

Australian Standard®

Design for access and mobility

**Part 2: Enhanced and additional
requirements—Buildings and
facilities**

This Australian Standard was prepared by Committee ME/64, Access For People With disabilities. It was approved on behalf of the Council of Standards Australia on 26 November 1991 and published 10 February 1992.

The following interests are represented on Committee ME/64:

Access Australia
ACROD
Australian Chamber of Manufactures
Australian Council on the Ageing
Australian National Council of and for the Blind
Australian Uniform Building Regulations Coordinating Council
Building Owners and managers Association of Australia
Department of Administrative Services—Australian Construction Services
Department of Housing, New South Wales
Department of Housing and Local Government, Queensland
Department of the Premier and Cabinet, South Australia
Master Builders Construction and Housing Association, Australia
National Committee of Independent Living Centres
Royal Australian Institute of Architects
Royal Melbourne Institute of Technology
South Australian Department of Housing and Construction
Telecom Australia

Additional interest participating in preparation of Standard:
Paraplegic and Quadriplegic Association of Victoria

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 90069.

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 1428.2—1992

Design for access and mobility

Part 2: Enhanced and additional requirements—Buildings and facilities

RECONFIRMATION NOTICE

Technical Committee ME-064 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Reconfirmed documents cannot be amended, but may be formally revised and a new edition published.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 13 January 2015.

Reconfirmed documents cannot be amended, but may be formally revised and a new edition published.

The following are represented on Technical Committee ME-064.

Association of Consultants in Access Australia
Australian Association of Occupational Therapists
Australian Blindness Forum
Australian Building Codes Board
Australian Industry Group
Australian Institute of Architects
Australian Institute of Building Surveyors
AUSTROADS
Blind Citizens Australia
Consumers Federation of Australia
Deafness Forum of Australia
Disabled Persons Assembly New Zealand
Housing Industry Association
Master Builders Australia
Physical Disability Australia
Property Council of Australia
Royal New Zealand Foundation for the Blind

NOTES

Australian Standard[®]

Design for access and mobility

Part 2: Enhanced and additional requirements—Buildings and facilities

First published as part of AS CA52.1—1968.
Revised and redesignated AS 1428—1977.
Revised and redesignated in part as AS 1428
Supplement 1—1988.
Revised and redesignated AS 1428.2—1992.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 7234 5



Documents

Document Sharing Hub

PREFACE

This Standard was prepared by the Standards Australia Committee on Access for People with Disabilities to supersede [AS 1428, Supplement 1—1988](#) *Extracts—Design rules for access by the disabled (Supplement to AS 1428—1977)*.

The purpose of this Standard is twofold. First, it covers items which are not covered in [AS 1428.1](#), *Design for access and mobility*, Part 1: *General requirements for access—Buildings*, and second it gives enhanced requirements for access, for reference by authorities and other users who wish to provide a greater level of accessibility than the minimum requirements of Part 1.

Whereas the requirements in Part 1 are based on research on the capabilities of 80 percent of people with disabilities in Australia who use wheelchairs, together with some recognized needs of other disability groups, the enhanced requirements in this Standard have been determined, where possible, from the researched capabilities of at least 90 percent of test subjects comprising both people who use wheelchairs and ambulant people. Where the minimum space, dimensions and gradients of Part 1 have been shown to be suitable for 90 percent of users, the requirements of [AS 1428.1](#) have been called up in this Standard.

The major sources for determining the requirements in this Standard are studies by J. Bails, Public Buildings Department of South Australia, 1983, and E. Steinfeld, Syracuse University, Syracuse, NY, USA, 1979. For reach limits, reference was also made to *A study of the space requirements of wheelchair users* from the official journal of the International Society of Paraplegia: Paraplegia, volume 4, Number 1, May 1966. In recommending spaces between rest areas and time allowance at traffic lights, reference was made to the ability of people to move stated distances and the movement time of people in the 1990 research report *An ergonomic study of pedestrian areas for disabled people*, Institute of Transport Studies, University of Leeds, UK.

The series, when complete, will comprise the following:

AS

1428 *Design for access and mobility*

[1428.1](#) *General requirements for access—Buildings*

1428.2 *Enhanced and additional requirements—Buildings and facilities* (this Standard)

[1428.3](#) *Requirements for children and adolescents with physical disabilities*

[1428.4](#) *Tactile ground surface indicators for the orientation of people with vision impairment*

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

CONTENTS

	<i>Page</i>
1 SCOPE	4
2 APPLICATION	4
3 REFERENCED DOCUMENTS	4
4 DEFINITIONS	5
5 DIMENSIONS	5
6 CIRCULATION SPACES	5
7 CONTINUOUS ACCESSIBLE PATH OF TRAVEL	7
8 WALKWAYS, RAMPS AND LANDINGS	8
9 GROUND AND FLOOR SURFACES	8
10 HANDRAILS AND GRABRAILS	9
11 DOORWAYS AND DOORS	10
12 LIFTS	10
13 STAIRWAYS	10
14 CAR PARKING FACILITIES	14
15 SANITARY FACILITIES	14
16 SYMBOLS	26
17 SIGNS	26
18 WARNINGS	27
19 LIGHTING	28
20 SOUND LEVELS	29
21 HEARING AUGMENTATION—LISTENING SYSTEMS	29
22 REACH RANGES	30
23 CONTROLS	32
24 FURNITURE AND FITMENTS	33
25 VIEWING RANGES	36
26 AUDITORIUMS AND ASSEMBLY AREAS	36
27 STREET FURNITURE	36
28 GATEWAYS AND CHECKOUTS	38
29 VENDING MACHINES	38
30 TELEPHONES	41
31 POST BOXES	42
32 TIME DELAY FOR LIGHTS AT PEDESTRIAN CROSSING	42
 APPENDICES	
A KITCHENS AND LAUNDRIES	43
B ADDITIONAL INFORMATION ON ACCESS REQUIREMENTS IN SPECIFIC TYPES OF BUILDINGS AND FACILITIES	48
C RAMP LENGTH RECKONER	52

STANDARDS AUSTRALIA

Australian Standard

Design for access and mobility

Part 2: Enhanced and additional requirements — Buildings and facilities

1 SCOPE This Standard sets out requirements for the design of buildings and facilities for access for people with disabilities. Where appropriate, these requirements are enhanced from the minimum requirements of Part 1. This Standard also includes requirements for items which are not covered in Part 1, and is intended to be used in conjunction with Part 1.

This Standard does not include requirements for the following:

- (a) Buildings and facilities which are purpose-built for children with disabilities or the provision of tactile ground surface indicators (see Preface).
- (b) Service areas such as plant rooms, commercial kitchens, maintenance storerooms, maintenance access ways, rigging lifts and delivery docks.

2 APPLICATION This Standard is written in a form which is suitable for use by the regulatory authorities or as a part of contract documentation. Compliance with this Standard will ensure compliance with the minimum requirements set out in [AS 1428.1](#).

