

OWNERS GUIDE



This guide is for owners of dwellings, being Class 1a buildings and Class 10 buildings approved under National Construction Code (NCC) 2022 only and excludes attic stairs, areas seldom accessed and spiral stair cases. It is for stairs and ramps to and from a building, including a swimming pool. It is the user's responsibility to confirm that the contained information continues to be accurate and current. IF IN DOUBT - ASK!!

NATIONAL CONSTRUCTION CODE

This guide contains technical requirements and information from the NCC 2022 Building Code of Australia Volume 2 H5D2 and ABCB Housing Provisions Part 11.2. For an online copy go to www.abcb.gov.au

WHY THE GUIDE?

- Not all contractors, landscapers and concreters are aware of, and familiar with the required Construction Standards.
- Incorrectly constructed stairs and ramps can result in slips and falls which can cause serious injury. These may also lead to expensive insurance claims and litigation.
- It is expensive to rectify non-complying stairs and ramps often requiring the complete removal and reconstruction of the non-complying stairs.
- Non-complying stairs and ramps may cause delays in issuing Occupation Certificates.
- Slip resistant finish are often not provided.
- Non-complying stairs and ramps may result in avoidable re-inspection fees.

COMMON CONSTRUCTION ISSUES REQUIRING EXPENSIVE RECONSTRUCTION

- The constructed stairs are outside allowable dimensions.
- Post occupation installation of tiles over concrete finish the previously complying stairs are made noncompliant with the tiling affecting the stair geometry and tolerances.
- Large 'trendy' steps installed that are too large to be a **tread** and too small to be a **landing**.
- The constructed stairs, whilst inside the allowable dimensions, exceed the allowable minor deviations.
- The complying stairs were constructed before a pathway was installed and the new pathway made the constructed stairs no longer comply as it raised the finished ground level making the bottom step a different height to the other steps.
- The stairs not being provided with a slip resistance finish.

CONSTRUCTING STAIRS AND RAMPS



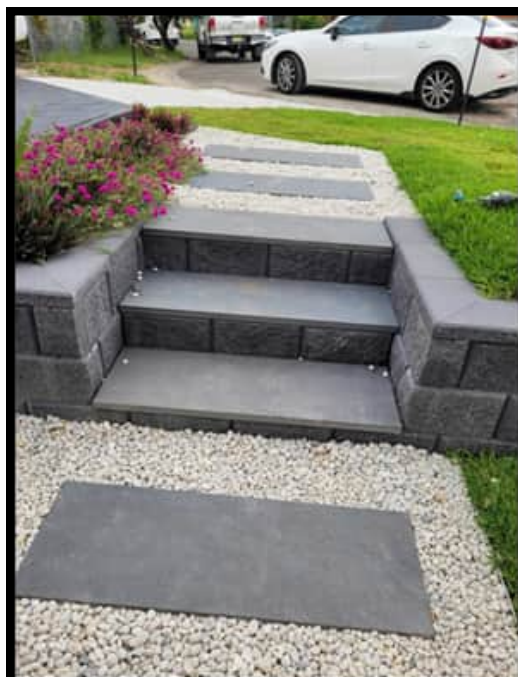
PHOTO A

These stairs at final inspection complied with NCC Requirements. This is pre-occupation and construction of the driveway and pathway.



PHOTO B

The same stairs following the installation of the driveway by the owner's contractor. The path at the base of the stairs reduced the bottom riser height making it lower height than the other riser heights. With these steps being concrete and masonry reconstruction is expensive.



These stairs were in part made using landscaping blocks. The landscaping blocks are 200mm tall, taking the riser height above the maximum allowed 190mm. The bottom riser also has a significantly different riser height to the other risers. The concrete slab surface was also greater than the allowed 355mm going width. The reconstruction of the stairs was required.



PHOTO A: Stairs at final inspection complied with NCC requirements.



PHOTO B: Same stairs following the installation of the pathway and the tiling of the porch and stairs. The path at the base of the stairs affected the bottom riser height and the tiling changed the heights taking them outside the allowable variations requiring the retiling of the area.

HOW TO USE THIS GUIDE?

