple ramps with landings – weighted aggregate ramp length provides an example for determining the weighted aggregate ramp length where multiple gradients are used.

**Figure 3.8 Multiple ramps with landings – weighted aggregate ramp length**



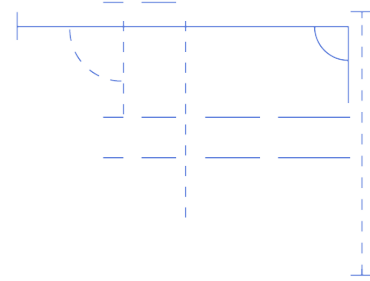
For multiple ramp gradients, determine the permitted weighted aggregate ramp length. Using the above example with a 1:14 ramp (maximum aggregate length of 9 m) and two 1:20 ramps (maximum aggregate length of 15 m), the permitted weighted aggregate for these two ramp gradients is determined with this formula:

$$\frac{x}{9} + \frac{y}{15} \leq 1$$

So, for the above example with a 1:14 ramp of 3 m and 5 m of 1:20 ramps:

$$\frac{3}{9} + \frac{5}{15} \leq 0.67$$

Therefore, the ramp above complies with 1.1(4)(a)



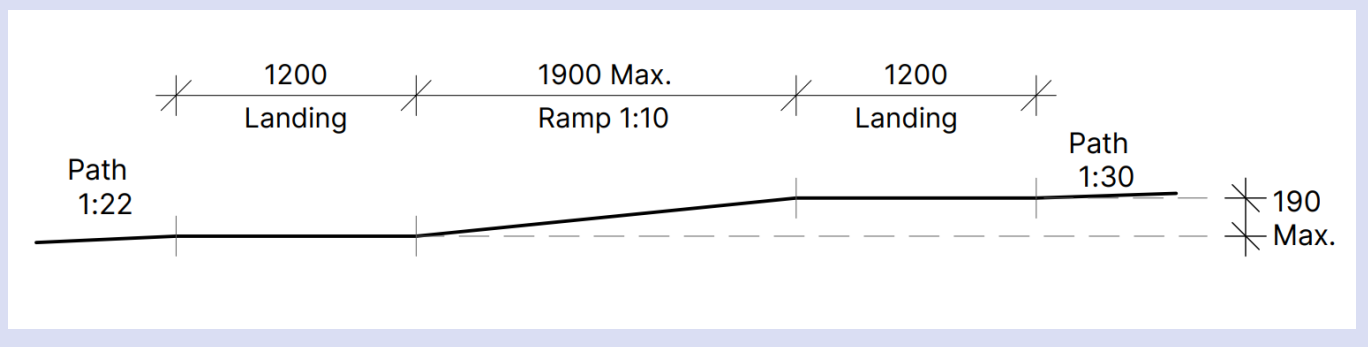
## Step ramp

Clause 1.1(5) permits the use of one step ramp in an access path. A step ramp assists a person to ascend a single step (no more than 190 mm high), but it cannot be longer than 1900 mm or steeper than 1:10 (Figure 3.9). A steeper gradient requires more effort from users, so a shallower gradient should be used where possible.

### Example: Step ramp with landings

Step ramp with landings to safely transition between ramp and paths, as shown in Figure 3.9.

Figure 3.9 Example of a step ramp with landings (dimensions in mm)



### Ramp landing location

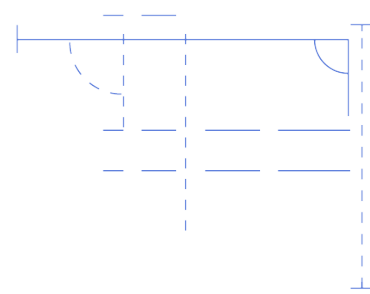
The Standard stipulates that the start of the access path is the allotment boundary (see Clause 1.1(1)(a)). Therefore, use of the public footpath for a landing would require a Performance Solution.

## Access path design

The key aim for designers of access paths is to achieve a simple, practical and safe step-free access path that is accessible to people with different levels of mobility.

Access path design is influenced by several factors, including site topography, the location of the building on the site, and car parking requirements. Gates provided along the access path must have a minimum clear opening width of 820 mm, in accordance with Clause 1.1(3)(a).

Designers may select from a range of materials for the access path, provided they are fit for purpose. For example, a firm surface will meet the Objective and Functional Statement in the NCC. Different materials may be used along the same access path, such as concrete and timber decking, provided the path is continuous and free of impediments to ensure safe use.



Examples of impediments include:

- pedestrian bridges using unsuitable materials (for example uneven timber planking with excessive gaps between planks)
- paths with a crossfall steeper than 1:40
- objects that protrude into the required minimum width of the path (such as a bench, post, or letterbox).

Where access paths include both ramped and non-ramped path sections, potential trip and fall hazards associated with changes in level should be minimised.

### 3.3.2 Decks, verandahs, and the like forming part of access path

Decks and verandahs and other similar structures are common attachments to Australian homes and may form part of the access path to a dwelling entrance. Where they do, the access path requirements of the Standard also apply, including the requirement for a continuous step-free access.

### 3.3.3 Driveway may form part of access path

A driveway may form part of a step-free access path where it complies with the Standard's requirements for access path gradients and length. Where part or all of a driveway that forms part of a step-free access path has a gradient of 1:20 or steeper, Clauses 1.1(4) and (5) apply in the same way as for a separate access path.

## 3.4 Parking space incorporated into step-free access path

Clause 1.2 states that one or more car parking spaces can form part of a required step-free access path, provided at least one of the car parking spaces has an unobstructed size of at least 3200 mm wide by 5400 mm long and has a maximum gradient of 1:33 for bitumen surfaces or 1:40 for any other surface material. This clause only applies when the appurtenant<sup>2</sup> garage, carport, or car parking space is connected to, or forms part of a required access path.

Figure 3.10 illustrates how incorporation of a car parking space may be used as an alternative to providing access from an allotment boundary.

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<sup>2</sup> For the definition of *appurtenant*, see [Appendix B](#).

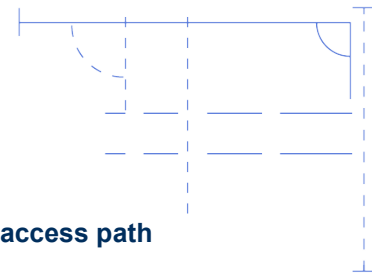
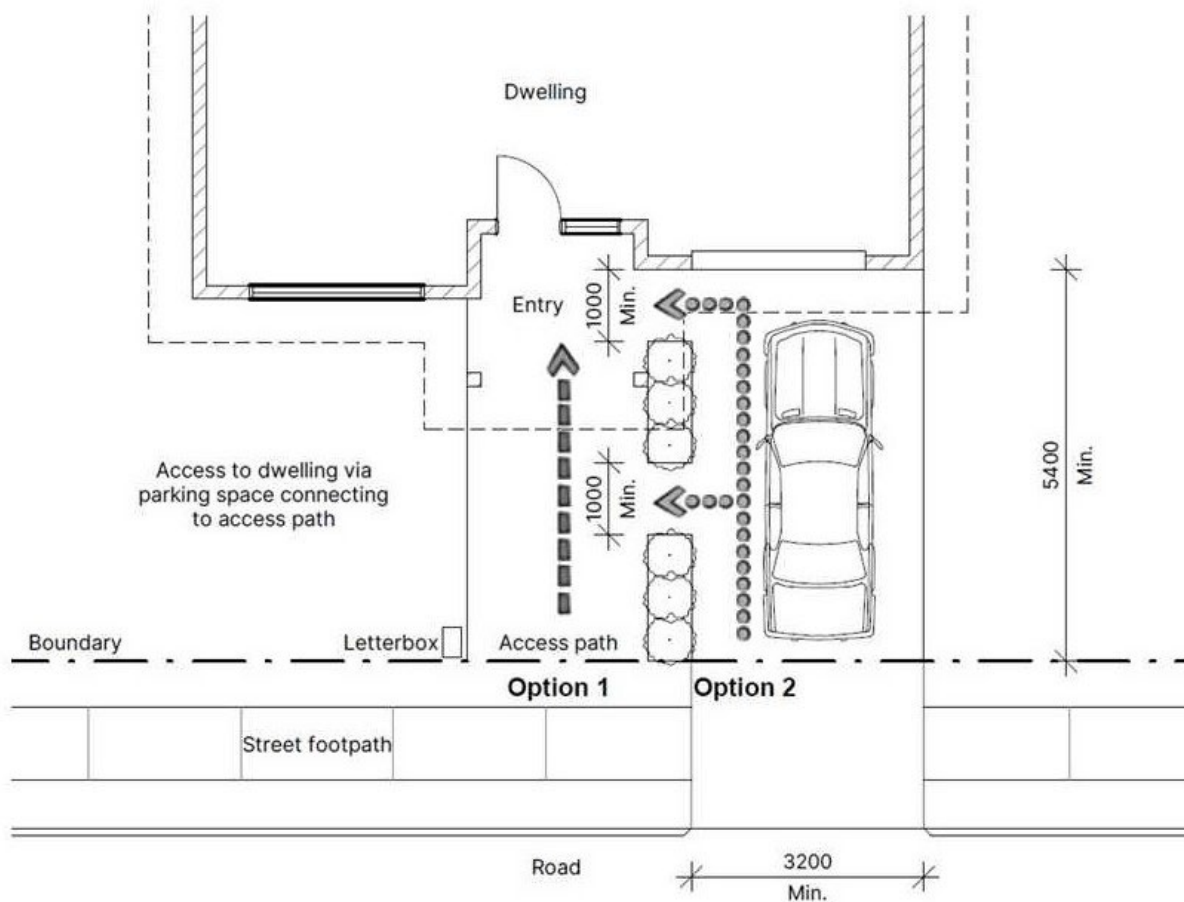


Figure 3.10 Options for incorporating, or not incorporating, a car parking space in the access path



Where the step-free access path is provided from an appurtenant garage or carport, access into the dwelling must be via a door complying with Part 2.

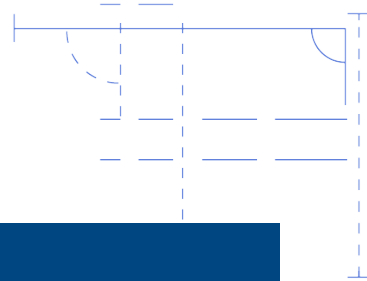
### Alert

There is no need to specifically signpost or mark the car parking space (e.g. by line marking) as there is no requirement for car parking spaces associated with a Class 1a dwelling to be identified.

## 3.5 Exemptions to dwelling access requirements

The exemptions that apply to dwelling access for Class 1a buildings are found in:

- the exemptions box for Performance Requirement H8P1
- Clauses H8D2(2)(a) and (b).



## Alert

These exemptions apply only to the access path (excluding landings) to a Class 1a building. This is because the step-free access path requirements in the Standard apply only to Class 1a buildings. Where an exemption applies, compliance with Clause 1.1 of the Standard is not required in relation to the access path.

When step-free access path is not provided from an appurtenant<sup>3</sup> garage, carport or car parking space in accordance with H8D2(2)(a), compliance with Clause 1.1 of the Standard is not required if one or more of the following conditions in H8D2(2)(b) apply:

- the area available for the access path is too steep
- there is insufficient space to construct a compliant access path.

### 3.5.1 When access via an appurtenant garage, carport or car parking space is not provided

NCC Volume Two Clause H8D2(2)(a) sets a pre-requisite that must be satisfied before any one or more of the exemption conditions listed in H8D2(2)(b)(i) to (iv) can be applied. Where step-free access is not provided from an appurtenant garage, carport, or car parking space the exemption conditions in H8D2(2)(b) cannot be applied.

Examples include:

- no garage, carport or car parking space is proposed on the site
- the garage, carport or car parking space is located on a different floor level to the rest of the dwelling and step-free access is not provided
- the garage, carport or car parking space is shared with another dwelling or building and is not provided for the exclusive use of the occupants.

## Alert

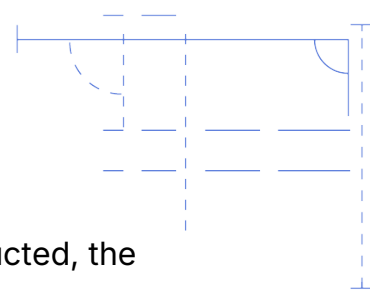
Even if an exemption for Clause 1.1 is applicable, all other relevant requirements of the Standard must still be complied with.

### 3.5.2 The area for the access path is too steep

The exemption applies only to the specific area of the site where a compliant access path would otherwise be built. It does not apply to the site as a whole. Where there is at least

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<sup>3</sup> For the definition of *appurtenant*, see [Appendix B](#).



one location on the site where a compliant access path could be constructed, the exemption cannot be applied.

For example, it may not be possible to design a compliant access path from the allotment boundary (or an accessible car parking space) to the front entrance due to excessive slope. However, if it is possible to construct a compliant access path along the side of the house to a rear patio or other accessible entrance, the exemption would not apply.

### 3.5.3 Insufficient space on the allotment

The *insufficient space* exemption is set out in NCC Volume Two at H8D2(2)(b)(iii). It applies where the available space on the allotment is insufficient to construct a compliant step-free access path. This may be due to the physical size or configuration of the allotment, or due to requirements under planning or other regulatory controls outside of the NCC that limit the proportion of a site that can be covered by structures and/or impervious ground coverings.