NOTES:

- 1 Additional information relating to access in kitchens and laundries is provided in Appendix A.
- 2 A summary of the access requirements for specific types of buildings and facilities is provided in Appendix B.

3 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS	
1088	Hearing aids
1088.4	Part 4: Magnetic field strength in audio-frequency induction loops for hearing aid purposes
1371	Toilet seats of moulded plastics
1428	Design for access and mobility
1428.1	Part 1: General requirements for access – Buildings
1428.1	Supplement 1 : General requirements for access – Buildings – Commentary
1680	Interior lighting
1680.1	Part 1: General principles and recommendations
1680.2	Part 2: Recommendations for specific tasks and interiors
1735	SAA Lift Code
1735.7	Part 7: Stairway lifts
1735.8	Part 8: Inclined lifts
1735.12	Part 12: Facilities for persons with disabilities
1735.13	Part 13: Lifts for persons with limited mobility – Manually powered
1735.14	Part 14: Lifts for people with limited mobility – Restricted use – Low-rise platforms
1735.15	Part 15: Lifts for people with limited mobility – Restricted use – Non-automatically controlled
1744	Forms of letters and numerals for road signs
1924	Playground equipment for parks, schools and domestic use
1924.2	Part 2: Design and construction – Safety aspects
2107	Acoustics – Recommended design sound levels and reverberation times for building interiors
2220	Emergency warning and inter-communication systems in buildings
2220.1	Part 1: Equipment design and manufacture
2220.2	Part 2: System design, installation and commissioning
2700	Colour standards for general purposes
2890	Off-street parking
2890.1	Part 1: Car parking facilities
2999	Alarm systems for the elderly and other persons at risk
3979	Hydrotherapy pools

4 DEFINITIONS For the purpose of this Standard, the definitions given in AS 1428.1 and those below apply.

4.1 Accessible – describes all or part of a site, building or facility that complies with this Standard, and that can be approached, entered and used by people with disabilities.

4.2 Ambulant people with disabilities – people who are able to walk but have mobility or manipulative impairments.

4.3 Hazard – any area or object within the environment that may place people at risk.

4.4 Luminance factor – the ratio of luminance of a surface to that of a perfect reflector, identically illuminated.

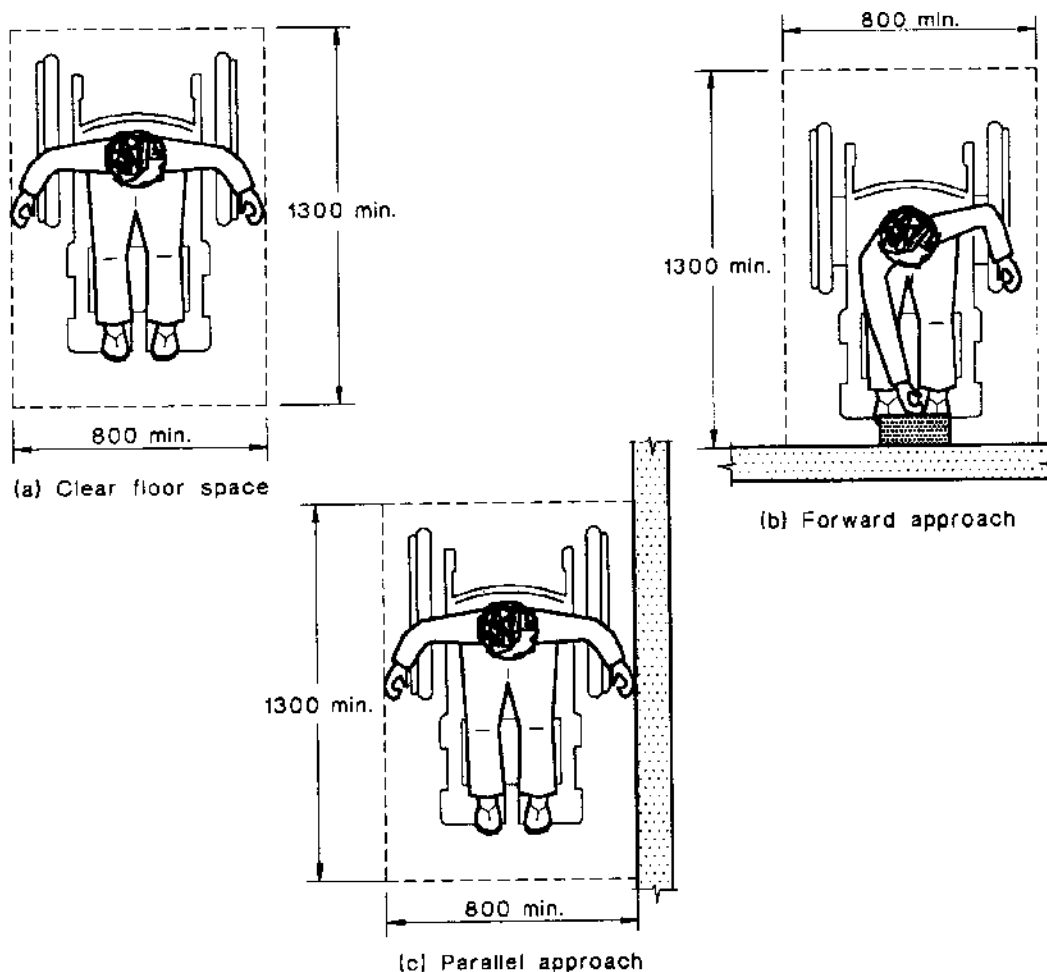
4.5 Path of travel – a passageway, walkway, ramp, landing or other space used for circulation.

4.6 Sensory impairment – any significant loss of hearing or sight.

5 DIMENSIONS The dimensions given throughout this Standard shall not be reduced by projecting skirtings, kerbs, handrails or other fixtures. Dimensions that are not qualified by a range or as being either minimum or maximum shall have normal building tolerances applied.

6 CIRCULATION SPACES

6.1 Clear floor or ground space for a stationary wheelchair The minimum clear floor or ground space required to accommodate a single stationary wheelchair and occupant shall be 800 mm by 1300 mm (see Figure 1). The minimum clear floor or ground space for wheelchair may be positioned for forward or parallel approach to an object (see Figure 1). Clear floor or ground space for wheelchairs may be part of the knee space required under objects.



DIMENSIONS IN MILLIMETRES

FIGURE 1 MINIMUM CLEAR FLOOR SPACE FOR WHEELCHAIRS

6.2 Circulation space for 180° wheelchair turn The space required for a wheelchair to make a 180° turn shall be not less than 2070 mm in the direction of travel and not less than 1540 mm wide.

NOTE: A space of 2270 mm in the direction of travel and 1740 mm wide is preferred.

6.3 Circulation space for 360° wheelchair turn The space required for a wheelchair to make a 360° turn shall be not less than 2250 mm by 2250 mm.

