

AS 1428.1:2021



STANDARDS
Australia



Design for access and mobility

Part 1: General requirements for access — New building work



AS 1428.1:2021

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- Blind Citizens Australia
- Deafness Forum of Australia
- Department of Industry, Science, Energy and Resources
- Engineers Australia
- Housing Industry Association
- Human Factors and Ergonomics Society of Australia
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Design for access and mobility

Part 1: General requirements for access — New building work

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Preface

This Standard was prepared by the Standards Australia Committee ME-064, Access for People with Disabilities, to supersede AS 1428.1:2009.

This document is part of a series that comprises the following:

AS 1428.1, *Design for access and mobility, Part 1: General requirements for access — New building work* (this Standard)

AS 1428.2, *Design for access and mobility, Part 2: Enhanced and additional requirements — Buildings and facilities*

AS/NZS 1428.4.1, *Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment — Tactile ground surface indicators*

AS 1428.4.2, *Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment — Wayfinding signs*

AS 1428.5, *Design for access and mobility, Part 5: Communication for people who are deaf or hearing impaired*

The objective of this document is to provide building designers and users (architects, property owners and regulators) with the minimum design requirements for new building work to enable access for people with disabilities.

Because of the variety of situations which may need to be addressed when designing buildings and facilities, it is seen as necessary for this document to provide a range of data so that the requirements for access can be met and allow for flexibility in design where limitations are imposed by other building conditions. The intention is to make this document a practical reference document for designers, particularly with regard to problem areas such as doorways and sanitary facilities.

The National Construction Code (NCC) and Disability (Access to Premises — Buildings) Standards define where access for people with a disability is required and reference a number of Australian Standards (including this document) to provide technical solutions to meet deemed-to-satisfy provisions.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

The use of Notes in this document are of an advisory nature only to give explanation or guidance to the user on recommended design considerations or technical procedures, or to provide an informative cross-reference to other documents or publications. Notes do not form a mandatory part for conformance to this document.

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Introduction

This document describes basic minimum technical details for accessible buildings.

The National Construction Code (NCC) and Disability (Access to Premises — Buildings) Standards (Premises Standards) provide information on which classes of buildings are to be made accessible and prescribes the specific areas within those buildings where access must be provided. The NCC and Premises Standards refer to this document and other documents as a means of compliance with the deemed-to-satisfy access provisions of the NCC and Premises Standards.

Australian Standard®

Design for access and mobility

Part 1: General requirements for access — New building work

Section 1 Scope and general

1.1 Scope

This document specifies the design requirements for new building work, as required by the National Construction Code (NCC) and the Disability (Access to Premises — Buildings) Standards (Premises Standards), to provide access for people with disabilities. Particular attention is given to —

- (a) continuous accessible paths of travel and circulation spaces for people who use wheelchairs;
- (b) access and facilities for people with ambulatory disabilities; and
- (c) access for people with sensory disabilities.

NOTE 1 The NCC and Premises Standards set out requirements for other features of the accessible built environment not covered in this document, such as lifts, hearing augmentation, tactile ground surface indicators, signage, glazing, lighting, car parking and toilet numbers, and distribution.

This document does not include requirements for —

- (i) wheelchairs that have dimensions exceeding those shown in [Figure 1](#); or
- (ii) motorized scooters.

NOTE 2 Information on vision impairment is given in [Appendix C](#).

1.2 Application

This document is referenced by the NCC and the Premises Standards for the provision of access for people with disabilities. As an NCC and Premises Standards referenced document, it is applicable to buildings as and when specified in the NCC and Premises Standards.

NOTE 1 Conformance to this document may also be required by other regulatory authorities.

This document provides the technical detail required to achieve the level of access for a deemed-to-satisfy solution.

The requirements specified in this document are intended to permit general use of buildings and facilities by people with disabilities acting independently, or where a person's usual method of operation is with an assistant, in the company of that assistant.

NOTE 2 This document is based on data resulting from empirical testing of persons aged between 18 and 60 years and may not be appropriate when applied to persons outside this age range.

The dimensions stated in this document, relevant to the use of wheelchairs, relate to the 80th percentile wheelchair size and user (see [Figure 1](#)), except at the following locations where the 90th percentile dimensions are required:

- (a) On an accessway, at the location of a turn greater than 60°.
- (b) New accessible sanitary facilities.
- (c) At doorways, including door width and circulation space.

NOTE 3 The majority of the dimensions relevant to the 90th percentile in this document aligns with the findings of research undertaken by J. Bails, 1983 (see Bibliography).

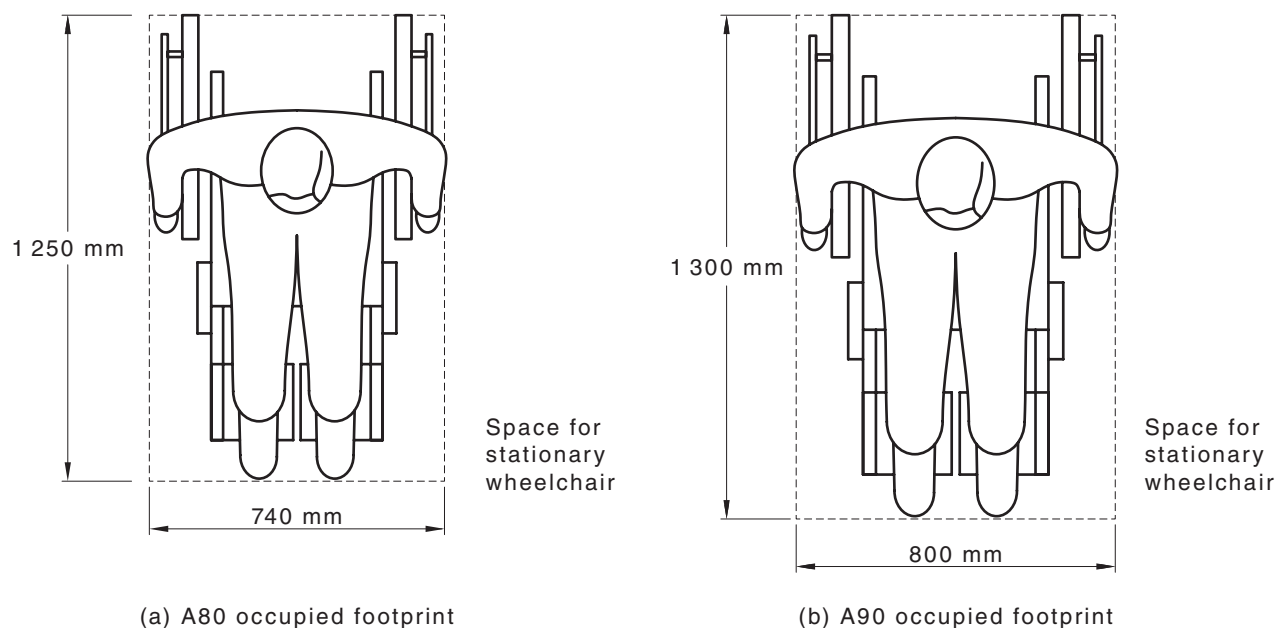


Figure 1 — Footprint for an occupied wheelchair

1.3 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document:

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 2700, *Colour standards for general purposes*

AS 1735.12, *Lifts, escalators and moving walks, Part 12: Facilities for persons with disabilities*

AS/NZS 1428.4.1, *Design for access and mobility, Part 4.1: Means to assist the orientation of people with vision impairment — Tactile ground surface indicators*

1.4 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

1.4.1

accessible

having features to enable use by people with a disability

1.4.2

active leaf

in a door with two leaves, the leaf that carries the latching or locking mechanism and typically has an operable handle

1.4.3

angle of approach

angle between the centre-line of one continuous accessible path of travel and the centre-line of an intersecting continuous accessible path of travel

1.4.4

Braille

system of touch reading for the blind, which employs raised dots that are evenly arranged in quadrangular letter spaces or cells

1.4.5**circulation space**

clear unobstructed area, to enable persons using mobility aids to manoeuvre

1.4.6**continuous accessible path of travel**

uninterrupted path of travel to, into or within a building providing access to all accessible facilities

1.4.7**encroachment**

the intrusion of a building component, fixture or fitment into a continuous accessible path of travel or circulation space

1.4.8**grate**

cover in a pavement or floor or similar that allows water to enter a drain while accommodating foot and or wheeled traffic as per the site and usage context

1.4.9**hazard**

any area or fixed object in or immediately adjacent to a direction of travel, which may place people at risk of injury

1.4.10**kerb**

side barrier to a trafficable or accessible pedestrian surface

1.4.11**landing**

flat or crowned surface with a gradient and crossfall not steeper than 1 in 40, to provide a rest area on a ramp, stairway or walkway

1.4.12**luminance contrast**

the light reflected from one surface or component, compared to the light reflected from another surface or component

1.4.13**mixing valve**

valve in which separate supplies of heated water and cold water are mixed together, either manually or automatically, to give a desired temperature from the mixed outlet

Note 1 to entry: The temperature of the mixed water is controlled by the operation of a control handle or handles.

