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.

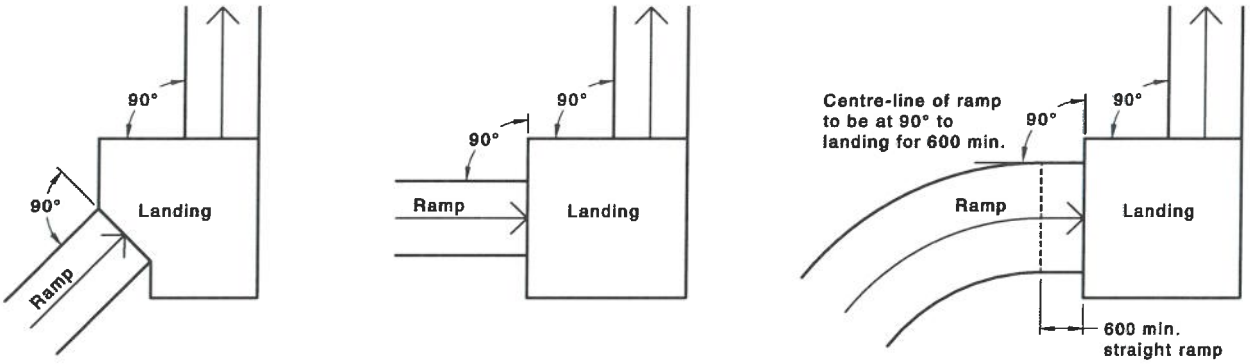
(k) Kerbs or kerb rails shall —

(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).

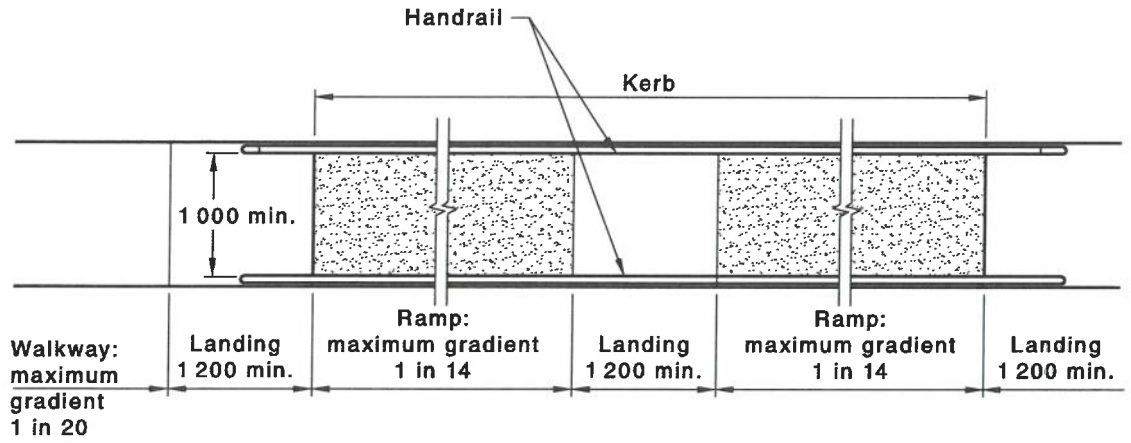
Dimensions in millimetres



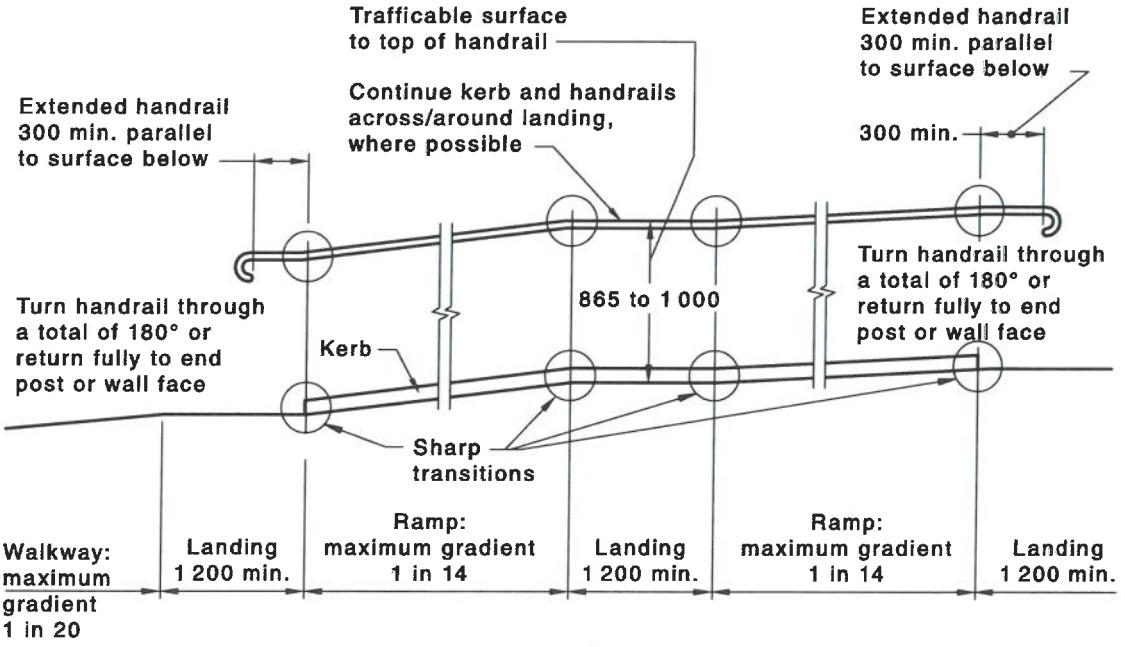
(a) Angled approach (b) Straight approach (c) Curved approach

Figure 13 — Angle of approach between ramp and landing

Dimensions in millimetres

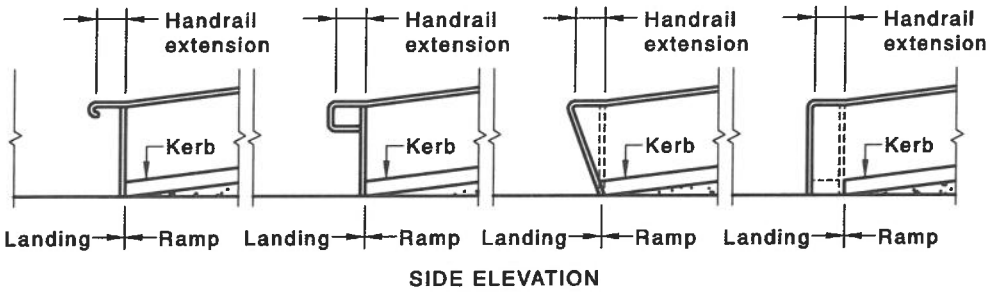


(a) Plan view

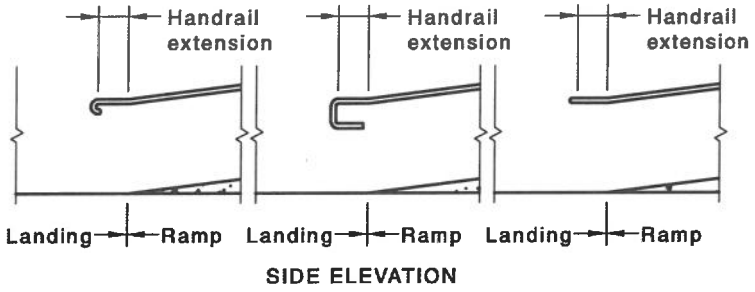


(b) Elevation

Figure 14 — Ramp handrails



(a) Post mounted handrails



(b) Wall mounted handrails

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

Dimensions in millimetres

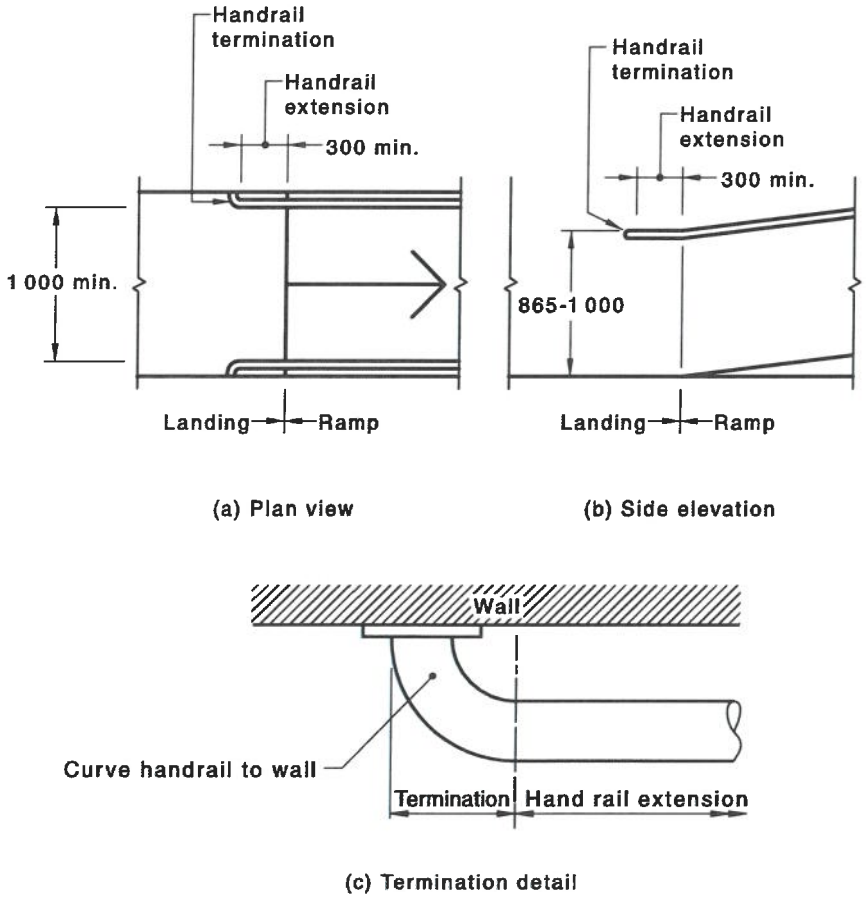


Figure 15(B) — Ramp handrails — Detail for handrails terminated by turning horizontally through 90° to the wall