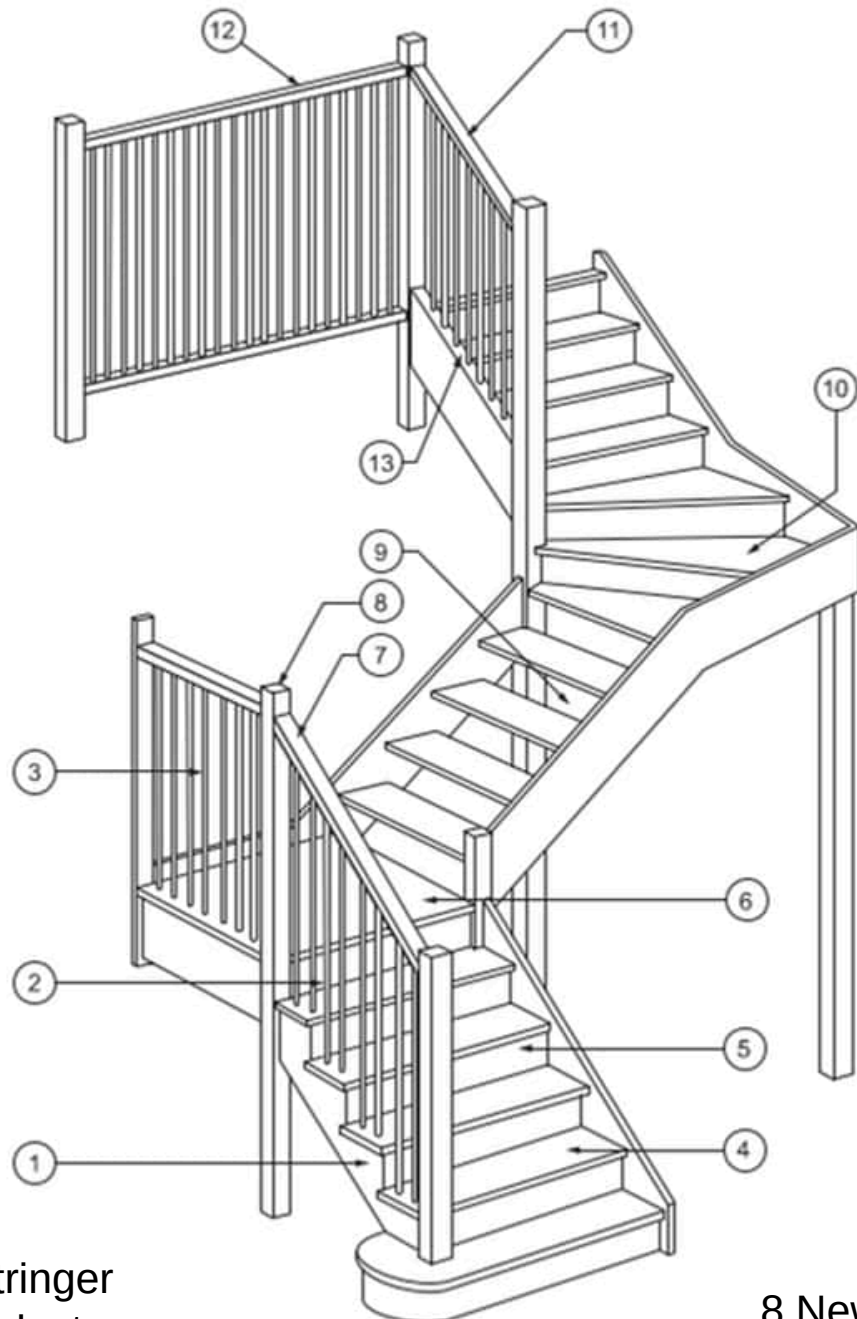
- Measure the height from the door threshold to ***finished ground level***.
- Using the measured height and go to the section measured height falls within.
- For specific stair and ramp construction dimensions and refer to 'Stair Geometry - Construction Measurements (Excluding Spiral Stairs)'.
- Give a copy of this guide to your contractor and make them aware that the stairs and ramps must comply with the NCC.
- If the contractor has any doubt – **THEY NEED TO ASK AND CLARIFY.**
- The contractor's completed work should be checked against this guide.



WHAT DO THE TERMS OR TECHNICAL WORDS MEAN?

Every effort has been made to use plain English words and phrases, however by necessity the guide contains technical words and phrases. Where a word or phrase is in bold italics, that word or phrase are included in the dictionary at the end of the Guide.

