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full participation
and equality

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**Accessibility for the Disabled - A
Design Manual for a Barrier Free
Environment**

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II. ARCHITECTURAL DESIGN CONSIDERATIONS

4. STAIRS

1. PROBLEM IDENTIFICATION

Steep staircases.

Poorly designed steps that hinder
foot movement.

2. PLANNING PRINCIPLE

To provide safe and well-
dimensioned staircases for the
comfort of all people, especially
those with mobility problems.

3. DESIGN CONSIDERATIONS

3.1 General

- Differences in level should be illuminated or minimized as much as possible for the comfort of disabled people.
- A complementary ramped route, elevator or lift should be provided where there are steps in an otherwise accessible path.
- All steps should be uniform.
- Circular stairs and stepped landings should be avoided (fig. 1).
- Open risers are not recommended.

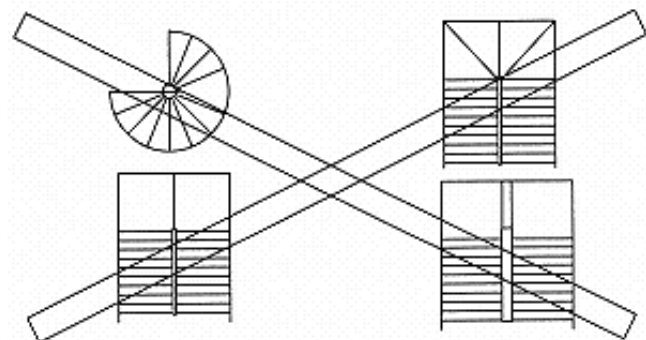


Fig. 1

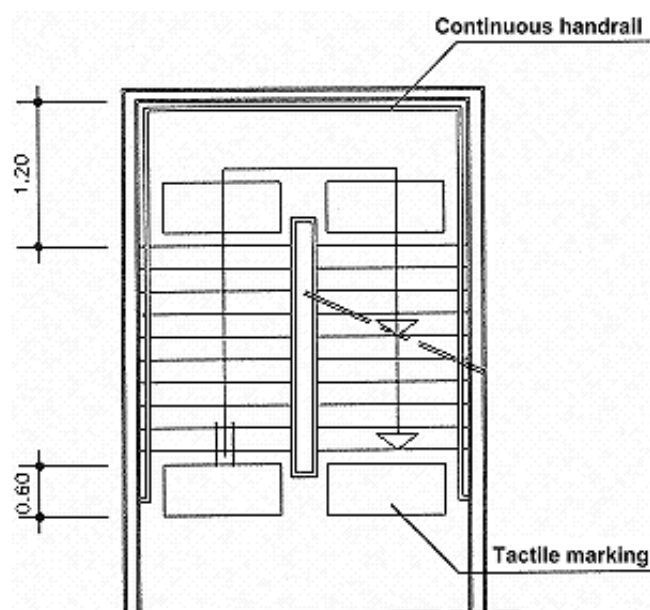


Fig. 2

3.2 Width

- The minimum width of a stairway should be 0.90 m for one-way traffic and 1.50 m for two-way traffic.
- For indoor stairs, the riser should be between 0.12 m and 0.18 m, and the tread between 0.28 m and 0.35 m.

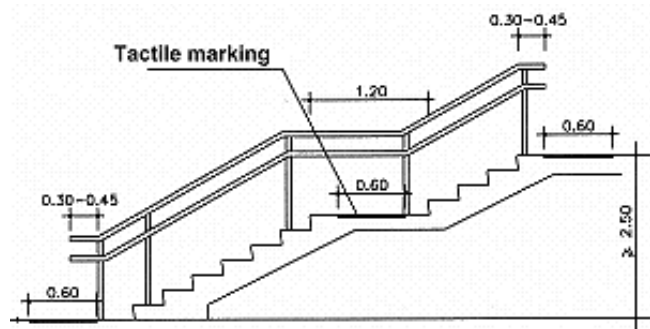


Fig. 3

- For outdoor stairs, the maximum riser should be 0.15 m and the minimum tread should be 0.30 m.

3.3 Landing (fig. 2) (fig. 3)

- An intermediate landing should be provided when the stairs cover a difference in level of more than 2.50 m.

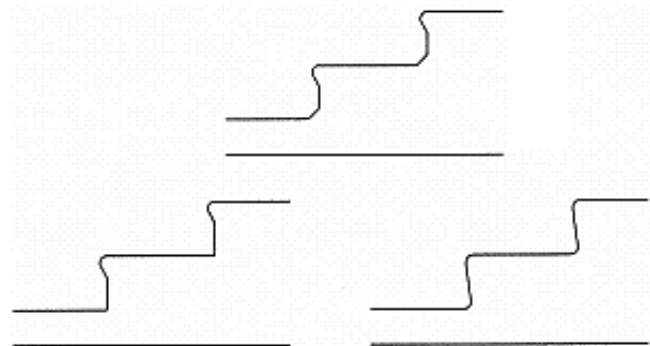


Fig. 4: Recommended nosing types

- The length of the landing should be at least 1.20 m extending along the full width of the stairs.