1.4.14**outlet**

portion of the tap assembly after the shut-off device where water flows for its intended use

1.4.15**people with ambulant disabilities**

people who have a mobility disability but are able to walk

1.4.16**grabrail**

rail used to give a steadying or stabilizing assistance to a person engaged in a particular function

1.4.17**handrail**

rail used in circulation areas such as corridors, passageways, ramps and stairways to assist in continuous movement

1.4.18**ramp**

inclined surface on a continuous accessible path of travel between two landings with a gradient steeper than 1 in 20 but not steeper than 1 in 14

1.4.19**ramp, kerb**

inclined surface on a continuous accessible path of travel with a maximum rise of 190 mm, a length not greater than 1 520 mm and a gradient not steeper than 1 in 8, located within or attached to a kerb

1.4.20**ramp, step**

inclined surface on a continuous accessible path of travel with a maximum rise of 190 mm, length not greater than 1 900 mm and a gradient not steeper than 1 in 10

1.4.21**ramp, threshold**

inclined surface on a continuous accessible path of travel with a maximum rise of 35 mm, length not greater than 280 mm and a gradient not steeper than 1 in 8

1.4.22**slip-resistant**

property of a surface having a frictional force-opposing movement of an object across a surface

1.4.23**sole occupancy unit**

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;
- (b) a room or suite of rooms in a Class 3 building, as defined in the NCC, which includes sleeping facilities;
- (c) a room or suite of associated rooms in a Class 5, 6, 7, 8 or 9 building, as defined in the NCC; or
- (d) a room or suite of associated rooms in a Class 9c residential care building, as defined in the NCC, which includes sleeping facilities and any area for the exclusive use of a resident

1.4.24**tactile ground surface indicator****TGSI**

truncated cones and/or bars installed on the ground or floor surface, designed to provide pedestrians who are blind or vision-impaired with warning or directional orientation information

Note 1 to entry: For requirements for TGSI, see AS 1428.4.1.

1.4.25**tactile signs**

signage incorporating raised text, and/or symbols and Braille to enable touch reading by people who are blind or who are vision-impaired

1.4.26**walkway**

any surface on a continuous accessible path of travel with a gradient not steeper than 1 in 20

Section 2 Dimensions

The dimensions given throughout this document are in millimetres unless shown otherwise. All dimensions are net and shall not be reduced by projecting skirtings, kerbs, handrails or other fixtures.

Dimensions refer to finished surfaces (e.g. face of wall tiles and floor finishes).

NOTE Dimensioning to the limit of a range is likely to lead to nonconformities. Good practice in design and documentation aims to allow building tolerances. Clearance dimensions in this document refer to finished surfaces, not to those of structural elements.

Unless otherwise indicated, limiting dimensions for an inclined surface on a continuous accessible path of travel shall be taken as horizontal and vertical only.

Section 3 Continuous accessible paths of travel

3.1 General

A continuous accessible path of travel shall not include a step, stairway, turnstile, revolving door, escalator, moving walk or other impediment.

NOTE When setting out works using the dimensions in this section, make appropriate allowances for construction tolerance (see [Section 2](#)).

3.2 Heights of a continuous accessible path of travel

The minimum unobstructed height of a continuous accessible path of travel shall be 2 000 mm or 1 980 mm at doorways (see [Figure 2](#)).

3.3 Width of a continuous accessible path of travel

Unless otherwise specified (such as at doors, curved ramps and similar), the minimum unobstructed width (see [Figure 2](#)) of a continuous accessible path of travel shall be 1 000 mm except in the case of a curved ramp or walkway (see [Clause 7.4](#) (d)). The following shall not intrude into the minimum unobstructed width of a continuous accessible path of travel:

- (a) Fixtures and fittings such as lights, awnings, windows that, when open, intrude into the circulation space, telephones, skirtings and similar objects.
- (b) Essential fixtures and fittings such as fire hose reels, fire extinguishers and switchboards.
- (c) Door handles less than 900 mm above the finished floor level.

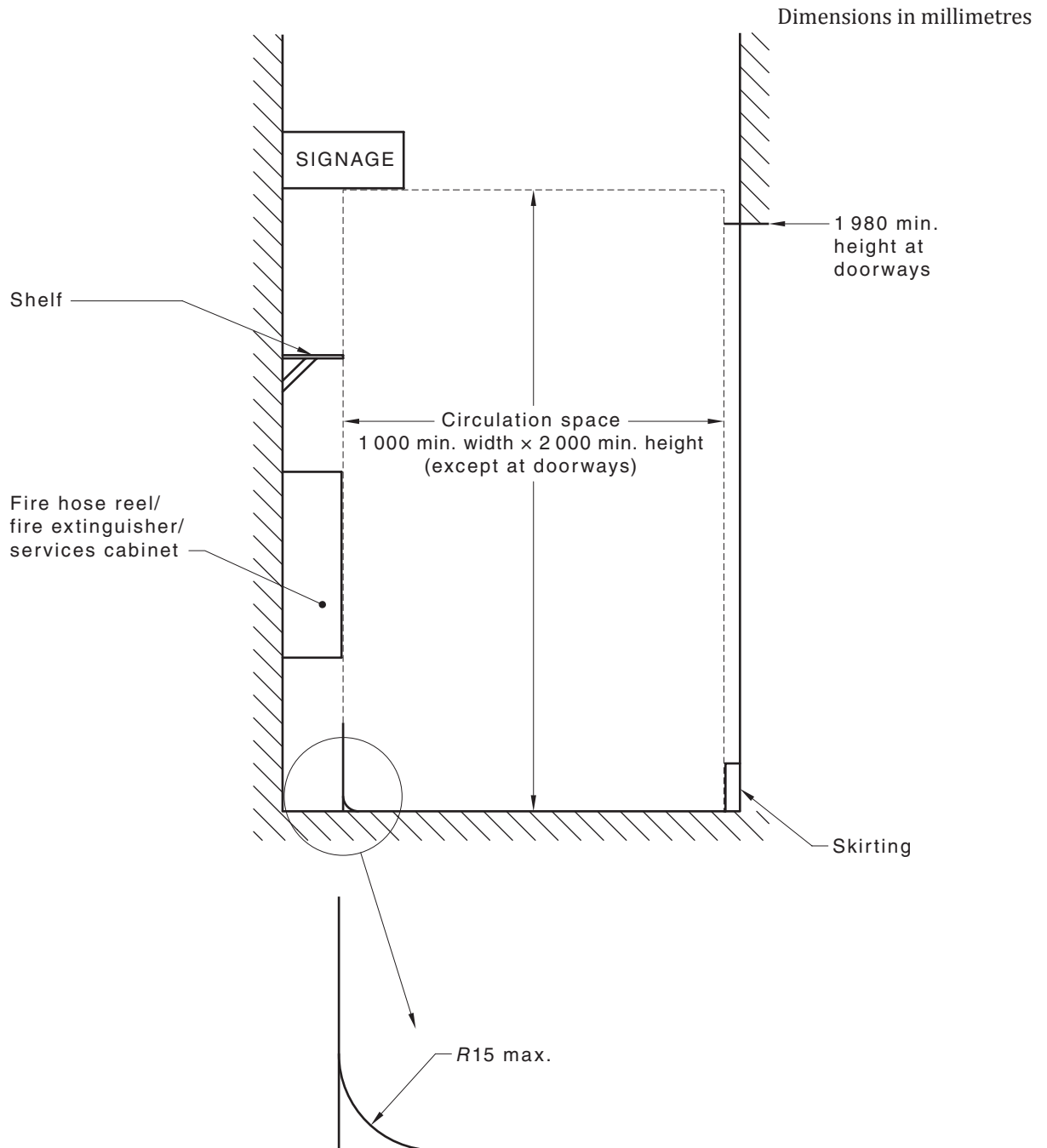


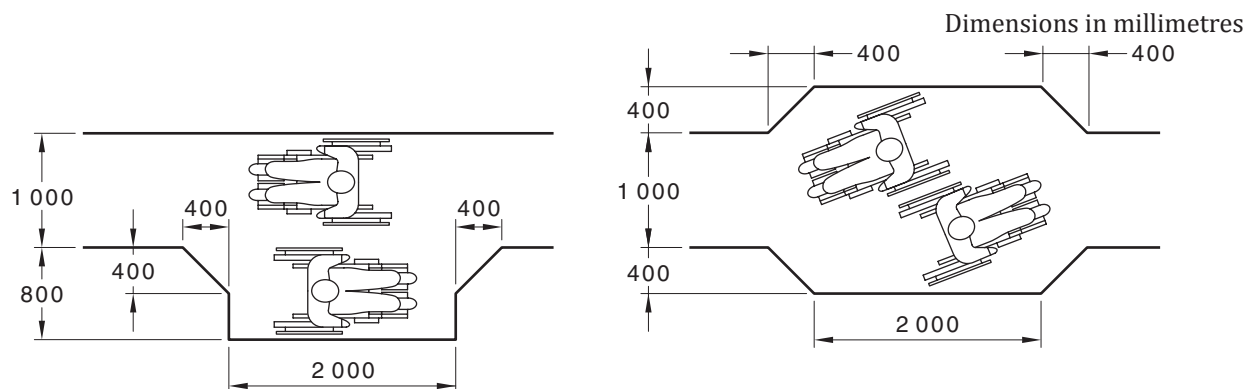
Figure 2 — Continuous accessible path of travel — Minimum height and width

3.4 Passing space for wheelchairs

Passing space for 2 persons using wheelchairs shall be a minimum width of 1 800 mm for a minimum length of 2 000 mm.

