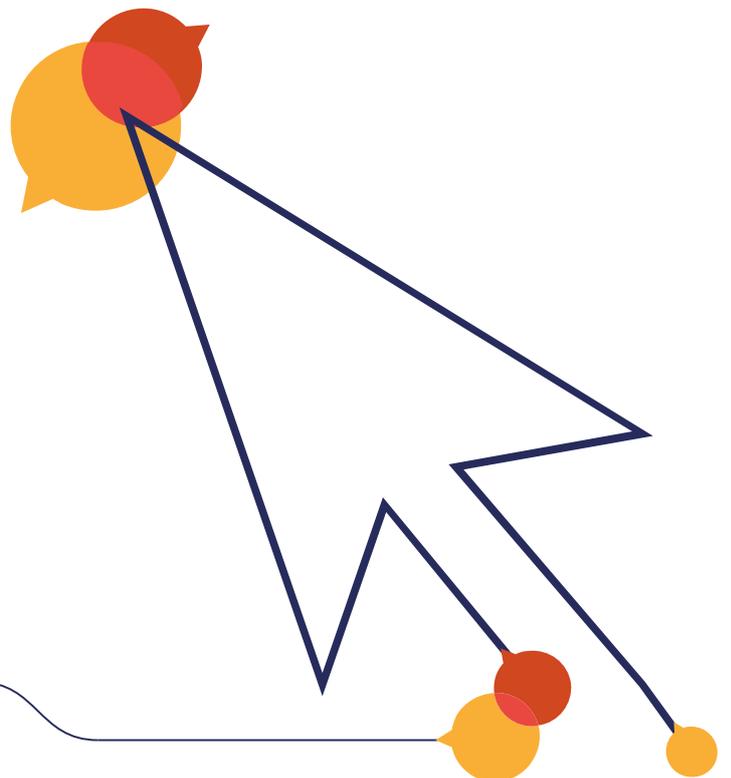


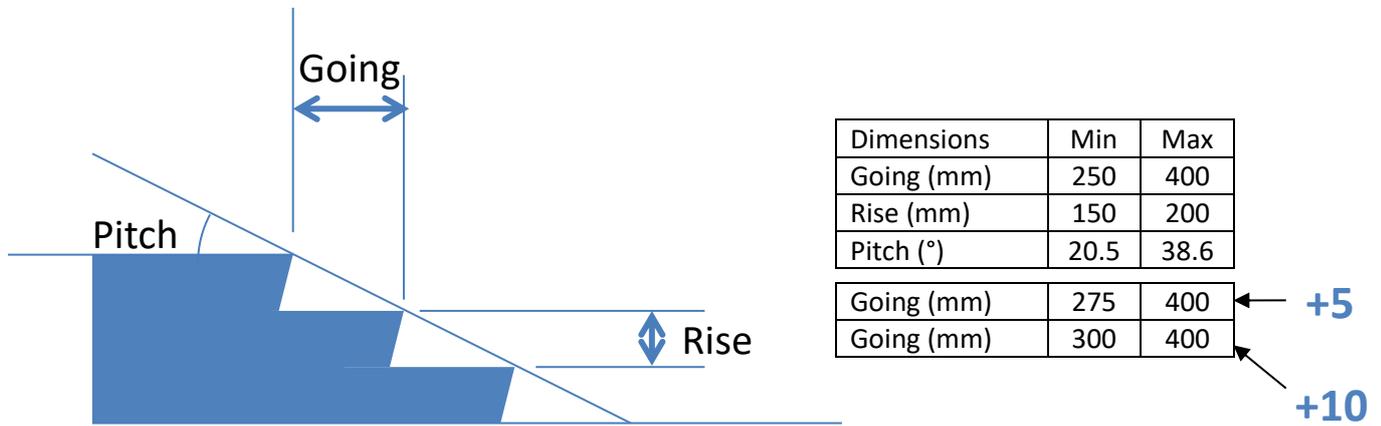
Safer by design

Supporting technical drawings



Technical drawings to support *Safer by design: A framework to reduce serious accidental injury in new-build homes*