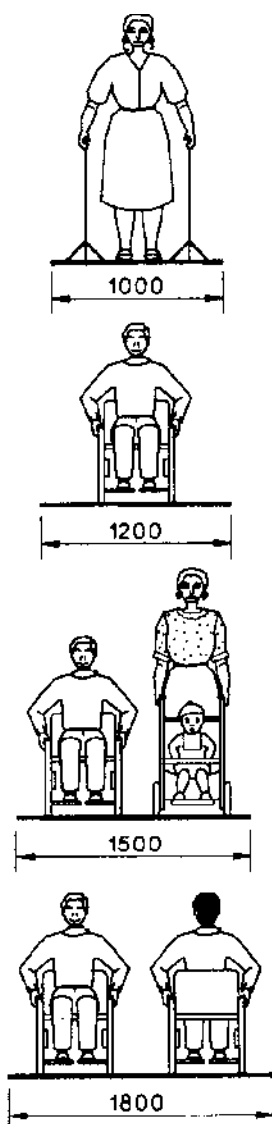
NOTE: A space of 2450 mm by 2450 mm is preferred.

6.4 Width of path of travel The minimum clear width of a path of travel shall be 1200 mm except at doors (see Clause 11.6).

6.5 Passing space for wheelchairs Passing space for wheelchairs shall be as follows:

- (a) The minimum width of space required for two wheelchairs to pass each other shall be 1800 mm.
- (b) Where a path of travel is less than 1800 mm wide, passing spaces at intervals of not more than 6 m shall be provided as follows (see Figure 3):
 - (i) *On one side of the path of travel*—the path of travel shall be not less than 1600 mm long and 1800 mm wide.
 - (ii) *With the space distributed equally on both sides of the path of travel*—the path of travel shall be not less than 2000 mm long and 1800 mm wide.

NOTE: Path width needs are shown in Figure 2 as a guide for designers.



- (a) A clear width of 1000 mm is adequate for people with ambulant disabilities, just allows passage for 80 percent of people who use wheelchairs, and is in accordance with [AS 1428.1](#)

- (b) People who use wheelchairs require a clear width of 1200 mm

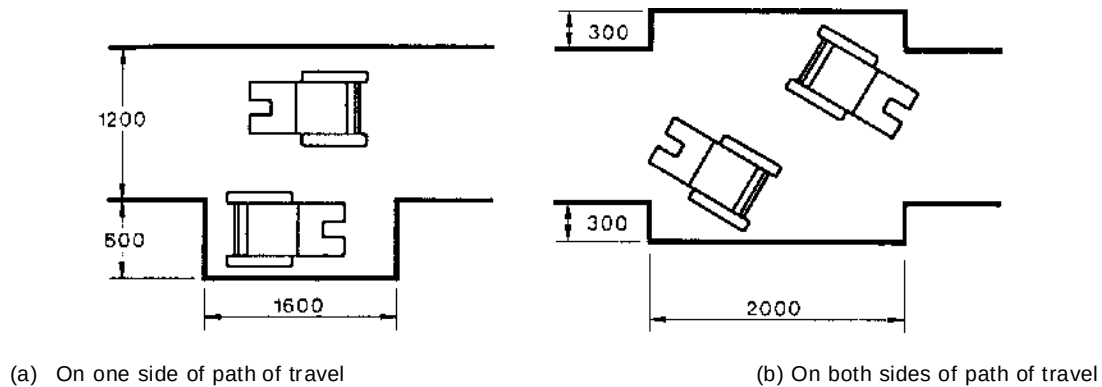
- (c) A clear width of 1500 mm allows a wheelchair and a pram to pass

- (d) To allow two wheelchairs to pass comfortably, a clear width of 1800 mm is required

DIMENSIONS IN MILLIMETRES

FIGURE 2 PATH WIDTH NEEDS

COPYRIGHT



DIMENSIONS IN MILLIMETRES

FIGURE 3 PASSING SPACE FOR WHEELCHAIRS

6.6 Changes in level Changes in level along a path of travel shall comply with the requirements for abutment of surfaces in AS 1428.1. If a path of travel has an abrupt change in level (i.e. ledge or step) greater than 3 mm, then a kerb ramp, a ramp or a lift in accordance with Clause 12 shall be provided.

The requirements of this Clause do not apply to tactile ground surface indicators which may have a raised profile of 4-5 mm.

6.7 Vertical clearance The following requirements for vertical clearance apply:

- (a) Fixtures and fittings such as lights, awnings, opening windows and similar objects shall have a minimum clearance of 2000 mm above the trafficable surface.
- (b) Essential fixtures and fittings such as fire hose reels, fire extinguishers and telephones shall not protrude into circulation spaces.
- (c) Street furniture and the like shall not protrude into a path of travel (see Clause 27).

6.8 Floor and ground surfaces The surfaces of a circulation space shall comply with Clause 9.

7 CONTINUOUS ACCESSIBLE PATH OF TRAVEL Continuous accessible paths of travel shall be provided as follows:

- (a) Accessible paths of travel within the boundary of the site shall be provided from transportation stops, accessible parking and accessible passenger loading zones, and public streets or walkways to the accessible building entrance they serve.
- (b) Accessible paths of travel shall connect accessible buildings, facilities, and spaces that are on the same site.
- (c) Accessible paths of travel shall connect accessible building entrances with all accessible spaces and facilities within a building.
- (d) Accessible paths of travel shall connect accessible entrances of each accessible building with those exterior and interior spaces and facilities that serve it.
- (e) The accessible elements of buildings and facilities shall be arranged so as to minimize distances to be travelled between them.

NOTE: Attention to the siting of facilities and clear information signs directing people to these facilities will greatly reduce the fatigue experienced by people with disabilities. Limitations on stamina, which can result in fatigue, shortness of breath and dizziness, are posed by many disabilities such as cardio-pulmonary disorders, haemiplegia and amputation. Where there are unavoidable distances between facilities, frequent resting points with seats, handrails, and drinking-water fountains or similar outlets should be provided.

In areas of high use by people with ambulatory disabilities, such as areas frequented by elderly people, seats should be provided no more than 60 m apart alongside paths of travel.

The following table shows the demonstrated ability of people with disabilities to move more than a stated distance without a rest.

Type of disability	Percentage unable to move more than the stated distance				
	m				
	18	68	137	180	360
People who use wheelchairs	0	5	5	60	85
People with vision impairment	0	0	5	50	75
People who use walking aids	10	25	40	80	95
Ambulatory people	5	15	25	70	80

8 WALKWAYS, RAMPS AND LANDINGS

8.1 General Walkways, ramps and landings shall comply with [AS 1428.1](#), with the following exceptions and additional requirements:

- (a) *Width* Walkways, ramps and landings shall have an unobstructed width of not less than 1200 mm.
- (b) *Provision of landings at ramps* Ramps shall be provided with landings at the top and bottom of the ramp and at intervals not exceeding —
 - (i) for ramp gradients of 1 in 14: 6 m;
 - (ii) for ramp gradients of 1 in 19: 14 m; and
 - (iii) for ramp gradients between 1 in 19 and 1 in 14, at intervals which shall be obtained by linear interpolation.
- (c) *Doorways at landings* The dimensions of the landings shall be in accordance with Clause 11.5.4.