See [Section 7](#) for gradient and crossfall requirements.

NOTE For examples see [Figure 3](#).



All dimensions are minimum

Figure 3 — Examples for passing space for wheelchairs

3.5 Circulation space for wheelchair turn

3.5.1 General

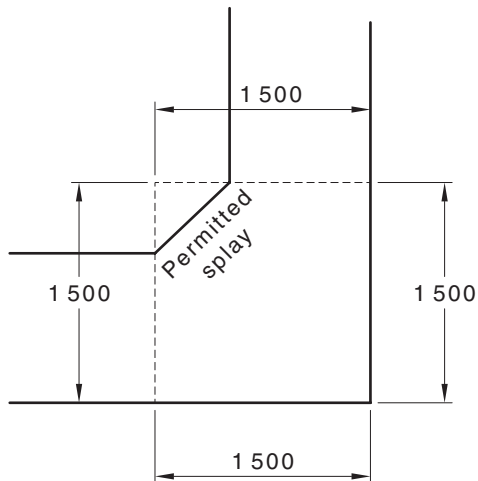
See [Section 7](#) for gradient and crossfall requirements.

3.5.2 60° to 90° turn

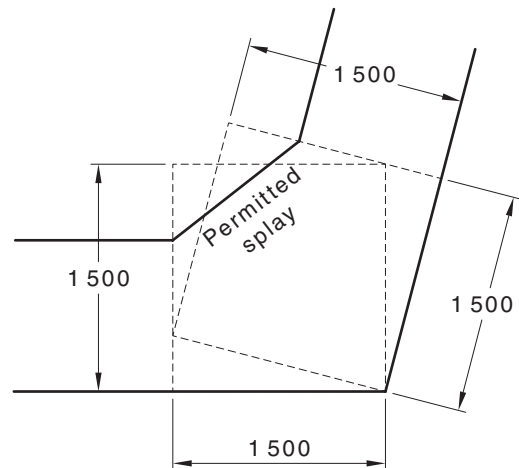
A space required for a wheelchair to make a 60° to 90° turn shall be not less than 1 500 mm wide and 1 500 mm long in the direction of travel. Where the width of the path of travel is less than 1 500 mm, the space may be splayed across the internal corner as shown in [Figure 4](#).

3.5.3 30° to < 60° turn

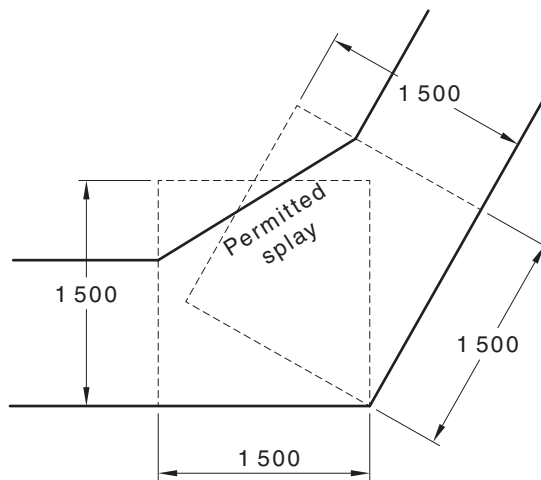
Where the angle of turn is 30° to less than 60° and the width of the path of travel is less than 1 200 mm, a splay of at least 500 mm × 500 mm shall be made on the internal corner, as shown in [Figure 4](#).



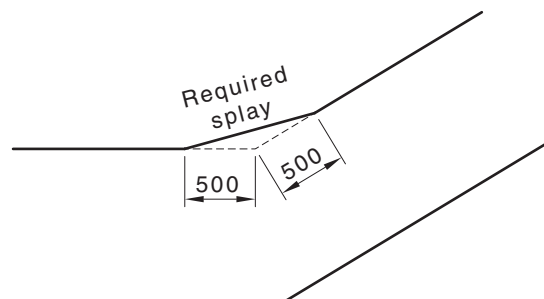
Turn 90° in path of travel
Corridor less than 1 500 mm wide
requires widening at turn



Turn 75° in path of travel
Corridor less than 1 500 mm wide
requires widening at turn



Turn 60° in path of travel
Corridor less than 1 500 mm wide
requires widening at turn



Turn 30° to < 60° in path of travel
less than 1 200 mm wide

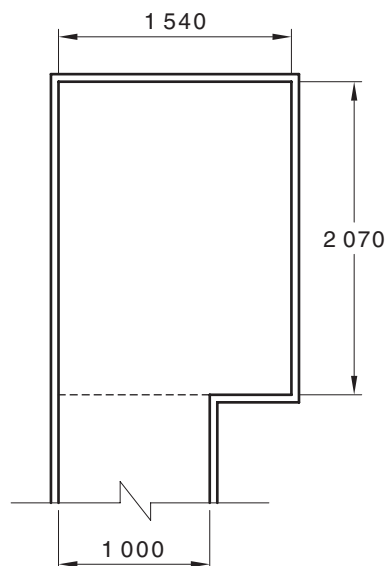
All dimensions are minimum

Figure 4 — Space required for a 30° to 90° turn

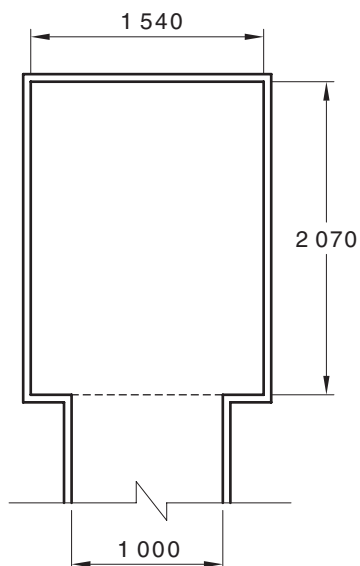
3.5.4 Greater than 90° to 180° turn

The space required for a wheelchair to make a greater than 90° to 180° turn shall be not less than 2 070 mm in the direction of travel and not less than 1 540 mm wide, as shown in [Figure 5](#).

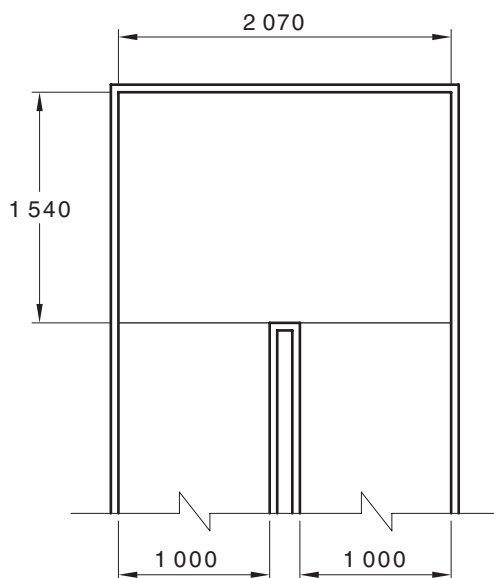
NOTE For landing dimensions, see [Clause 7.8](#).



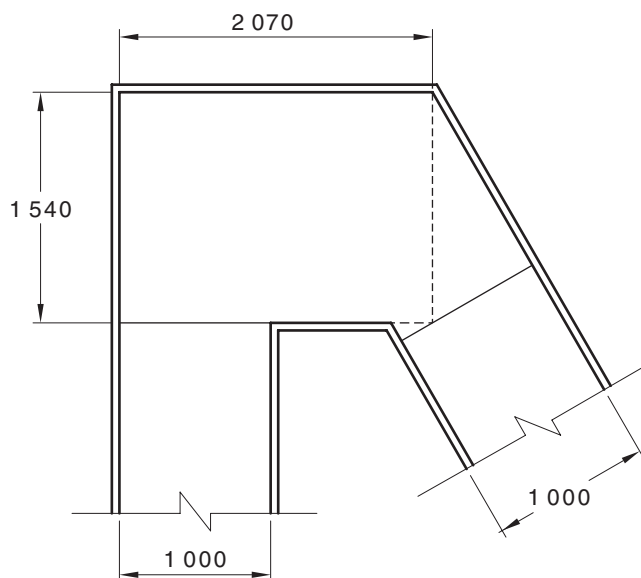
(a) Space required in corridor



(b) Space required in corridor



(c) Space required at ramp landing



(d) Space required at ramp landing

All dimensions are minimum

Figure 5 — Space required for a greater than 90° to 180° turn

3.6 Visual indicators on glazing

Where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights, including any glazing capable of being mistaken for a doorway or opening, shall be clearly marked for their full width with an unbroken, solid and opaque contrasting line. The contrasting line shall be not less than 75 mm high and shall extend across the full width of the glazing panel. The lower edge of the contrasting line shall be located between 900 mm and 1 000 mm above the plane of the finished floor level.