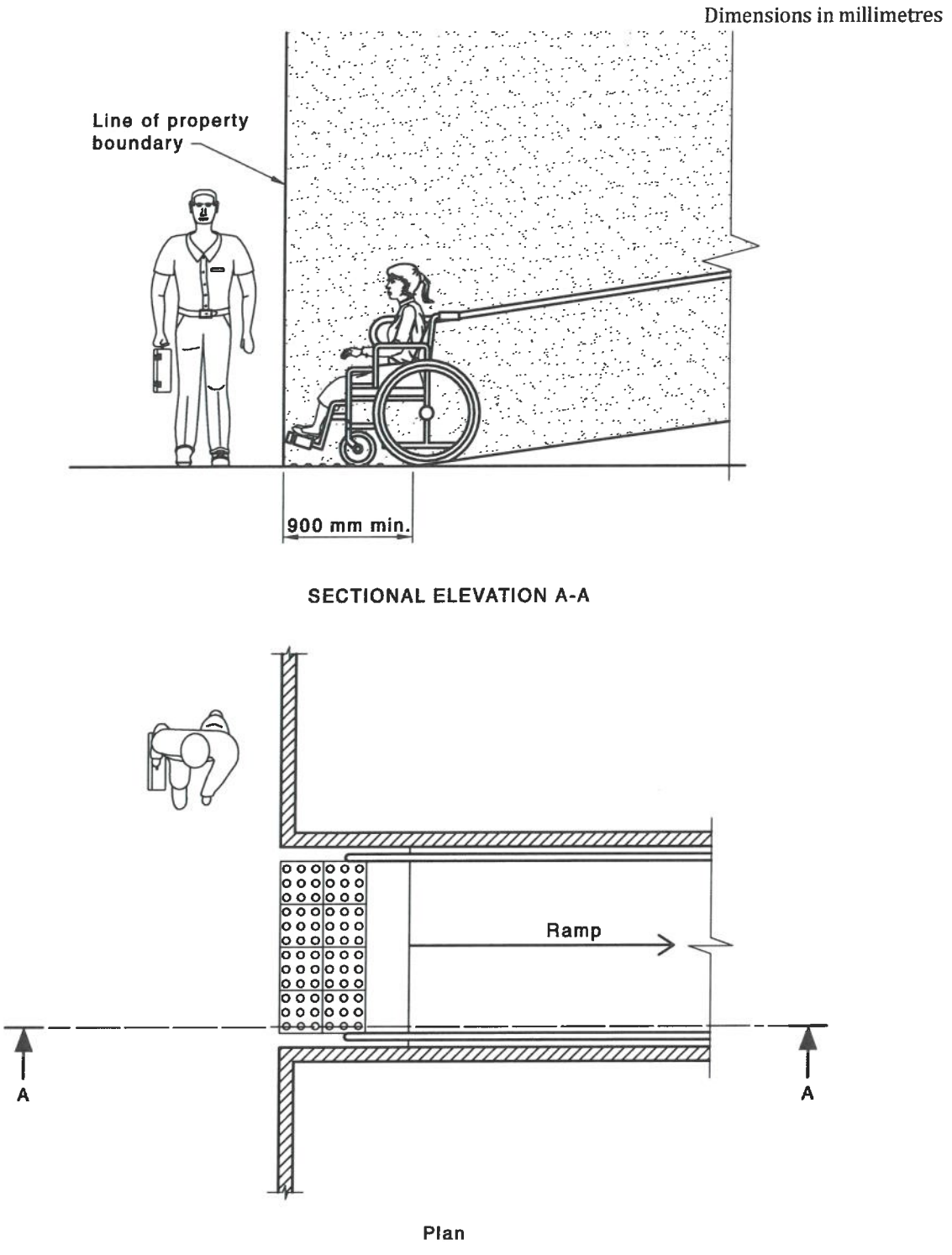
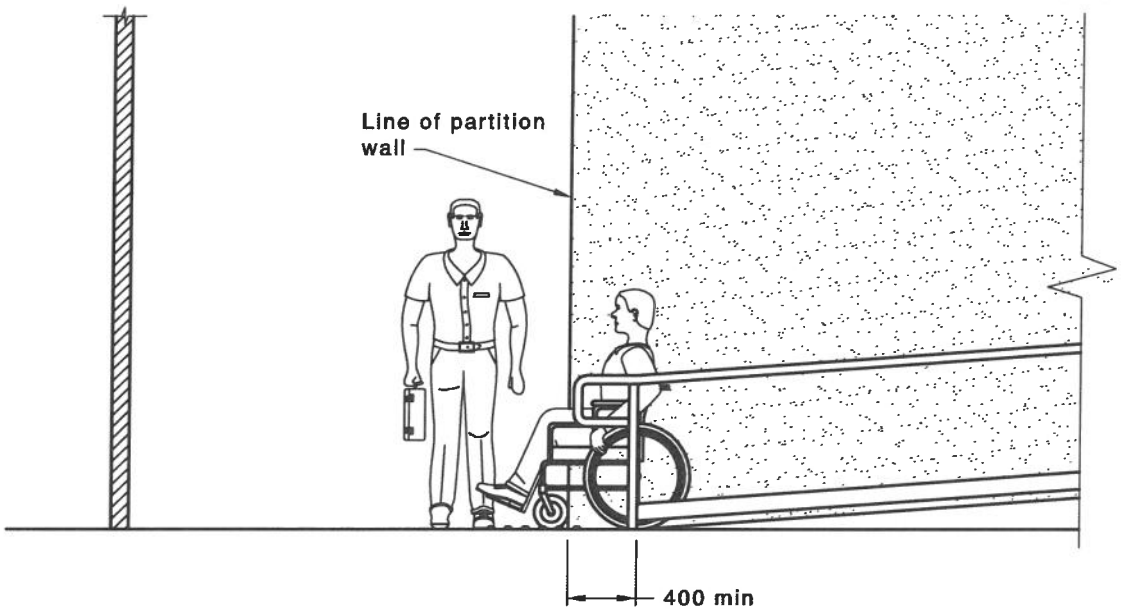
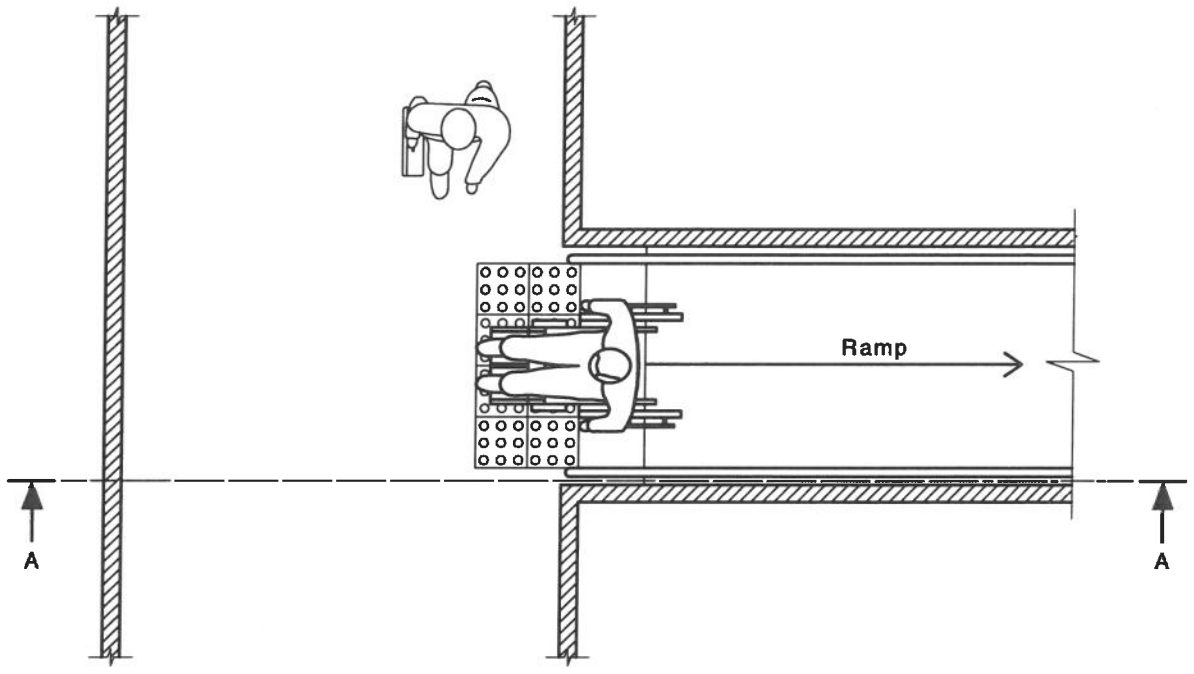