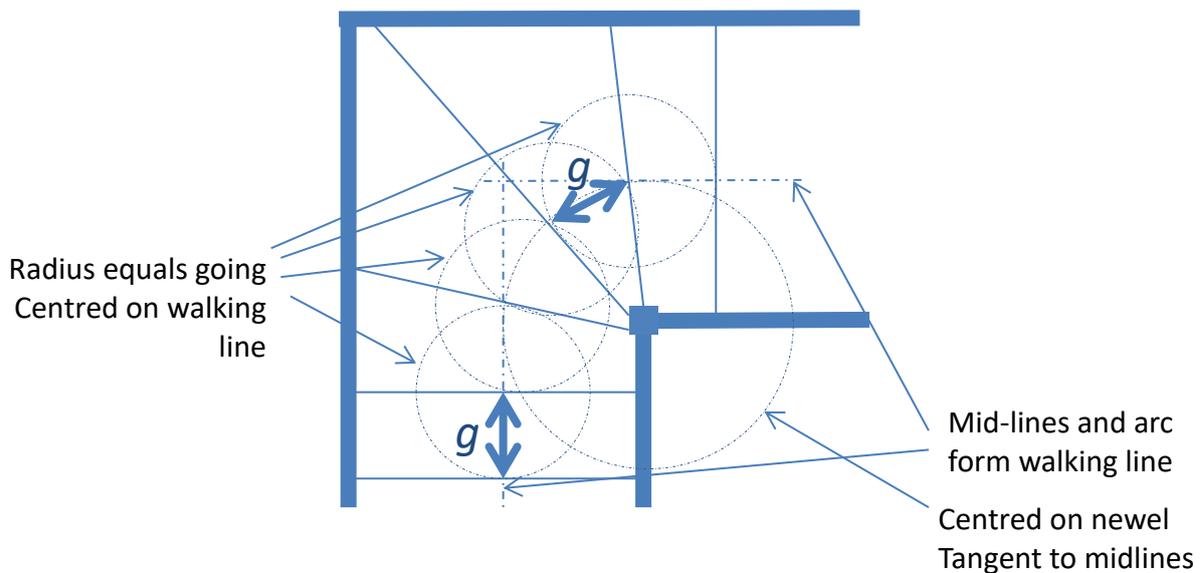
Internal dwelling stairs



Going and rise are measured nosing to nosing. Values in tables are nominal, with 1% tolerance allowed. Hence measured going on any step could be 250 mm ± 2.5 mm.

Quick check 1: If pitch is less than 38.6°, then likely to comply.

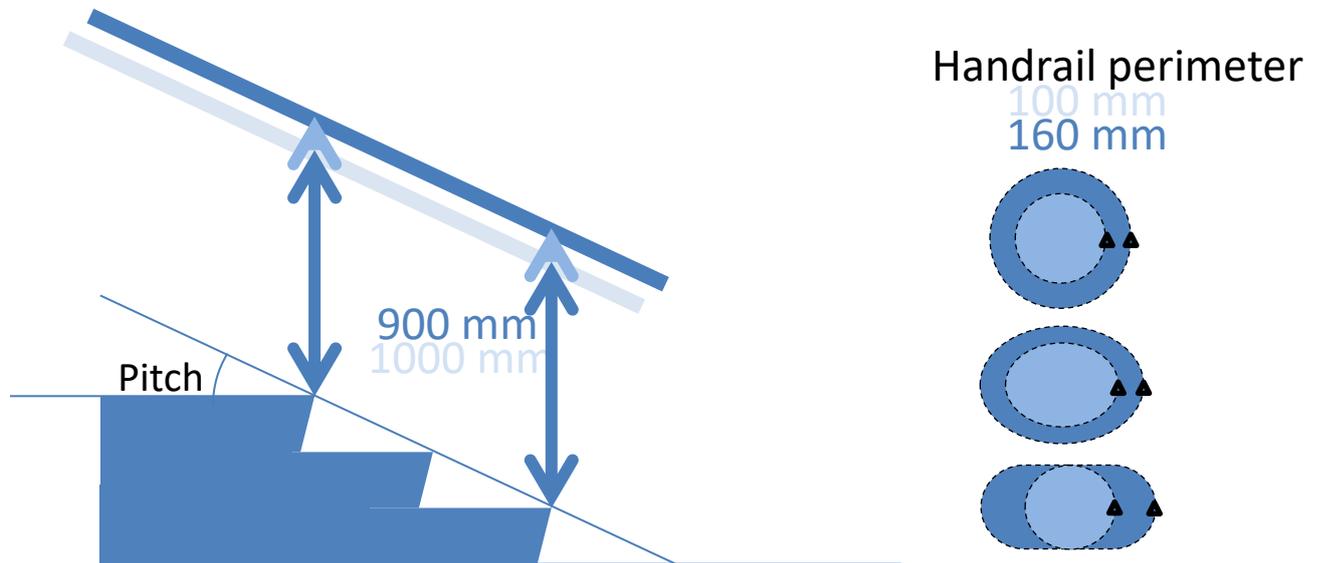
Quick check 2: Use crouch and sight test at top of flight to see if all nosings (front part of the step) can be lined up visually. If one nosing stands out or is hidden by other steps then further measurement may be needed.



By considering the winders first, and using these construction rules it is possible to make the goings on winders equal to the goings on the straight parts of any stair. Note at the newel post nosings must be a minimum of 50 mm apart.