#### Relationship to property boundary

When applying the exemption, it is generally assumed that the step-free access path is located within the property boundary. However, in some cases, such as Class 1a dwellings that form part of a strata development with shared access paths and driveways, it may be possible for an access path to extend into common property or be shared between dwellings. In these cases, the access path may extend beyond the strata boundary.

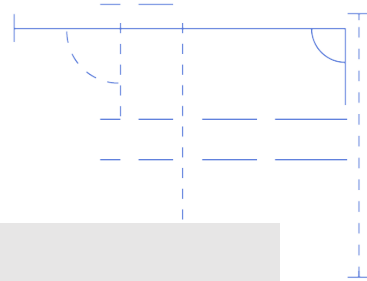
As with all exemptions, these situations must be assessed on a case-by-case basis. Considerations should be given to factors such as the permanency, control and ongoing availability of the pathway. Where compliance with the DTS Provisions is not clear, a Performance Solution may be used, subject to acceptance by the appropriate authority.

#### Reminder

Unless an exemption applies, a step-free access path is required under NCC Volume Two and the Standard. Compliance must be assessed and signed off by the appropriate authority.

## 3.6 Other relevant NCC provisions for dwelling access

The NCC includes additional provisions that are relevant to the design of ramps and landings forming part of a step-free access path. For example, the Performance Requirement in Volume Two, H5P1 (Movement to and within a building) includes requirements to ensure people can move safely to and within a building.



## H5P1 Movement to and within a building

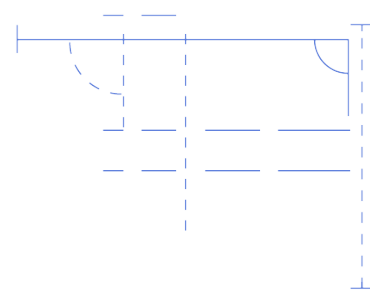
So that people can move safely to and within a building—

- (a) walking surfaces must have safe gradients; and
- (b) any stairway or ramp (other than a *threshold ramp*) must—
  - (i) have suitable handrails where necessary to assist and provide stability to people using the stairway or ramp; and
  - (ii) have suitable landings to avoid undue fatigue of users; and
  - (iii) be suitable for safe passage in relation to the nature, volume and frequency of likely usage; and
  - (iv) have slip-resistant walking surfaces on ramps, and on stairway treads or near the edge of the nosing.

Where ramps and landings form part of the step-free access path, they must comply with the DTS requirements in Volume Two Clause H5D2. These requirements are detailed in the ABCB Housing Provisions Standard (Housing Provisions) in Clauses 11.2.3, 11.2.4 and 11.2.5.

The Notes to Clause 11.2.3 in the Housing Provisions remind users that the Standard applies to ramps provided for the purposes of Clause 1.1(1). For such ramps, the gradient and landing requirements of the Standard apply. As a result, a ramp gradient of 1:8 (permissible under the Housing Provisions) would not be acceptable where the ramp forms part of the step-free access path.

Where a step-free access path is provided shared with a driveway, and the gradient is between 1:14 and 1:20, the driveway must meet the Standard's requirements for a ramp.



## 4 Dwelling entrance

### 4.1 Introduction

The dwelling entrance requirements ensure that dwellings are easy to enter and exit, including for older people and people with a mobility-related disability.

At least one entry door to the dwelling must comply with the Standard. The compliant entrance door does not need to be the front door, as long as it connects to the step-free access path in accordance with Clause 1.1(2), such as entry from a garage.

Part 2 of the Standard details the DTS compliance requirements for the designated dwelling entrance.

### 4.2 Application

In livable housing design, requirements for the dwelling entrance are covered by the following:

- H8P1(b) (Volume Two) and G7P1 (Volume One)
- H8D2 (Volume Two) and G7D2 (Volume One)
- Part 2 of the Standard.

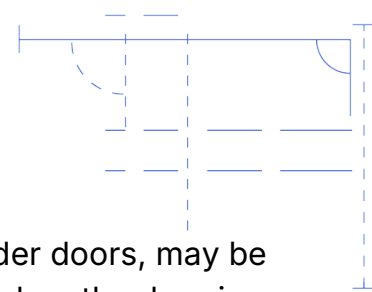
### 4.3 Design and configuration of nominated entrance doors

#### 4.3.1 Clear opening width

The Standard requires the designated entrance door to have a minimum clear opening width of 820 mm, measured clear of the door leaf and frame when the door is in the fully open position.

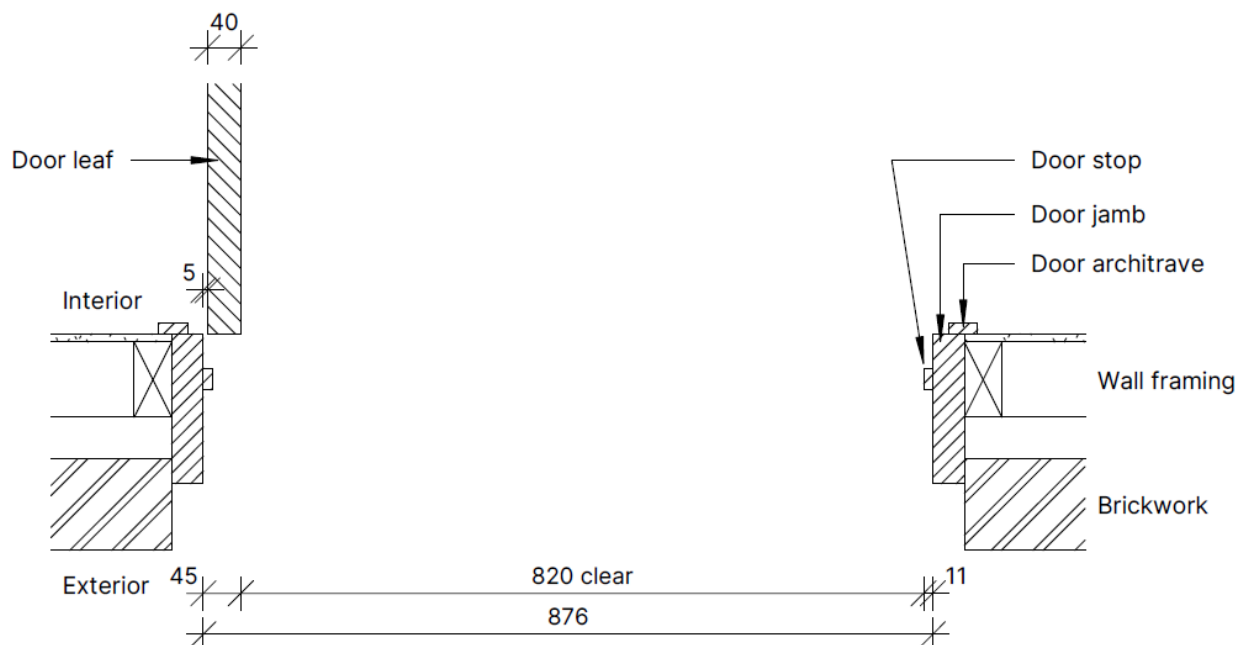
For example, an 870 mm leaf door may achieve the required minimum clear opening where it has a door leaf thickness of 40 mm (a common industry standard for entrance doors) and door stops of 11 mm on each side. This example reflects standard door sizes currently available from most door suppliers and is illustrative only.

Actual clear opening widths may vary depending on hinge types, installation methods, and the depth of door stops greater than 11 mm. Figure 4.1 illustrates this example.



Other types of door assemblies, such as double, bi-fold and multiple-slider doors, may be used, provided the overall clear opening width is not less than 820 mm when the door is fully open.

**Figure 4.1 Plan view of a typical door frame with a swing door**

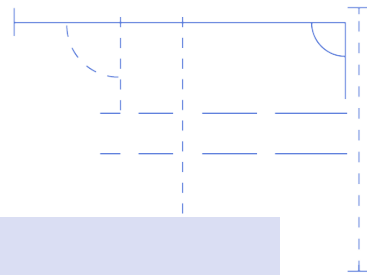


### 4.3.2 Threshold

Clause 2.2 of the Standard provides 4 options for complying with the threshold requirements for an entrance door subject to Clause 2.1. These options are:

- (1) provide a level threshold, or
- (2) have a door sill threshold height no more than 5 mm (with rounded or bevelled edge), or
- (3) provide a ramped threshold (maximum 1:8 gradient) within the depth and width of the door jamb, between the entry landing and the inside floor level, or
- (4) where the above three requirements cannot meet the weatherproofing requirements of the NCC:
  - (a) for external entrance doors containing a raised door sill, have no lip or upstand greater than 15 mm within the sill profile, and
  - (b) have no more than 5 mm height difference between the edge of the top surface of the sill and the adjoining finished floor surface level.

Figure 4.2 to Figure 4.5 illustrate how each of the 4 threshold options could be applied in practice.



## Example: Threshold options for external step-free entrance

Figure 4.2 Option 1: Level threshold (example of rebated door threshold)

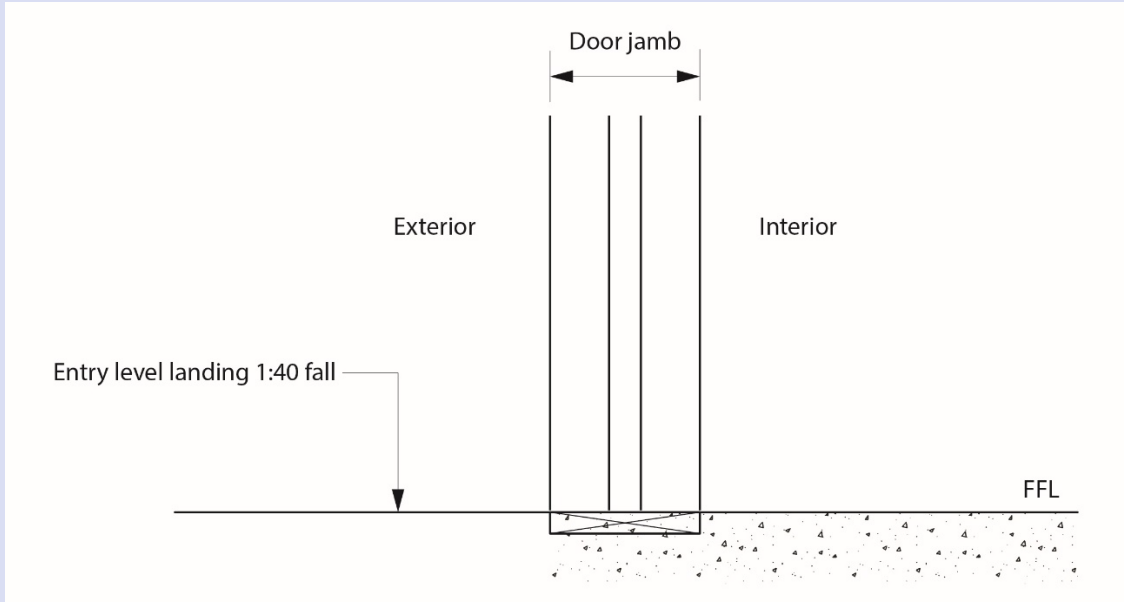
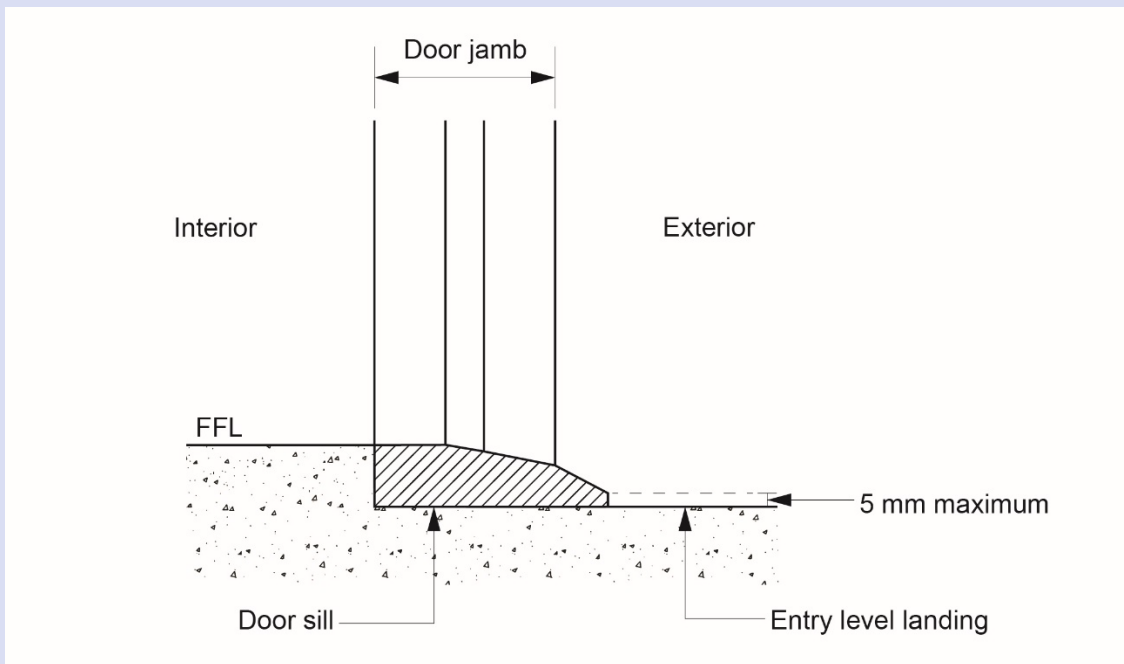
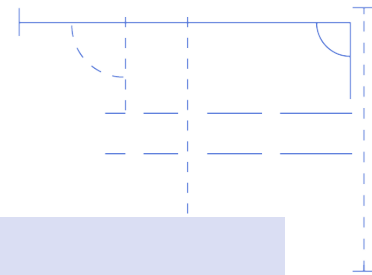
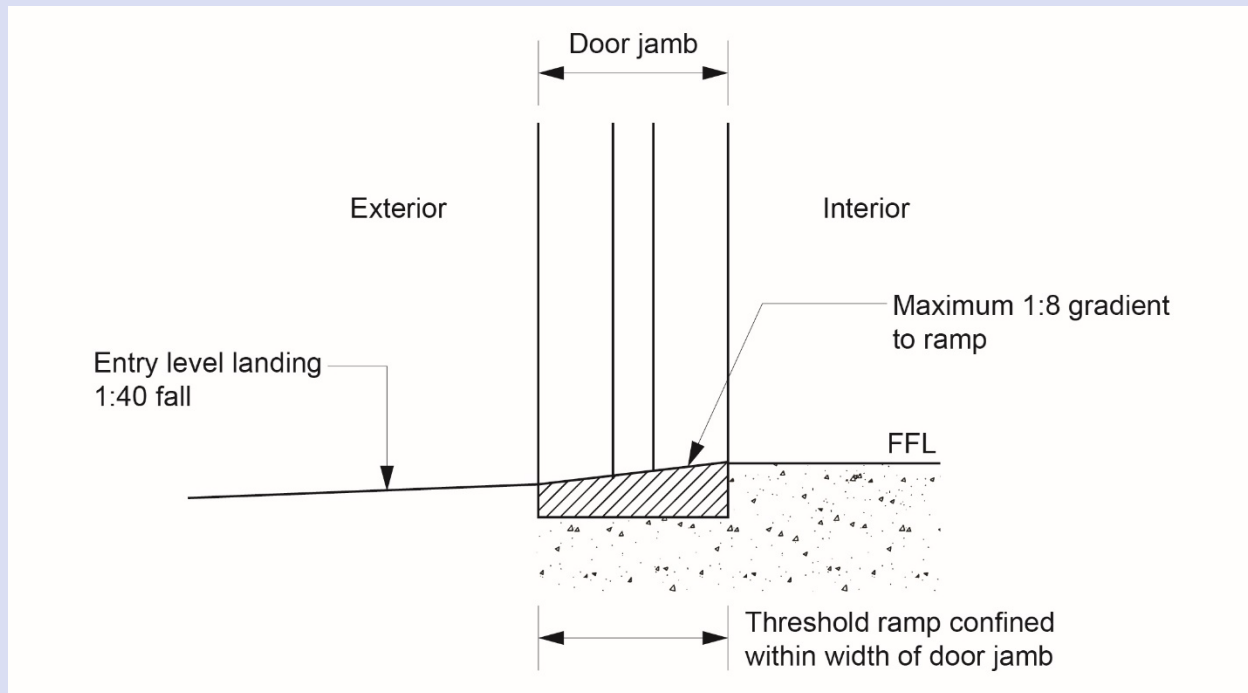


