



Stairways

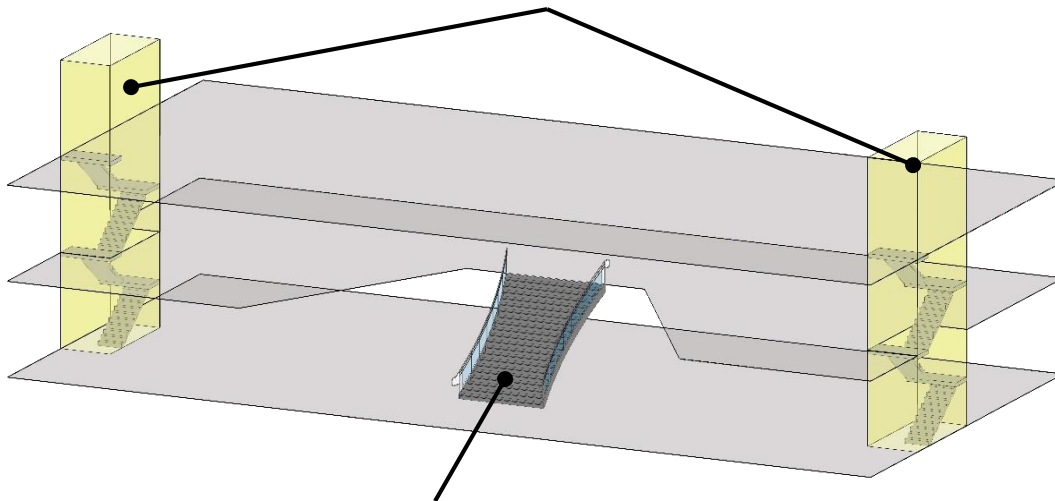


This guide explains requirements in the ADA Standards for stairways.

Required Compliance [§210]

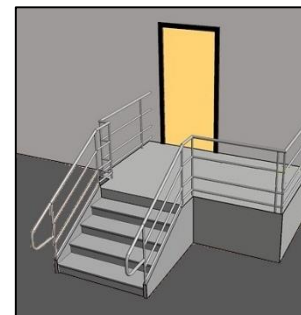
Interior and exterior stairs that are part of a required means of egress must meet the Standards. Compliance is required for all stairs on required egress routes, including those comprised of a single riser. The Standards do not apply to stairways that are not part of a required means of egress nor to alternating tread devices and “ship’s ladders.” The Standards exempt aisle stairs in assembly areas, stairs in non-public areas of detention and correctional facilities, and stairs of play components.

Stairs that are part of a required means of egress must comply.



Compliance is not required for monumental stairs and other stairs if they are not part of a required means of egress.

Stairs that are part of exit discharge or other components of a means of egress must comply.



Alterations

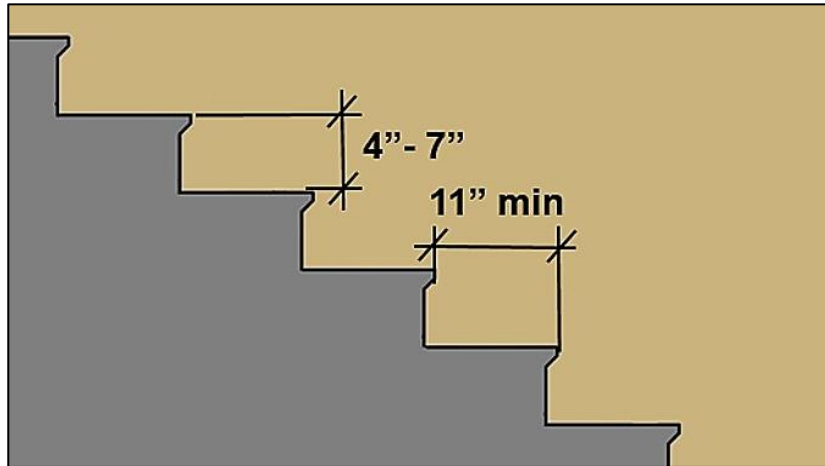
In alterations, stairs between levels that are connected by an accessible route (e.g., ramp or elevator) are not required to meet the Standards, but handrails must comply when stairs that are part of a means of egress are altered (§210.1, Ex. 2).

Stairways [§504]

Requirements for stairways address treads and risers, surfaces, nosings, and handrails.

Treads and Risers (§504.2 and §504.3)

All steps on a flight must have uniform riser heights within a range of 4" – 7" and uniform tread depths that are 11" min. Open risers are prohibited.



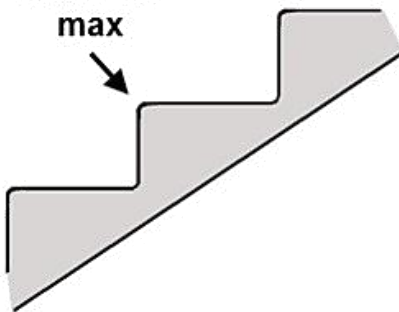
Tread Surface and Wet Conditions (§504.4 and §504.7)

Tread surfaces must comply with requirements for ground and floor surfaces (§302) and cannot have changes in level other than slopes not steeper than 1:48. Treads and landings subject to wet conditions must be designed to prevent the accumulation of water.