Figure 16 — Location of ramp at a boundary to prevent protrusion of handrails and tactile ground surface indicators (TGSIs) into a transverse path of travel

Dimensions in millimetres



SECTIONAL ELEVATION A-A



PLAN

NOTE Where the transverse walkway is less than 3 m wide the TGSIs may be reduced in accordance with AS 1428.4.1

Figure 17 — Location of ramp to prevent protrusion of handrails into a transverse path of travel other than at boundaries

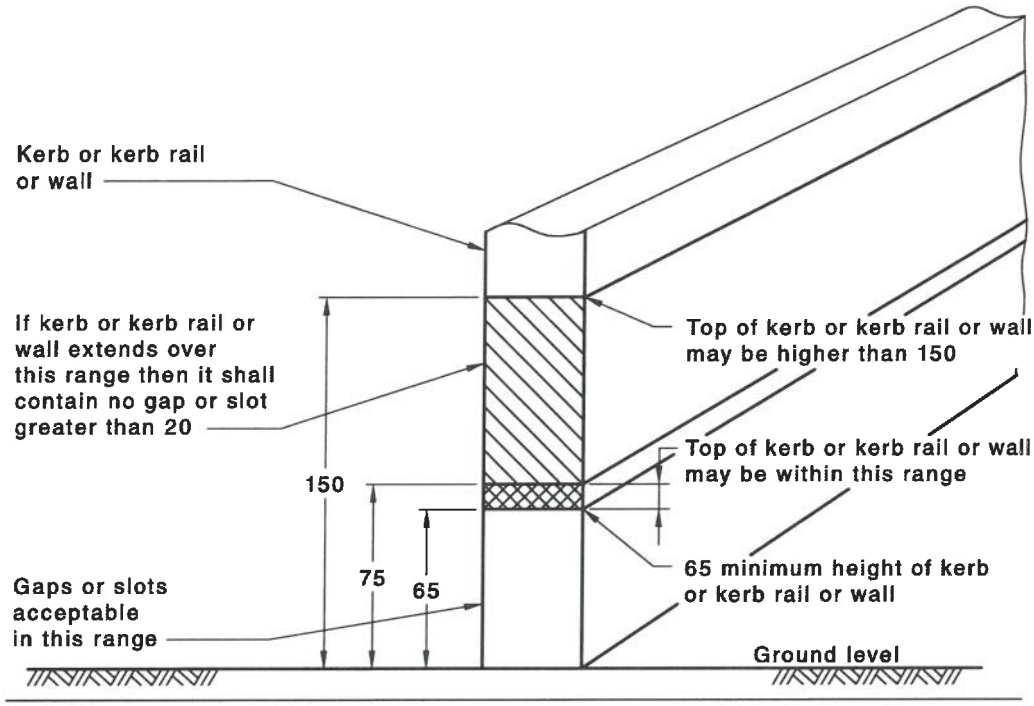
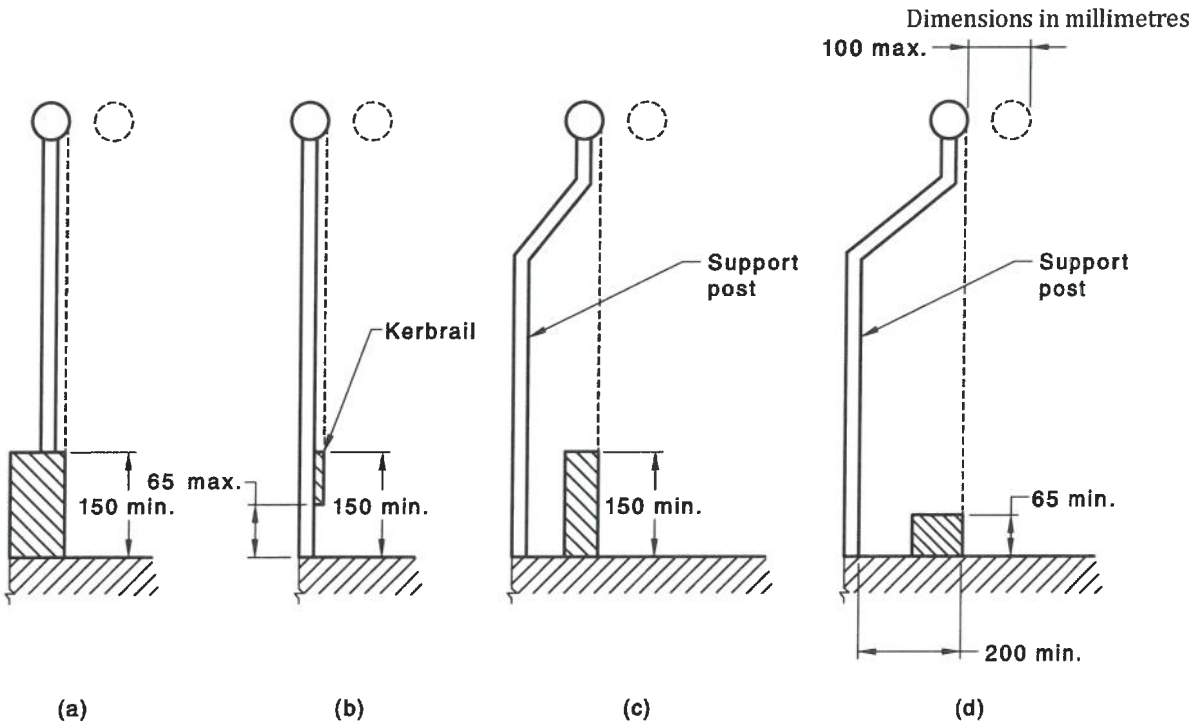


Figure 18 — Kerb



NOTE See Appendix A for further clarification

Figure 19 — Section showing location of kerb or kerb rail in relation to handrail with vertical support

7.4 Curved walkways, ramps, and landings

Curved ramps are defined as ramps with a maximum inside radius of 5 m. Curved ramps, walkways and landings shall be in accordance with the following:

(a) The gradient of curved ramps and walkways shall be in accordance with Figure 20.

(b) Landings shall be in accordance with Clause 7.8.

(c) The length of a curved ramp shall be measured horizontally along its centre-line.

(d) Curved ramps and walkways shall have a width of not less than 1 500 mm.

(e) Any crossfall shall be towards the centre of curvature.

(f) Curved walkways and ramps shall begin and terminate with 1 500 mm long straight landings which shall intersect with each other along the centre-line. Any required change in width shall be accommodated within the length of the landing.

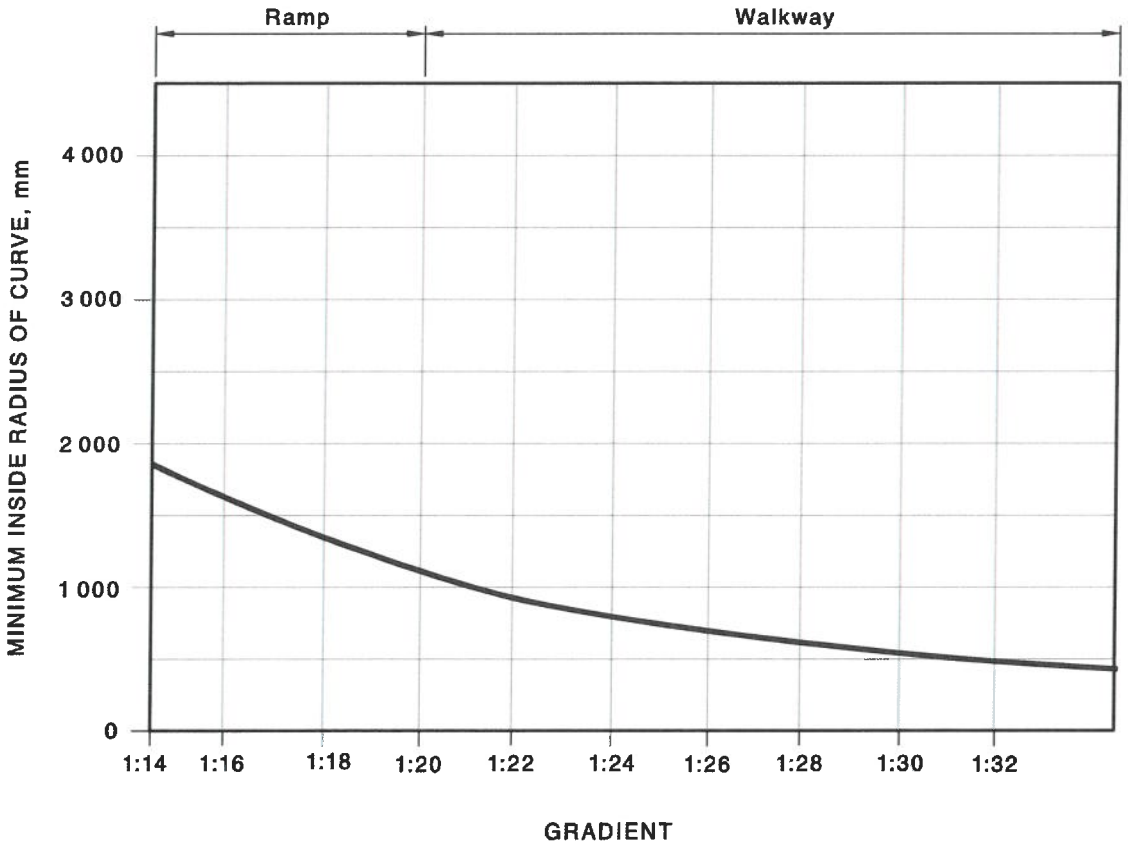


Figure 20 — Curved ramp and walkway gradients

7.5 Threshold ramps

Threshold ramps at doorways on a continuous path of travel shall have —

(a) a maximum rise of 35 mm;

(b) a maximum length of 280 mm;

(c) a maximum gradient of 1:8; and

(d) be located within 20 mm of the door leaf which it serves, as shown in Figure 21.