STAIRWAY AND BARRIER TERMS/MEMBERS
NCC VOLUME 2 FIGURE 11.3.2



- 1. Stringer
- 2. Baluster
- 3. Barrier
- 4. **Tread**
- 5. **Riser**
- 6. **Landing**
- 7. Handrail

- 8. Newel post
- 9. Open riser
- 10. **Winders** (tapered treads)
- 11. Handrail
- 12. **Landing** barrier
- 13. Barrier



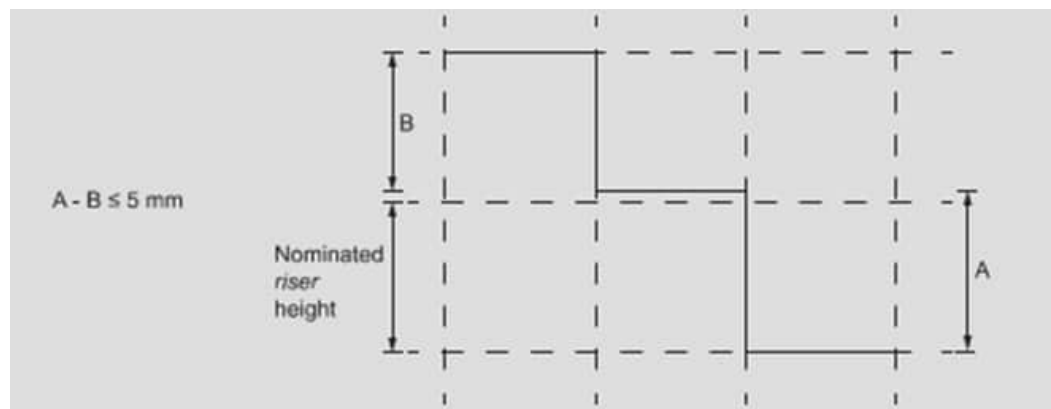
STAIR GEOMETRY: CONSTRUCTION MEASUREMENTS (EXCLUDING SPIRAL STAIRS)

- Flight of stairs to have a maximum of 18 *risers*.
- Stair geometry is to meet the following dimensions:

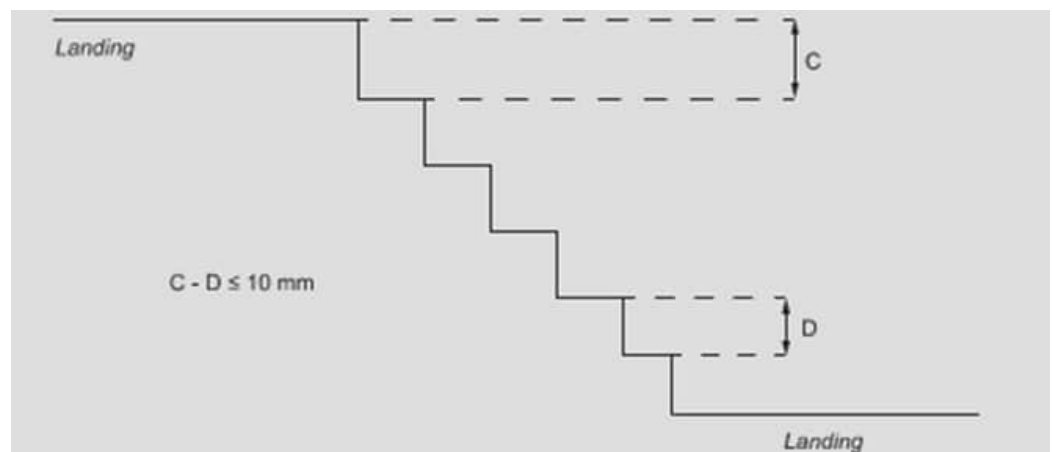
<i>Riser</i>		<i>Going</i>		Slope relationship (2 <i>Riser</i> + <i>Going</i>)	
Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
115mm	190mm	240mm	355mm	550mm	700mm

ALLOWABLE MINOR DEVIATIONS IN STAIRS

- The same tolerances apply to both *goings* and *risers*.
- A maximum of 5mm deviation/variation between **adjacent riser** heights and **going** widths. (see A and B in diagram below).



- A maximum of 10mm deviation/variation between the largest and smallest *riser* heights and *going* widths. (see C and D in diagram below).

