

For Every Step®



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architectural group

Stair Nosing Compliance Guide





We create better
shared spaces.
Everyone deserves
easy access.

Compliance Begins with Classic: Here's Why



Trusted Compliance Experts

We deliver compliant solutions for stairs, floors, bike storage, bollards, and car park safety. Trust us to get it right.



Over 40 Years of Experience

Partnering with building professionals across Australia, we offer design, supply, and installation services. Your project is in expert hands.



Easy LRV Calculator

Our free online LRV Calculator gives instant luminance contrast values for dry and wet readings, with a Pass or Fail to Australian Standards. Get immediate results emailed to you.



Comprehensive Resource Hub

Our Resource Hub offers downloadable technical documents including Compliance Guides, Product Data Sheets, Fire Reports, Slip Reports, LRV Reports, and Installation Guides—all in one place.



Dream It. Visualise It. Implement It.

Visualise your product in your space with Classic's 3D and Augmented Reality technology, ensuring it's perfect before implementation.



Committed to Sustainability

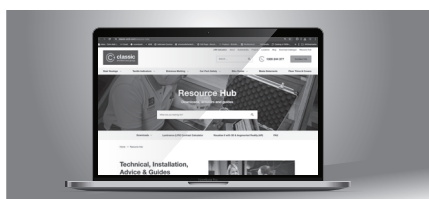
Our Low Impact For the Environment (LIFE®) Program shows our commitment to sustainability from production to end-of-life.



Nationwide Support

With local manufacturing and operations across Australia, we ensure fast turnarounds and reliable service.

Trust us to get it right.



Why is compliance important?

Stair nosings play a crucial role in the safety, accessibility, and overall functionality of staircases. They are integral components of safe and accessible stair design, providing visual and tactile cues, preventing accidents, and contributing to the overall usability of staircases in various environments.

What codes and standards are relevant?

The Disability Discrimination Act (DDA) mandates that buildings and facilities in Australia ensure reasonable access for individuals with disabilities. This encompasses the safety and accessibility of stairways, walkways, and all communal areas. While the DDA doesn't explicitly outline specific requirements for this, it provides the overarching goal of guaranteeing safe access for people with disabilities.

In Australia, the National Construction Code (NCC) and Building Code of Australia (BCA) incorporate Australian Standards that detail specific requirements for designing accessible environments, including provisions for mobility and access. The NCC is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia. The BCA forms chapters 1 and 2 of the NCC. Under the NCC 2022, all building classifications must be accessible to people with disabilities with reference to the Australian Standard.

The BCA adopts AS1428.1:2021 and requires mandatory compliance with the AS1428.1 Standard that is enforceable by law. AS1428.1:2021 provides guidelines for the design and construction of buildings and facilities to ensure accessibility for people with disabilities, specifically in relation to stair nosings. The BCA states that in any new development, and in major refurbishment all stairways (except a fire stairway) must comply with AS1428.1:2021.

AS4586:2013 is the Australian Standard that outlines the property criteria for slip resistance classification. Materials used for stair nosings must be tested and classified, according to the standard to ensure safe and secure footing for pedestrians, especially in wet or slippery conditions. The standard sets out suitable testing methods as well as resulting classifications ie. P5, P4 etc.

AS1657:2018 is the Australian Standard that outlines the requirements for the design, construction, and installation of stairs in various types of buildings.

The BCA also sets out comprehensive requirements for fire safety in buildings, including specifications for the fire resistance of building materials.

Where are these applicable?

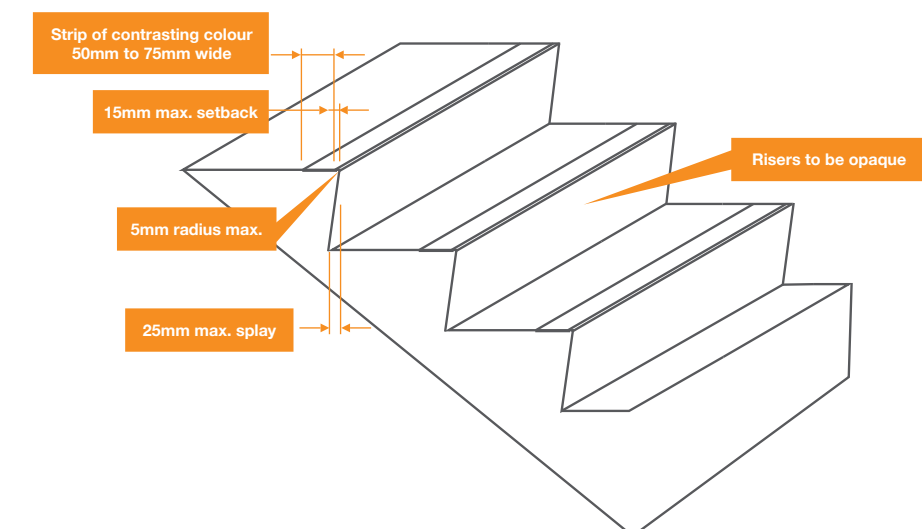
The above-mentioned standards are applicable in various environments where public access is provided, including but not limited to;