Any contrasting line on the glazing shall provide a minimum of 30 % luminance contrast when viewed against the floor surface or surfaces within 2 m of the glazing on the opposite side. The contrast shall be achieved when viewed from each side of the glazing.

The opacity of the line shall be tested by observing a solid object placed immediately behind and touching the glass. The line shall be considered opaque if there is no image of the object visible.

NOTE 1 On tinted glass, the contrast of the strip may be more appropriately considered against the glass tint than the floor beyond.

NOTE 2 Any logo, branding, company name or the like may be added to the visual indicator strip, but these should be fully above, or fully below the minimum 75 mm wide unbroken, solid and opaque contrasting line.

NOTE 3 AS 1288:2006 Section 5 provides further information relating to the criteria and situations relevant to glazing that is more vulnerable to human impact.

3.7 Glazed viewing panels

Glazed viewing panels in doors shall conform to AS 1288.

NOTE Glazed viewing panels in doors should be as follows (see [Figure 36 \(a\)](#)):

- (a) The lower edge of the glazing should be not more than 1000 mm above the plane of the finished floor.
- (b) The upper edge of the glazing should be not less than 1600 mm above the plane of the finished floor.
- (c) In width, the glazing should extend to within not more than 200 mm from the latch edge of the door and be not less than 150 mm wide.

Section 4 Floor or ground surfaces on continuous accessible paths of travel and circulation spaces

4.1 General

A continuous accessible path of travel and any circulation spaces shall have a slip-resistant surface. The texture of the surface shall be traversable by people who use a wheelchair and those with an ambulant or sensory disability.

NOTE 1 Information relevant to slip resistance can be found in AS 4586, AS 4663, HB 197, and SA HB 198.

NOTE 2 When setting out works using the dimensions in this section, make appropriate allowances for construction tolerance (see [Section 2](#)).

4.2 Construction tolerances at abutment of surfaces

Abutment of surfaces shall have a smooth transition. Design transition shall be 0 mm. Construction tolerances shall be as follows:

- (a) 0 ± 3 mm vertical; and
- (b) 0 ± 5 mm, provided the higher edge is bevelled or rounded to reduce the likelihood of tripping as shown in [Figure 6](#) (a).

Design allowance for the joints of abutting pavers shall be as shown in [Figure 6](#) (b).

Design allowance for joints in pavers shall be as shown in [Figure 7A](#). Design allowance for timber decking and boardwalks shall be as shown in [Figure 7B](#).

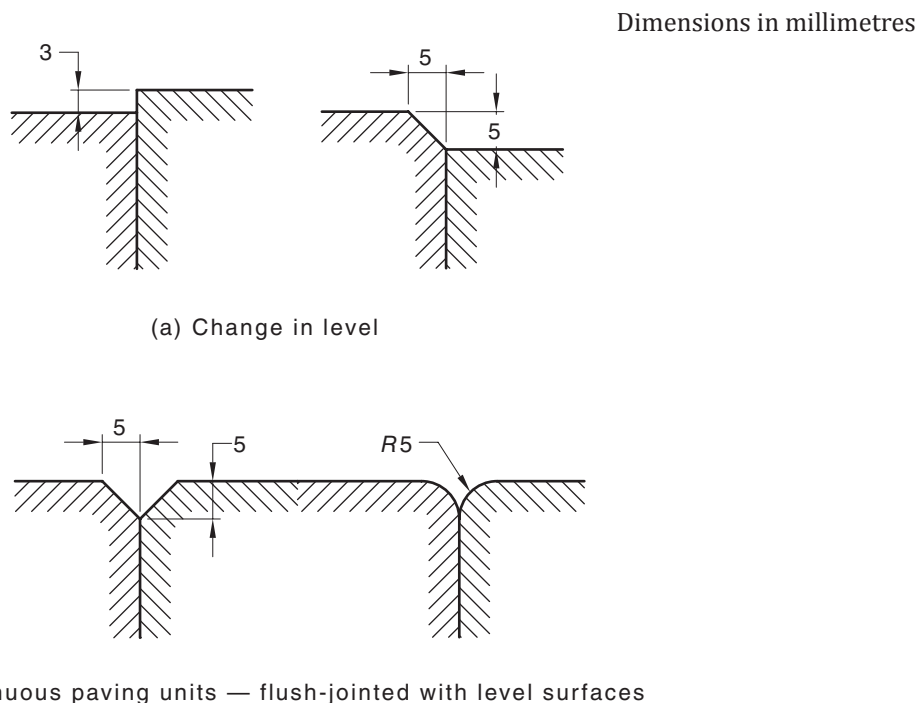
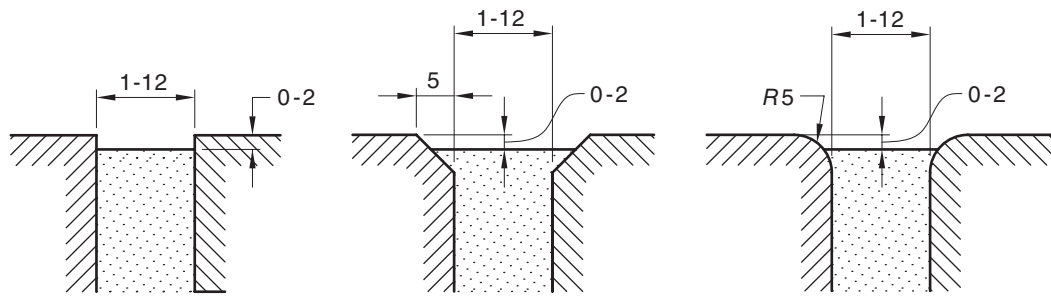
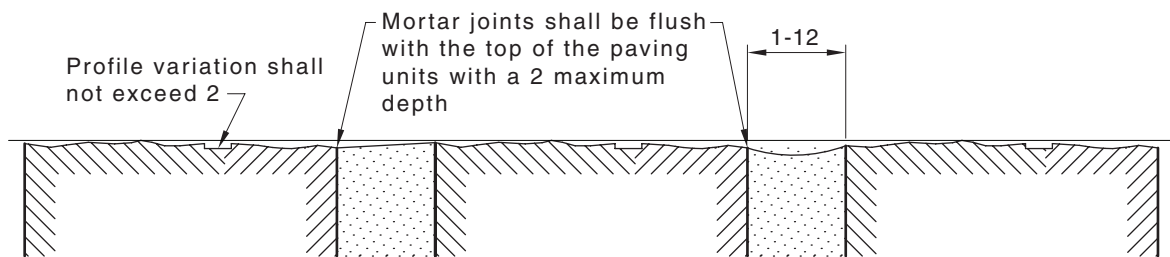


Figure 6 — Acceptable construction tolerances for abutment of surfaces

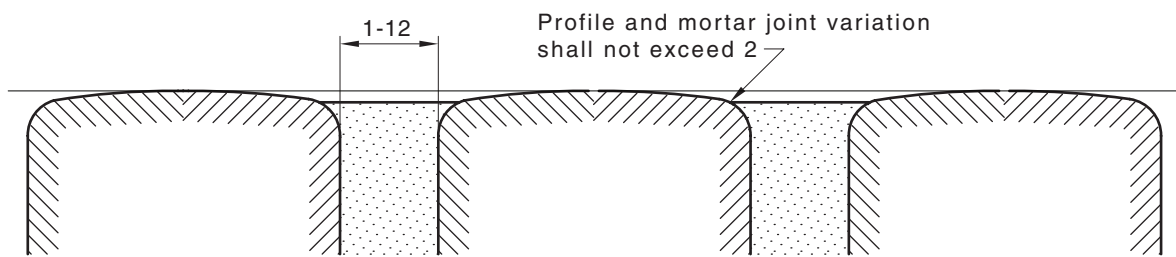
Dimensions in millimetres and are maximum