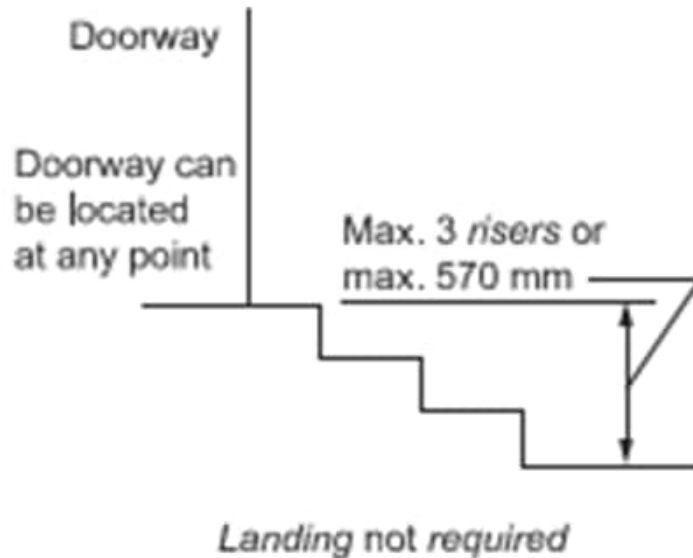




FOR HEIGHTS LESS THAN 230MM

- For heights 230mm and less, no step is required between the door threshold and finished ground level. *NCC ABCB Housing Provisions CI 11.2.6*

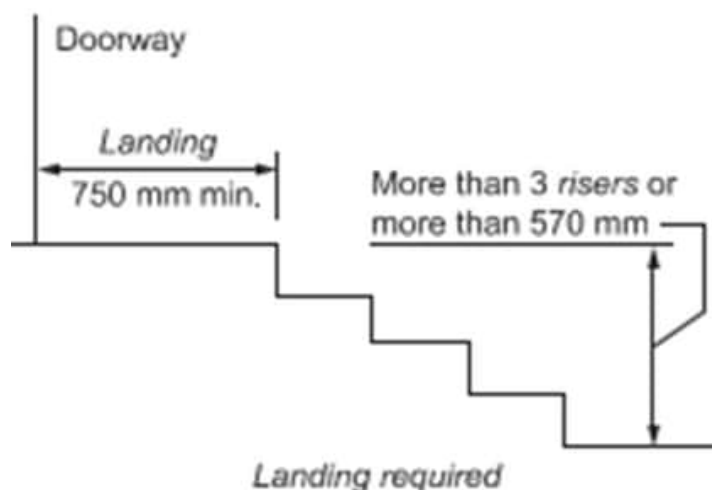
FOR HEIGHTS BETWEEN 230 AND 570MM AND WHERE THERE ARE **NO MORE THAN 3 RISERS**



- Stair geometry to meet the dimensions set out in “Stair geometry – Construction Measurements (Excluding Spiral Stairs)”.
- Slip resistance meeting the requirements detailed in “Slip Resistance Finish”.

NCC ABCB Housing Provisions CI 11.2.2 & 11.2.5

FOR HEIGHTS BETWEEN 570MM AND 1M AND WHERE THERE ARE **MORE THAN 3 RISERS**

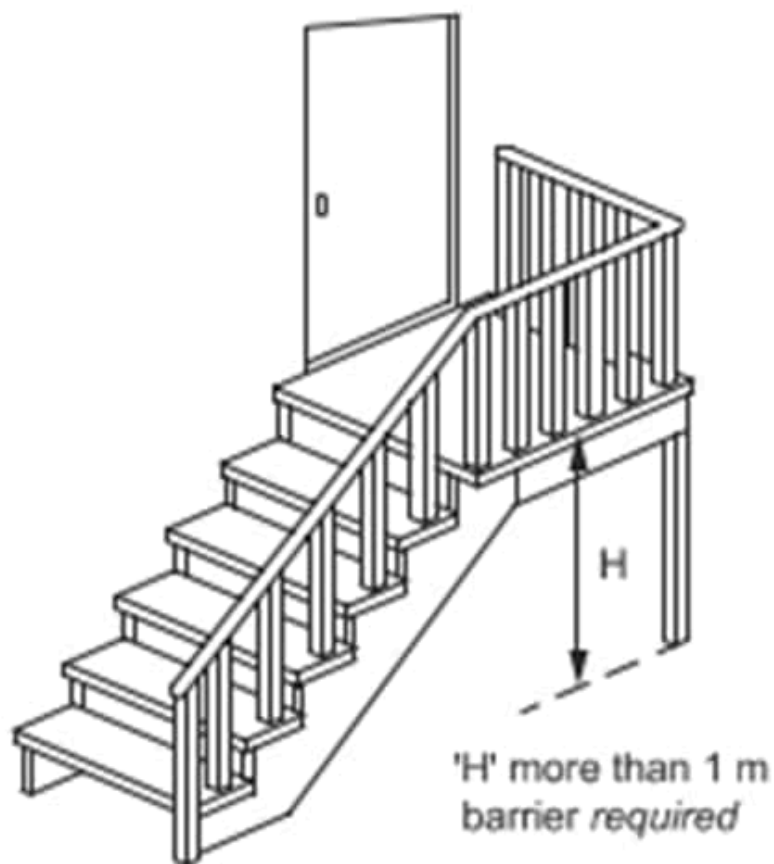




- Stair must include a landing with a minimum width of 750mm for the openable portion of the door.
- Stair geometry to meet the dimensions set out in “*Stair geometry – construction measurements (Excluding Spiral Stairs)*”.
- Slip resistance meeting the requirements detailed in “*Slip resistance finish*”.