- All commercial developments
- Any residential apartment development
- If you own and rent out a property or Air B&B, you do have to have stair nosings, as this is considered public access

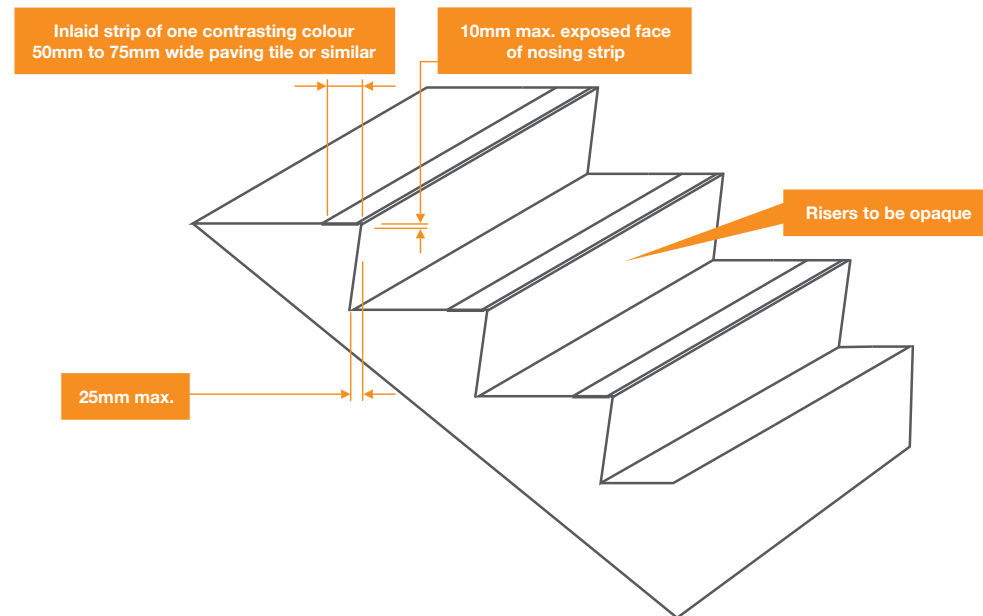
Outline of AS1428.1:2021 requirements: Visibility

- Stair nosings must span the full width of the path of travel.
- The single contrast strip (not multistrip) shall be of a continuous colour
- The contrast strip needs to be between 50mm and 75mm wide
- The contrast strip can be set no more than 15mm back from the front of the step
- Where the luminance contrasting strip is not set back from the front of the nosing, then any area of luminance contrast shall not extend down the riser more than 10 mm.
- NOTE: If the front of the nosing is NOT a contrast or 'blends in', and it is clearly differentiated from the luminance contrast strip, then the stair nosing can extend any distance down the riser.

Typical stair nosing with nosing strip:



Typical stair nosing with exposed nosing strip:



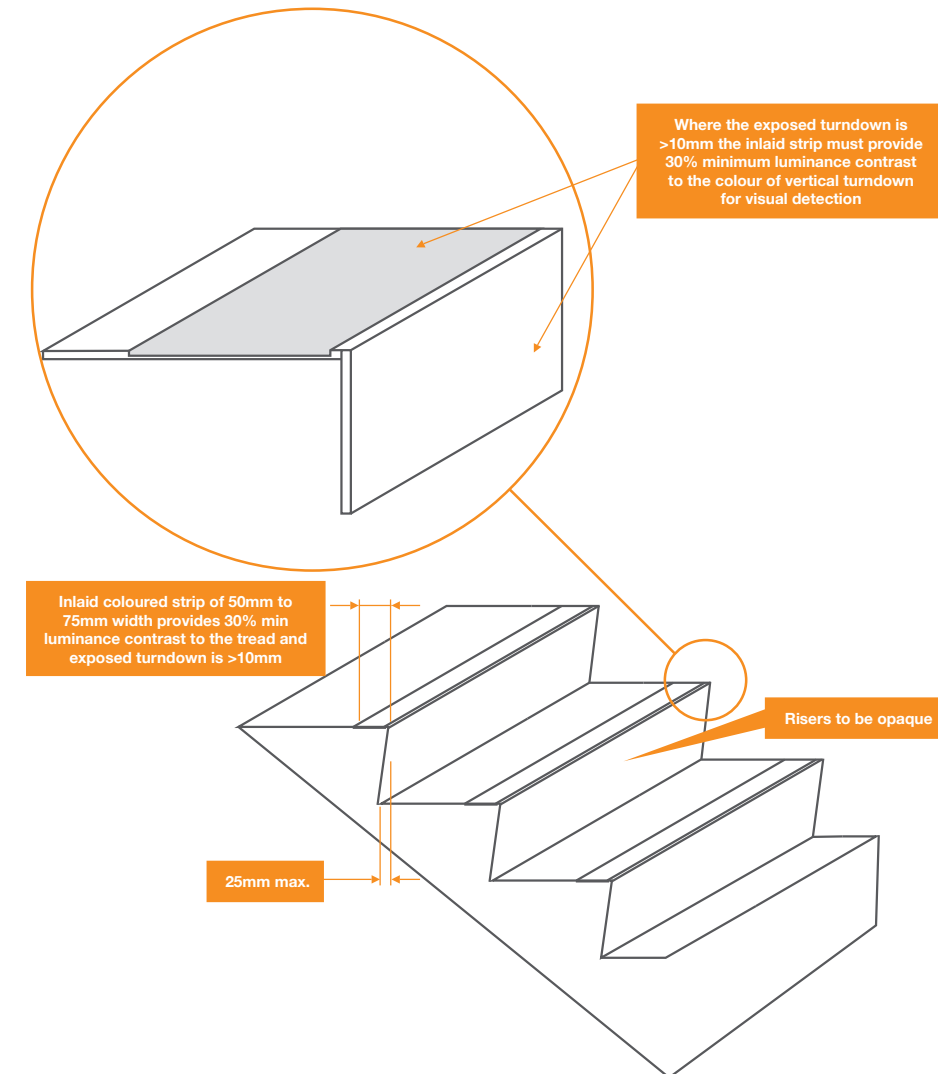
Luminance Contrast

- AS1428.1:2021 outlines specific requirements for the Luminance Reflectance Value (LRV) of stair nosings. LRV refers to the level of contrast between the stair nosing and their surrounding surfaces, making them more visible to individuals with vision impairments.
- The contrast strip must always have at least 30% luminance contrast to the floor finish or background.
- As outlined under 'Visibility', where the exposed turndown (or the front of the stair nosing) is greater than 10mm, the turndown must NOT have a 30% luminance contrast to the riser. The turndown must visually 'blend' with the vertical riser background.

Dimensions

- Where the stair tread extends beyond the face (by more than 10mm), it is considered part of the riser, the riser may be vertical or have a splay backwards up to a maximum 25 mm.

Typical stair nosing profile:



Slip Resistance

- The top surface of stair nosings must have a slip-resistant finish to reduce the risk of slips and falls. The slip resistance rating must be at least P3, as measured by a pendulum slip resistance tester (see further information on the slip resistance rating on pg 8).

Profile

- Stair nosing profiles may have a sharp intersection, a rounded up to 5mm radius, or be chamfered up to 5mm x 5mm.

Durability

- Stair nosings must be durable and able to withstand the wear and tear of regular use.

Outline of AS4586:2013:
Slip Resistance Classifications

- AS4586:2013 classifies pedestrian surfaces into five categories based on their slip resistance properties: P1, P2, P3, P4, and P5.
- These values indicate the level of slip resistance required to minimise the risk of slips and falls under typical pedestrian conditions.
- Certification and documentation of slip resistance test results may be required to demonstrate compliance with the standard.