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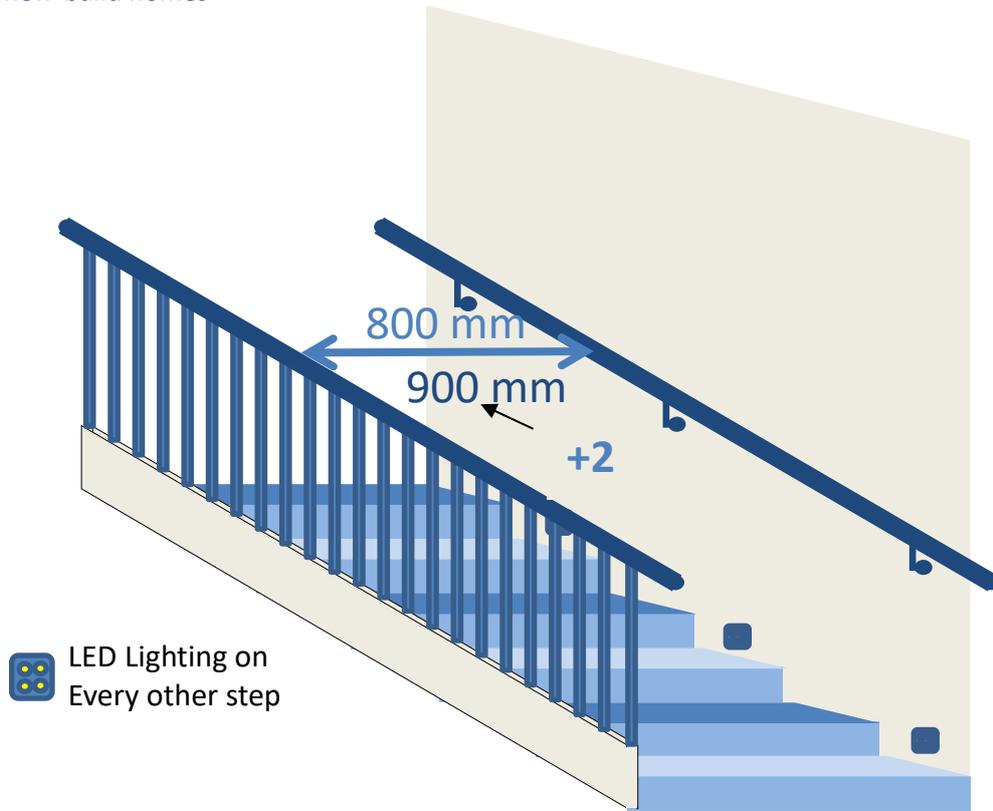
Handrail to be parallel to the pitch line and the top of the handrail to be between 900 mm and 1000 mm vertically above the pitch line.

A graspable handrail has a perimeter of between 100 mm and 160 mm. The shapes above: circular, elliptical and stadium, with a minimum radius of 15 mm, are the most graspable.

Quick check 3: Can you touch your fingers with your thumb while holding the handrail?

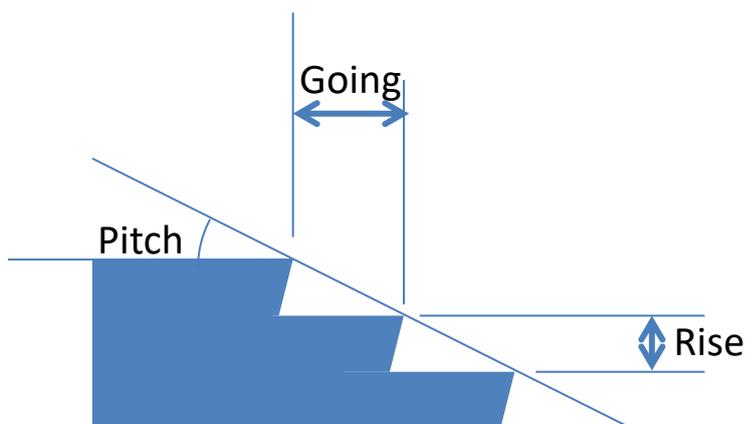


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Add a second handrail, and ensure at least one of them is graspable. Clear width between handrails (or handrail and guarding if only one handrail) to be a minimum of 800 mm. Install LED lighting such that every other step is illuminated providing contrast between steps.

External and communal stairs



Dimensions	Min	Max
Going (mm)	300	450
Rise (mm)	150	180
Pitch (°)	18.4	31.0
Going (mm)	325	450

+5

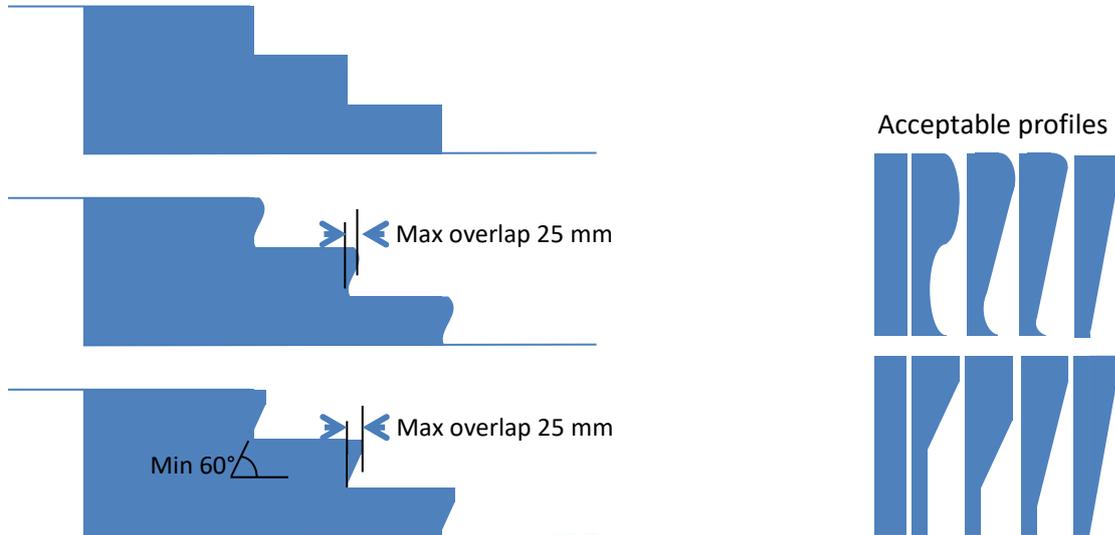
Going and rise are measured nosing to nosing. Values in tables are nominal, with 1% tolerance allowed. Hence measured going on any step could be 300 mm ± 3 mm.