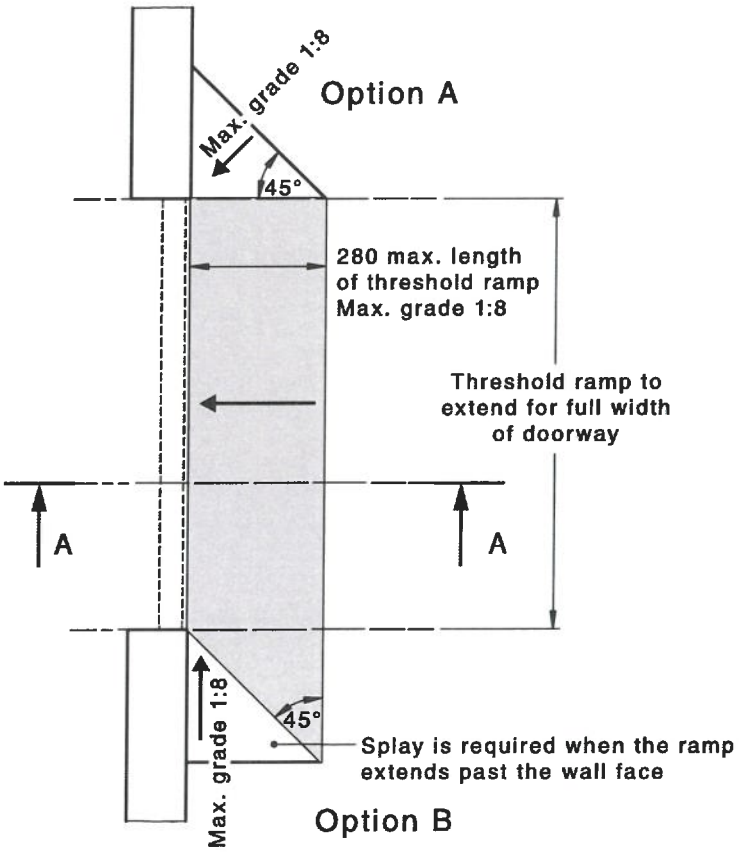
(e) sharp transition at top and bottom; and

(f) sharp transition at tapered or splayed edges.

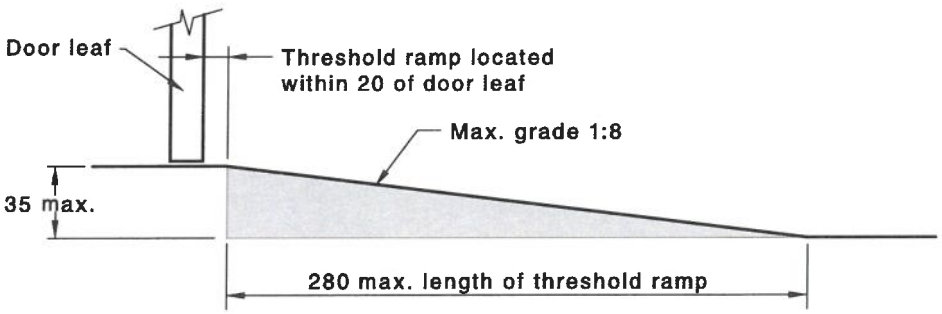
The edges of the threshold ramp shall be tapered or splayed at a minimum of 45° where the ramp does not abut a wall. Splay is required when the ramp extends past the wall face.

NOTE For door controls, see Clause 10.4.

Dimensions in millimetres



(a) PLAN VIEW (not to scale)



(b) SECTION A-A

Figure 21 — Threshold ramp

7.6 Step ramps

7.6.1 General

Step ramps shall have —

(a) **a maximum rise of 190 mm;**

(b) a length not greater than 1 900 mm; and

(c) a gradient not steeper than 1 in 10.

(d) **top and bottom aligned at 90° to the path of travel;**

(e) sharp transition at top and bottom; and

(f) sharp transition at tapered or splayed edges.

Step ramps shall be as shown in Figures 22(A) and 22(B), as applicable.

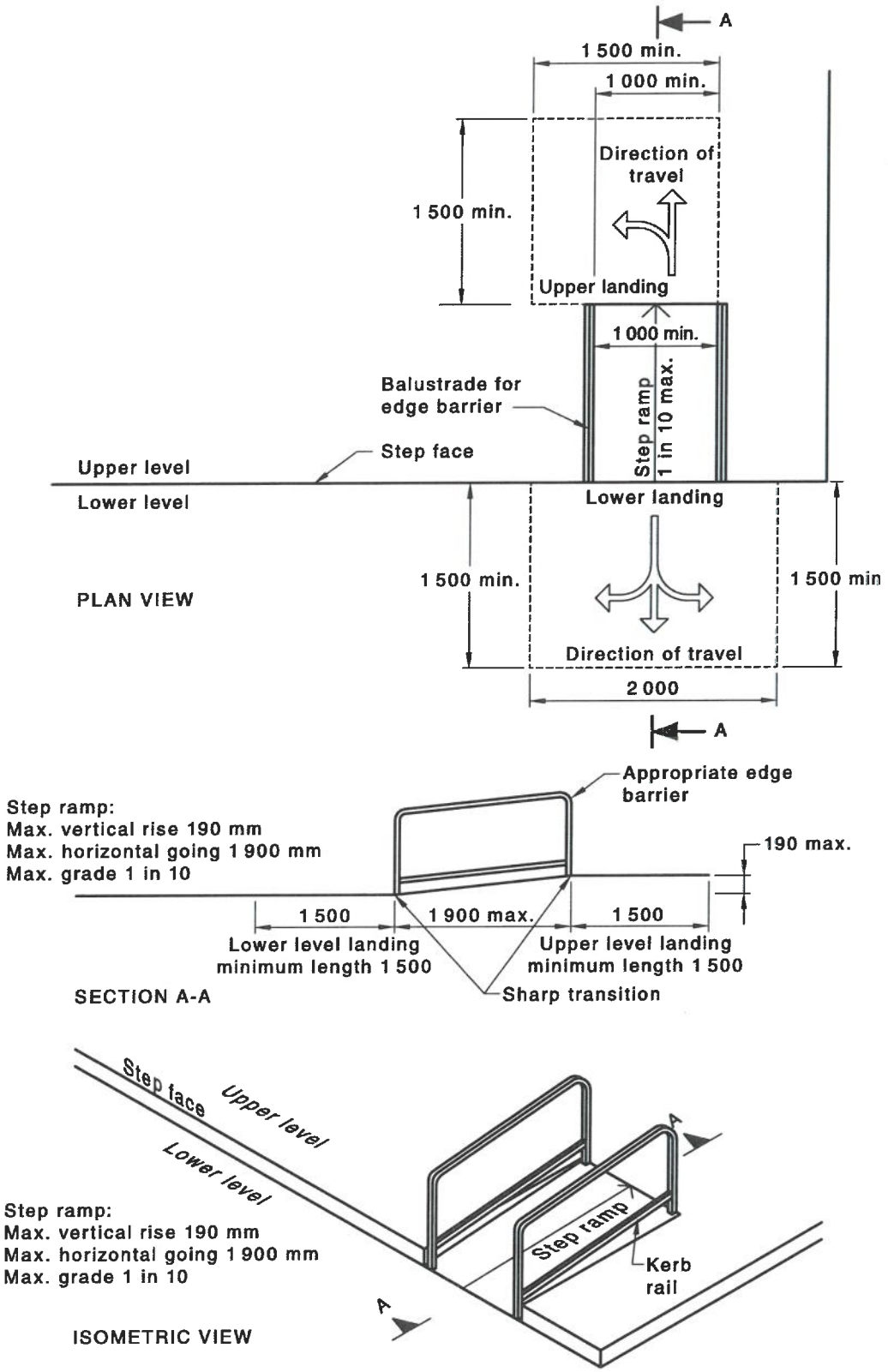
7.6.2 Edges to ramps

The edges of a step ramp shall be tapered or splayed at a minimum of 45° splay where the ramp does not abut a wall or where there is pedestrian cross-traffic. Otherwise, it shall be protected by a suitable barrier, as shown in Figure 22(B), such as —

(a) a wall, fence, balustrade or similar barrier; or

(b) where an open balustrade is provided a kerb or kerb rail shall be provided in accordance with Figures 18 and 19.