NOTE: A table for calculating the length of a ramp for various rises and gradients is provided in Appendix C.

8.2 Outdoor conditions In outdoor conditions, walkways, ramps and landings shall be designed so that water does not accumulate on surfaces. (For requirements for ground surfaces, see Clause 9.)

8.3 Ramp handrails Ramp handrails shall comply with Clause 10.

8.4 Kerb ramps and step ramps

8.4.1 General The design, construction and location of kerb ramps and step ramps shall comply with [AS 1428.1](#).

8.4.2 Provision of ramps at kerbs Wherever a path of travel crosses a kerb, one of the following shall be provided —

- (a) a kerb ramp in accordance with [AS 1428.1](#) (for preferred gradient, see Notes to Figure 8 of [AS 1428.1](#));
- (b) ramps and landings in accordance with this Clause (8); or
- (c) the surfaces shall be graded to meet each other, provided that any gradient and abutment of surfaces complies with [AS 1428.1](#) and that tactile directional indicators are provided as appropriate (see Preface).

NOTE: Drainage may be achieved by placing gratings at the base of ramps (see Clause 9(c)).

8.4.3 Location at marked crossings Kerb ramps (the entry to ramps) at marked crossings shall be wholly contained within the markings, excluding any flared sides (see Figure 4).

8.4.4 Islands Raised islands in crossings shall be cut through level with the street or have kerb ramps at both sides and a level area at least 1220 mm long in the part of the island intersected by the crossings (see Figure 4).

NOTES:

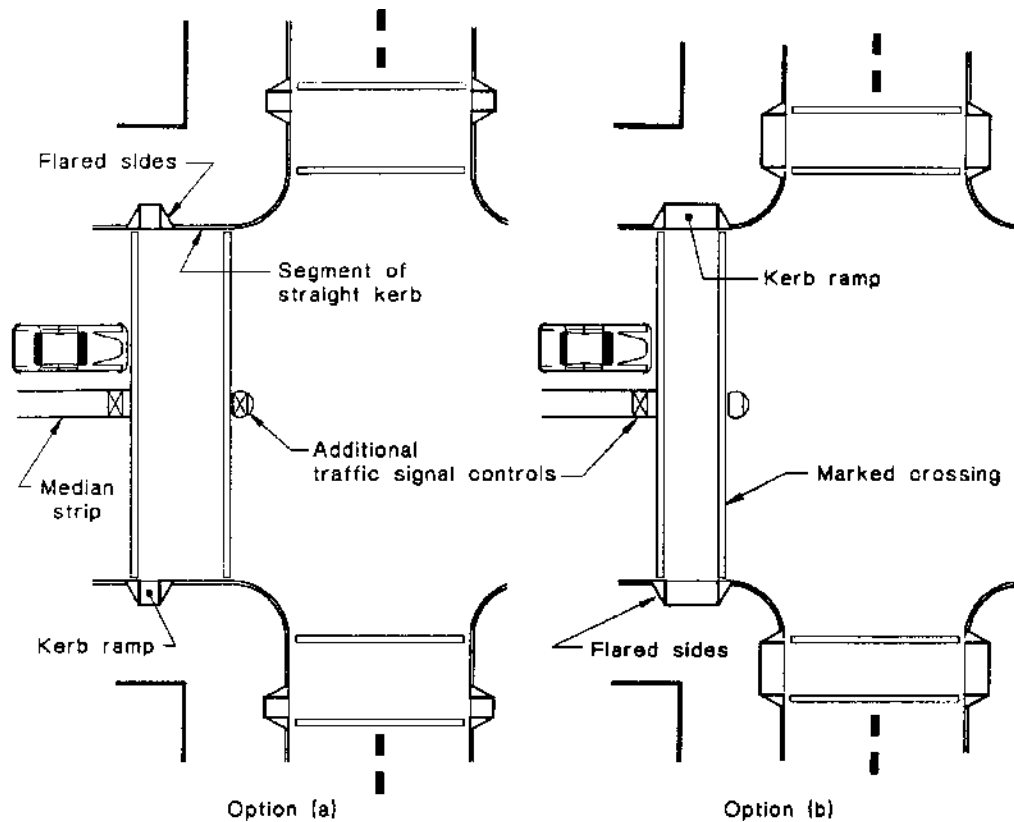
- 1 Traffic signal control buttons should be positioned within the zone of common reach (see Clause 22.4).
- 2 Where traffic signals are installed, auditory signals and tactile directional indicator buttons should be provided.

8.4.5 Surface The ramp and sloping sides shall be slip-resistant and of a colour that contrasts with the adjoining surface.

8.4.6 Tactile warnings Warning strips shall be provided at the top of the ramp, in accordance with Clause 18.1.

9 GROUND AND FLOOR SURFACES Ground and floor surfaces shall comply with the requirements for floor surfaces in [AS 1428.1](#), and with the following:

- (a) *Abutment of surfaces* Paving bricks with bevelled edges or chamfered arises and heavily textured and figured surfaces such as raked joint pavers shall not be used.
- (b) *Carpet* Where carpet is used on a ground or floor surface, the following requirements apply:
 - (i) The carpet shall be securely attached.
 - (ii) Any pad, backing or cushioning shall provide a firm surface.
 - (iii) The carpet shall have a level loop, a textured loop, a level cut pile or a level cut or uncut pile texture.
 - (iv) The pile height shall be not more than 6 mm.
 - (v) Exposed edges of carpet shall be fastened to the floor surface and shall have a trim along the entire length of any exposed edge.
 - (vi) Carpet edge trim shall create no ridge on the floor surface higher than 3 mm.
- (c) *Gratings* If gratings are located in a walking surface, they shall have spaces not more than 13 mm wide and not more than 150 mm long. If gratings have elongated openings, they shall be placed so that the long dimension is transverse to the dominant direction of travel.



NOTES:

- 1 Option (a) is preferred by some people with ambulant disabilities.
- 2 All traffic signal controls, i.e. both at the kerbside and at the median island, should have the controls within the reach range shown in Figure 23.

FIGURE 4 KERB RAMPS AT MARKED CROSSINGS

10 HANDRAILS AND GRABRAILS

10.1 Handrails

10.1.1 General The following general requirements apply for handrails:

- (a) The design and construction of handrails shall comply with [AS 1428.1](#).
- (b) The end of the handrail shall be extended parallel to the surface below for a minimum of 300 mm (450 mm is preferred). The end shall be a continuous rail, turned down 100 mm or be returned fully to the end post or wall face.
- (c) Where a handrail is not continued, a tactile indicator in the form of a domed button shall be provided in accordance with Figure 5.
- (d) Gripping surfaces of handrails shall be continuous.
- (e) Handrails shall not rotate within their fittings.