3.4 Nosing (fig. 4)

- Sharp edges and overhanging nosing should not be used for treads.
- Nosing should be flush or rounded and should not project more than 40 mm.

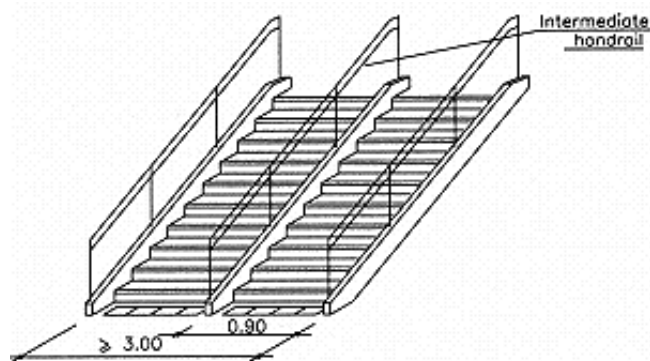


Fig. 5

3.5 Handrails

- Handrails must be installed on both sides of the stairs and around the landing for gripping (fig. 3).
- For stairs more than 3.00 m wide, one or more intermediate handrails could be provided (fig. 5).
- The distance between the handrails when both sides are used for gripping should be between 0.90 m and 1.40 m (fig. 5).
- Handrails must extend a distance between 0.30 m and 0.45 m at the

top and bottom of the stairs (see [Railings and Handrails](#)) (fig. 3).

3.6 Tactile marking (fig. 2) (fig. 3)

- A textural marking strip should be placed at the top and bottom of the stairs and at intermediate landings to alert sightless people as to the location of the stairs.
 - The tactile marking strip should be at least 0.60 m wide and should extend over the full width of the stairs.
 - To guide users with poor vision, the colour of the strip should contrast with the surrounding surface.
- ### 3.7 Surface
- Landings, treads and nosing should be slip-resistant and free of projections.
 - Exterior stairs should be pitched forward at 10 mm per metre to drain surface water.
 - Slip-resistant stair nosing should be used to fix carpets on stairs.

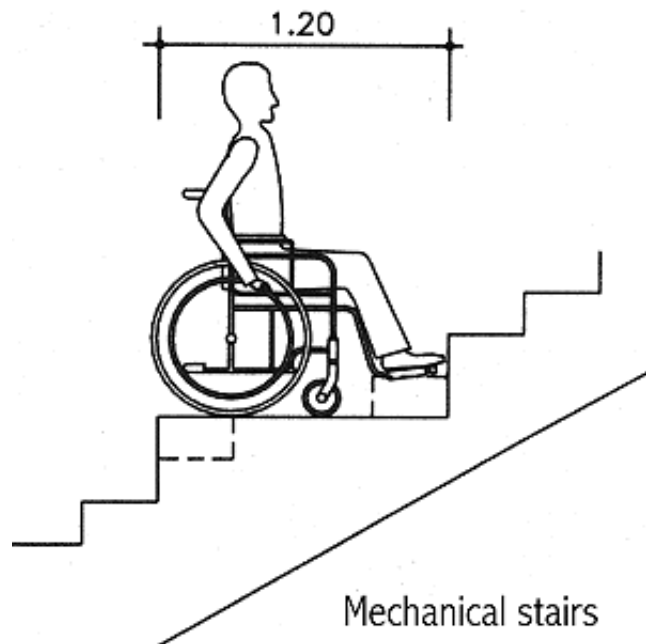


Fig. 6

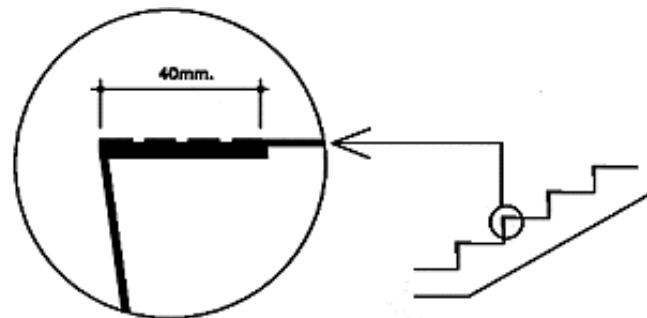


Fig. 7

3.8 Emergency stairs

- Emergency stairs should be identified by tactile markings.

3.9 Mechanical stairs (escalators)

- Mechanical stairs can be provided with an adaptable tread at least 1.20 m long, if they are to be used by persons confined to wheelchairs (fig. 6).
- The edges of escalators should be painted in a contrasting colour for the benefit of poor-sighted users.

4. EXISTING CONSTRUCTIONS

- When the configuration of the

nosing cannot be modified, slip-resistant strip should be applied to the nosing as an alternative solution (fig. 7).

- Slip-resistant strips should be 40 mm wide and should not extend more than 1 mm above the tread surface.
- To guide people with sight problems, the colour of the strips should contrast with that of the stairs.

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