Quick check 1: If pitch is less than 31°, then likely to comply.



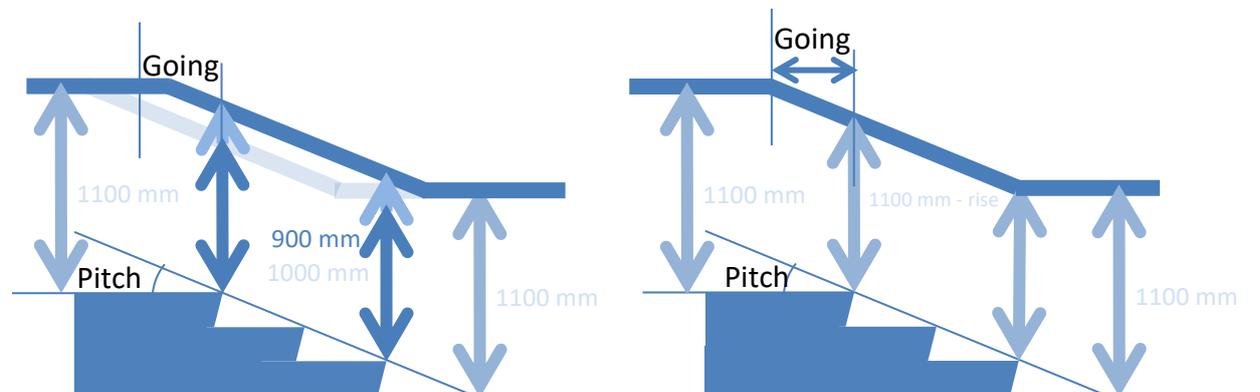
Technical drawings to support *Safer by design: A framework to reduce serious accidental injury in new-build homes*

Quick check 2: Use crouch and sight test at top of flight to see if all nosings (front part of the step) can be lined up visually. If one nosing stands out or is hidden by other steps then further measurement may be needed.



Suitable step profiles should be closed risers with an overlap between 0 mm and 25 mm. Profiles may be square or curved. The rake must be 60° or steeper, and therefore rise through a height of between two times the overlap and the full height of the riser. A number of alternative shapes may be acceptable, however consideration should be given to the shape of available proprietary nosings before choosing a particular profile.

It is unusual to see handrails on external steps, although they still provide a valuable safety function; if present ideally they should follow these recommendations including lighting and clear width. However, any attempt to provide safer external stairs through handrails or lighting would be encouraged, even if they do not meet the high expectations of this document.