NOTE: Where a high proportion of users are short (i.e. not necessarily children) a second handrail should be provided in accordance with Figure 5. When tested in accordance with the test for head and neck entrapment in [AS 1924.2](#), the space between the handrails should allow Probe B to be fully inserted without becoming entrapped in any way.

10.1.2 Stairway handrails The installation of stairway handrails shall be in accordance with [AS 1428.1](#) and with the following:

- (a) Wherever practicable the outside handrail shall be continuous throughout the stair flights and around landings (see Clause 10.1.1(c)).
- (b) The inside handrail shall always be continuous, and at landings shall maintain a height which is parallel to the finished floor (see Figure 6).
- (c) Where there is a background wall, handrails shall have a luminance contrast factor with the wall of not less than 0.3 (30 percent).

10.2 Grabrails The design and construction of grabrails shall comply with [AS 1428.1](#), and with the following:

- (a) The clearance between the grabrail and the adjacent wall surface shall be as specified in the appropriate Clauses of this Standard.
- (b) Grabrails shall not rotate within their fittings.

NOTE: Grabrails installed in wet areas or outdoors should be slip-resistant when wet.

11 DOORWAYS AND DOORS

11.1 Provision of entrances The provision of entrances shall comply with [AS 1428.1](#).

NOTE: If an entrance is located in an external wall, consideration should be given to protecting it from wind forces e.g. by a lobby, screen wall or sliding doors.

11.2 Thresholds If a threshold is required, it shall be in accordance with [AS 1428.1](#).

NOTE: It is in the interests of people with disabilities for thresholds at doorways to be eliminated. Proprietary draught and water seals are available for use on the bottom of doors as an alternative to thresholds. Water can be controlled by the use of grates (see Clause 9(c)). Canopies for weather protection at entry doors may also enable thresholds to be eliminated. This is not always possible and, where thresholds do occur, a kerb ramp should be used to overcome the change of level.

11.3 Lighting Illumination of entrance areas shall comply with Clause 19.

11.4 Call buttons Call buttons at entrances shall be located not less than 900 mm and not more than 1100 mm above the plane of the finished floor and not less than 500 mm from an internal corner.

NOTE: Call buttons should have an integral, continuously operating light.

11.5 Doorways

11.5.1 Clear opening of doorways The minimum clear opening of a doorway shall be 850 mm (see Figure 7).

NOTE: Doors should be clearly defined by a contrasting frame or trim.

11.5.2 Circulation spaces at doorways The circulation spaces at doorways shall comply with [AS 1428.1](#) except that 100 mm shall be added to all length (L) values and 50 mm shall be added to all width (W) values.

11.5.3 Double-leaf doorways If doorways have two independently operated door leaves, then at least one leaf shall meet the requirements of this Standard. That leaf shall be an active leaf.

11.5.4 Landings at doorways The dimensions of a landing at a doorway shall comply with Clause 11.5.2 (see also Note to Clause 11.2).

11.6 Doors

11.6.1. Door glazing Door glazing shall comply with [AS 1428.1](#).

11.6.2 Glazing in joinery doors or flush doors Glazing in joinery doors or flush doors shall be as follows:

- (a) The lower edge of the glazing shall be not less than 300 mm and not more than 1000 mm above the bottom edge of the door.
- (b) The upper edge of the glazing shall be not less than 1600 mm above the bottom edge of the door.
- (c) In width, the glazing shall extend not more than 200 mm from the latch edge of the door and shall be not less than 150 mm wide.

NOTE: Glazing in doors is useful to people with disabilities as it provides a view of a user approaching the door from the other side. The lower perimeters of glazing are set to avoid the footrest of a wheelchair contacting the glass.

11.6.3 Door controls Door controls shall comply with Clause 23.

12 LIFTS Lifts shall comply with [AS 1735.12](#), except that the floor area in lifts shall be increased 300 mm in each direction, from the minimum size specified in [AS 1735.12](#).

NOTES:

- 1 Lifts should be installed in buildings having more than one level, including car parks.
- 2 Lifts installed for public use should have audio, visual and tactile information.
- 3 Other Australian Standards for lifts and lifting devices that will assist access and mobility in buildings are [AS 1735.7](#), [AS 1735.8](#), [AS 1735.13](#), [AS 1735.14](#) and [AS 1735.15](#).

13 STAIRWAYS

13.1 General Stairways shall not be the sole means of access. Ramps which comply with Clause 8, or lifts which comply with Clause 12, or both, shall be provided as an alternative to stairs.

Spiral stairways and stairways with open risers shall not be provided.

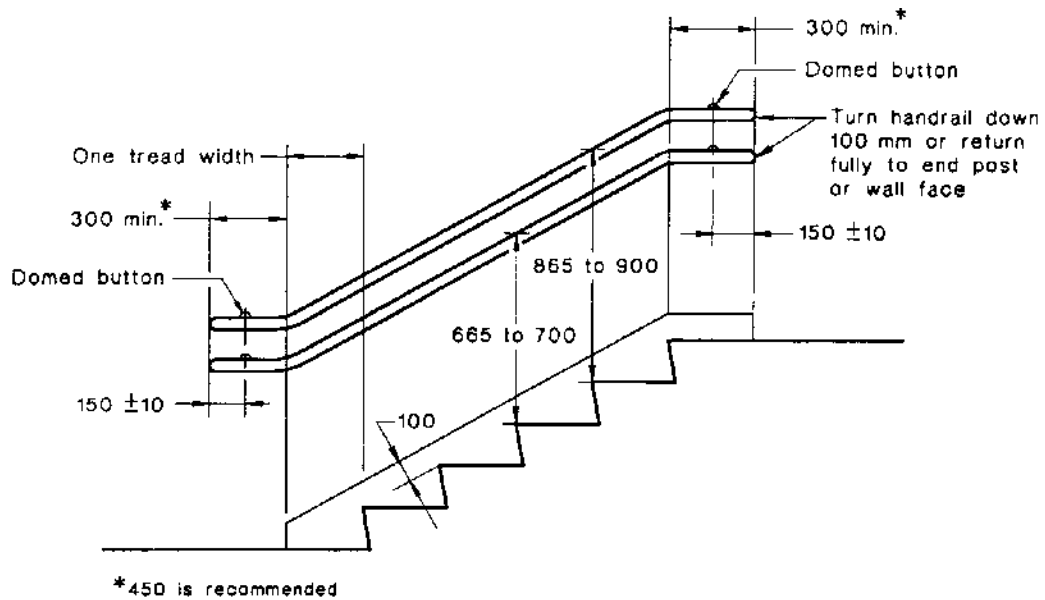
NOTE: Although stairways are an impediment to people who use wheelchairs and many ambulant people with disabilities, if properly designed they can provide independent access for some people with mobility impairments.