Slip Resistance Testing

- Stair nosing materials must undergo slip resistance testing to ensure correct classification in accordance with the standard.
- Slip resistance values are determined through pendulum testing, which measures the dynamic coefficient of friction (DCOF) of pedestrian surfaces under specified conditions. The Pendulum Test Value (PTV) indicates the level of slip resistance exhibited by a surface, with higher values indicating greater slip resistance.
- A stair nosing’s Slip Resistance Value (SRV) will indicate what category of pedestrian surface it is most suited too, see table below:

Pendulum Classification	Slip Resistance Value (SRV)	Slip Risk
P0	Below 12	Very high
P1	12-24	Very high
P2	25-34	High
P3	35-44	Moderate
P4	45-54	Low
P5	Over 54	Very Low

Slip Rating Requirements

Stairs and ramps in buildings covered by NCC Volumes One and Two, must meet or exceed, the following slip classifications for dry and wet surfaces;

	Dry Surface	Wet Surface
Tread Surface	P3 or R10	P4 or R11
Nosing Strip	P3	P4
Ramp not steeper than 1:8	P4	P5

Maintenance

- Proper cleaning, maintenance, and periodic testing are recommended to uphold the slip resistance of pedestrian surfaces.

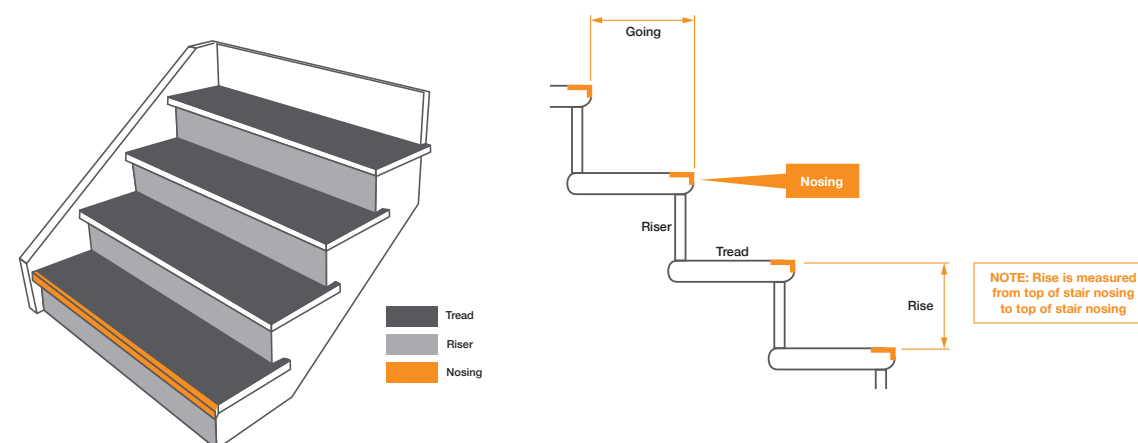
Outline of AS1657:2018 requirements:

AS1657:2018 outlines the requirements for the design, construction, and installation of stairs in various types of buildings. Key requirements for treads and risers, which affect stair nosing selection, include:

- Treads must have a minimum depth of 240mm and a maximum rise of 190mm. The tread is the horizontal part of the stair, on which a person walks. The rise or riser is the vertical space between one step and another.
- Risers must have a minimum height of 115mm and a maximum height of 190mm (including the stair nosing).
- Stairs and landings must be level and have a minimum width of 900mm.
- The tread shall extend the full width of the path of travel and the tread surface shall be slip-resistant. Slip resistance classification must be in accordance with AS4586:2013.
- Slip-resistant nosings must be provided on stairs where there is a risk of slipping.
- The nosing shall be such that the edge of the tread is clearly visible against the background.

TIP: It is crucial to select and specify your stair nosing before designing and building your staircase. This ensures that you account for any additional height added by the nosing, maintaining the riser height within the maximum 190mm limit once the nosings are installed.

If your staircase has already been built with risers at the maximum height of 190mm and you still need to add stair nosing, don't panic! Please contact us at Classic Architectural Group for advice, we can discuss the options and products in our range that may provide a suitable solution.



Outline of NCC 2022 - Fire safety requirements:

Testing

The Building Code of Australia (BCA) assigns fire resistance ratings (FRR) to building materials based on their ability to withstand exposure to fire without failure. These ratings indicate the duration for which a material or assembly can maintain structural adequacy, integrity, and insulation during a fire. Building materials (including stair nosings) must undergo fire resistance testing in accordance with recognised testing standards referenced in the BCA.