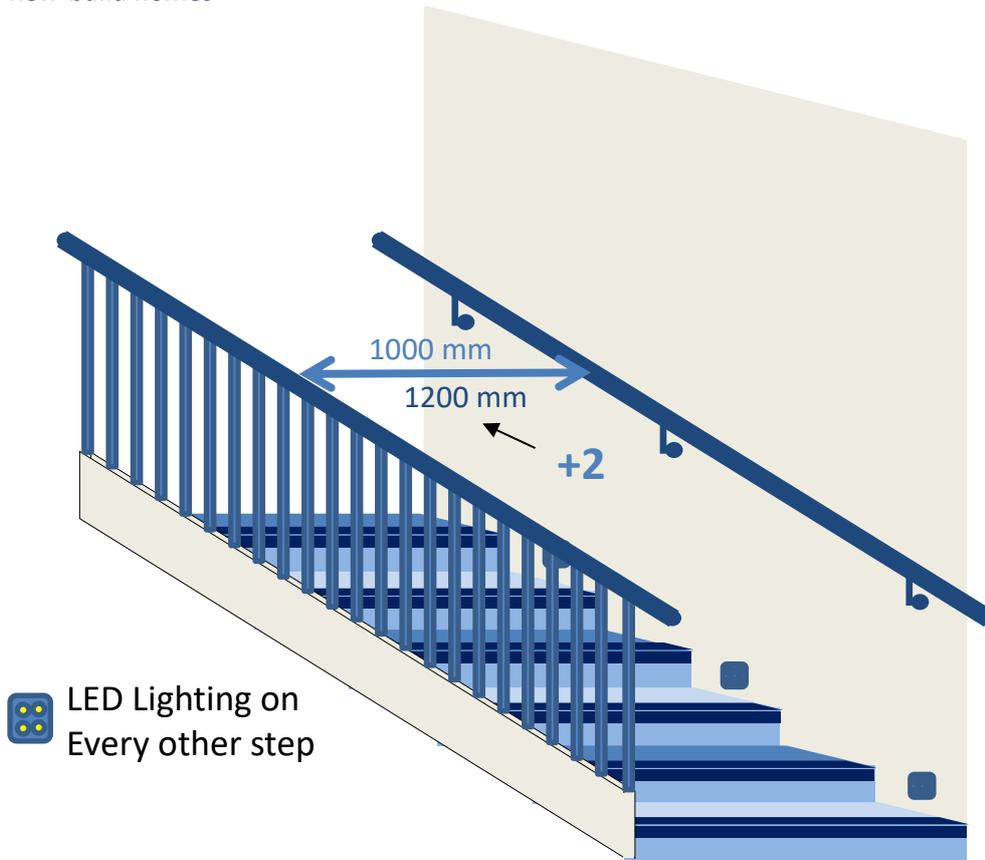


Technical drawings to support *Safer by design: A framework to reduce serious accidental injury in new-build homes*

The points available for handrails, clear width and lighting conditions covered in this document are therefore a consideration for communal stairs only, going above and beyond what is required in building regulations minimum guidance. Although the handrail height can be between 900 mm and 1000 mm above the pitch line, if set to a height of 1100 - rise mm (920 - 950 mm) the handrail can level out to 1100 mm over landings directly above the bottom nosing. Continuing the pitch for an additional going length at the top of the flight allows the handrail to meet a landing rail again at 1100 mm.



Technical drawings to support *Safer by design: A framework to reduce serious accidental injury in new-build homes*



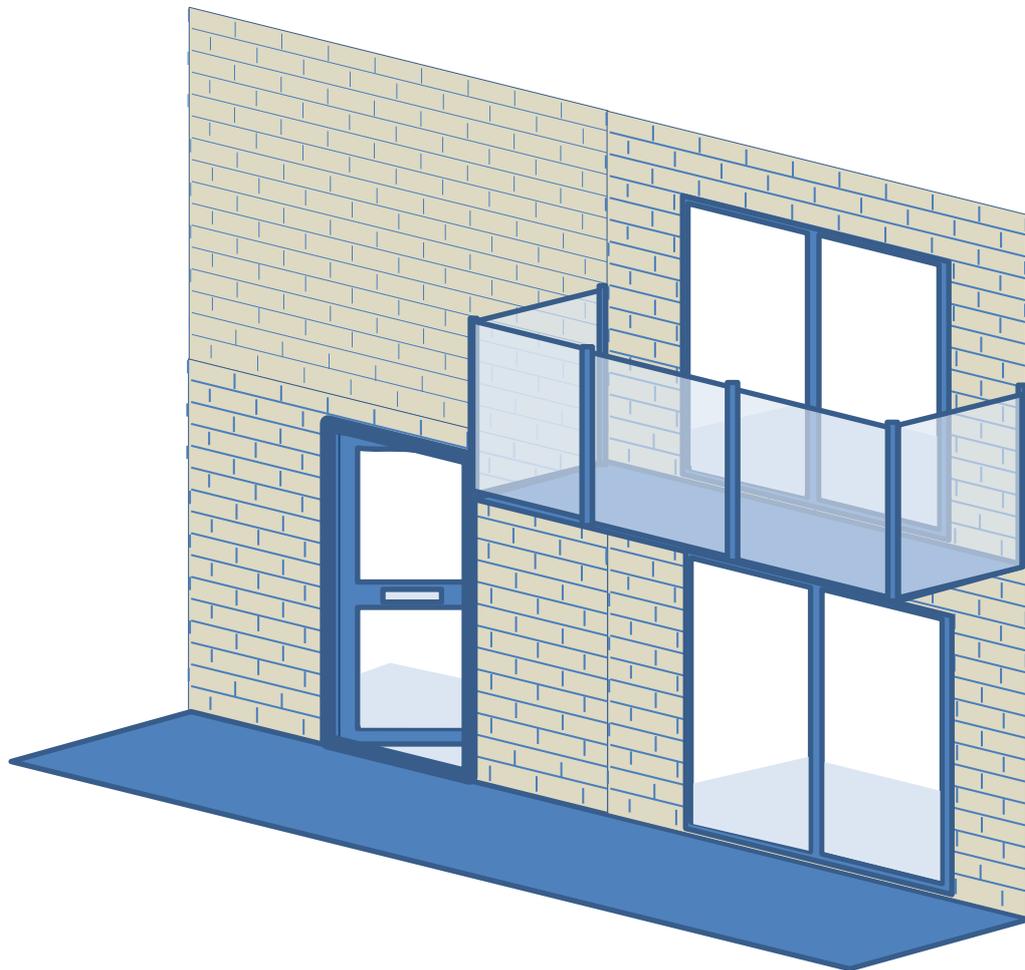
Two graspable handrails. The clear width between handrails to be a minimum of 1000 mm. Install LED lighting such that every other step is illuminated providing contrast between steps. Nosings should contrast visually (distinguishable difference in light reflectance value, around 30 points, as measured using BS 8493:2008+A1:2010) with the rest of the tread through added material which is 50-65 mm on the tread and 30-55 mm on the rise.