13.2 Configuration of steps The configuration of steps shall be as shown in Figure 8.

NOTE: The preferred configuration for users with walking frames and severe ambulant disabilities is shown in Figure 9. However, this configuration may not comply with the normal requirements of the regulatory authorities.

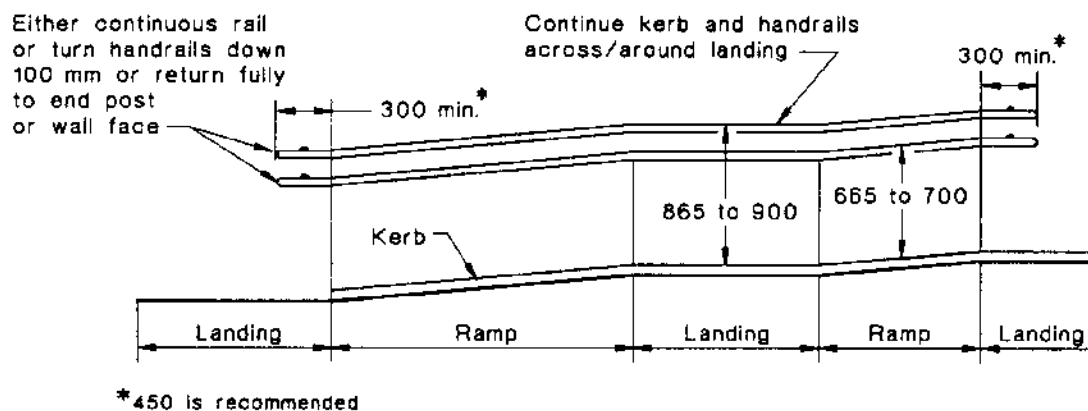
13.3 Warning strip at nosing of steps Steps shall have a warning strip at the nosing as shown in Figures 8 and 9.

13.4 Stairway handrails Stairway handrails shall be in accordance with Clause 10.1.



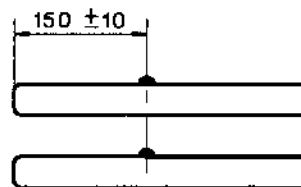
NOTE: Height of rails measured from nosing of tread to top of rails

(a) Stairway handrails



Height of rails measured from trafficable surface to top of rails.

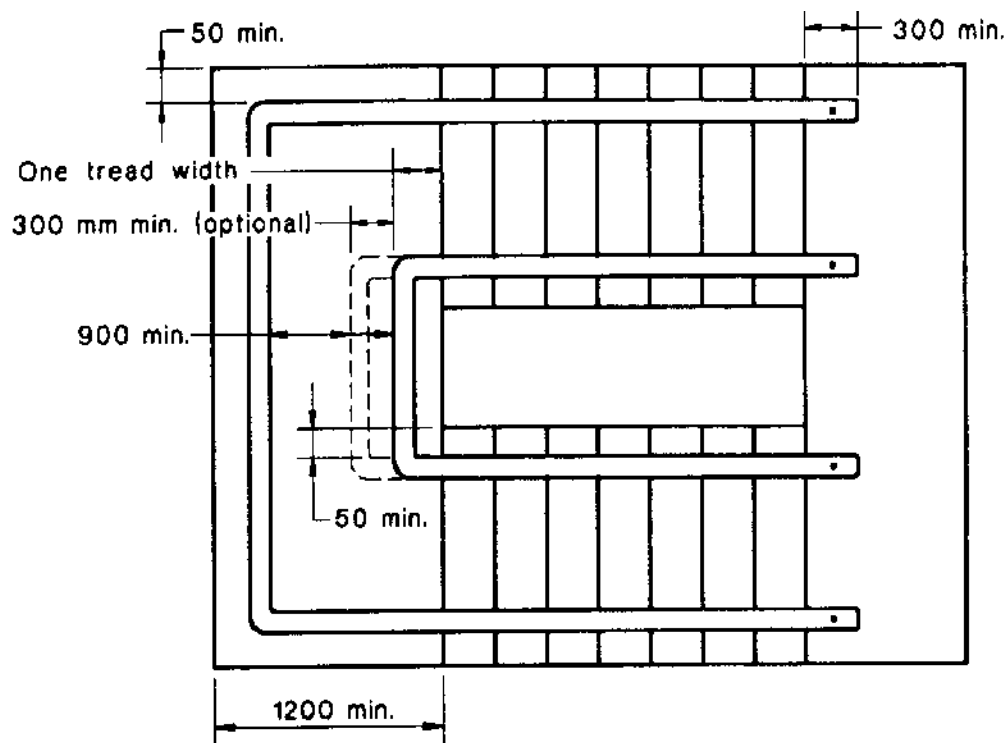
(b) Ramp handrails



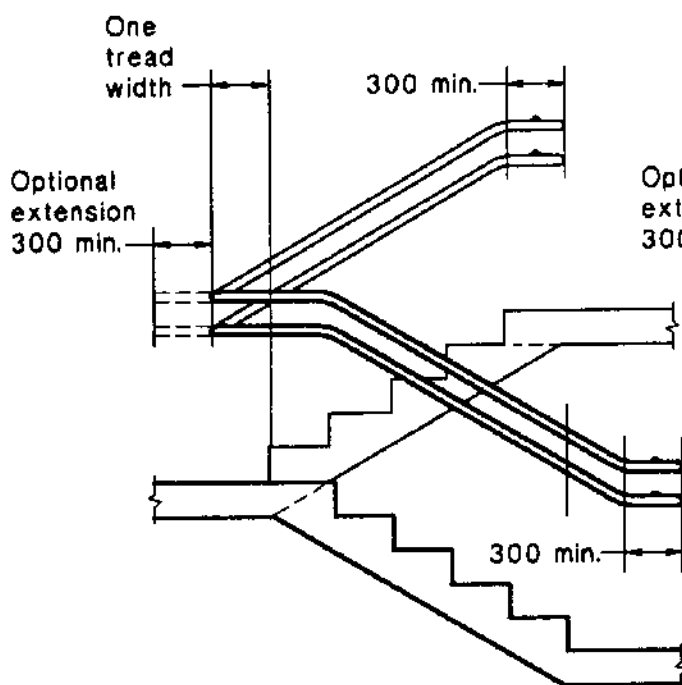
(c) Domed buttons indicating discontinuity of handrail