(a) Continuous paving units — Level surface

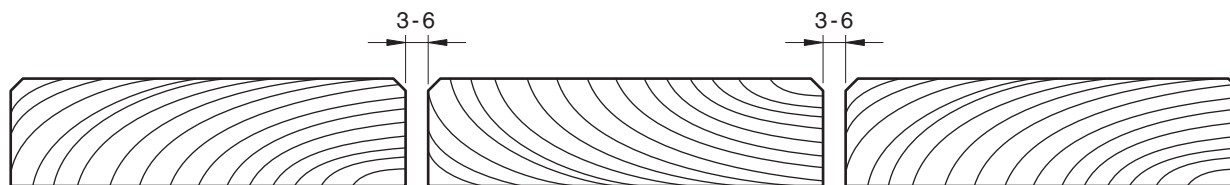


(b) Continuous paving units — Irregular surfaces

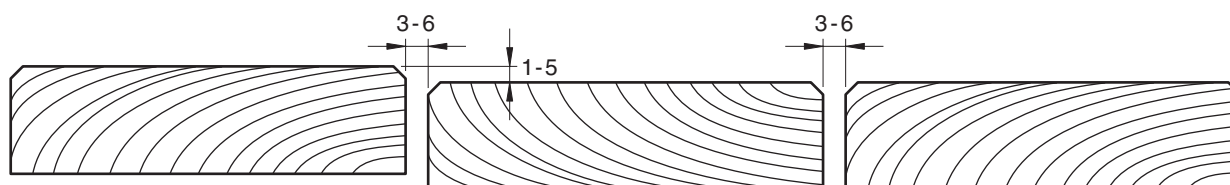


(c) Continuous paving units — Domed surfaces

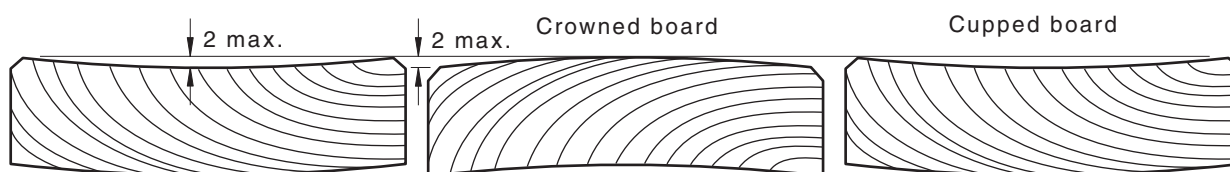
Figure 7(A) — Raked joint pavers



(a) Gap spacing for continuous timber and composite decking
 * Gaps may be increased to 10 mm in high rainfall areas for exposed installations and boards exceeding 150 mm width



(b) Single incidence of change in level on timber and composite decking



(c) Uneven surface tolerances for continuous timber and composite decking

Figure 7(B) — Timber decking and boardwalks

4.3 Floor coverings

4.3.1 Carpets and other soft flexible materials

Where carpets or any soft flexible materials are used on the ground or floor surface —

- (a) the pile height or pile thickness shall not exceed 11 mm and the carpet backing thickness shall not exceed 4 mm; and
- (b) the carpet pile height or pile thickness dimension, carpet backing thickness dimension and the combined dimensions shall be a maximum of 11 mm, maximum of 4 mm and a maximum of 15 mm respectively.

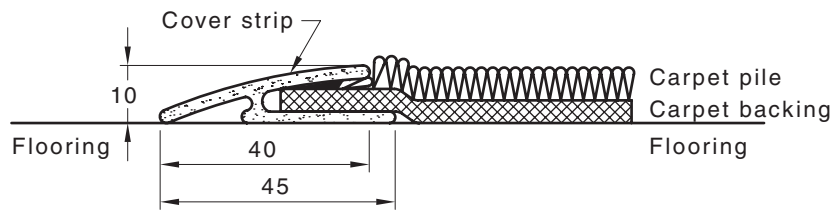
NOTE An example is given in [Figure 8](#).

Abutting floor coverings shall have a smooth transition. At the leading edge, carpet trim and mat edges shall have a vertical face no higher than 3 mm, or a rounded or bevelled edge no higher than 5 mm or above that height a gradient of 1:4 up to a maximum of 10 mm.

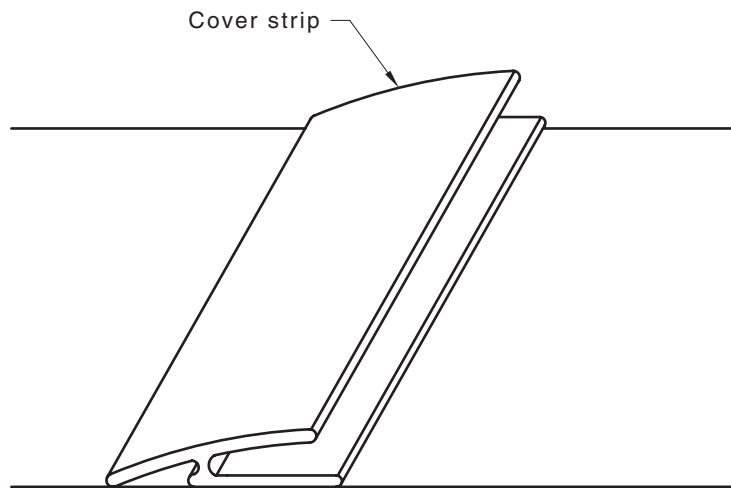
A range of trims are available, such as curved metal covers, cap vinyl covers, small and larger threshold trims, flat metal covers, metal edge trims, smooth edge trims, plank ramp and the like.

This clause also applies to mats, rugs and temporary matting/rugs on other floor finishes.

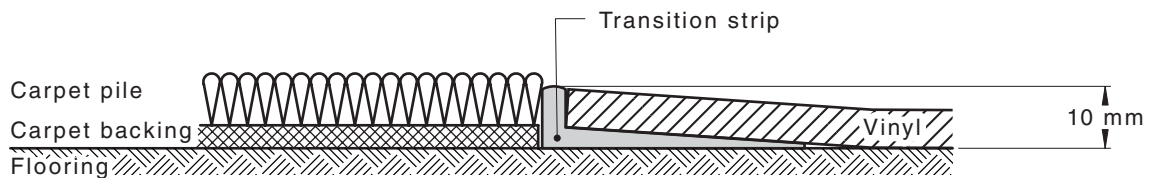
Dimensions in millimetres



(a) Optional section A



(b) View of optional section A



(c) Optional section B

Figure 8 — Example of abutting floor coverings on a continuous accessible part path of travel

4.4 Grates

Grates in paths of travel shall be in accordance with the following:

- (a) Circular openings shall be not greater than 13 mm in diameter.
- (b) Slotted openings shall be not greater than 13 mm wide and not greater than 150 mm long and be oriented so that the long dimension is transverse to the dominant direction of travel.
- (c) Linear openings shall be oriented so that the longer dimension is transverse to the dominant direction of travel, except where linear openings are less than 8 mm wide. Where linear openings are less than 8 mm wide, orientation is optional.

4.5 Timber decking and boardwalks

The gap between boards depends on the type of board used and the location of the installation.

For decking boards no greater than 150mm wide the installation shall be designed for a maximum 6 mm gap.

Adjacent boards shall be level within a maximum vertical 3 mm tolerance.

For decking boards over 150 mm wide the gap may be increased to a maximum of 10 mm. Where the gap exceeds 8 mm the boards shall run transverse to the direction of travel.

The fixing method shall maintain the tolerances shown in [Figure 8](#).

NOTE 1 Decking and boardwalks may be constructed from hardwood timber, softwood timber or manufactured products. These all react differently in the environment and the choice of materials should take the specific site into consideration.

NOTE 2 As the materials are subject to environmental conditions, regular maintenance may be required to ensure the installation requirements are maintained.

Section 5 Signage

5.1 Form of signs

The NCC contains requirements for Braille and tactile signage.

Where signs are required, the form of signs shall be as follows:

- (a) Where required by the NCC, raised tactile and/or Braille signage shall be provided as follows:
 - (i) Sanitary facilities shall be identified with the following:
 - (A) Raised and visual versions of the international symbol of access.
 - (B) Raised and visual versions of the male and female symbols.
 - (C) Raised text that shall be in title case (e.g. Male Toilet).

NOTE 1 Title case has the first letter of each word capitalized and the rest are lower case. Short articles, prepositions and conjunctions are not capitalized.
 - (D) Braille that fully describes the visual information displayed by symbols and raised text.

NOTE 2 For example, a sign for a male toilet will include the words “Male Toilet” as visual, raised text and Braille as well as the raised visual male symbol.

NOTE 3 An example of a sign is given in [Figure 9\(A\)](#).
 - (ii) Signs for unisex accessible facilities shall be provided with the letters LH or RH to indicate a left-hand or right-hand side transfer onto the WC pan. The minimum font size shall be 20 mm sans serif.

NOTE 4 An example of right-hand side (RH) transfer is shown in [Figure 9\(A\)](#).

NOTE 5 Helvetica and Arial are sans serif fonts.
 - (iii) Entry doors to airlocks serving areas containing sanitary facilities shall be identified by the use of raised text and Braille, together with raised and visual symbols identifying each sanitary facility within.

NOTE 6 One symbol for each facility need only be used.

NOTE 7 Where the facilities for male and female are separate, a dividing line should be placed between each symbol.
- (b) Elements of a sign shall be set out singularly, or in a modular form.

NOTE 8 Examples of modular form are shown in [Figures 9\(A\), 9\(D\), 9\(E\)](#) and [9\(F\)](#).
- (c) Elements of a sign shall be arranged horizontally or vertically and shall include raised text and Braille, together with raised and visual symbols. Where words are used, they shall be displayed horizontally.

NOTE 9 Other symbols may be used in association with the text.
- (d) Facilities shall be identified by the use of raised text, Braille, and symbols if required. The identification shall be between 1 200 mm and 1 600 mm above finished floor levels.
- (e) A sanitary compartment for people with ambulant disabilities shall be identified in accordance with [Figure 9\(C\)](#).