Floors and steps

Approved Document M provides guidance on step free access to the main habitable rooms of the dwelling. The guidance is expected to apply to the principal private entrance, but access to an alternative entrance would be reasonable. A ramp or a lift suitable for a wheelchair user could provide the step free access. On steeply sloping plots a stepped approach can be used.



Technical drawings to support *Safer by design: A framework to reduce serious accidental injury in new-build homes*



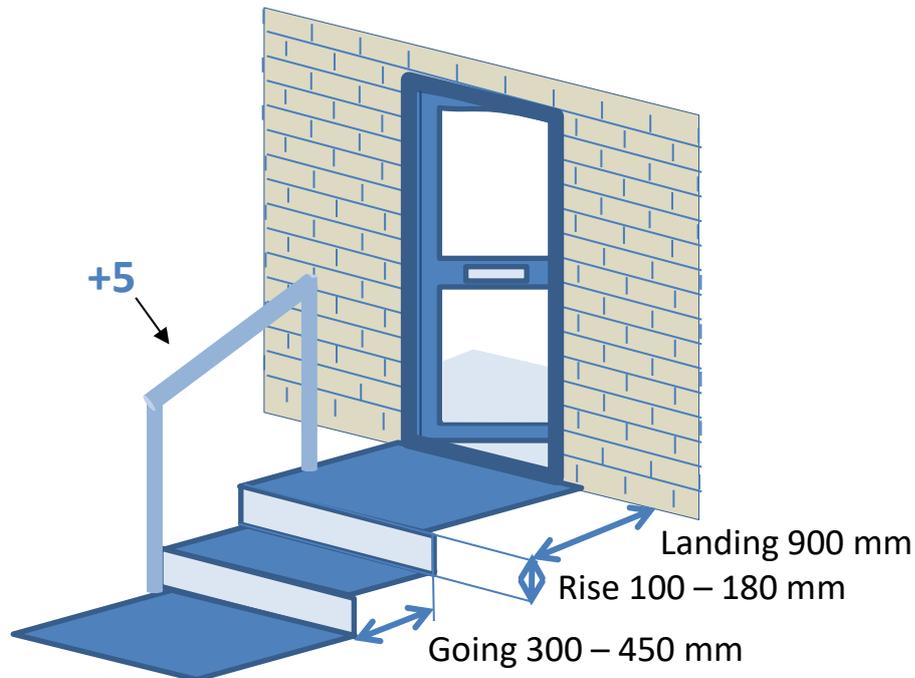
To be step free for this document, every entrance into the dwelling must be accessible without the need to use steps including balconies and patio doors. The external ground level or balcony surface should therefore be at the same height as the internal floor level adjacent to it.

For some types of doors there may be an up-stand at the threshold. Ideally the height of this should be as small as possible, but there are no restrictions to the up-stand required to be classed as step free.

Where external steps are necessary, for example because of a sloping site, landings, rise, going and the number of steps are all controlled. The top landing allows the door to be used from a firm level platform, rather than trying to operate the door while standing on steps.



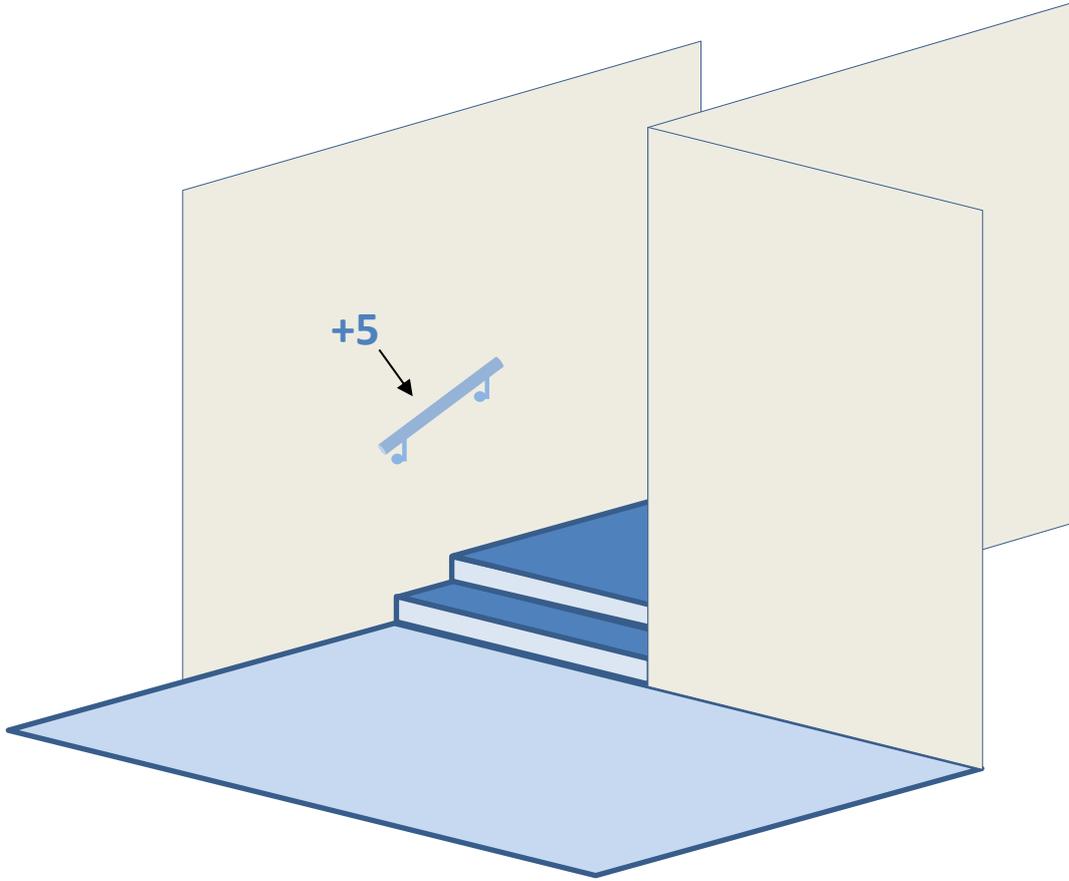
Technical drawings to support *Safer by design: A framework to reduce serious accidental injury in new-build homes*