DIMENSIONS IN MILLIMETRES

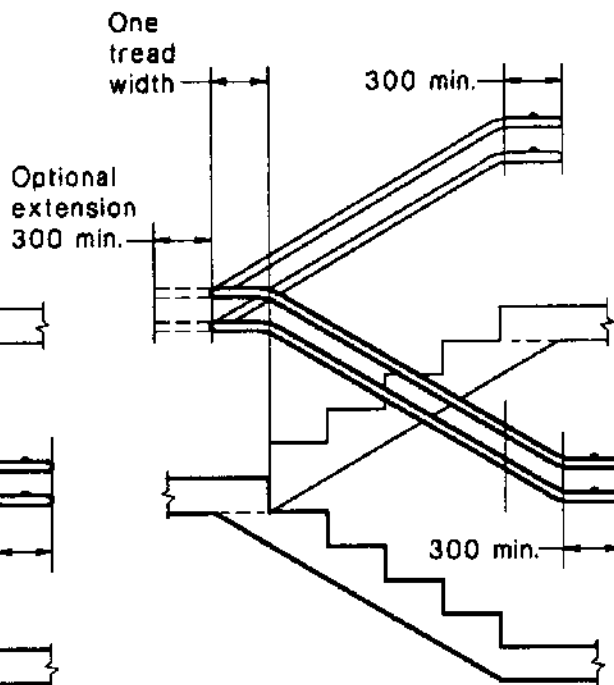
FIGURE 5 HANDRAILS



(a) General top view



(b) Side view Configuration A



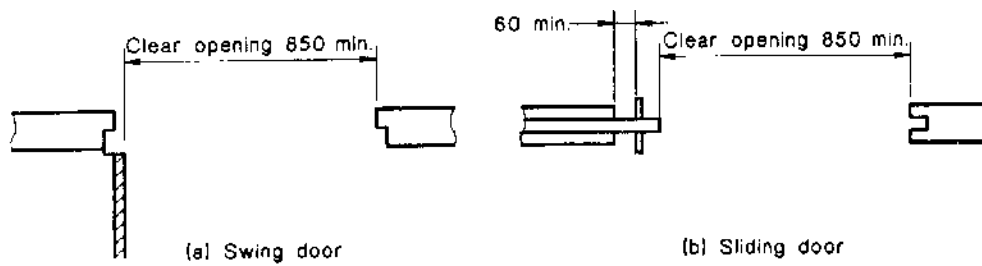
(c) Side view Configuration B

NOTES:

- 1 Full details and dimensions are shown in Figure 5.
- 2 Where space permits, the preferred option is to include the minimum 300 mm extension on the landing.