Braille shall be Unified English Braille (UEB), Grade 1, uncontracted, and shall be in accordance with the technical specifications set out by the Australian Braille Authority (ABA). Braille numerals shall be preceded by a Braille numerical sign.

The International Symbol of Access and the International Symbol for Deafness (see [Clause 5.2](#)) may be used without raised explanatory text such as “accessible” or “hearing loop installed”.



NOTE 1 The Braille indicator is only used where there are multiple lines of text. It indicates the location of the first line of Braille.

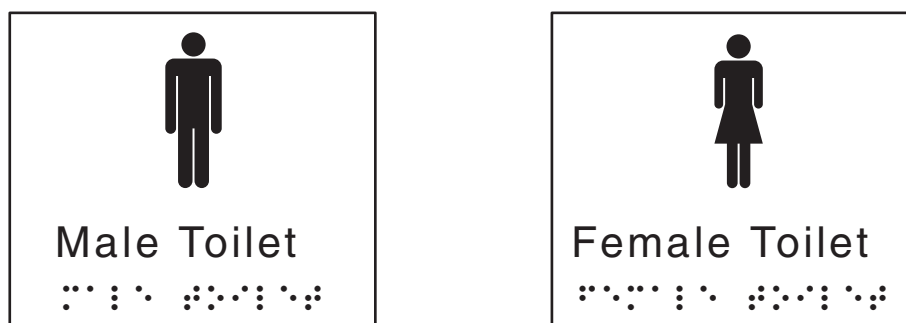
NOTE 2 Visual message: The sign displays a unisex accessible toilet with right-hand (RH) transfer.

NOTE 3 Minimum required raised tactile message: “Unisex Toilet RH” in raised tactile print and symbols.

NOTE 4 Minimum required Braille message: “Unisex accessible toilet rh” for right-hand transfer.

NOTE 5 The Braille in this figure is not to scale.

Figure 9(A) — Modular form of signs — Example of identification sign for a unisex accessible toilet with a right-hand (RH) transfer



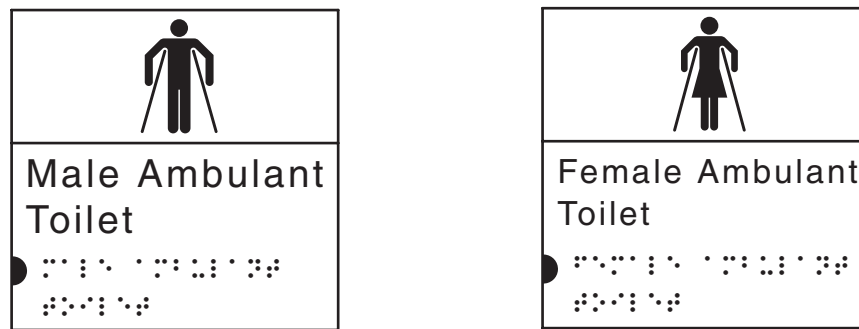
NOTE 1 Visual message: The signs display male toilet and female toilet.

NOTE 2 Minimum required raised tactile message: “Male Toilet”, “Female Toilet” in raised tactile print and symbols.

NOTE 3 Minimum required Braille message: “Male Toilet”, “Female Toilet”.

NOTE 4 The Braille in this figure is not to scale.

Figure 9(B) — Modular form of signs — Example of identification signs for male and female toilets



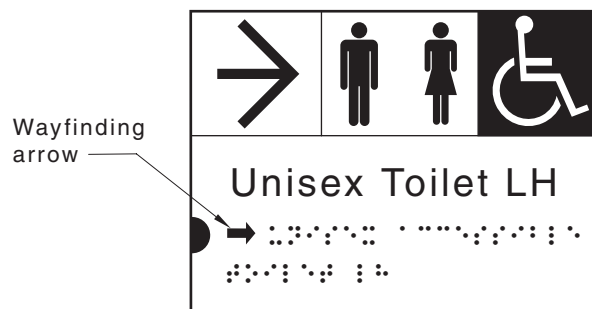
NOTE 1 Visual message: The signs display ambulant accessible male and female toilets.

NOTE 2 Minimum required raised tactile message: “Male Ambulant Toilet”, “Female Ambulant Toilet” in raised tactile print and symbols.

NOTE 3 Minimum required Braille message: “Male Ambulant Toilet”, “Female Ambulant Toilet”.

NOTE 4 The Braille in this figure is not to scale.

Figure 9(C) — Modular form of signs — Example of identification signs for ambulant accessible male and female toilets



NOTE 1 Visual message: The sign displays the direction to a unisex accessible toilet with left-hand (LH) transfer.

NOTE 2 Minimum required tactile message: “Unisex Toilet LH” with raised tactile wayfinding arrow, print and symbols.

NOTE 3 Minimum required Braille message: “unisex accessible toilet lh” with a wayfinding arrow of Braille cell proportion.

NOTE 4 The Braille in this figure is not to scale.

Figure 9(D) — Modular form of signs — Example of wayfinding sign to a unisex accessible toilet with left hand (LH) transfer



NOTE 1 Visual message: The sign displays an accessible path of travel using a lift to level 3 to a unisex accessible toilet.

NOTE 2 Minimum required tactile message: “Unisex Toilet Level 3” with raised tactile symbols and print.

NOTE 3 Minimum required Braille message: “Braille arrow unisex accessible toilet on level 3 use lift” with a wayfinding arrow of Braille cell proportion.

NOTE 4 The Braille in this figure is not to scale.

Figure 9(E) — Modular form of signs — Example of wayfinding sign to a unisex accessible toilet

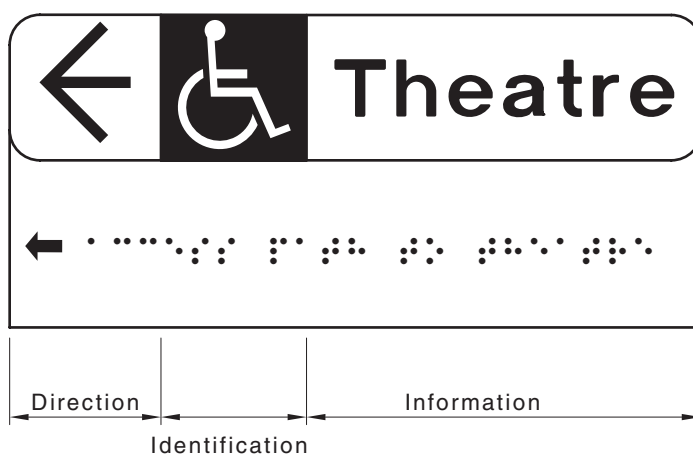


Figure 9(F) — Modular form of signs Example of wayfinding sign to identify facilities for persons with mobility disabilities

5.2 Symbols indicating access for people with disabilities

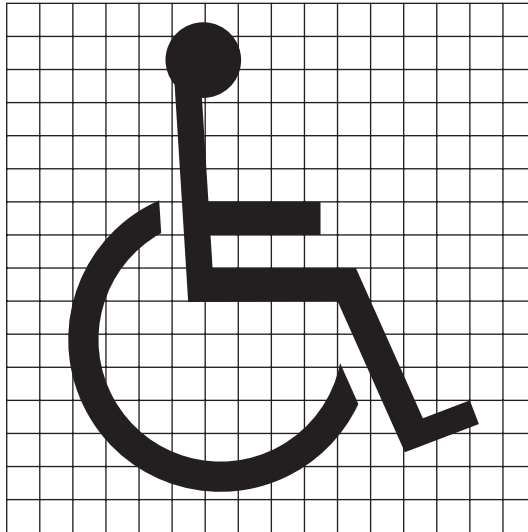
5.2.1 International symbol of access

The form of the international symbol of access shall be as follows:

- The symbol of access shall consist of two elements: a stylized figure in a wheelchair pointing to the right on a plain square background.
- The proportional layout of the symbol of access shall be in accordance with [Figure 10](#).
- The colour of the Figure shall be white on a blue background in accordance with [Figure 11](#). The blue shall be B21, ultramarine, of AS 2700, or similar.

- (d) For signs indicating the direction to a facility, an arrow shall be used in combination with the international symbol of access.

NOTE Signs identifying a facility may be used either with or without directional arrows.



NOTE The grid is for positional purposes only.

Figure 10 — Proportional layout for international symbol of access

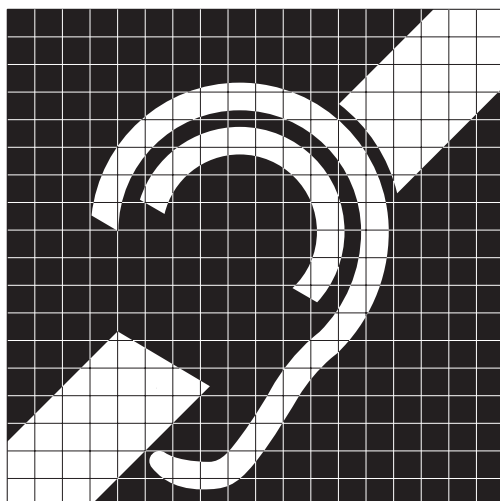


Figure 11 — Colour contrast for symbol of access

5.2.2 International symbol for deafness

The form of the international symbol for deafness shall be as follows:

- (a) The symbol for deafness shall consist of two elements: a stylized ear and diagonal slash on a plain square background.
- (b) The proportional layout of the symbol for deafness shall be in accordance with [Figure 12](#).
- (c) The colour of the symbol shall be white on a blue background. The blue shall be B21, ultramarine, of AS 2700, or similar.
- (d) The symbol shall not incorporate the letter "T" or any other symbol or lettering.