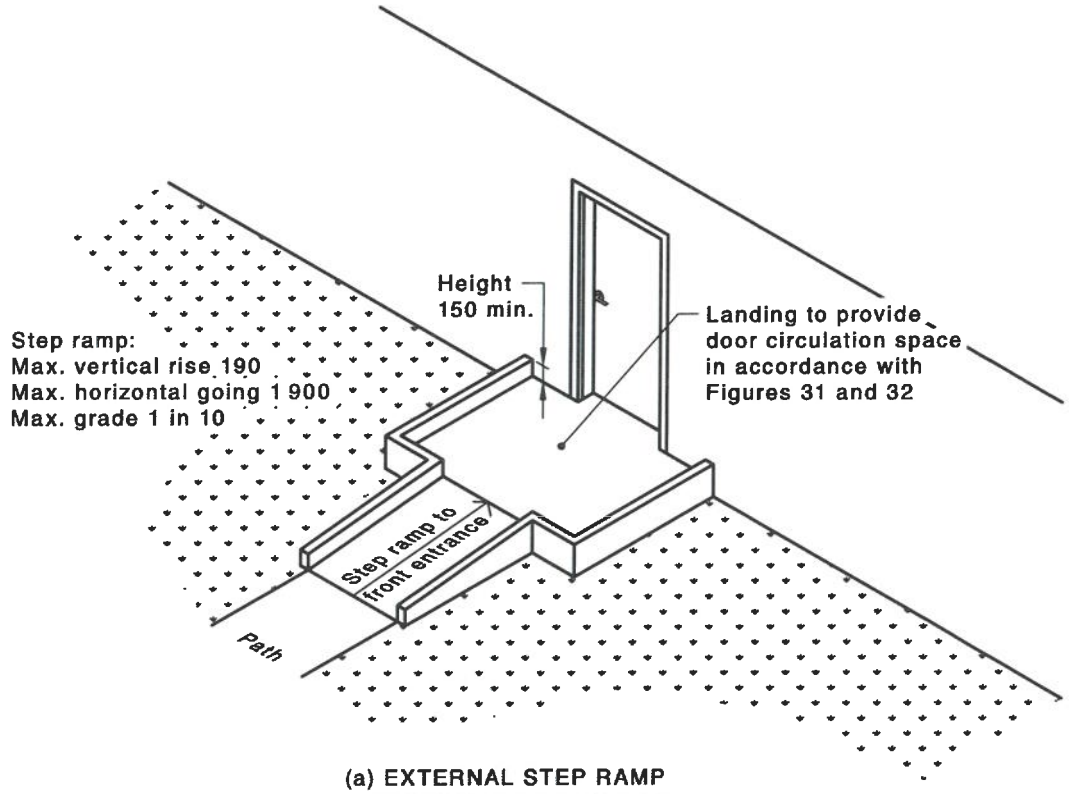
Dimensions in millimetres



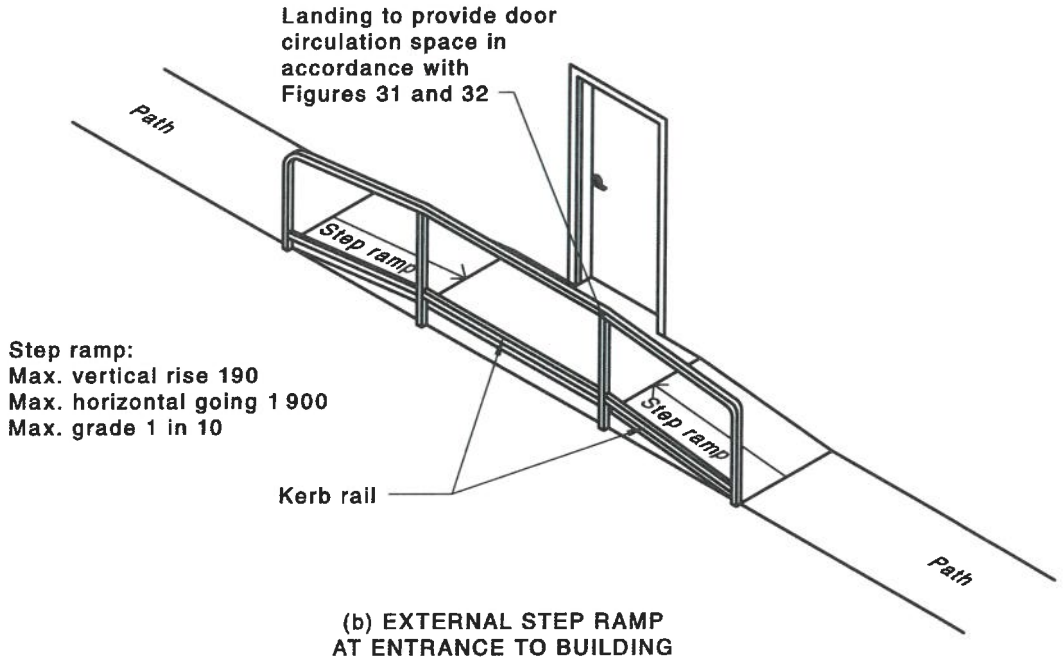
NOTE Where there is no turn involved, top and bottom landing may be reduced to a minimum of 1 200 mm in length.

Figure 22(A) — Step ramp — Inserted showing option of balustrade with kerb rail

Dimensions in millimetres



(a) EXTERNAL STEP RAMP
AT ENTRANCE TO BUILDING



(b) EXTERNAL STEP RAMP
AT ENTRANCE TO BUILDING

Figure 22(B) — External step ramps at entrance to building

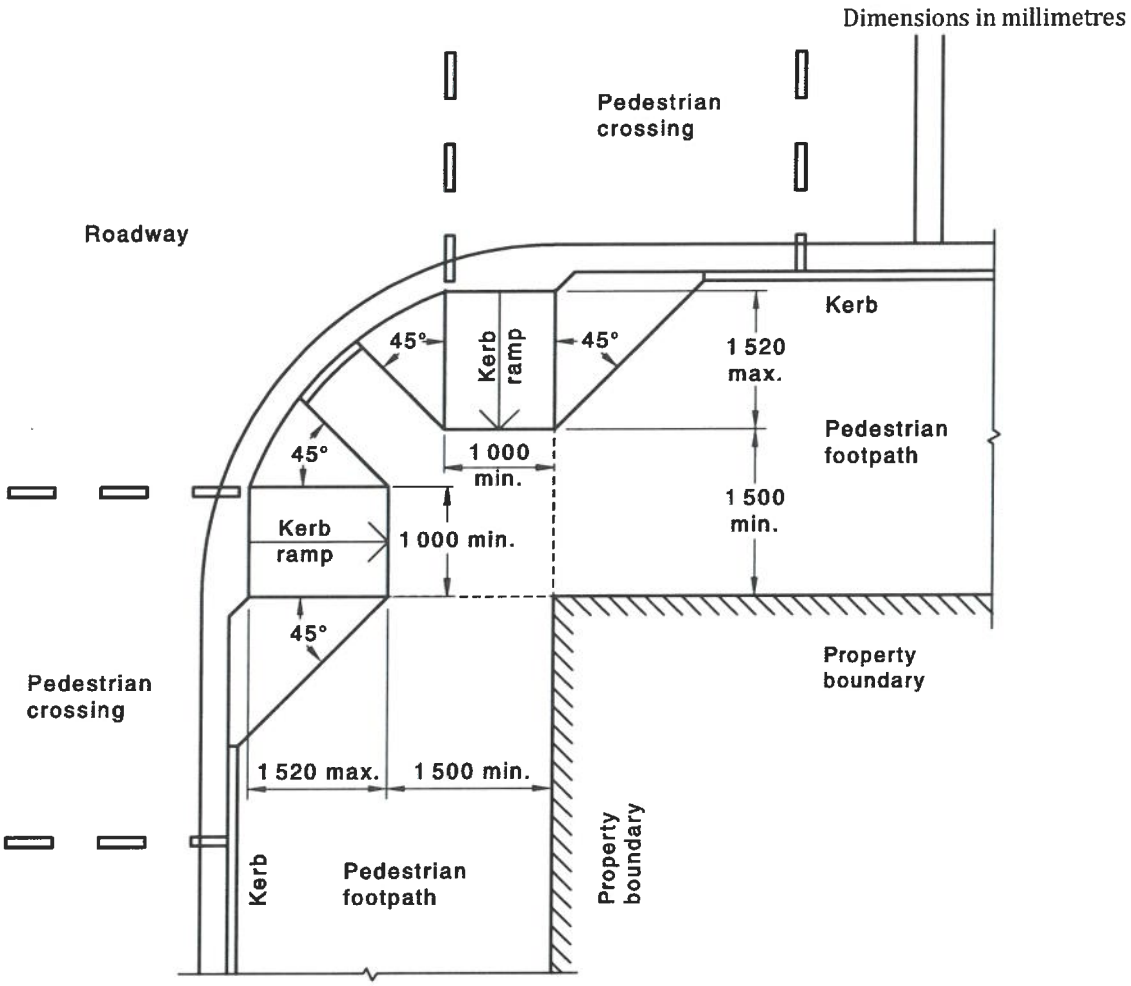
7.6.3 Finishes

Step ramps shall have a slip-resistant surface.

7.7 Kerb ramps

7.7.1 Alignment

Kerb ramps shall be aligned in the direction of travel and aligned with the kerb ramp on the opposite side of the crossing, as shown in Figures 23(A) and 23(B).



NOTE 1 Centre-line of kerb ramps and pedestrian refuges shall align across the road or vehicular driveway within the building/property allotment.