Figure 4.3 Option 2: Threshold sill 5 mm above entry level and landing

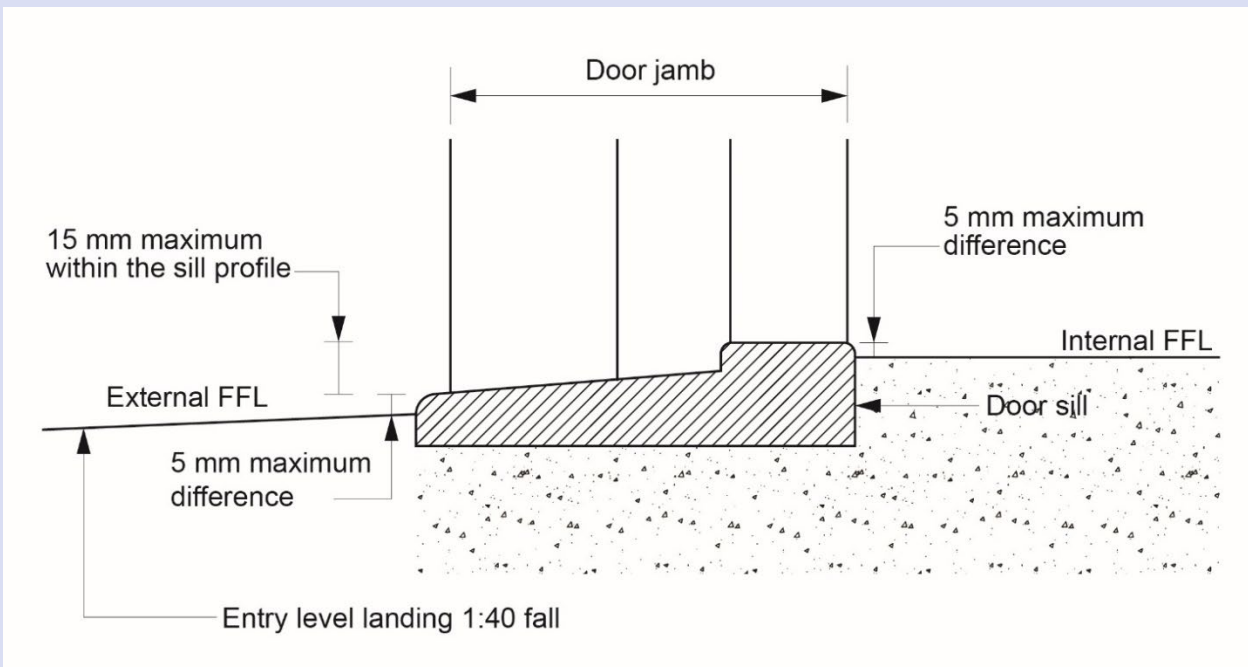




**Figure 4.4 Option 3: Threshold ramp (confined within depth of door jamb)**

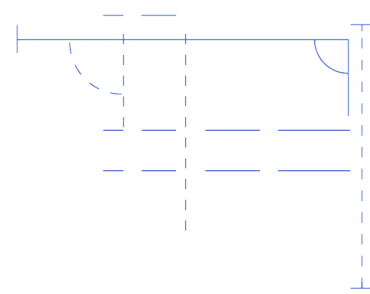


**Figure 4.5 Option 4: Threshold with no lip or upstand greater than 15 mm within the sill profile, and a maximum height difference of 5 mm with adjoining finished floor surface levels (FFL)**



**Note to Figure 4.2 to Figure 4.5:**

All dimensions are in mm.



### 4.3.3 Landing area

Clause 2.3 (Landing area) states that an entrance door subject to Clause 2.1 (Clear opening width) must have a space of at least 1200 mm x 1200 mm on the external side of the door with a crossfall gradient no steeper than 1:40. Access to this door must be unobstructed, other than by a gate or screen door.

However, Clause 2.3 does not apply to an entrance door that 'serves an appurtenant Class 10a garage or carport' in accordance with Clause 1.1(1)(b). This means that where step-free dwelling access is provided from the garage or carport, the 1200 mm x 1200 mm landing area is not required.

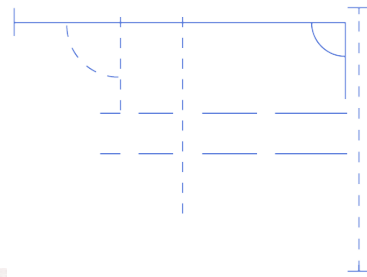
Where a car parking space is incorporated into the step-free access path, the carport or garage is taken to form part of the access path and must comply with Clause 1.2 (parking space incorporated into a step-free access path).

### 4.3.4 Weatherproofing for an external step-free entrance

The following requirements apply to weatherproofing of an external step-free entrance as set out in Clause 2.4:

- **Where the external entrance surface is impermeable**, a channel drain must be provided for the full width of the entrance. The channel drain must comply with NCC Volume Two H2D2 (Drainage) and be designed to allow inspection and cleaning. This supports termite inspection (where applicable—see Australian Standard AS 3660.1 *Termite Management – New Building Work*) and ongoing maintenance, particularly in bushfire-prone areas.
- **Where the external entrance surface is decking or another permeable surface**, the drainage surface below must comply with NCC Volume Two H2D2 (Drainage) and Australian Standard AS 3959 *Construction of Buildings in Bushfire-Prone Areas*.
- **A roof must be provided over the landing area**, with a minimum plan area of 1200 mm × 1200 mm, where the landing is also graded to fall away from the building at a gradient not steeper than 1:40. Any posts, columns or supports for the roof must not obstruct the required 1200 mm × 1200 mm landing area in front of the entrance door, in accordance with Clause 1.1(4).

Figures 4.6 to Figure 4.8 illustrate examples of these requirements.

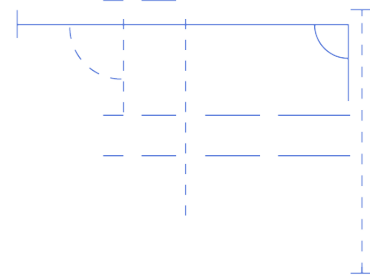


**Figure 4.6 Channel drain at entrance door**



**Figure 4.7 Permeable decking surface**





**Figure 4.8 Front porch area with roof cover over landing area**



## 4.4 Other relevant NCC provisions for dwelling entrance

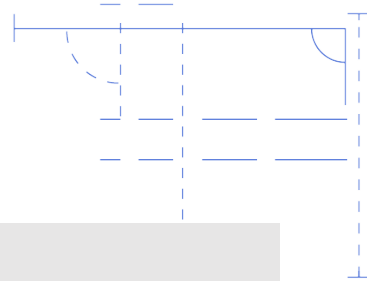
Other NCC provisions relevant to dwelling entrances, include slip resistance and weatherproofing.

### 4.4.1 Slip resistance and dwelling entrance

Where the dwelling entrance landing is served by a ramp that forms part of the step-free access path, the ramp must comply with the slip resistance requirements of NCC Volume Two H5D2 as detailed in Clause 11.2.4 of the Housing Provisions.

### 4.4.2 Surface water drainage and landing for dwelling entrance

Volume Two H2P1 Rainwater management includes Performance Requirements relating to surface water, as shown in the extract below.



## H2P1 Rainwater management

- (1) *Surface water*, resulting from a storm having an *annual exceedance probability* of 5% and which is collected or concentrated by a building or *sitework*, must be disposed of in a way that avoids the likelihood of damage or nuisance to any *other property*.
- (2) *Surface water*, resulting from a storm having an *annual exceedance probability* of 1% must not enter the building.
- (3) A drainage system for the disposal of *surface water* resulting from a storm having an *annual exceedance probability* of—
  - (a) H2p1
  - (b) 5% must—
    - (i) convey *surface water* to an appropriate *outfall*; and
    - (ii) avoid *surface water* damaging the building; and
  - (c) 1% must avoid the entry of *surface water* into a building.

The corresponding DTS Provisions are found in Volume Two Clause H2D2(b) Drainage. These include requirements for drainage of:

- roofs in some areas where a drainage system is required
- sub-soil areas where excessive soil moisture problems may occur
- land adjoining or under buildings.

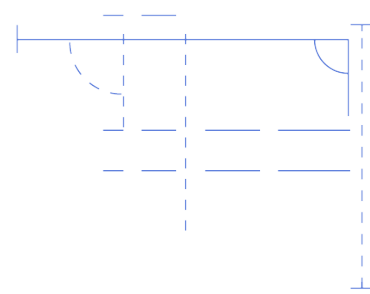
Clause H2D2 calls up Clause 3.3.3 of the Housing Provisions, which contains an important limitation statement that excludes a landing area provided for the purposes of Clause 2.3 of the Standard.

### 3.3.3 Surface water drainage

#### Limitation

3.3.3 does not apply to a landing area provided for the purposes of Clause 2.3 of the ABCB Standard for Livable Housing Design, except for a channel drain or drainage surface provided under Clause 2.4 of that Standard.

The appropriate authority should be able to provide information on the need for site drainage systems.



## 5 Internal doors and corridors

### 5.1 Introduction

Part 3 of the Standard outlines minimum design requirements for internal doors and corridors to ensure dwellings are easily accessible and functional.

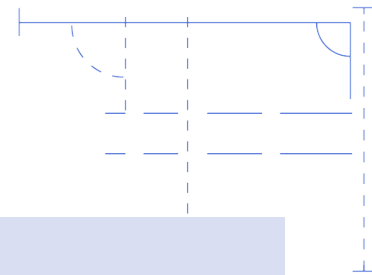
### 5.2 Application

For livable housing, these requirements apply to internal doors and corridors:

- H8P1 (Volume Two) and G7P1 (Volume One)
- H8D2 (Volume Two) and G7D2 (Volume One)
- Part 3 of the Standard.