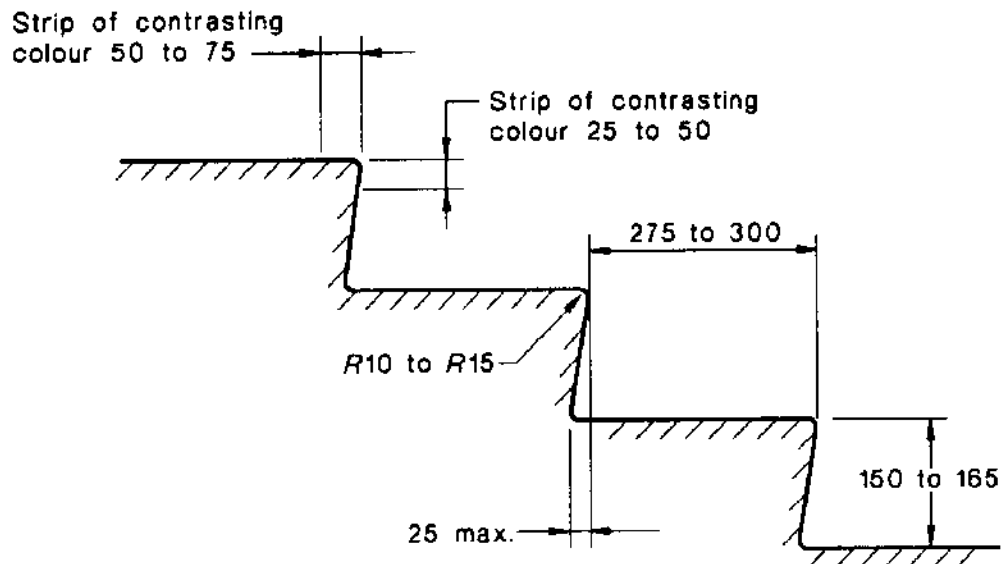
DIMENSIONS IN MILLIMETRES

FIGURE 6 INSIDE HANDRAIL AT LANDINGS



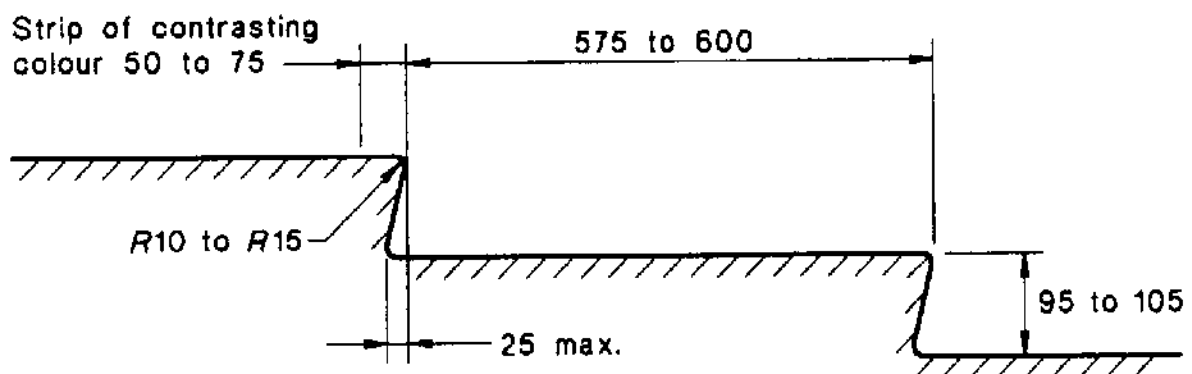
DIMENSIONS IN MILLIMETRES

FIGURE 7 CLEAR OPENING OF DOORWAYS



DIMENSIONS IN MILLIMETRES

FIGURE 8 CROSS-SECTION OF STAIRS



DIMENSIONS IN MILLIMETRES

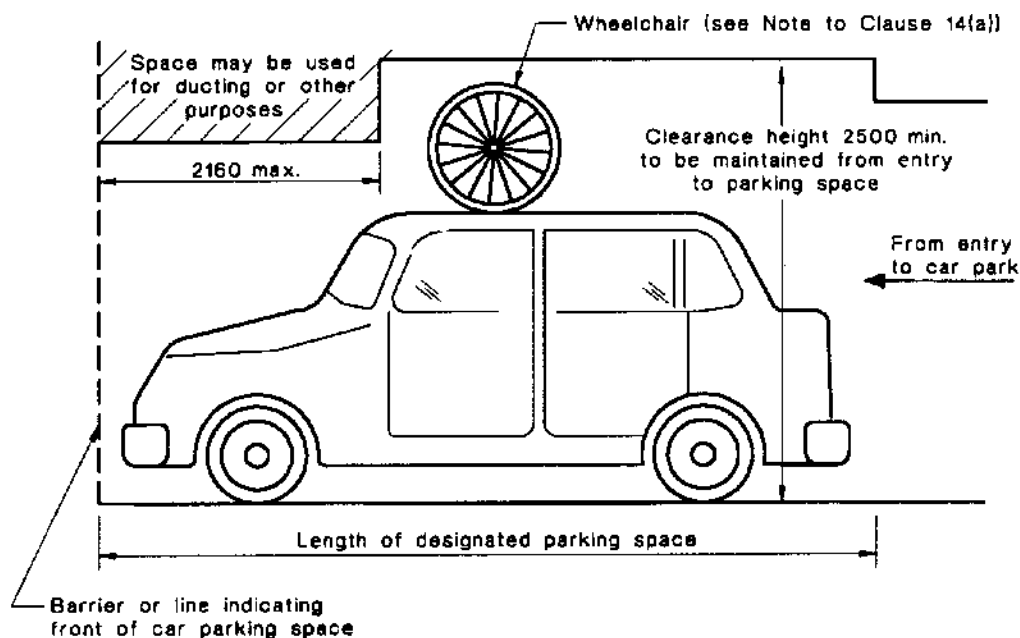
FIGURE 9 PREFERRED CONFIGURATION OF STEPS FOR USERS WITH WALKING FRAMES

14 CAR PARKING FACILITIES

14.1 General Car parking facilities shall comply with the requirements for car parking for people with disabilities in [AS 2890.1](#), and with the requirements of Clause 14.2:

14.2 Vertical clearance for car parks For each car parking space designated as parking for people with disabilities, a vertical clearance of not less than 2500 mm shall be provided from the entrance of the car parking space to a distance of not less than 2160 mm from the front of the space (see Figure 10).

NOTE: Where a wheelchair hoist is used, although the wheelchair is stored on the vehicle roof in a flat position, it is raised to full wheelchair height (in addition to the height of the roof rack) during the hoisting process.



DIMENSIONS IN MILLIMETRES

FIGURE 10 SIDE VIEW OF VERTICAL CLEARANCE IN CAR PARKS

15 SANITARY FACILITIES

15.1 General Sanitary facilities shall comply with [AS 1428.1](#) with the following exceptions and additional requirements:

- The minimum circulation space in water closets shall be increased in length and width and shall be in accordance with Figure 11.
- Door circulation spaces shall be in accordance with Clause 11.5.2.
- At least one emergency call button which complies with [AS 2999](#) shall be installed in accordance with Clause 23 in each sanitary facility or combined facility.

NOTE: Separate call buttons should be placed near the WC pan, shower recess and bath.

- Toilet seats of moulded plastics shall comply with [AS 1371](#). The design of the seat shall provide lateral stability.

NOTE: It should be recognized that people with disabilities making transfers from wheelchairs to toilet seats will generally place greater than average shear forces on seats and fittings.

- Water closets built especially for the use of ambulant people with disabilities shall be in accordance with Clause 15.3.

NOTES:

- The unisex WC is recommended in areas used by the general public e.g. shopping centres, hotels and the like where a person with a disability may be accompanied by a member of the opposite sex. Access to the facility should not necessitate traversing an area reserved for one sex only.
- The luminance factor of horizontal work surfaces in sanitary facilities should be not less than 0.3 (30 percent) different from adjoining vertical surfaces.
- Sensor-operated air hand dryers should be provided.

15.2 Grabrails Where a concealed or high level cistern is used, a continuous grabrail as specified in Clause 10.2 shall be provided across the rear wall and side wall nearest the WC pan (see Figures 12(d) and (f)). Where a low-level cistern is used the grabrail may be terminated at each side of the cistern as shown in Figure 12(f).

The distance from the front of the WC pan to the grabrail on the rear wall shall be not less than 600 mm and not more than 605 mm.

NOTE: As the grabrail provides both support and assistance, it is recommended that a system be selected whereby a continuous grabrail can be utilized.

15.3 Water closets built especially for use by ambulant people with disabilities

15.3.1 General Water closets for use by ambulant people with disabilities shall be as shown in Figure 12.

15.3.2 Grabrails Grabrails shall be installed in accordance with Clause 10.2 and Figure 12(e).

15.3.3 Doors Doors to water closets shall comply with the following:

- (a) Outward-opening doors shall have a hinge mechanism that holds the door in a closed position without the use of a latch.
- (b) Inward-opening doors shall be fitted with a retractable stop or similar device to allow, in an emergency, the latch to be released and the door to swing outward, or the door to be removed.

15.4 Shower recesses Shower recesses shall comply with AS 1428.1, and with the following additional requirements:

- (a) *Folding seat* A foldable, self-draining, non-slip seat with rounded edges, complying with the requirements of AS 1428.1, and which folds down, shall be provided inside the shower recess (see Figures 13 and 14).

NOTES:

- 1 For ease of manufacture, the seat may be fabricated in two parts.
- 2 It is necessary for the seat to fold down, as a horizontal grabrail is located above the end of it.
- 3 A mobile shower chair should be provided for use wherever possible, as the majority of users prefer not to transfer to a folding seat.

- (b) *Grabrails* Grabrails shall be installed in accordance with Clause 10.2 and Figure 13.

NOTES:

- 1 Additional grabrails may be provided as shown in Figure 14.
- 2 Although it can assist many users to transfer to the folding seat, the vertical grabrail can make a transfer onto the end of the seat difficult for some users.

- (c) *Soapholder* The soapholder shall be a protruding type and be able to withstand a force of 1100 N applied at any position and in any direction without showing any signs of loosening or deformation.

NOTE: Where it is anticipated that showering will be with the assistance of an attendant, the preferred option is a two-walled recess as shown in Figure 13(a).

- (d) *Shower recesses built especially for use by ambulant people with disabilities* Shower recesses for ambulant people with disabilities may be provided with —

- (i) a folding seat, or a freestanding shower chair; and
- (ii) a floor waste outlet in accordance with Figure 15.

NOTE: Figure 13(a) is the preferred design option for use by ambulant people.

15.5 Urinals The stall urinals shown in Figure 16 shall be provided as follows:

NOTE: Wall hung urinals are not recommended, but where they are used, a grabrail of not less than 350 mm in length should be provided for each urinal (see Figure 16(a)).

- (a) Urinals shall be constructed without a step or hob.
- (b) A serrated, slip-resistant, hinged grate with apertures not more than 25 mm wide shall be provided, as shown in Figure 16.
- (c) A grabrail in accordance with Clause 10.2 shall be fixed to the urinal enclosure, as shown in Figure 16.
- (d) A clear circulation space not less than 1540 mm wide shall be provided for the full length of the urinal (see Figure 16(b)).

NOTES:

- 1 A sensor flushing device is preferable.
- 2 See Clause 15.2 for requirements in which a urinal is part of a combined sanitary facility.