Requirements

Fire resistance levels (FRL) are assigned to building elements, such as walls, floors, roofs, doors, and windows, based on their fire resistance ratings for structural adequacy, integrity, and insulation. The BCA specifies minimum FRL requirements for different building types and occupancies, these are measured using results from the Critical Radiant Flux (CRF) test. This test measures the radiant energy required to sustain burning as determined by AS ISO 9239.1. The CRF is basically the lowest energy a fire requires to keep burning, hence the higher the value the better.

The NCC states (in S7C3) that a floor lining or floor covering must have:

- A Critical Radiant Flux (CRF) not less than that listed in the Table S7C3 below; and
- in a building not protected by a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17, a maximum smoke development rate of 750 percent-minutes; and
- a group number complying with S7C6(b) for any portion of the floor covering that is continued more than 150mm up a wall.

Table S7C3 CRITICAL RADIANT FLUX (CRF in kW/m 2) OF FLOOR MATERIALS AND FLOOR COVERINGS Class of Building	Building not fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17	Building fitted with a sprinkler system (other than a FPAA101D or FPAA101H system) complying with Specification 17	Fire-isolated exits and fire control rooms
Class 2, 3, 5, 6, 7, 8 or 9b, excluding: (i)Class 3 accommodation for the aged; and (ii)Class 9b as specified below.	2.2	1.2	2.2
Class 3 Accommodation for the aged.	4.5	2.2	4.5
Class 9a Patient care areas. Areas other than patient care areas.	4.5 2.2	2.2 1.2	4.5 4.5
Class 9b auditorium or audience seating area used mainly for— (i)indoor swimming or ice skating; and (ii)other sports or multi-purpose functions.	1.2 2.2	1.2 1.2	2.2 2.2
Class 9c Resident use areas. Areas other than resident use areas.	-- --	2.2 1.2	4.5 4.5

Fire Exit Stairs

The BCA (Clause D3.3(a)(ii)) states that all stairways (except a fire-isolated stairway – see below) must comply with Clause 8 of AS1428.1. Therefore, all stairways (with 2 or more steps and not a required fire-isolated stairway) must have all relevant accessible features outlined in AS1428.1 (see pages 3-8 for details).

A fire-isolated stairway, is a stairway within a fire-resisting shaft and includes the floor and roof or top enclosing structure. A fire-isolated stairway must comply with Clause 8.1(f) and (g) of AS1428.1 only. These clauses include the below requirements;

- Stair nosings must span the full width of the path of travel.
- The single contrast strip (not multistrip) shall be of a continuous colour
- The contrast strip needs to be between 50mm and 75mm wide
- The contrast strip can be set no more than 15mm back from the front of the step

- The contrast strip must always have at least 30% luminance contrast to the floor finish or background.
- Where the luminance contrasting strip is not set back from the front of the nosing, then any area of luminance contrast shall not extend down the riser more than 10 mm.

According to the NCC 2019 Volume One Amendment (Section D – Construction of exits, D2.13 Goings and Risers), stair nosings on all stairs fire exit stairs must have a slip resistance classification not less than those listed under AS4586:2013 (see table on pg 9).

GLOSSARY

What is Luminance contrast?

Luminance contrast is defined in AS1428.1 as ‘the light reflected from one surface or component, compared to the light reflected from another surface or component’. It is not the difference in the colour or the colour contrast, but the difference in the light reflective properties of each colour.

What is Luminance Contrast Testing?

Luminance Contrast Testing is carried out to determine the sensation experienced or cause by reflected light of a surface. It’s important to note the type of finish and surface itself influences this sensation.

Classic Architectural Group offers a free online calculator, as your quick guide to compliance, providing you with the luminance contrast value for dry and wet readings, with a Pass or Fail to Australian Standards. As well as getting instant readings, you can have a report with the results emailed to you. [Click here](#) for our video guide on how to use our LRV calculator.

What is a Slip Resistance Rating?

According to AS1428.1, the slip resistance rating is a measure of the slip resistance of a surface, typically expressed as a numerical value. This rating indicates the surface’s ability to provide traction and is measured using pendulum slip resistance tester. Slip resistance values are determined through pendulum testing, which measures the dynamic coefficient of friction (DCOF) of pedestrian surfaces under specified conditions. The Pendulum Test Value (PTV) indicates the level of slip resistance exhibited by a surface, with higher values indicating greater slip resistance.

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