### 5.3 Clear opening width

Clause 3.1 states that internal doorways must have a clear opening of at least 820 mm, regardless of door type (swing doors, sliding doors, concertina doors and cavity sliding). The clear opening width differs from the actual door width as shown in the following example.



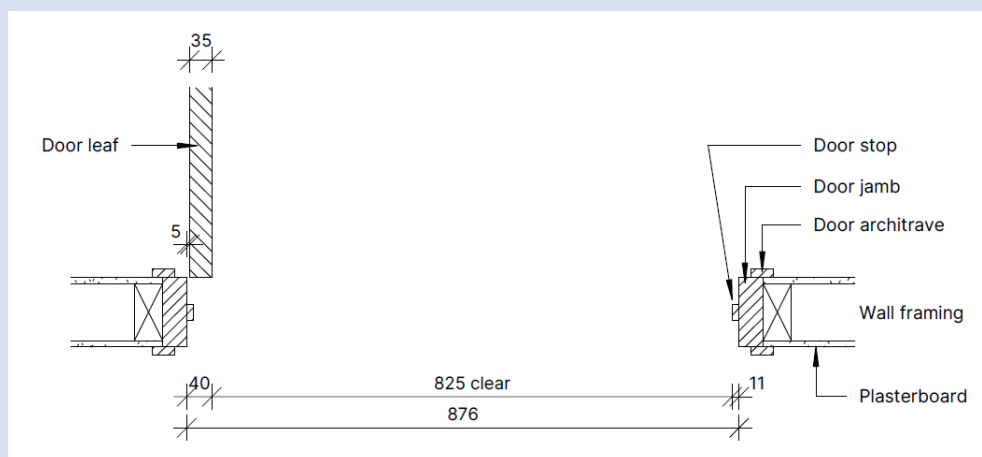
### Example: Clear opening width

The following example illustrates an internal swing door. The 820 mm door leaf size is a common size used for internal doors in residential dwellings. If you allow 3 mm tolerance gaps either side of the door leaf and the door framing, the framing spacing would be 826 mm. When you deduct 22 mm (11 mm door stops either side of the door) from 826 mm, we are left with 804 mm, without even considering the depth of the door leaf itself. This does not meet the requirement for a clearance of 820 mm. So, we need to use a wider door leaf.

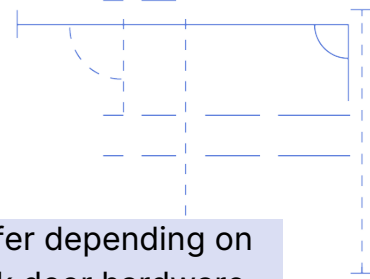
Figure 5.1 illustrates how an 870 mm door leaf size could achieve the required minimum clearance of 820 mm, based on the following assumptions. Note that different hinge types and their method of installation will also impact calculations for clearances.

internal door leaf width (mm):	870
2 x 3 mm gaps each side(mm):	+ 6
overall door frame spacing (mm):	= 876
internal door leaf depth (mm):	- 35
door stop depth (mm):	- 11
door hinge gap from frame when in open position (mm):	- 5
clear opening width (mm):	= 825

**Figure 5.1 Plan view of typical internal door frame with a swing door (dimensions in mm)**



As illustrated, an 870 mm door would give us a total clearance of 825 mm, which exceeds the minimum clearance requirement of 820 mm. The Standard does not require the door handle to be considered for the minimum clearance.



Note that this example is based on several assumptions, which may differ depending on the materials and methods used for door framing and installation. Check door hardware and installation method to ensure minimum clear opening width is achieved.

### 5.3.1 Threshold

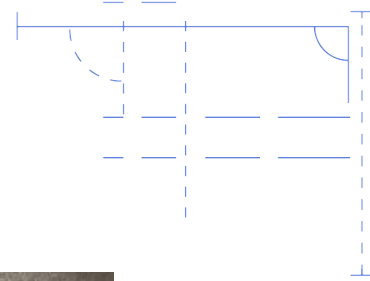
Thresholds to internal doorways that are subject to Clause 3.1 must:

- be level, or
- have a height of no more than 5 mm if the lip is rounded or bevelled, or
- be ramped within the depth of the door frame and have a gradient not steeper than 1:8 (with the ramp extending to the full width of the door frame).

Figures 5.2 and illustrate examples of these points.

**Figure 5.2 Example of a ramped threshold within a door jamb**





**Figure 5.3 Example of a level threshold through the doorway**

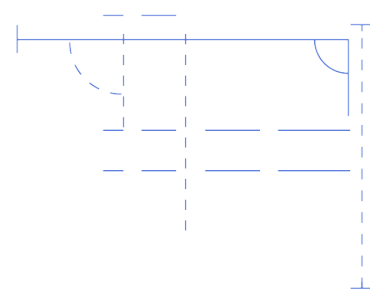


### 5.3.2 Corridor width

Corridors, hallways and similar spaces that connect to a door referenced in Clause 3.1 must have a minimum clear width of 1000 mm. This measurement is taken between finished wall surfaces (such as plasterboard or timber cladding), and excludes wall skirting boards, mouldings (such as picture rails), and surface-mounted features including power outlets, wall tiles and door stops. These elements are not taken into account when determining the required corridor width. Door hardware may project into the minimum required corridor width.

#### Note

The corridor width requirement does not apply to a stairway that is part of a path of travel to a shower complying with Parts 5 and 6 on a level other than the entry level.



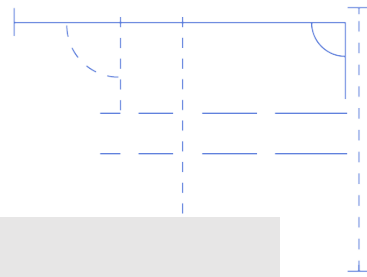
## 6 Sanitary compartment

### 6.1 Introduction

The sanitary compartment requirements in the Standard improve accessibility and usability for occupants and visitors, including older people and those with mobility-related disabilities. Part 4 specifies the minimum design and construction requirements for at least one sanitary compartment within a dwelling.

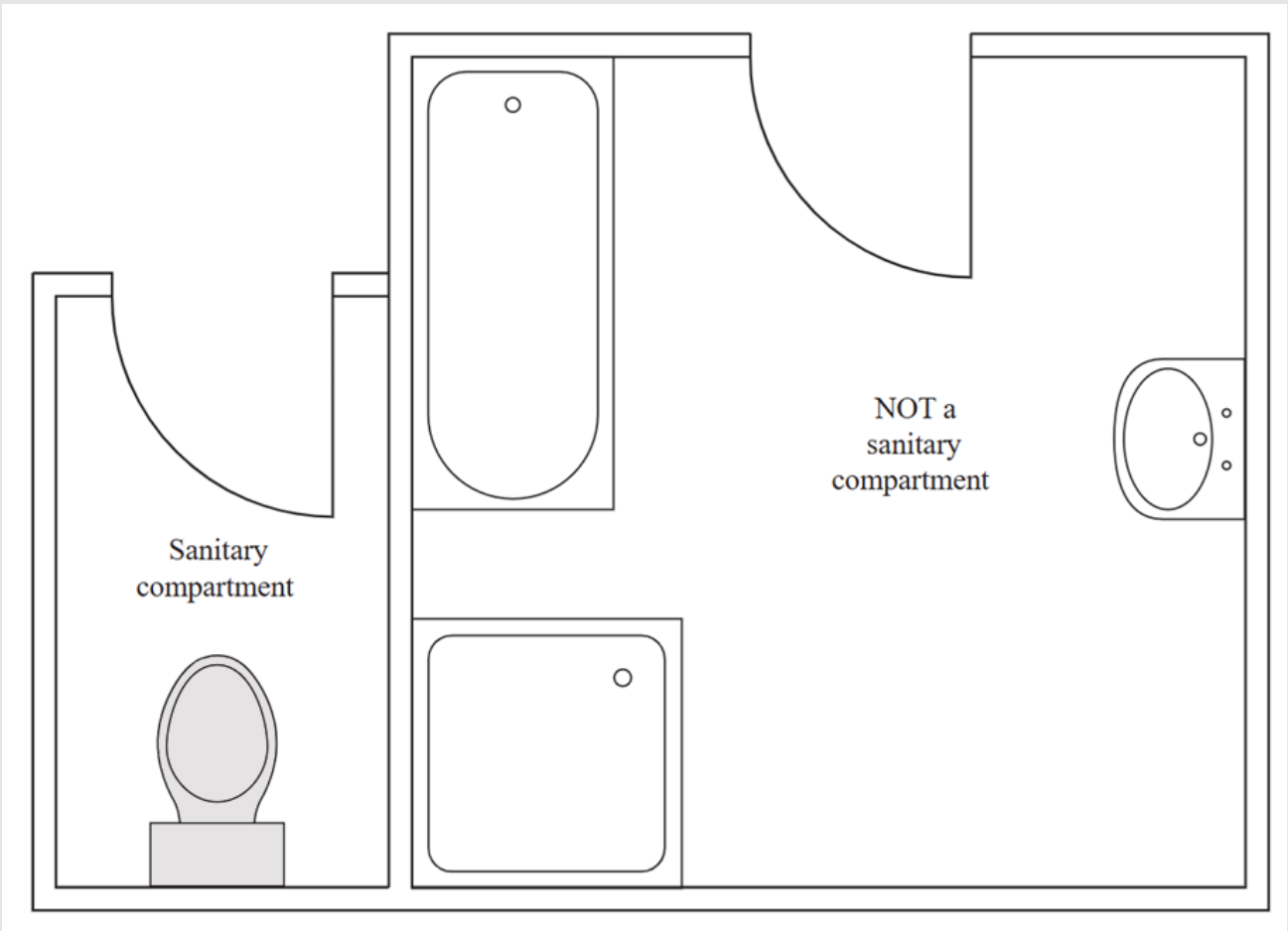
The NCC defines *sanitary compartment* as a room or space containing a toilet pan or urinal.

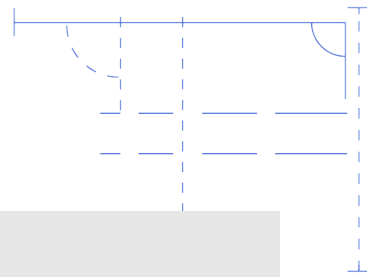
Figures 6.1 and illustrate that a room qualifies as a sanitary compartment only where it contains a toilet pan or urinal. In Figure 6.1 the room on the right is not a sanitary compartment because it does not contain a toilet pan or urinal. The separate room containing the toilet pan, located on the left side of the illustration is the sanitary compartment.



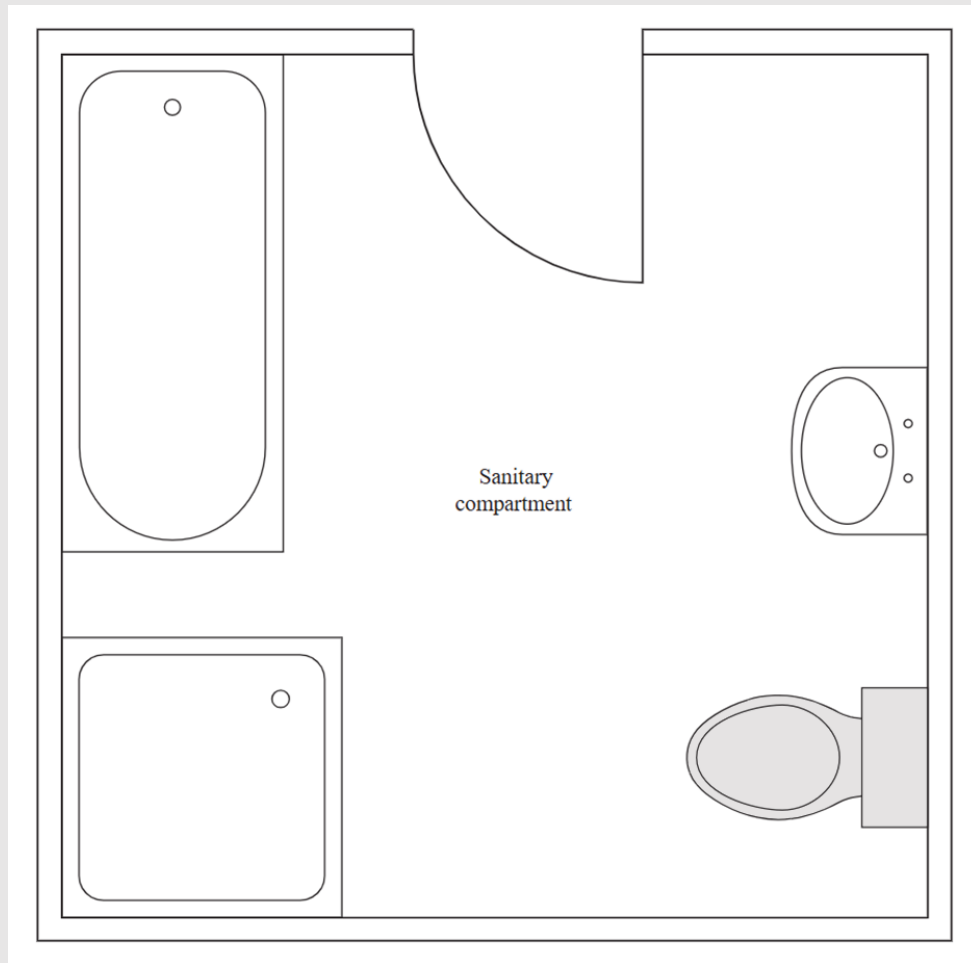
## Sanitary compartments in the NCC

Figure 6.1 Identification of sanitary compartments (NCC 2025, Figure 6b)





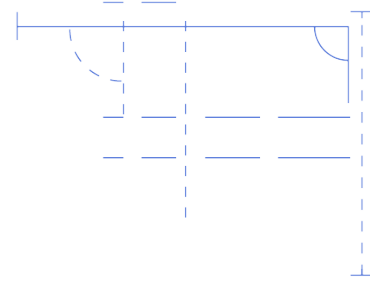
**Figure 6.2 Identification of sanitary compartments (NCC 2025, Figure 6a)**



## 6.2 Application

For livable housing design, sanitary compartments are covered by the following requirements:

- H8P1(d) (Volume Two) and G7P1(c) (Volume One)
- H8D2 (Volume Two) and G7D2 (Volume One)
- Part 4 of the Standard
- Part 6 of the Standard.