Single steps or short flights between rooms, in circulation spaces or at thresholds are hazardous and should be avoided, so that Internally all the rooms on each storey should be accessible without the need to use steps. If steps are unavoidable, then their presence should be clearly discernible through contrasting floor finishes and a handrail, even on single steps.

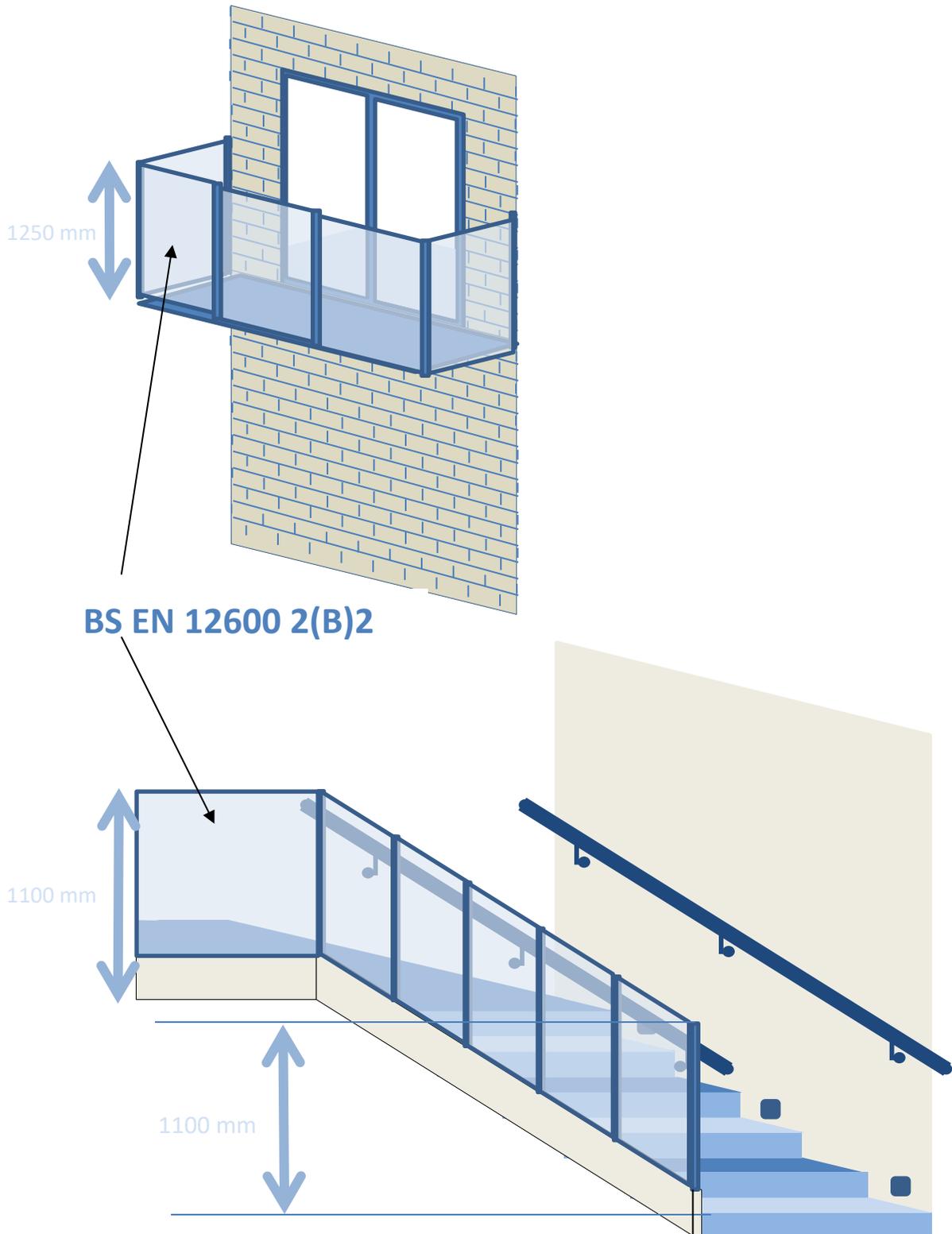


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Bannisters and guarding



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Increasing the height of guarding reduces the risk of falls and makes it harder for young children to climb. On stairs the handrail can no longer form the top of the guarding. Clear width between handrails should be 800 mm as a minimum.