Nosings (§504.5)

Tread Edge Radius

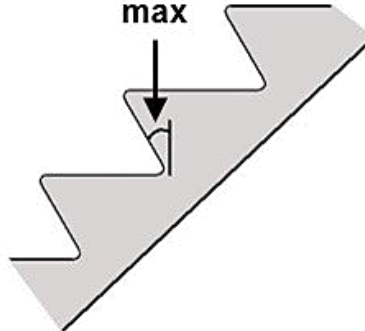
radius 1/2" max



The radius of curvature at the leading edge of the tread must be 1/2" max.

Angled Riser

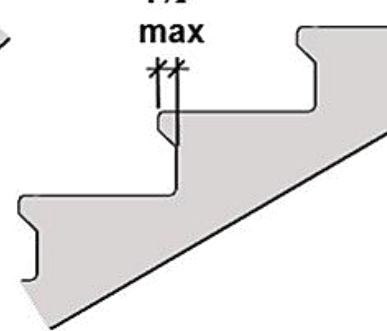
30° max



Risers can slope under the tread at an angle not exceeding 30° from vertical.

Curved or Beveled Nosing

1 1/2" max



Nosings cannot project more than 1 1/2" over the tread, and the underside of the leading edge of the nosing must be curved or beveled.

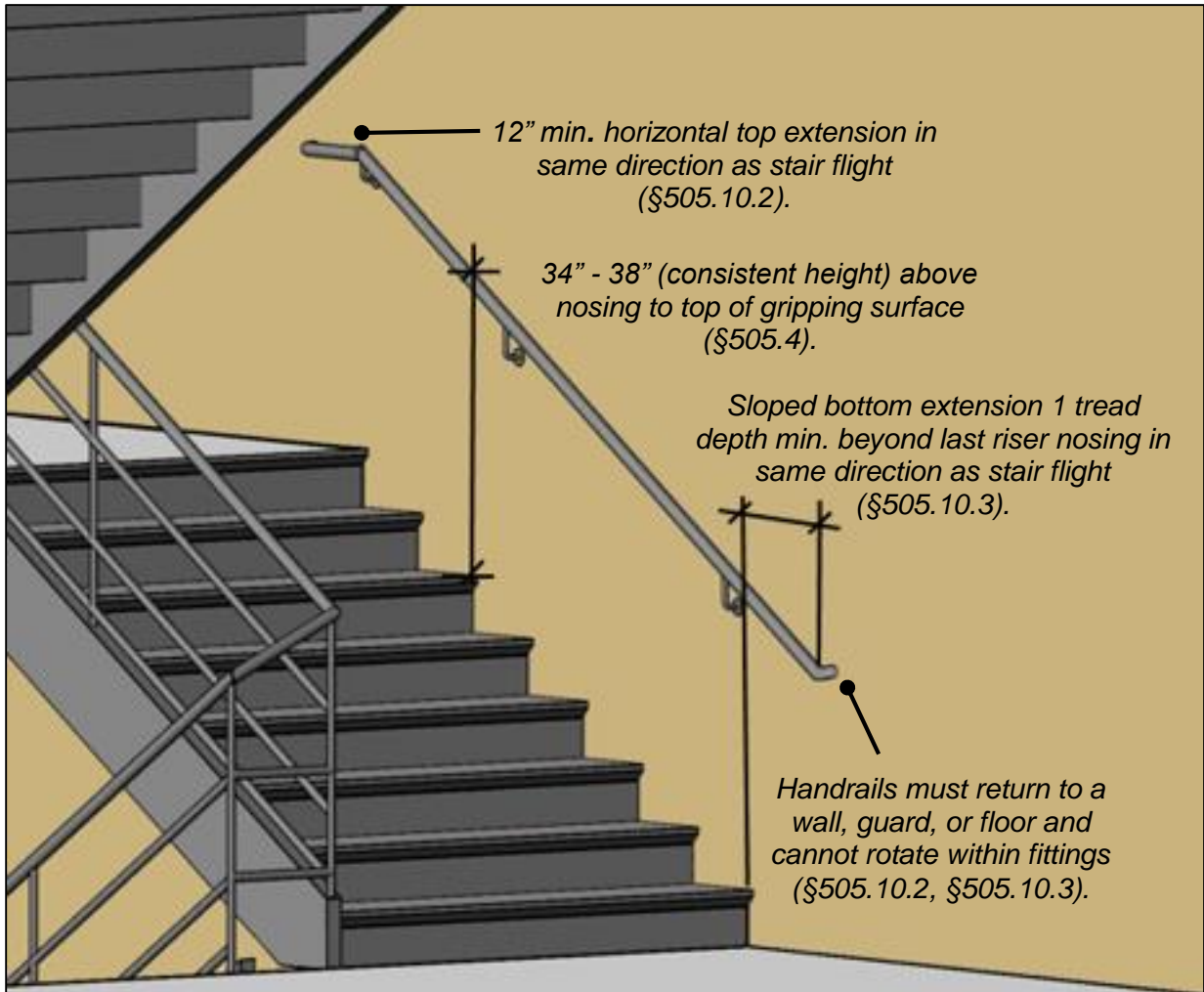


Recommendation: Providing visual contrast (light-on-dark or dark-on-light) on the top and bottom steps that is approximately 2 inches wide and located either on nosings or at the leading edges of treads is helpful for people with low vision.