## 6.3 Location

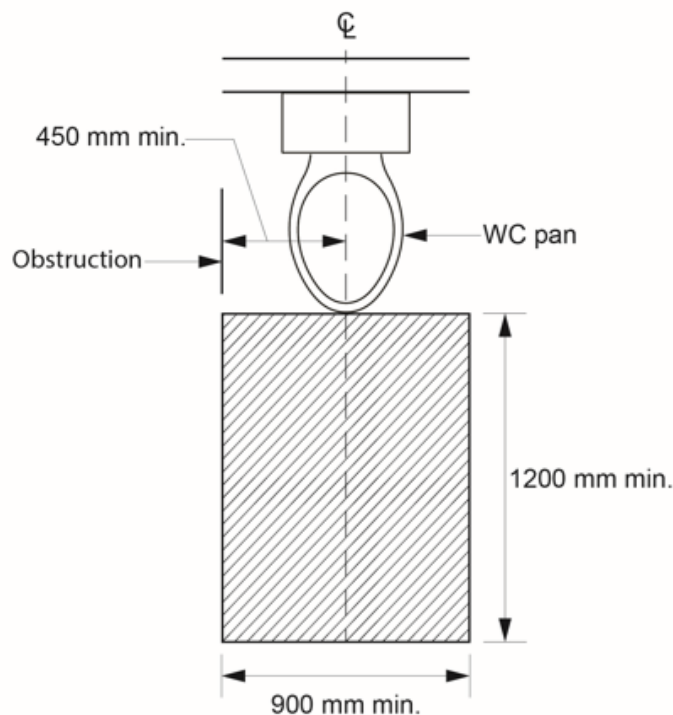
Clause 4.1 Location requires that at least one sanitary compartment is located on the ground floor or entry level of a dwelling. This sanitary compartment must include a toilet pan.

## 6.4 Circulation space

Under Clause 4.1, sanitary compartments must provide a clear circulation space of not less than 900 mm x 1200 mm immediately in front of the front edge of the toilet pan, as shown in Figure 6.3.

Skirting boards, architraves, toilet roll holders, and similar fittings may encroach into this space. However, the circulation space must remain clear of any door swing. Providing clear space in front of and to the side of the toilet pan improves usability for children, older adults and people with mobility disabilities.

**Figure 6.3** Circulation zone for a toilet



Where a toilet is located between opposite side walls, such as in a typical standalone sanitary compartment, there must be at least 900 mm of circulation space measured between the finished wall surfaces.

Where the toilet pan is located in a room with other fixtures, such as a vanity or bathtub, any obstruction on the side of the toilet pan must be no closer than 450 mm from the centreline of the toilet pan.

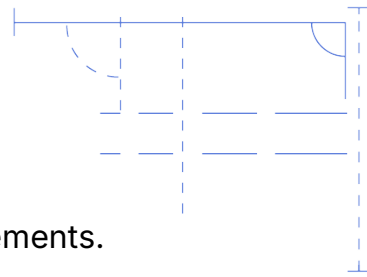


Figure 6.4 and Figure 6.5 illustrate examples of these application requirements.

### Example: Applying the circulation zone

Figure 6.4 Applying the circulation zone – toilet in separate compartment

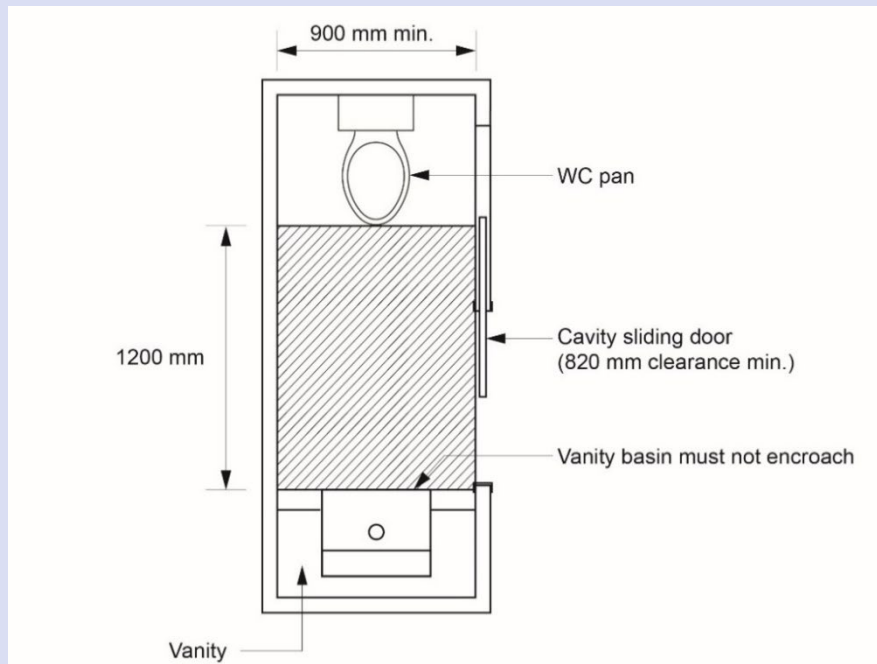
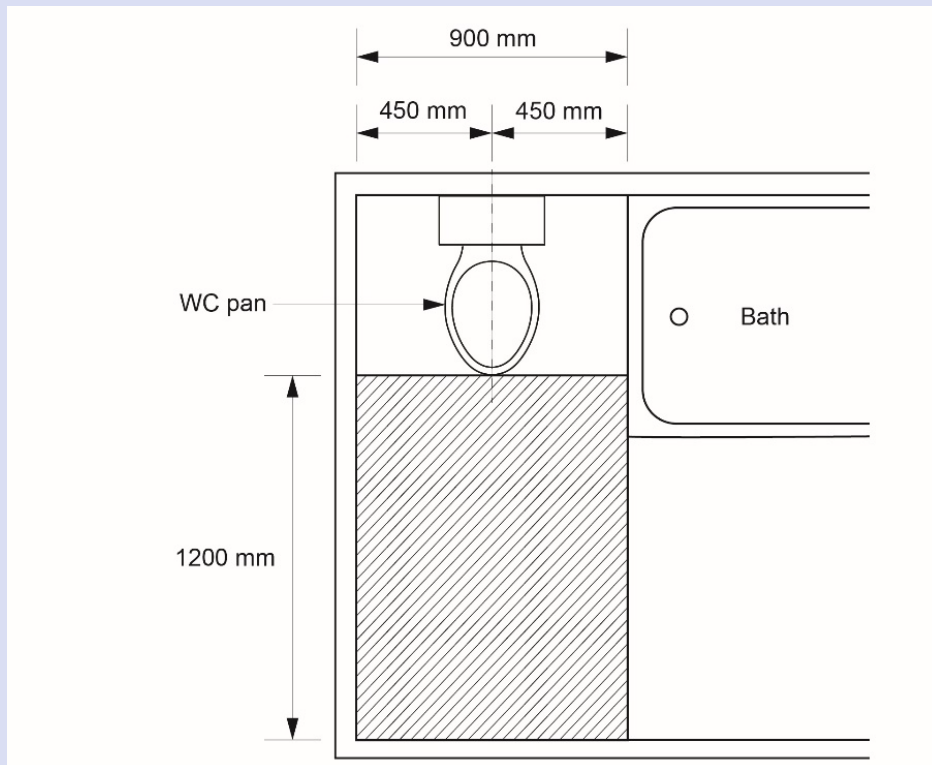
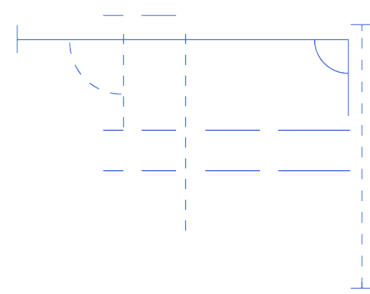


Figure 6.5 Applying the circulation zone and the 450 mm clearance from obstructions with bath adjacent



**Note:** Examples of room layouts showing positioning of fixtures and reinforcing are shown in [Appendix D](#).



# 7 Shower

## 7.1 Introduction

Part 5 of the Standard seeks to ensure easy and independent access for all home occupants to at least one shower in a dwelling.

## 7.2 Application

For livable housing design, showers are covered by the following requirements:

- H8P1(e) (Volume Two) and G7P1(d) (Volume One)
- H8D2 (Volume Two) and G7D2 (Volume One)
- Part 5 of the Standard
- Part 6 of the Standard.

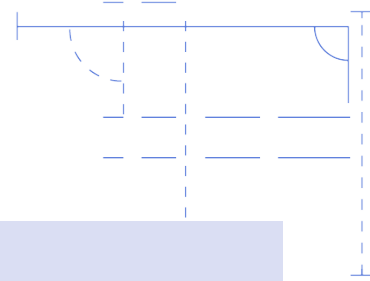
### 7.2.1 Only one shower needs to comply

No matter how many showers a dwelling has, only one must meet the Part 5 requirements. The compliant shower does not have to be on the ground or entry level.

### 7.2.2 Hobless and step-free entry

Clause 5.2 of the Standard requires that at least one shower must have an entry that is both hobless and step-free. In other words, the floor at the entrance to the shower must be level with the surrounding floor and sloped appropriately to direct water towards the floor waste within the recess. Clause 5.2(2) permits a 5 mm high lip (such as a waterstop angle commonly used at the edge of the shower recess) to help retain water.

Figures 7.1 and provide examples of showers with hobless, step-free entries. For room layouts including fixture placement and reinforcement details, see [Appendix D](#).



## Example: Hobless and step-free entry showers

Figure 7.1 Image of a step-free and hobless shower with glazed screen, no door

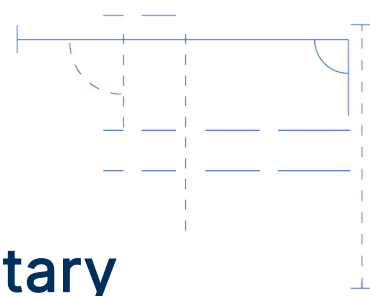


Figure 7.2 Image of a step-free and hobless shower with no screen



## 7.3 Other relevant NCC provisions for showers

Performance Requirement H4P1 in Volume Two covers the wet area requirements in Class 1a dwellings. DTS Provision H4D2 states that compliance with Australian Standard, *AS 3740 Waterproofing of Domestic Wet Areas*, or Part 10.2 of the Housing Provisions, meets H4P1. For more information, see NCC Navigator: [Waterproofing in houses](#).



# 8 Reinforcement of bathroom and sanitary compartment walls

## 8.1 Introduction

Part 6 of the Standard specifies the requirements for the reinforcement of bathroom and sanitary compartment walls. These requirements are designed to ensure that walls adjacent to showers, toilets and where applicable, baths are capable of supporting the future installation of grabrails.

## 8.2 Application

Reinforcement is covered by the following requirements:

- H8P1(f) (Volume Two) and G7P1(e) (Volume One)
- H8D2 (Volume Two) and G7D2 (Volume One)
- Part 6 of the Standard.

### 8.2.1 Location

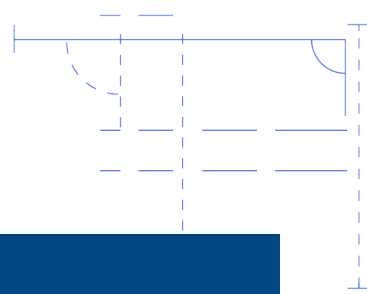
Wall reinforcement is not required for walls constructed of concrete, masonry, or similar materials that can support grabrails, including plaster applied to masonry or concrete. For other materials, Part 6 applies only to bathrooms or sanitary compartments subject to the requirements of Parts 4 and 5.

#### Free-standing bath

A free-standing bath is excluded because it does not have adjoining walls for fixing grabrails.

### 8.2.2 Construction

Reinforcing must be constructed using at least 12 mm thick standard grade plywood (or similar), or at least 25 mm thick timber framing. The Standard includes figures showing the required locations for sheeting or framing.