NOTE The grid is for positional purposes only.

Figure 12 — Proportional layout for international symbol for deafness

Section 6 Tactile ground surface indicators

Tactile ground surface indicators (TGSIs) to warn people of hazards shall be in accordance with AS/NZS 1428.4.1.

Section 7 Walkways, ramps and landings

7.1 General

Walkways, ramps and landings that are provided on a continuous accessible path of travel shall be as follows:

- (a) Sharp transitions shall be provided between the planes of landings and ramps, as shown in [Figure 14](#).
- (b) Landings shall be provided at all changes in direction in accordance with [Clause 7.8](#).
- (c) Landing or circulation space shall be provided at every doorway, gate, or similar opening.
- (d) The crossfall for a walkway or landing shall be no steeper than 1 in 40, except that bitumen surfaces shall have a camber or crossfall no steeper than 1 in 33.

NOTE 1 For requirements for ground surfaces, see [Section 4](#).

NOTE 2 When setting out works using the dimensions in this section, make appropriate allowances for construction tolerance (see [Section 2](#)).

7.2 Walkways

Walkways shall be in accordance with the following:

- (a) The floor or ground surface abutting the sides of the walkway shall provide a firm and level surface of a different material to that of the walkway at the same level of the walkway, follow the grade of the walkway and extend horizontally for a minimum of 600 mm unless one of the following is provided:
 - (i) Kerb in accordance with [Figure 18](#); or
 - (ii) Kerb rail and handrail in accordance with [Figure 19](#); or
 - (iii) A wall, fence, balustrade or similar barrier.

In the case of a street kerb, the minimum width of the walkway shall be increased by 600 mm at that side as shown in [Figures 24\(B\)](#) and [24\(C\)](#).

- (b) Walkways shall be provided with landings, as specified in [Clause 7.8](#), at intervals not exceeding the following:
 - (i) For walkway gradients of 1 in 33, at intervals no greater than 25 m.
 - (ii) For walkway gradients of 1 in 20, at intervals no greater than 15 m.
 - (iii) For walkway gradients between 1 in 20 to 1 in 33, at intervals that shall be obtained by linear interpolation.

For walkways shallower than 1 in 33, no landings are required.

The intervals specified above may be increased by 30 % where at least one side of a walkway is bounded by —

- (iv) a kerb or kerb rail as specified in [Clause 7.3\(j\)](#) and a handrail as specified in [Clause 9](#); or
- (v) a wall and a handrail as specified in [Clause 9](#).

7.3 Ramps

Ramps shall be in accordance with the following:

- (a) The maximum gradient of a ramp exceeding 1 900 mm in length shall be 1 in 14.
- (b) The gradient of a ramp shall be constant throughout its length with a maximum allowable tolerance of 3 % provided no section of the ramp is steeper than 1 in 14.
- (c) Ramps shall be provided with landings, as specified in [Clause 7.8](#), at the bottom and at the top of the ramp and at intervals not exceeding the following:
 - (i) For ramp gradients of 1 in 14, at intervals not greater than 9 m.
 - (ii) For ramp gradients steeper than 1 in 20, at intervals not greater than 15 m.
 - (iii) For ramp gradients between 1 in 14 and steeper than 1 in 20, at intervals that shall be obtained by linear interpolation.

- (d) Where ramps are constructed with a change in direction, the angle of approach shall create a 90° angle to the line of transition between the ramp surface and the landing surface, as shown in [Figure 13](#).

- (e) Ramps shall have a handrail in accordance with [Clause 9](#) on each side of the ramp, as shown in [Figure 14](#).

NOTE 1 [Figures 15\(A\)](#) and [15\(B\)](#) show examples of suitable ramp handrail terminations.

- (f) Where the intersection is at the property boundary, the ramp shall be set back by a minimum of 900 mm so that the handrail (in accordance with [Clause 9](#)) and TGSIs do not protrude into the transverse path, as shown in [Figure 16](#).

- (g) TGSIs shall be installed in accordance with AS 1428.4.1.

- (h) Where the intersection is at an internal corridor, the ramp shall be set back by a minimum of 400 mm so that the handrail in accordance with [Clause 9](#) does not protrude into the transverse path of travel as shown in [Figure 17](#).

- (i) The handrail shall extend a minimum of 300 mm horizontally past the transition point at the top and bottom of the ramp except where the inner handrail is continuous at an intermediate landing.

- (j) Where a handrail is not supported on a wall, ramps and intermediate landings shall have kerbs or kerb rails in accordance with the following:

- (i) The minimum height above the finished floor shall be 65 mm.
- (ii) The height of the top of the kerb or kerb rail shall not be within the range 75 mm to 150 mm above the finished floor, as shown in [Figure 18](#).
- (iii) There shall be no longitudinal gap or slot greater than 20 mm in the kerb or kerb rail within the range 75 mm to 150 mm above the finished floor.

NOTE 2 For details on kerbs and kerb rails, see [Figure 18](#).

NOTE 3 For location of kerb or kerb rail, see [Figure 19](#).

NOTE 4 Examples of kerb rail configuration are shown in [Appendix A](#).

(k) Kerbs or kerb rails shall —

- (i) be located so that the ramp-side face is either flush with the ramp-side face of the handrail or no greater than 100 mm away from the ramp-side face of the handrail, as shown in [Figure 19](#);
- (ii) where the handrail is supported on a vertical post, the height of the top of the kerb or kerb rail shall be not less than 150 mm above the finished floor, as shown in [Figure 19](#) (a), (b) or (c); and
- (iii) where the kerb is at a height of 65 mm to 75 mm, the support posts shall be set back a minimum of 200 mm from the face of the kerb or kerb rail, as shown in [Figure 19](#) (d).

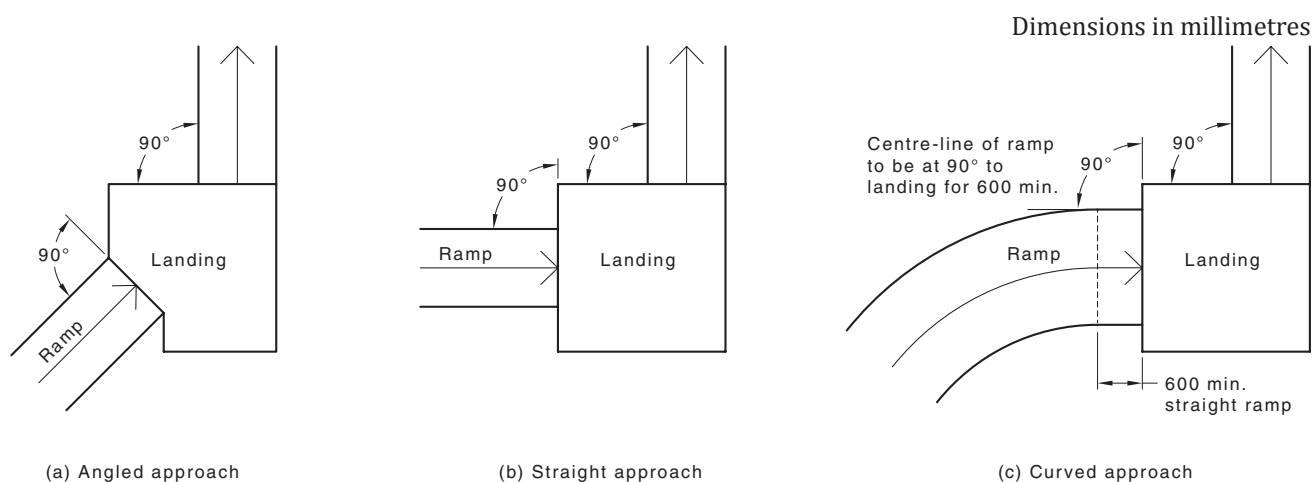


Figure 13 — Angle of approach between ramp and landing

The diagram illustrates the plan view of a staircase layout. It features a central section with two ramps and two landings. The ramps are labeled 'Ramp: maximum gradient 1 in 14'. The landings are labeled 'Landing 1 200 min.'. The overall width of the central section is indicated as '1 000 min.'. The layout is flanked by a 'Walkway: maximum gradient 1 in 20'. A 'Kerb' is shown at the top, and a 'Handrail' is indicated by a line pointing to the top edge of the central section.