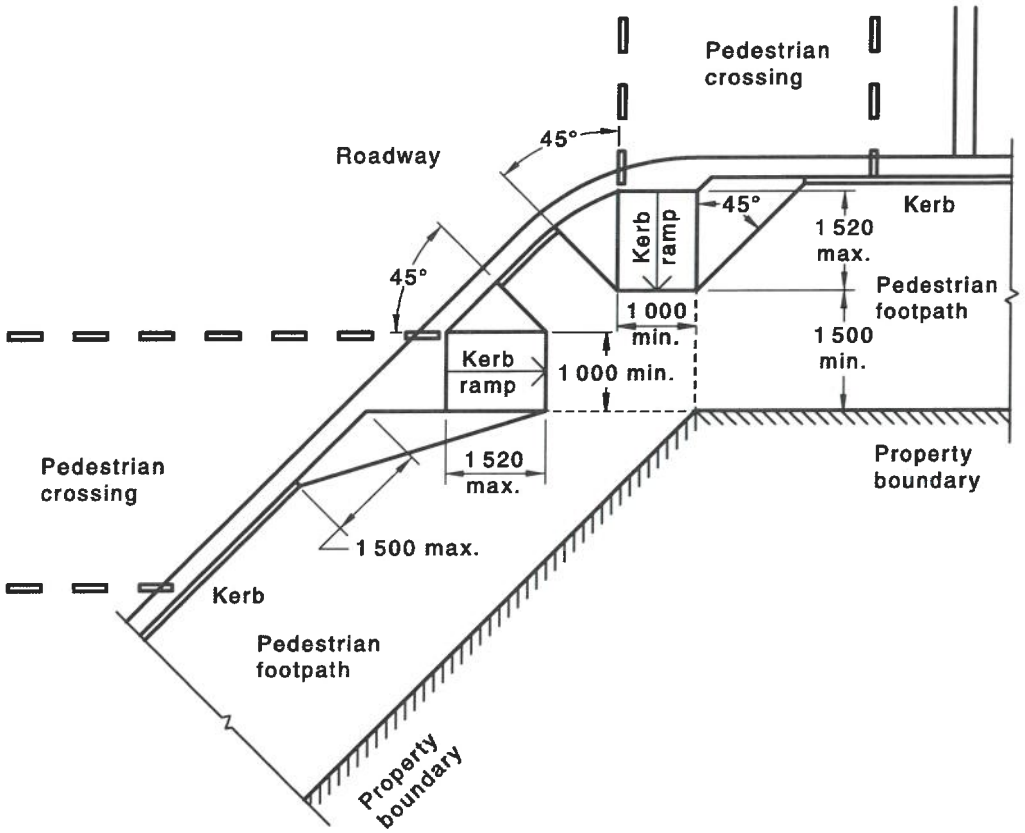
NOTE 2 Top and bottom of kerb ramps shall be aligned at 90° to path of travel.

NOTE 3 All planes of ramps and wings shall have sharp gradient transitions.

NOTE 4 For requirements for tactile ground surface indicators see AS 1428.4.1.

NOTE 5 For requirements for pedestrian lights and push-button assemblies see AS 1742.14.

Figure 23(A) — 90° road intersection



NOTE 1 Centre-line of kerb ramps and pedestrian refuges shall align across the road or vehicular driveway within the building/property allotment.

NOTE 2 Top and bottom of kerb ramps shall have a sharp gradient transition.

NOTE 3 For requirements for tactile ground surface indicators see AS 1428.4.1.

NOTE 4 For requirements for pedestrian lights and push-button assemblies see AS 1742.14.

NOTE 5 Top and bottom of kerb ramps shall be aligned at 90° to path of travel.

NOTE 6 Edge of ramps shall have a sharp transition at the splay to ensure that the width of the path of travel is not compromised by curving the transition.

Figure 23(B) — Alignment of kerb ramps — 90° road intersection

7.7.2 Profile

Kerb ramps shall have —

(a) a maximum rise of 190 mm;

(b) a length not greater than 1 520 mm; and

(c) a gradient not steeper than 1 in 8, located within or attached to a kerb.

The profile of ramps shall have sharp transitions and be in accordance with the following:

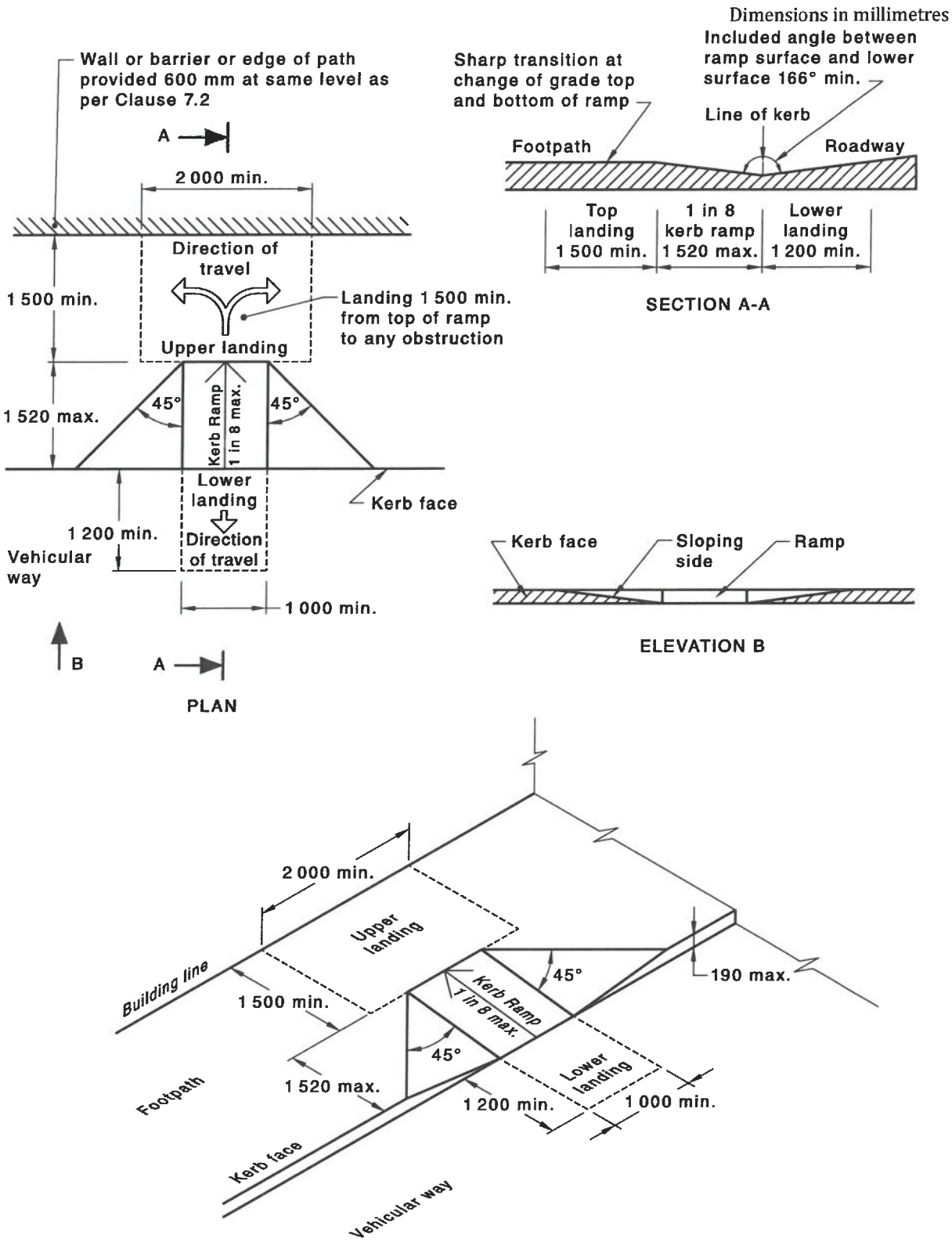
(i) The design and construction of kerb ramps shall be as shown in Figures 24(A), 24(B) and 24(C).

(ii) The sloping sides of a kerb ramp shall be tapered or splayed as indicated in Figures 24(A) and 24(B).

(iii) The angle at the base of the kerb ramp shall be a minimum of 166° as shown in Figures 24(A) and 24(B).