## Grabrails

There is no requirement to install grabrails.

## Framing size

Framing sizes are minimum; larger thicknesses are permitted, for example offcuts from framing timber.

## Cavity slider doors

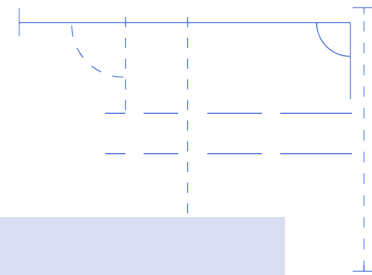
Care is required when locating a cavity slider door in a wall requiring reinforcement adjacent to a fixture. This is to ensure the door operation is not impeded by future fixings. It is also to ensure the ability to support loads from sheeting (if used), linings and potential grabrails under load (that is in use).

For showers and baths, reinforcement should only be provided to the available width of the wall. This includes where the available wall is narrower than the specified reinforcing width, or where a window sill terminates lower than the area specified for reinforcing.

For toilet pans, the full extent of either:

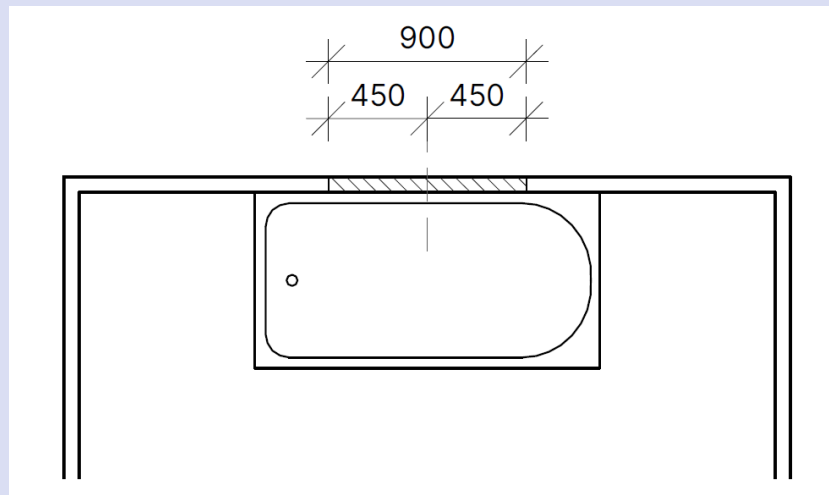
- side wall reinforcing, as stipulated in Figure 6.2e of the Standard, or
- rear wall reinforcing, as stipulated in Figures 6.2f or 6.2g of the Standard, must be provided.

See examples in Figures 8.1 to Figure 8.3.



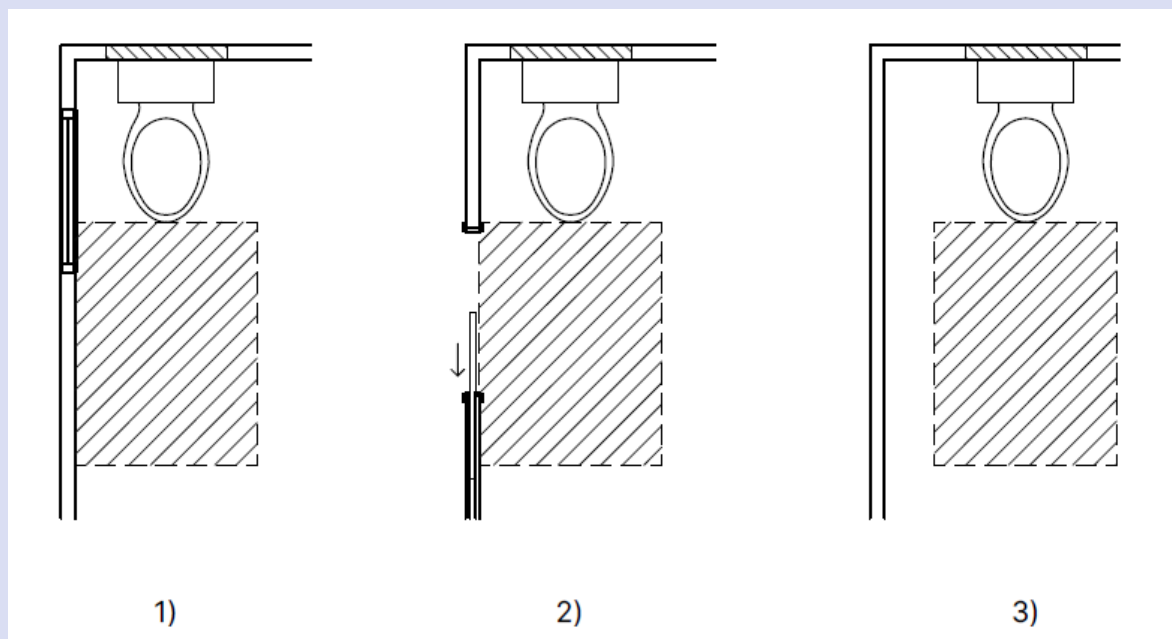
### Example: Reinforcing to a bath wall with only one adjoining wall

Figure 8.1 Bath with one adjoining wall, only requires reinforcing to the one adjoining wall (dimensions in mm)



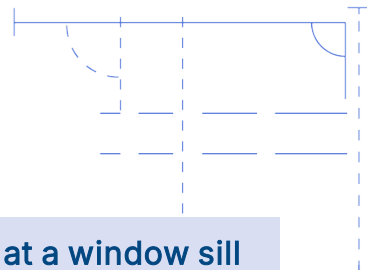
### Example: Reinforcing the wall behind the toilet pan

Figure 8.2 Examples of reinforcing behind the toilet pan



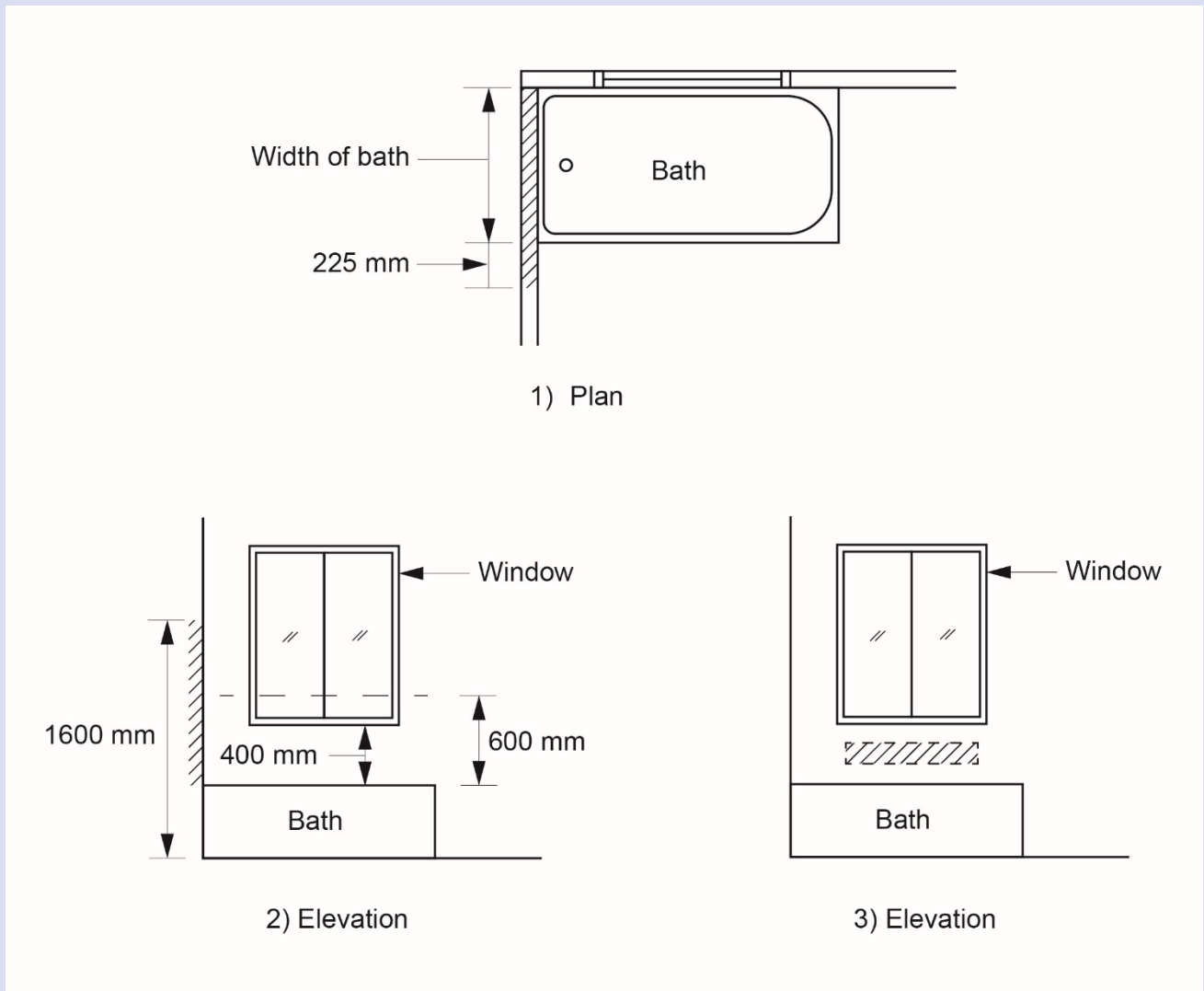
**Note to Figure 8.2:**

- (1) Window sill encroaches on side reinforcement location.
- (2) Door location encroaches on side reinforcement location.
- (3) Toilet pan centrelines more than 460 mm away from wall.



## Example: Reinforcing bath (and shower) wall where a wall terminates at a window sill lower than required for reinforcement height

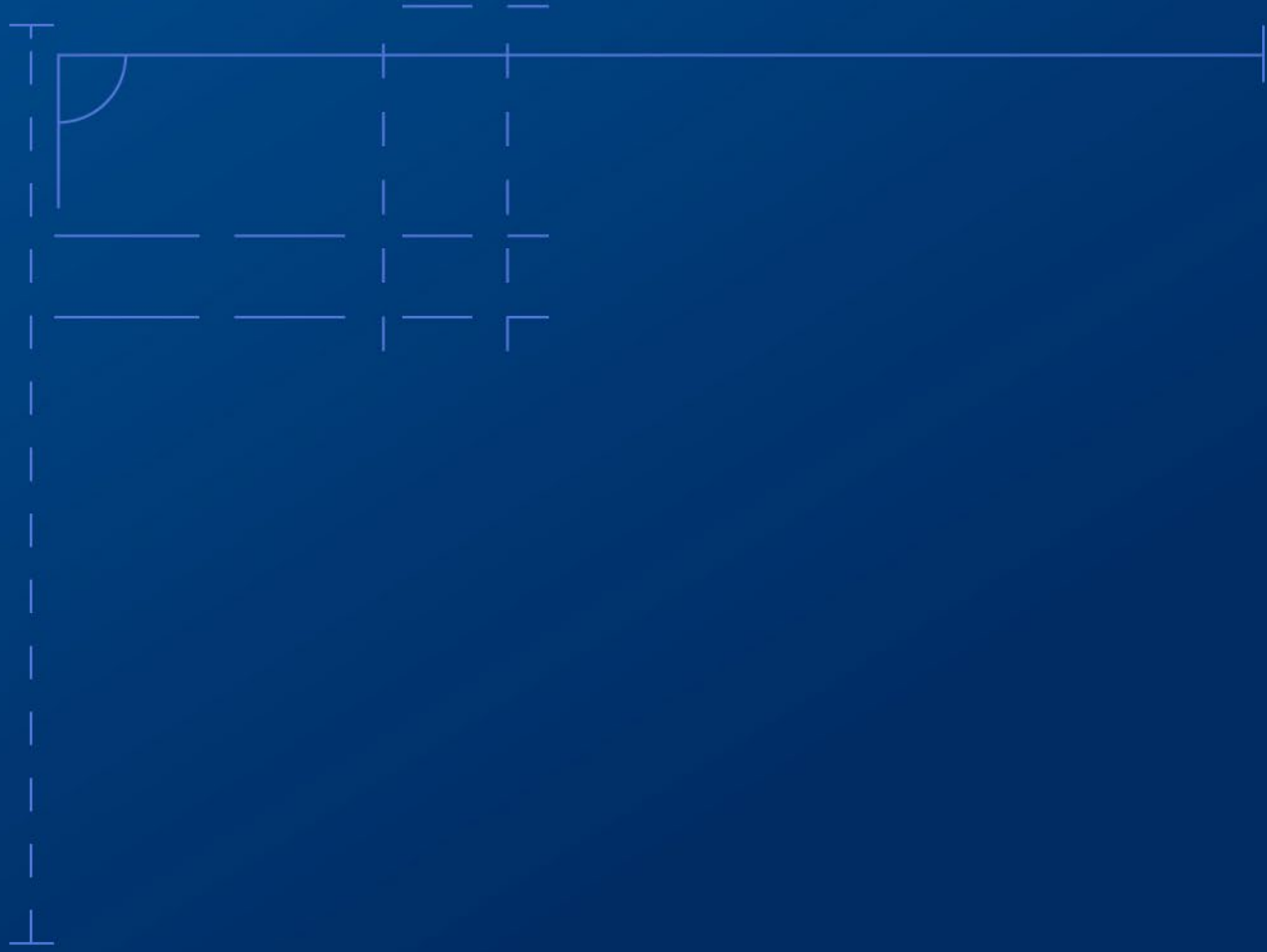
Figure 8.3 Window terminates at a window sill lower than the specified reinforcement height



**Note to Figure 8.3** Error! Reference source not found.:

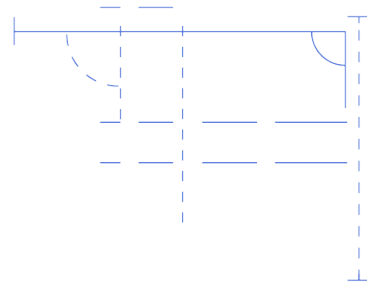
- (1) Reinforcement sheeting (or framing) only required to the wall adjacent the end of the bath. Note it extends 225 mm beyond the width of the bath.
- (2) Reinforcement sheeting ordinarily extends 600 mm above bath; sheeting may be provided for the available extent of the area specified in Figure 6.2b of the Standard.
- (3) Provision of framing in accordance with Figure 6.2a of the Standard, as an alternative to providing sheeting for the available extent of the specified area.