Bathrooms

The sanitary facilities should follow the guidance in Approved Document M 2.26 which states:

Sanitary facilities

General provisions

2.26 All walls, ducts and boxings to the WC/cloakroom, bathroom and shower room should be strong enough to support grab rails, seats and other adaptations that could impose a load of up to 1.5kN/m². Additional sanitary facilities beyond those required to comply with this guidance need not have strengthened walls.

NOTE: The loading for strengthened walls is considered suitable for many types of adaptations but additional localised strengthening may be required if adaptations are fitted that impose high point loads.

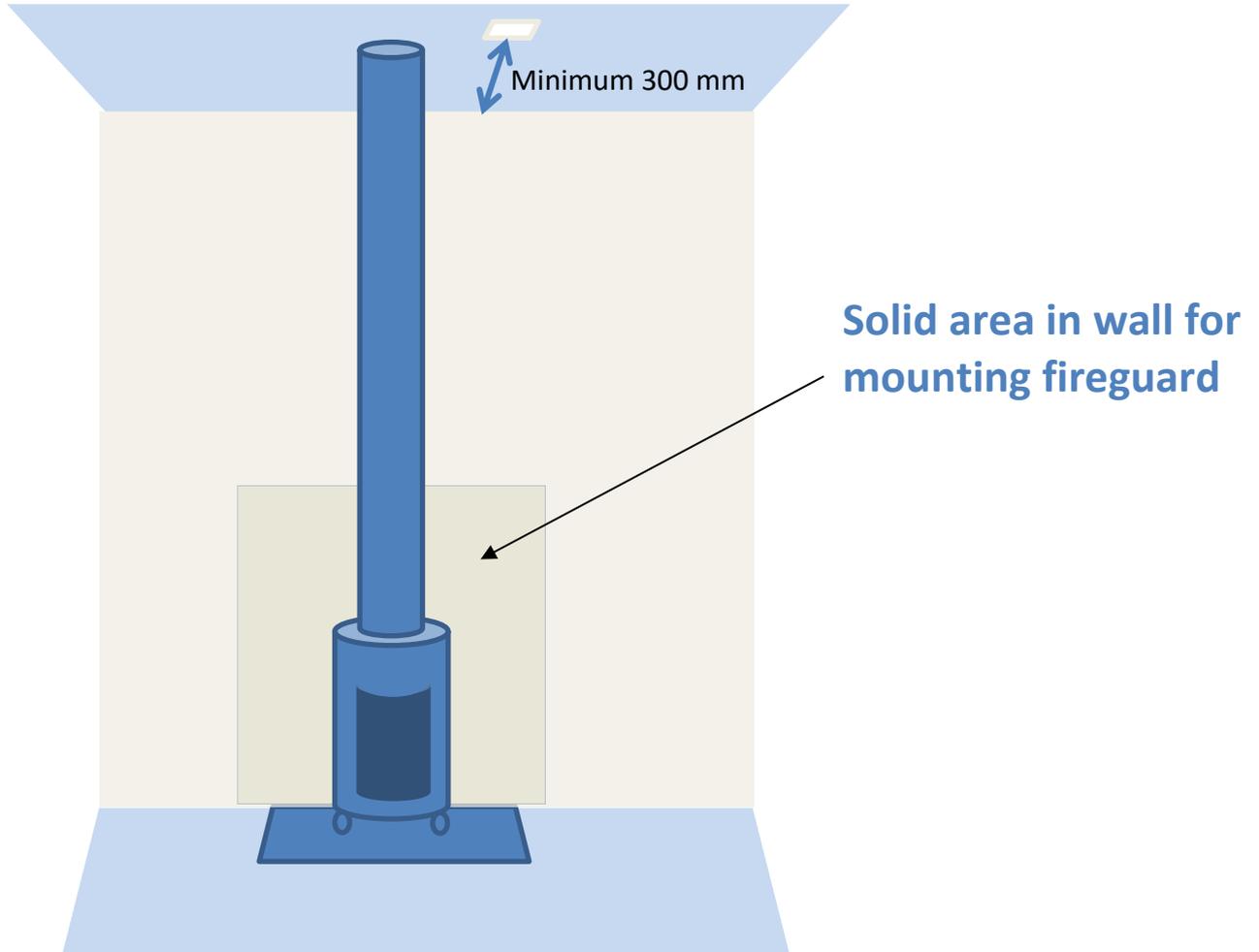
Additional points can be obtained by including guidance for grab rail and handrail locations in the handover pack.

Further additional points can be obtained by meeting all the requirements of M4(2) Accessible and adaptable dwellings.



Technical drawings to support *Safer by design: A framework to reduce serious accidental injury in new-build homes*

Hot surfaces and carbon monoxide





accidents don't have to happen

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