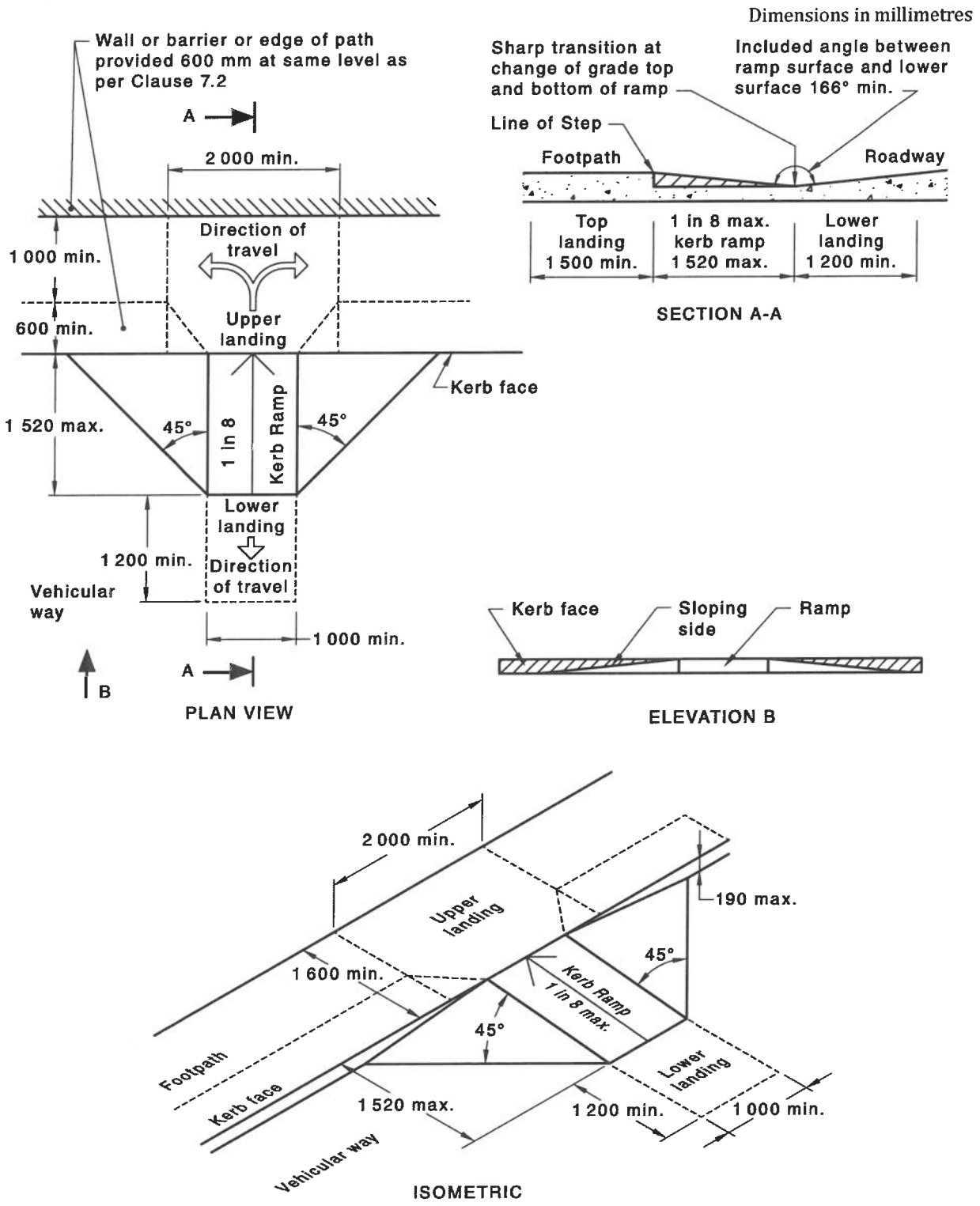
7.7.3 Finishes

Kerb ramps shall have a slip-resistant surface.



NOTE Where there is no turn involved, top landing may be reduced to a minimum of 1 200 mm in length.

Figure 24(A) — Inserted kerb ramp



NOTE Where there is no turn involved, top landing may be reduced to a minimum of 1 200 mm in length.

Figure 24(B) — Attached kerb ramp

Dimensions in millimetres

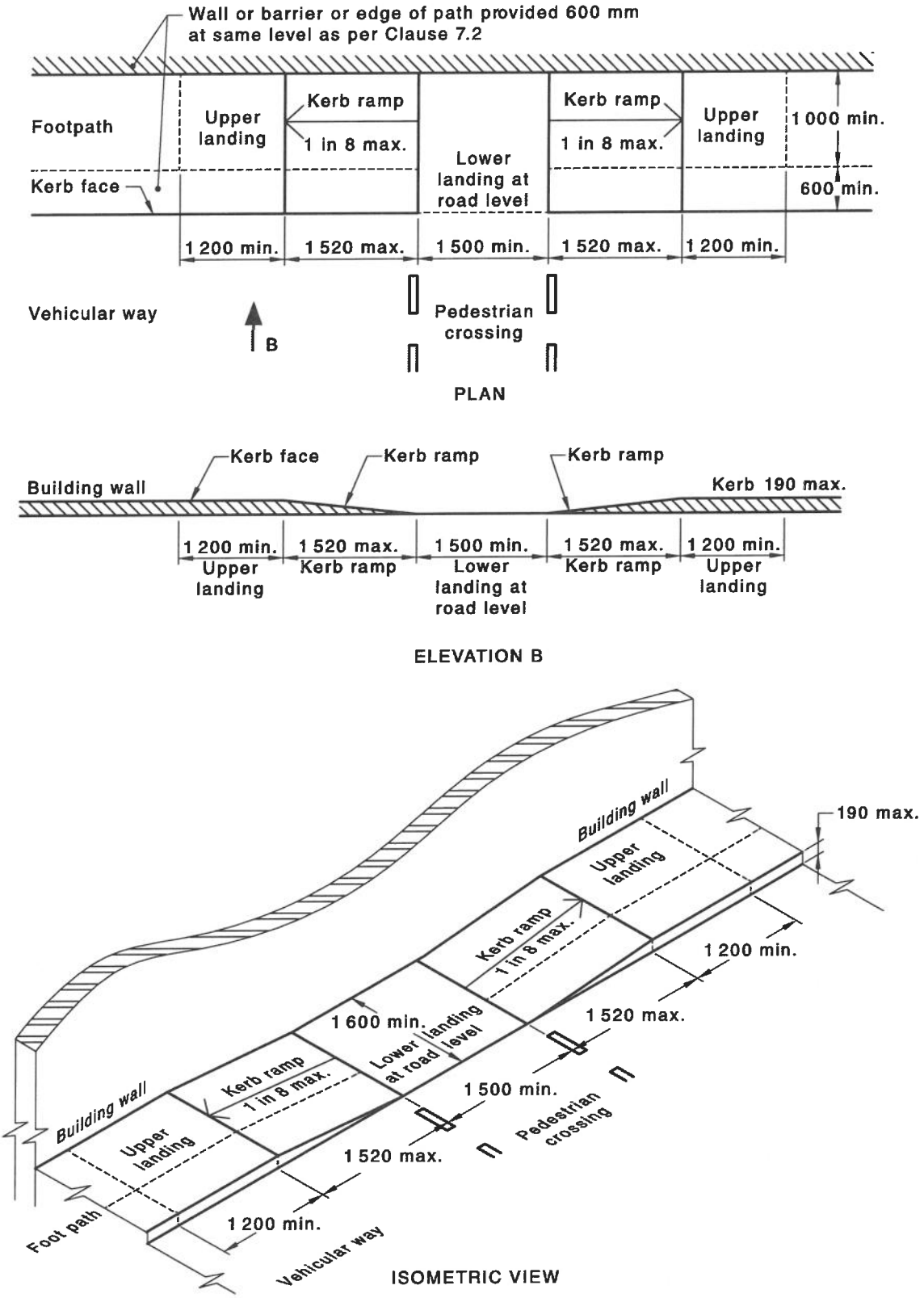


Figure 24(C) — In line kerb ramps — Narrow footpaths

7.8 Landings

7.8.1 Walkways and ramps

The length of landings at walkways and ramps shall be in accordance with one of the following:

(a) Where there is no change in direction, the length shall be not less than 1 200 mm, as shown in Figure 25(A).

(b) Where there is a change of direction not exceeding 90°, the landing shall be not less than 1 500 mm long and 1 500 mm wide. The internal corner may be truncated as shown in Figure 25(B). Where it is truncated the truncation shall not reduce the clear width of the accessways.

(c) For a 180° turn, the landing shall be as shown in Figure 25(C).

7.8.2 Step ramps

The length of landings at step ramps shall be not less than 1 200 mm in the direction of travel, as shown in Figures 22(A) and 22(B).

Where a change in direction is required, the length of step ramp landings shall be a minimum of 1 500 mm, as shown in Figure 22(A).

Where doorways are at landings, the dimensions of the landings shall be in accordance with the requirements of Clause 10.3 for circulation spaces at doorways shown in Figure 25(D).

7.8.3 Kerb ramps

The length of landings at kerb ramps shall be not less than 1 200 mm in the direction of travel.

Where a "T" junction occurs, the kerb ramp landing shall be a minimum of 1 500 mm × 2 000 mm, as shown in Figure 24(B).

Where a single change in direction is required, the ramp landings shall be a minimum of 1 500 mm × 1 500 mm.

