

SECTION 12

STAIRCASES/RAMPS/LADDERS

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P1	09/05/14	WA	Preliminary Issue for review
2	19/8/14		Issue to web

12.0 STAIRCASES/RAMPS/LADDERS

12.1 Generally

Where fire stairs are to be used as communicating stairs, compliant door hold open devices or viewing panels are to be incorporated. Handrails shall comply with BCA and shall be galvanised and not painted in fire stairs.

Generally

Internal and external stairs and ramps shall comply in all respects with the requirements of the BCA and AS 1428 Part 1: New Buildings.

Ramps shall be provided externally as required to provide access to buildings for people with disabilities. The use of ramps internally as a means of interconnecting floors is not an acceptable alternative to providing a lift.

JCU will not accept designs which combine maximum height risers with minimum width treads. Treads widths and riser heights shall generally comply with the requirements of AS 1428.2, with goings a minimum of 280mm wide.

Stairs

Stairs shall be designed to conform to the requirements of the BCA and other relevant Codes. In general, treads should be not less than 280mm, and risers should not exceed 180mm and must be consistently dimensioned throughout each flight. Stairs shall have a non-slip surface, be readily cleanable, and have a 50mm strip of contrasting colour on nosings.

PWD Access

Stairs and Ramps

Stairs and ramps for disabled access to building, including handrails, kerbs and the like shall comply with the requirements of AS 1428.1.

Designs that incorporate ramps with gradients less than 1:20 are preferred; to reduce the requirement for associated handrails.

Provide contrasting stair tread nosings as recommended in AS 1428. Tactile ground surface indicators should be installed in accordance with AS.1428.4 also refer Section 10 on stair treads finishes.

Fire Stairs

Fire Stairs may, in some instances, be approved for use as communication stairs for the day-to-day functioning of the building. The needs for the security of persons and property, and of maintaining the integrity of fire safety systems, must be weighed against the convenience of users and economic considerations (construction and operational).

When such use is approved, door hold-open devices or clear viewing panels are to be incorporated. Where fire stairs are approved to be used for intercommunication between floors, and not solely for escape, the standard of finish in these stairs must be equivalent to adjacent public areas.

12.2 Internal Stairs

Internal Stairs

There shall be a general circulation stair to access to all levels of the building to minimise the use of lifts. This circulation stair may be a fire isolated stair provided all access doors are controlled with magnetic hold open devices connected to the fire alarm system. The following points are to be considered in the design and placement of circulation stairs:

- Placement of stairs to maximise their visibility and use;
- Comply with the requirements of AS 1428.2;
- Design of stairs to be social spaces where conversations can occur;
- Design of stairs to act, where appropriate as natural ventilation shafts;
- Stairs shall be provided with natural light if possible.

Fire isolated stairs shall be provided to satisfy the requirements of the BCA and AS 1428.2.

These stairs may be fully enclosed within the building envelope, or may be open stairs external to the building façade.

12.3 External Stairs / Ramps

External Stairs and Landings

All external stairs and landings over two floors in height must be designed to prevent self-harm from jumping. Designs must be sympathetic to the fabric of the building and the surrounding built environment, and must be approved by JCU.

Exposure to Atmosphere

Steelwork to all stairs exposed to the atmosphere shall as a minimum requirement be prepared and hot dip galvanised (HDG) in entirety, in accordance with AS 4680. Cutting and welding on-site is not allowed without approval by JCU - "Zinc stick" and cold galvanizing do not constitute acceptable practice without JCU approval.

Balustrades

Balustrade panels to all stairs exposed to the atmosphere shall be constructed of:

- steel HDG as per above
- perforated powder coated aluminium
- stainless steel mesh by approval JCU
- glass
- other material with a high level of durability particularly with regard to resistance to deterioration and corrosion due to weathering and environmental effects (Only with approval from JCU)

Steps

- Where possible avoid steps in footpaths in external areas.
- Where required, external steps generally shall have 150 mm risers and 305 mm treads; the riser to have 30 raking face.
- Note: No single steps in the external landscape areas.
- Treads to be non-skid with contrast colour nosings.

Handrails

Materials to be stainless steel at main entrance/access ways, hot dip/ galvanized handrails may be acceptable in certain external locations with approval from JCU. Fixing details to be provided by structural engineer. Generally open hook ends to be closed off.

12.4 Handrails / Balustrades

Handrails

Internal general access stairs, including fire isolated stairs for general access, shall have stainless steel handrails to both sides.

Where the general access stairs are in an open well with exposed strings to flights, then a balustrade incorporating glass, perforated metal or other approved solid panels is desirable.

Handrails and balustrades to fire isolated stairs which are not general access stairs, may be galvanised steel.

12.5 Finishes

Fire isolated stairs, which are not general access stairs, shall have an integral non-slip finish to treads and landings, with a 'Yellow' painted nosing on both tread and landing edges.

Where carpet finishes are approved for internal non fire isolated stairs, tread nosings shall be aluminium with adhesive fixed contrasting coloured inserts.

Stairs and Fire-isolated Passageways

Quarry or ceramic tiles to fire-rated passageways and stairs including stair treads and risers shall be unglazed, shall be non-slip to suit the application with tread riser and nosing tile of a contrasting colour and matching grout. Appropriate caulked expansion joints shall be provided as required, including the junction of tiles floors with walls, installed in accordance with manufacturer's recommendations.

Colour selection for visual contrast shall comply with AS 1428.1 for stair tread nosings.

Any non-tiled stair tread nosings shall be Latham; heavy duty, slip resistant metal extrusion and purpose made for the application. Stair nosings on masonry stairs shall be recessed so that the top of the nosing is flush with the tread.

Tactile Indicators

Type B tactile indicators as described in AS 1428.4 are to be provided at the top, bottom and any mid entry point of all stairs and ramps with a grade greater than 1:20. Tactile indicators shall be positioned as shown AS 1428.4. Where separate tactile dots are used, the dots shall be 4 to 5 mm above the surrounding surface. Where dots are mounted on tiles, the tiles should be set flush with the surrounding surface.

12.6 Ladders and Walkways

All access stairs, ladders and walkways shall comply with AS 1657.

Inclined step ladders are to be used wherever possible in preference to vertical rung ladders, and shall include a fall arrest system.

Roof Access refer to Section 8 Roofs