Examples of room layouts showing positioning of fixtures and reinforcing are shown in [Appendix D](#).



# Appendices



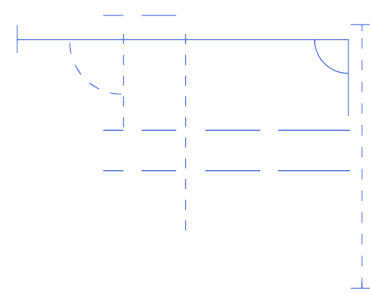


# Appendix A Abbreviations

The following table, [Table A.1](#), contains abbreviations used in this document.

**Table A.1 Example Abbreviations**

Abbreviation	Meaning
ABCB	Australian Building Codes Board
AS	Australian Standard
DTS	Deemed-to-Satisfy
FFL	Finished floor level
L	Landing
NCC	National Construction Code
SOU	Sole-occupancy unit



## Appendix B Glossary

This appendix contains a glossary of key terms used in this document with links to further information where relevant.

**Accessible:** Having features to enable use by people with a disability.

**Accessway:** A continuous *accessible* path of travel (as defined in AS 1428.1) to, into or within a building.

**Appropriate authority:** The relevant authority with the responsibility to determine the particular matter.

**Appurtenant:** Appurtenant refers to features or structures that are attached to or associated with a primary residence. These can include elements such as garages, carports, driveways, and other similar structures that are considered part of the property and contribute to its overall functionality and accessibility.

**Deemed-to-Satisfy Provisions:** Provisions which are deemed to satisfy the *Performance Requirements*.

**Deemed-to-Satisfy Solution:** A method of satisfying the *Deemed-to-Satisfy Provisions*.

**Designated bushfire prone area:** Land which has been designated under a power of legislation as being subject, or likely to be subject, to bushfires.

**Landing:** An area at the top or bottom of a *flight* or between two *flights*.

**Performance Requirement:** A requirement which states the level of performance which a *Performance Solution* or *Deemed-to-Satisfy Solution* must meet.

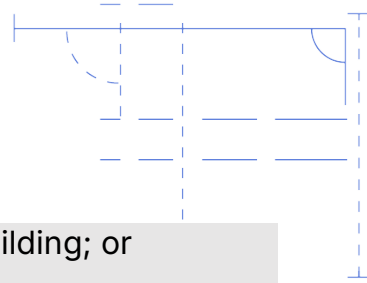
**Performance Solution:** A method of complying with the *Performance Requirements* other than by a *Deemed-to-Satisfy Solution*.

**Sanitary compartment:** A room or space containing a closet toilet pan or urinal (see Figures 6a and 6b in the Definitions of NCC 2025 (or Figure 6.1 and Figure 6.2 of this handbook)).

**Sole-occupancy unit:** A room or other part of a building for occupation by one or joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier and includes—

(a) a dwelling; or

(b) a room or suite of rooms in a Class 3 building which includes sleeping facilities;  
or

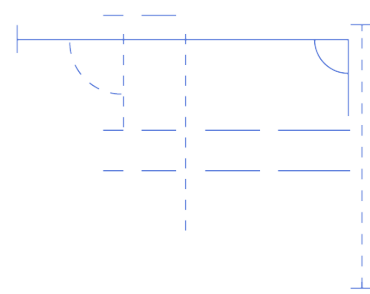


- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building; or
- (d) a room or suite of associated rooms in a Class 9c building, which includes sleeping facilities and any area for the exclusive use of a resident.

**Surface water:** All naturally occurring water, other than *sub-surface water*, which results from rainfall on or around the *site* or water flowing onto the site, including water that results from rainfall on the external *fabric* of the building and any other water that falls or flows onto the *fabric* from other sources.

**Verification Method:** A test, inspection, calculation or other method that determines whether a *Performance Solution* complies with the relevant *Performance Requirements*.

**Wet area:** An area within a building supplied with water from a water supply system, which includes bathrooms, showers, laundries and *sanitary compartments* and excludes kitchens, bar areas, kitchenettes or domestic food and beverage preparation areas.



# Appendix C Compliance with the NCC

## C.1 Responsibilities for regulation of building and plumbing in Australia

State and territory governments are responsible for regulation of building, plumbing and development/planning in their respective state or territory.

The NCC is a joint initiative of the Commonwealth and State and Territory Governments in Australia and is produced and maintained by the ABCB on behalf of the Australian Government and each state and territory government. The NCC provides a uniform set of technical provisions for the design and construction of buildings and other structures, and plumbing and drainage systems throughout Australia. It allows for variations in climate and geological or geographic conditions.

The NCC is given legal effect by building and plumbing regulatory legislation in each state and territory. This legislation consists of an Act of Parliament and subordinate legislation (e.g. building regulations) which empowers the regulation of certain aspects of buildings and structures, and contains the administrative provisions necessary to give effect to the legislation.

Each state and territory's legislation adopts the NCC subject to the variation or deletion of some of its provisions, or the addition of extra provisions. These variations, deletions and additions are generally signposted within the relevant section of the NCC, and located within appendices to the NCC. Notwithstanding this, any provision of the NCC may be overridden by, or subject to, state or territory legislation. The NCC must therefore be read in conjunction with that legislation.

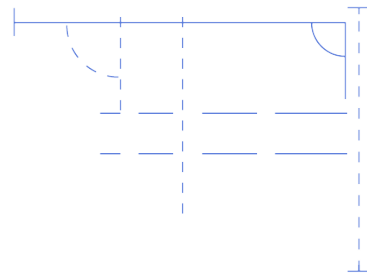
## C.2 Demonstrating compliance with the NCC

Compliance with the NCC is achieved by complying with the NCC Governing Requirements and relevant Performance Requirements.

The Governing Requirements are a set of governing rules outlining how the NCC must be used and the process that must be followed.

The Performance Requirements prescribe the minimum necessary requirements for buildings, building elements, and plumbing and drainage systems. They must be met to demonstrate compliance with the NCC.

There are 3 options available to demonstrate compliance with the Performance Requirements. These are:



- a Performance Solution
- a Deemed-to-Satisfy Solution, or
- a combination of a Performance Solution and a Deemed-to-Satisfy Solution.

All compliance options must be assessed using one or a combination of Assessment Methods, as appropriate. These include:

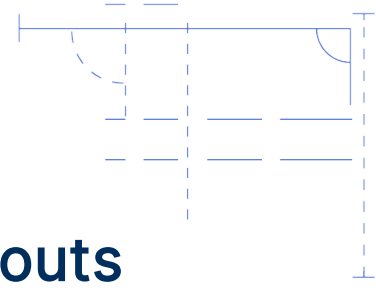
- Evidence of suitability
- Expert Judgement
- Verification Methods
- Comparison with DTS Provisions.

The hierarchy of the NCC and its compliance options is provided in Figure C.1. It should be read in conjunction with the NCC.

To access the NCC or for further general information regarding demonstrating compliance with the NCC visit the [ABCB website](#).

**Figure C.1 Demonstrating compliance with the NCC**





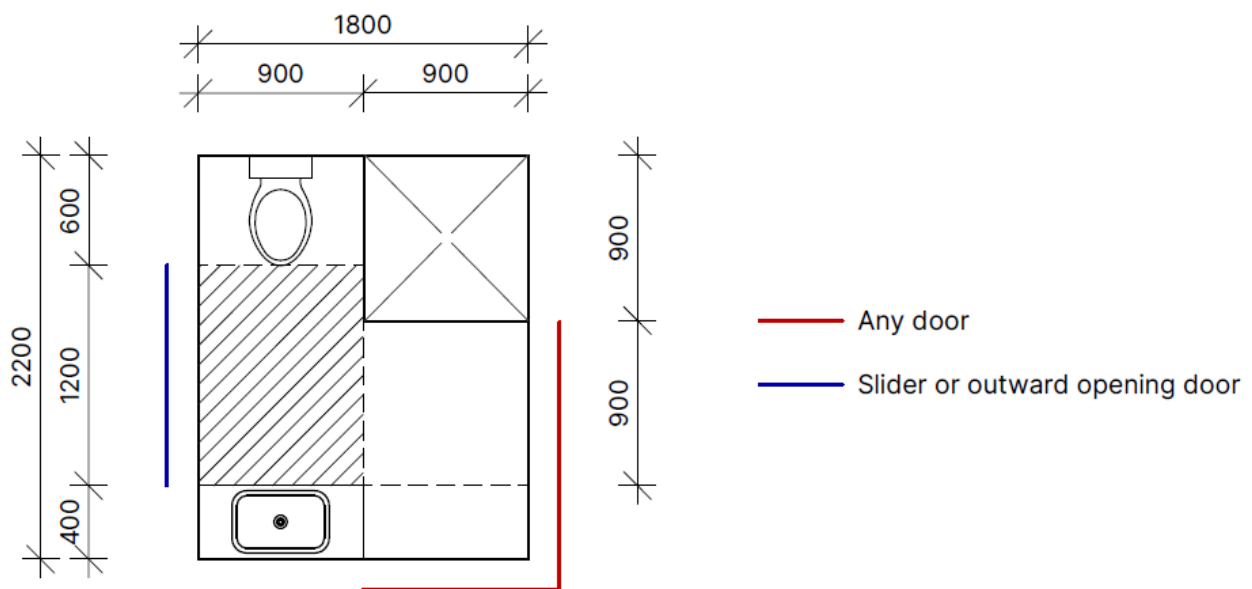
## Appendix D Examples of bathroom layouts

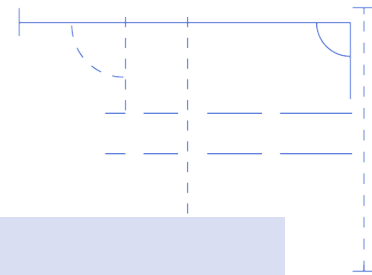
The following examples illustrate bathroom layouts that meet the requirements of the Standard and the Voluntary Standard.

### Example: Bathroom layout – 3.96 m<sup>2</sup>

This layout complies with the Standard. There are options for different door configurations.

Figure D.1 Bathroom layout – 3.96 m<sup>2</sup> (dimensions in mm)

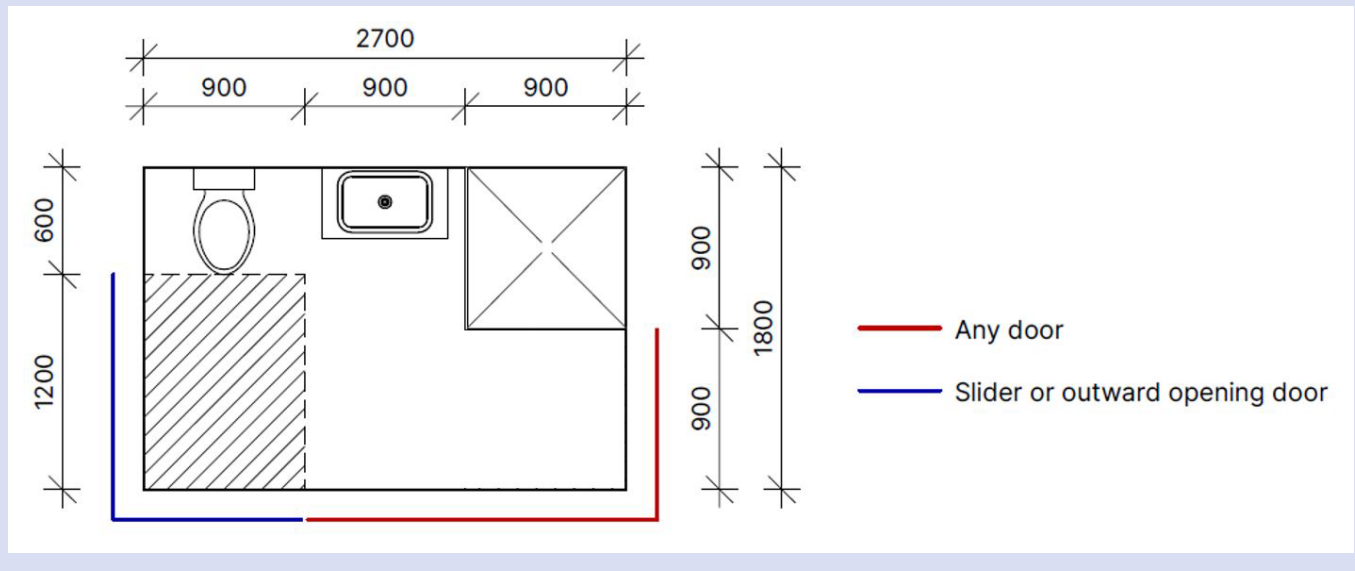


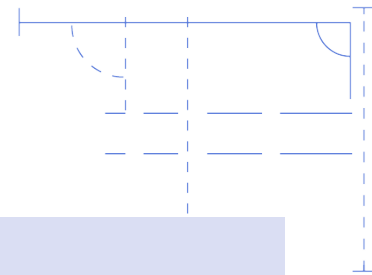


### Example: Bathroom layout – room area 4.86 m<sup>2</sup>

This layout complies with the Standard. There are options for different door configurations.