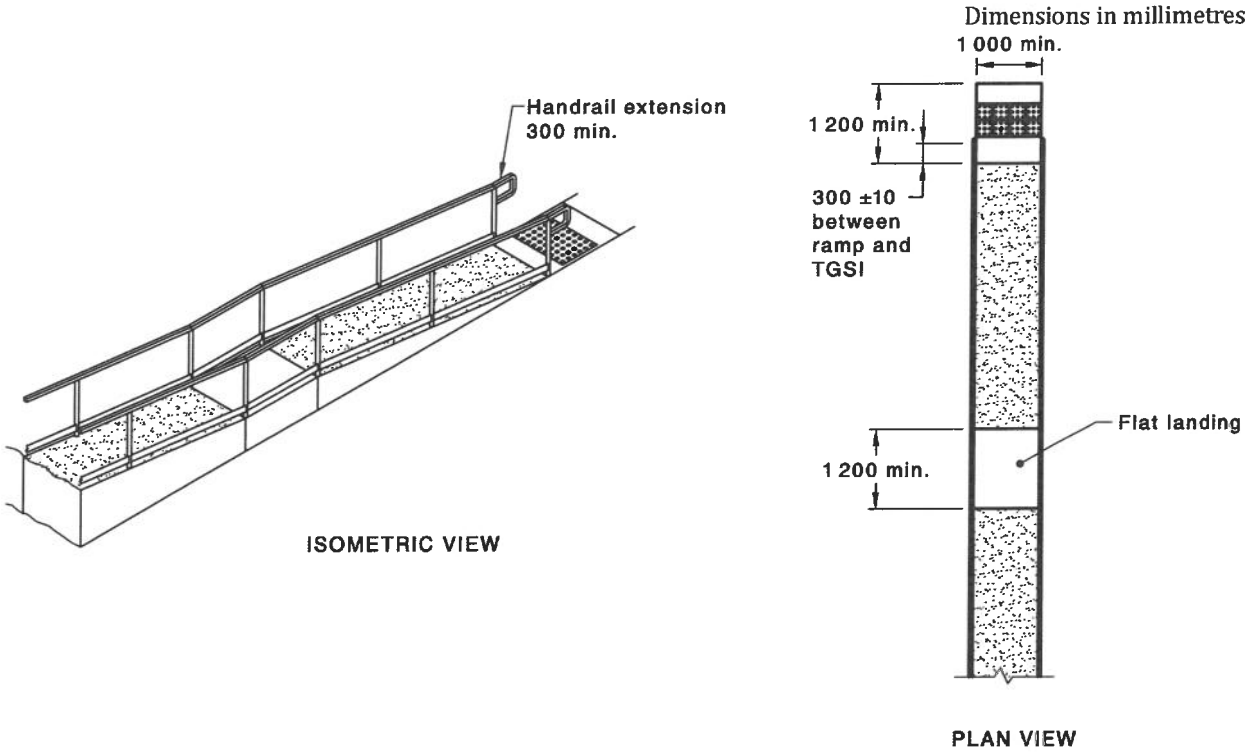


Figure 25(A) — Ramps and landings — With no change in direction

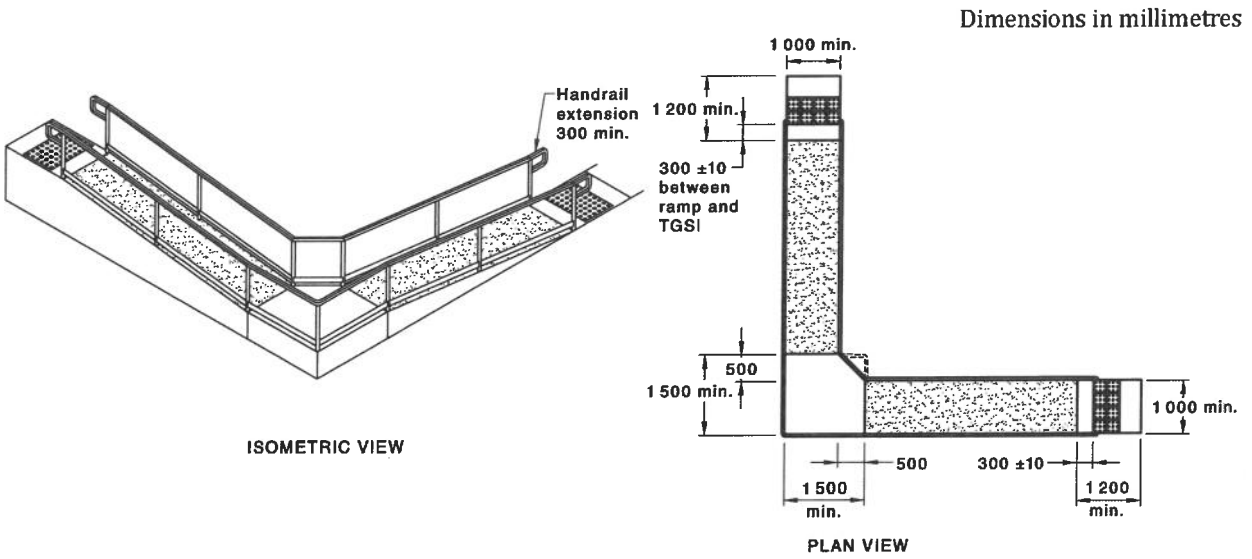


Figure 25(B) — Ramps and landings — 90° landing — Internal

Dimensions in millimetres

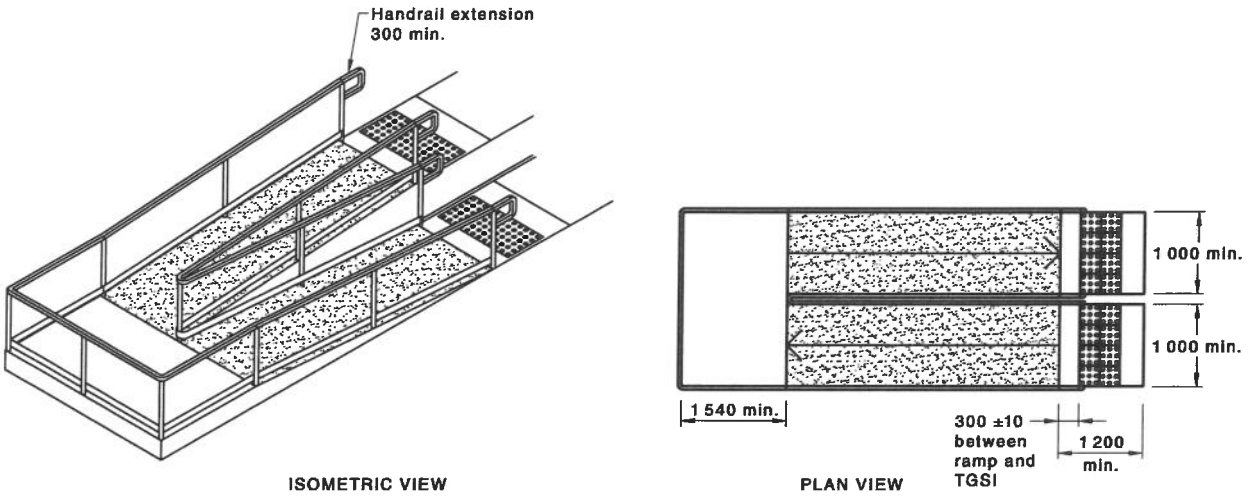


Figure 25(C) — Ramps and landings — 180° landing

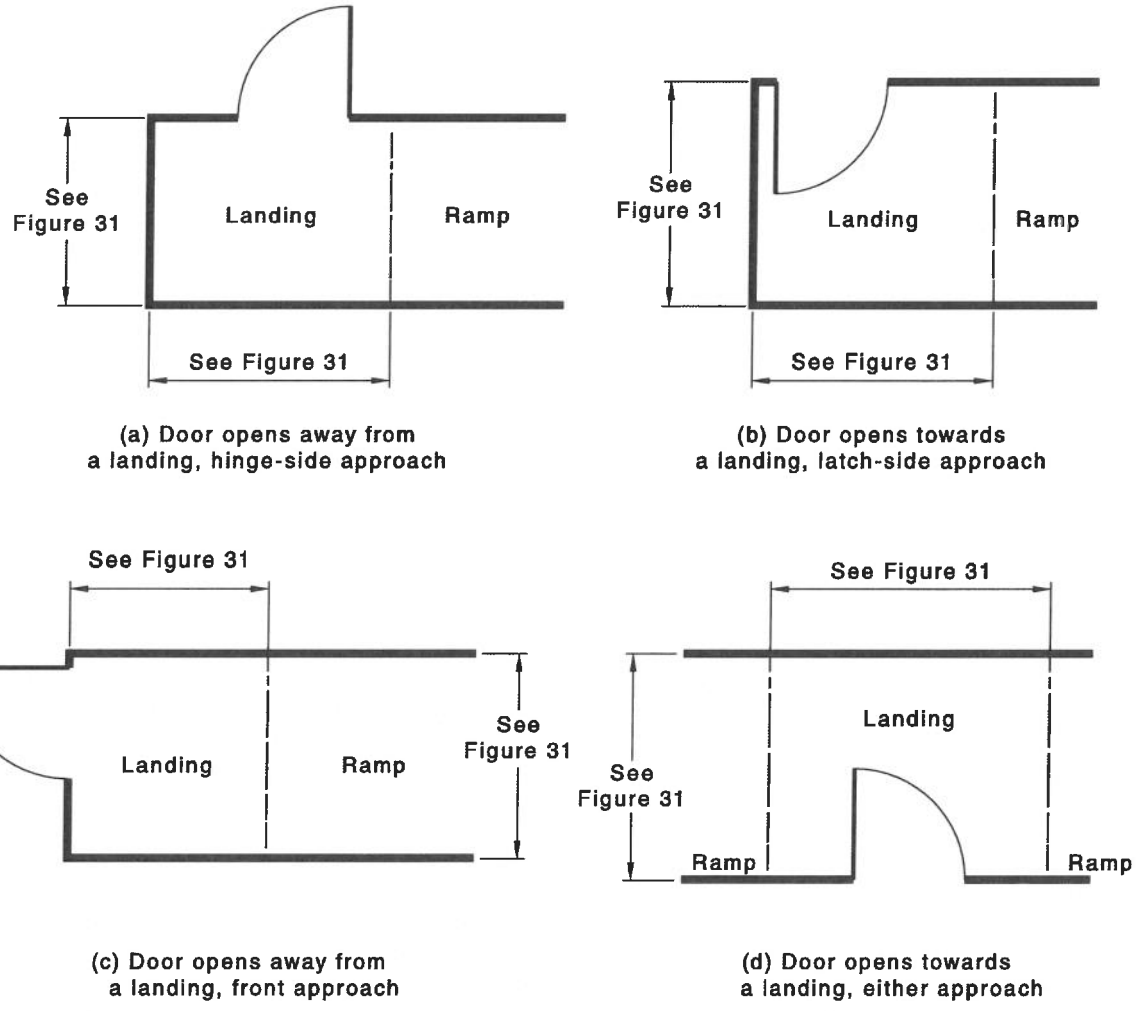


Figure 25(D) — Doorways at landings