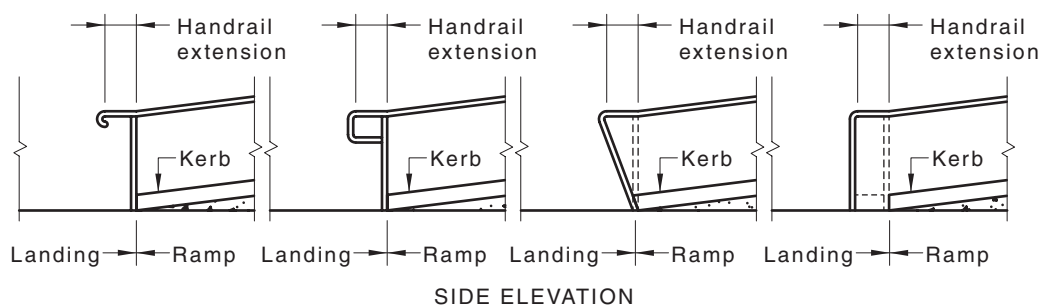
(a) Plan view

Diagram (b) Elevation shows the profile of a ramp and landings with handrails. The diagram includes the following labels and dimensions:

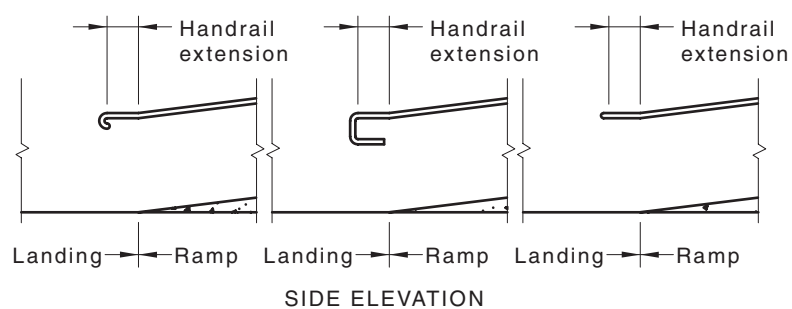
- Walkway:** maximum gradient 1 in 20
- Landing:** 1 200 min.
- Ramp:** maximum gradient 1 in 14
- Landing:** 1 200 min.
- Ramp:** maximum gradient 1 in 14
- Landing:** 1 200 min.
- Turn handrail through a total of 180° or return fully to end post or wall face**
- Extended handrail 300 min. parallel to surface below**
- 865 to 1 000** (Handrail height)
- Sharp transitions**
- Kerb**
- Continue kerb and handrails across/around landing, where possible**
- Trafficable surface to top of handrail**
- Extended handrail 300 min. parallel to surface below**

(b) Elevation

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(a) Post mounted handrails



(b) Wall mounted handrails

Figure 15(A) — Ramp handrails - Examples of handrail terminations

Dimensions in millimetres

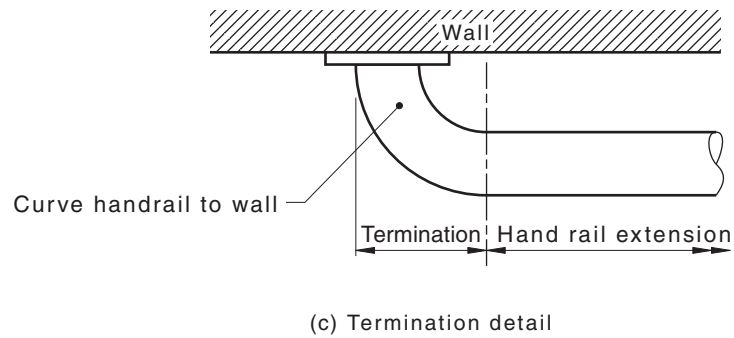
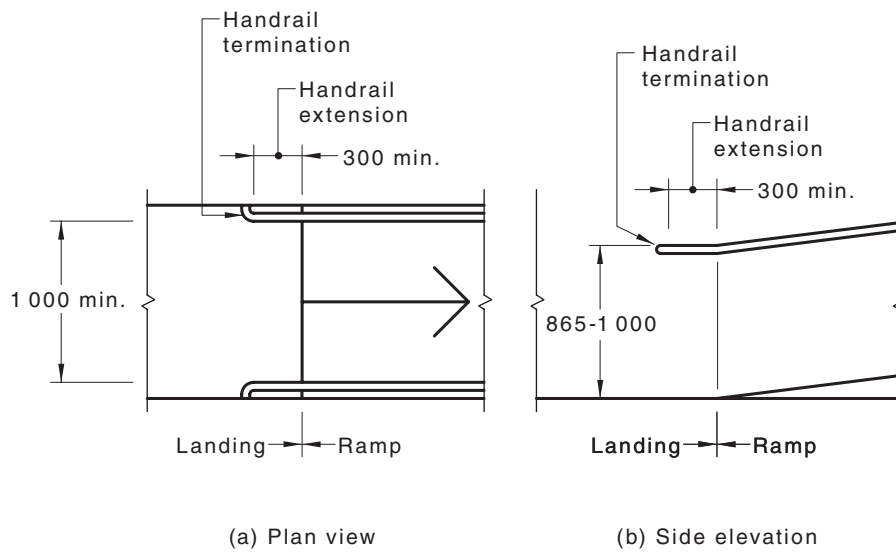


Figure 15(B) — Ramp handrails — Detail for handrails terminated by turning horizontally through 90° to the wall

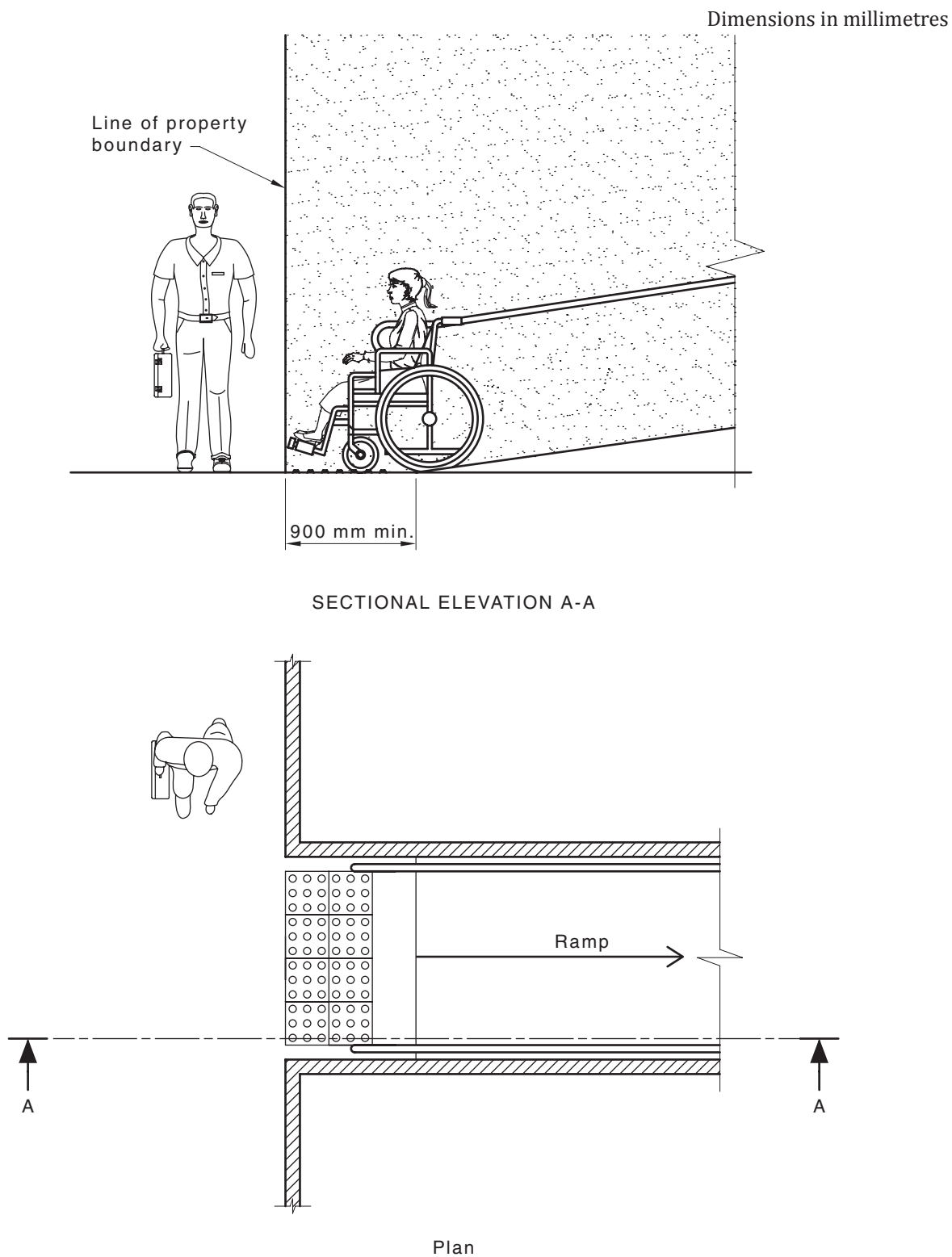


Figure 16 — Location of ramp at a boundary to prevent protrusion of handrails and tactile ground surface indicators (TGSIs) into a transverse path of travel