NCC ABCB Housing Provisions Cl 11.2.2 & 11.2.5

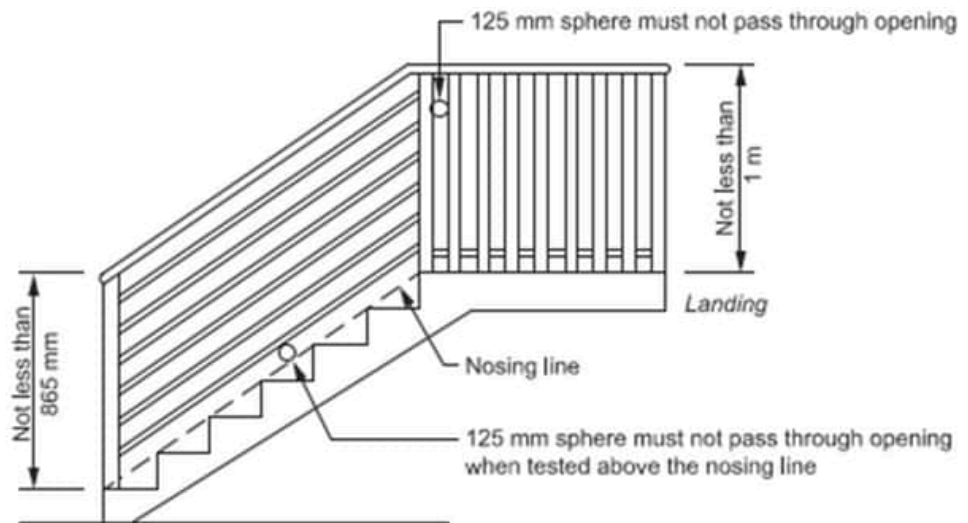
FOR HEIGHTS OVER 1M - A COMPLYING BALUSTRADE IS REQUIRED



- Stair is to include a landing no less than 750mm wide and be for the full width of the openable portion of the door.
- Stair geometry to meet the dimensions set out in “*Stair geometry – construction measurements (Excluding Spiral Stairs)*”.
- Slip resistance meeting the requirements detailed in “*Slip resistance finish*”.
- Must include a balustrade meeting the requirements detailed in “*Balustrade construction measurements*”.
- If located closer than 900mm to a boundary be made of non-combustible materials.
- Be able to withstand loading forces.



BALUSTRADE CONSTRUCTION MEASUREMENTS



BARRIER CONSTRUCTION

- Have a 1m minimum height above the floor of a landing.
- Have a 865mm minimum height above the nosing's of the stair **treads**.
- Have no openings that would allow a 125mm sphere to pass through any openings.

SLIP RESISTANCE FINISH

- Required for **stair treads** OR **nosings**.
- On leading edge of **landings**.
- Meet the slip resistance rating of Table 11.2.4

Application	Dry surface conditions	Wet surface conditions
Ramp not steeper than 1:8	P4 or R10	P5 or R12
Tread surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

Table 11.2.4 Slip-Resistance Classification



DICTIONARY

Balustrade: railing or coping, supported on balusters, to form a barrier at the open side of a stair, ramp, elevated platform, landing, balcony, or parapet. Balustrade is also used as the collective name to refer to the combination of railing, balusters and dies.

Finished Ground Level: ground level adjacent to the stairs at the completion of construction and landscaping.

Flight: That part of a stair that has a continuous series of risers, including risers of winders, not interrupted by a landing or floor.

Going: Means the horizontal dimension from the front to the back of a tread less any overhang from the next tread or landing above.

Landing: An area at the top or bottom of a flight or between two flights.

Nosing: The leading edge of a stair tread.

Riser: The height between consecutive treads and between each landing and continuous tread.

Slip Resistance: The effective friction of a walking surface

Tread: The horizontal surface of a stairway component that support a person's foot

TALK TO US

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