Figure D.2 Bathroom layout – 4.86 m<sup>2</sup> (dimensions in mm)





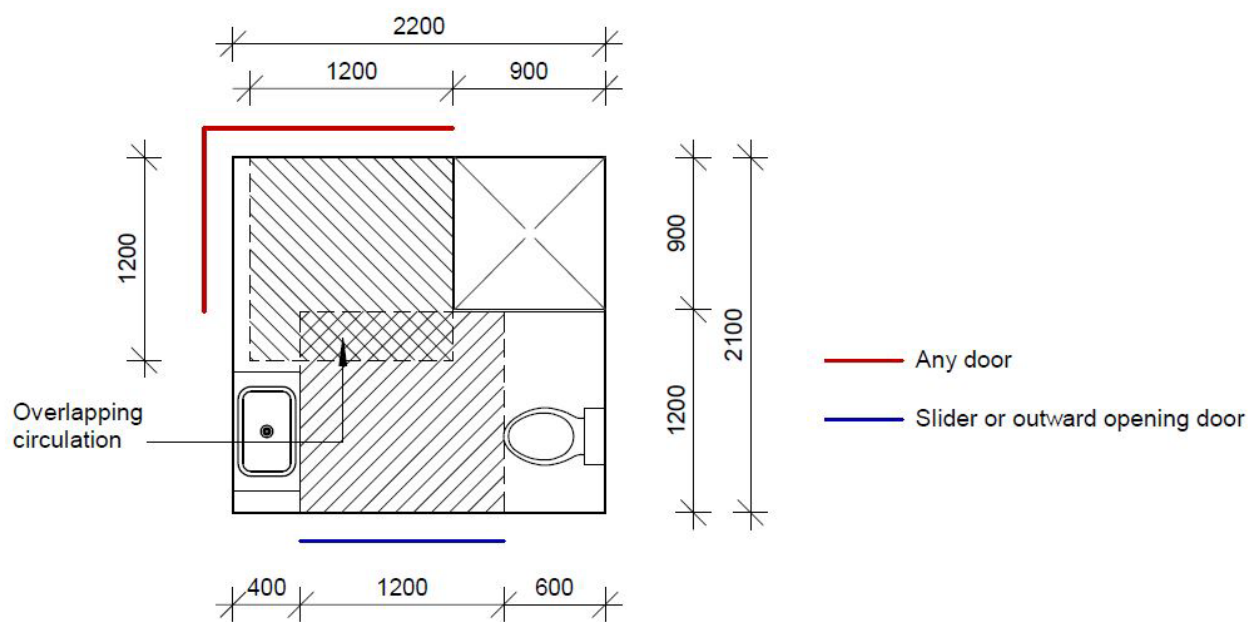
### Example: Bathroom layout – room area 4.62 m<sup>2</sup>

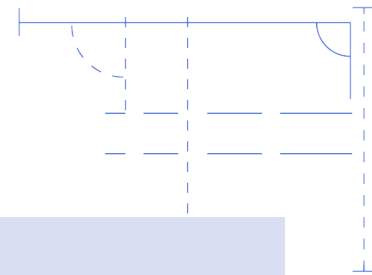
The layout complies with the Standard and the ABCB Voluntary Standard for minimum circulation and clear opening door width.

There are options for different door configurations.

The minimum circulation space for the toilet pan specified in the Voluntary Standard (1200 mm x 1200 mm) overlaps with the circulation space for a shower specified in the Voluntary Standard (1200 mm x 1200 mm).

Figure D.3 Bathroom layout – 4.62 m<sup>2</sup> (dimensions in mm)





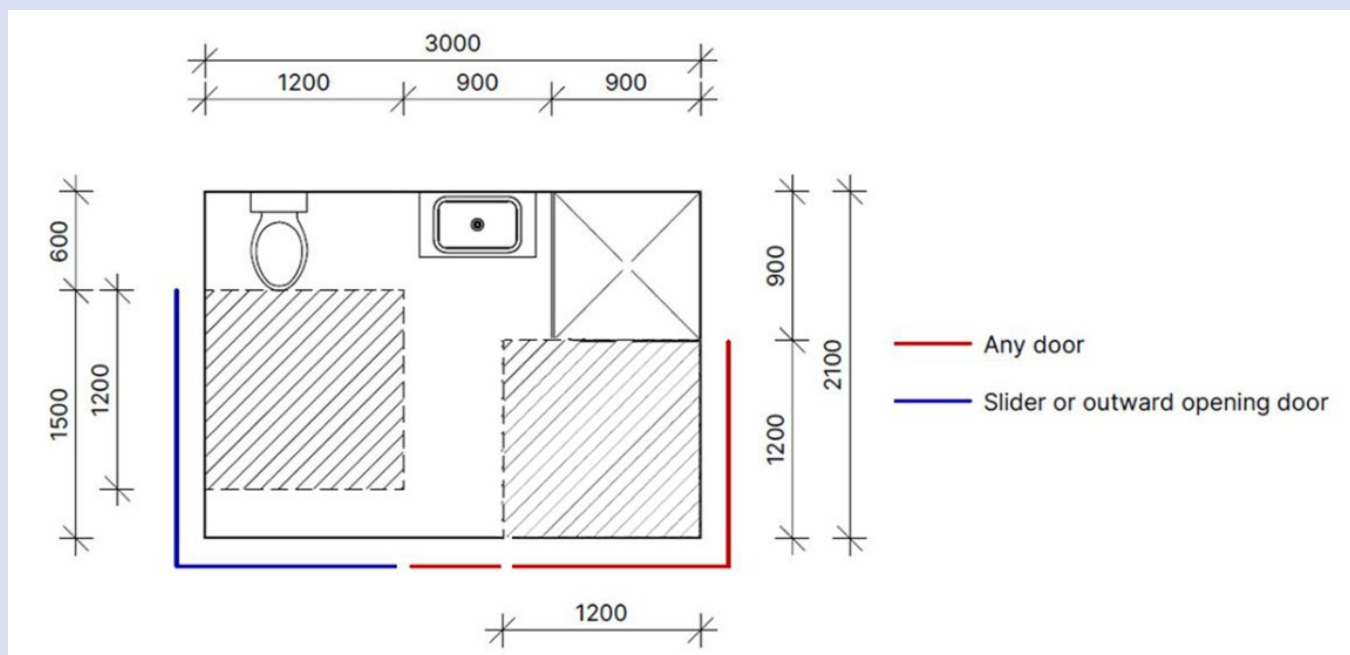
### Example: Bathroom layout – room area 6.3 m<sup>2</sup>

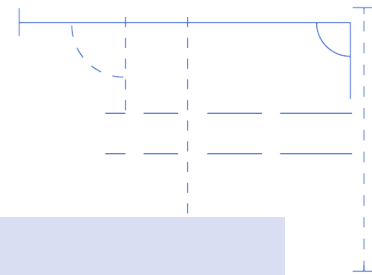
The layout complies with the Standard and the enhanced Voluntary Standard for minimum circulation and clear opening door width.

There are options for different door configurations.

The minimum circulation space for the toilet pan and a shower specified in the Voluntary Standard (1200 mm x 1200 mm).

Figure D.4 Bathroom layout – 6.3 m<sup>2</sup> (dimensions in mm)





### Example: Bathroom layout – room area 5.04 m<sup>2</sup>

The layout complies with the Standard and (subject to swinging door location) the Voluntary Standard for minimum circulation and clear opening door width.

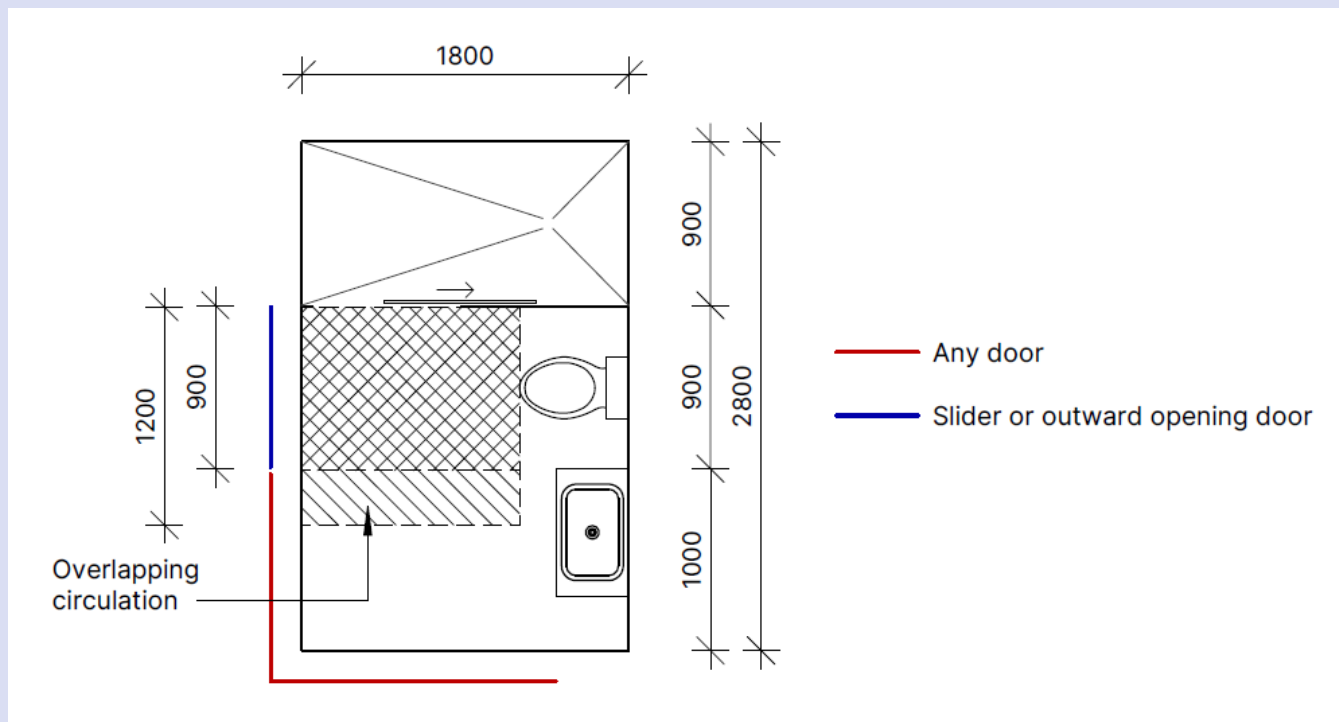
There are options for different door configurations.

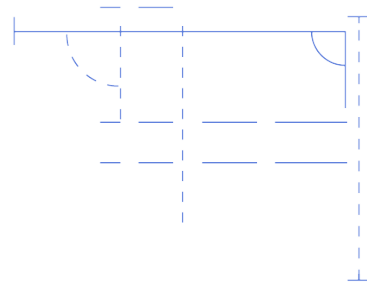
The minimum circulation space for the toilet pan specified in the Voluntary Standard (1200 mm x 1200 mm) overlaps with the circulation space for a shower (1200 mm x 1200 mm).

To meet the requirements of the Standard, a 900 mm x 1200 mm circulation space for the toilet pan need only be provided. This is reflected in the diagram; by hatching, and by the permitted location of a door leaf that swings into the sanitary compartment (i.e. 'Any door').

To meet the specifications of the Voluntary Standard, a 1200 mm x 1200 mm circulation space for the toilet pan is necessary. Further, to meet the Voluntary Standard, a swinging door leaf cannot encroach that circulation space.

Figure D.5 Bathroom layout – 5.04 m<sup>2</sup> (dimensions in mm)





## Appendix E Resources

Australian Building Codes Board (2025) [ABCB Housing Provisions Standard](#).

Australian Building Codes Board (2025) [ABCB Standard for Livable Housing Design](#).

Australian Building Codes Board (2023) [ABCB Voluntary Standard for Livable Housing Design – Beyond Minimum](#).

Australian Building Codes Board (2025) [National Construction Code](#).



**National  
Construction  
Code**



**Australian  
Building  
Codes Board**

**abcb.gov.au**