Handrails [§504.6, §505]

Handrails are required on both sides of stairs and must be continuous within the full length of each stair flight. Inside handrails on switchback or dogleg stairs must be continuous.

Stairway Handrails



Inside handrails at switchback/dogleg turns must be continuous (extension not required) (§505.3).

Top and sides of gripping surface cannot be obstructed; bottom can be obstructed up to 20% of the length (§505.6).



In alterations, full handrail extensions are not required where they would project into circulation paths and pose a hazard (§505.10, Ex. 3).

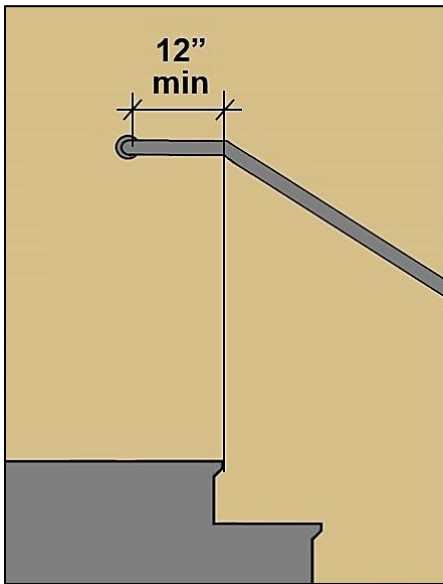


Recommendation: In facilities that primarily serve children, a second set of stairway handrails 28" high maximum above stair nosings is advisable. A vertical clearance 9" minimum between upper and lower handrails will help prevent entrapment.

Handrail Extensions [§505.10]

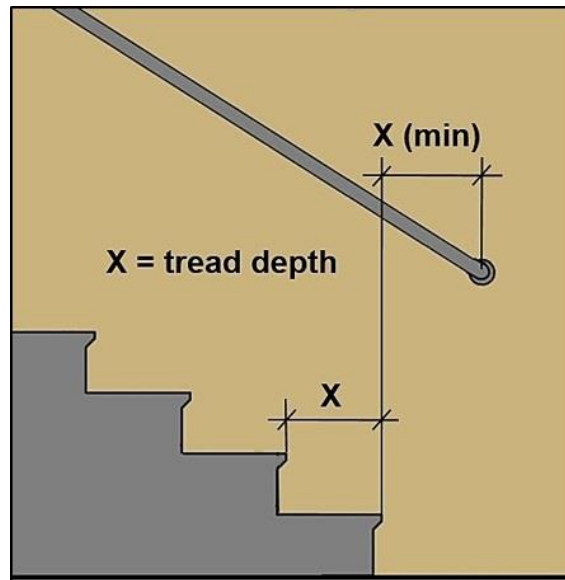
Handrail extensions at the top and bottom must return to walls, guards, or floors and horizontal portions must comply as protruding objects. The length is measured to the start of the return radius.

Top Handrail Extension



Handrails at the top of stairways must extend 12" minimum horizontally above the landing beginning directly above the first riser nosing or be continuous to the handrail of an adjacent stair flight (§505.10.2).


Bottom Handrail Extension



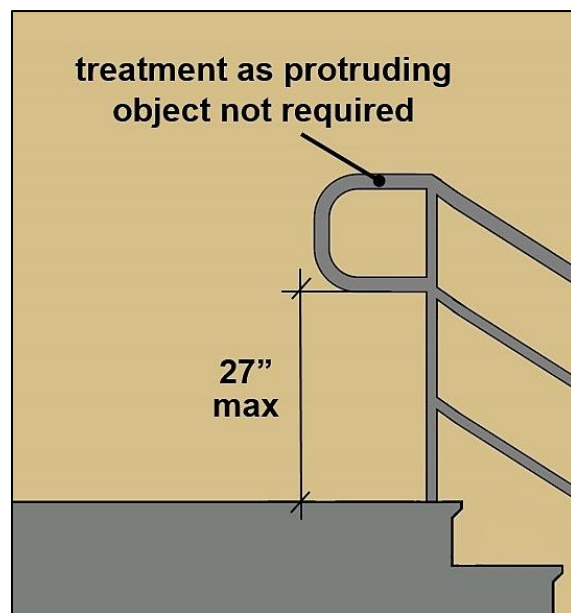
Handrails at the bottom must extend beyond the last riser nosing at the slope of the stair flight for a distance at least equal to one tread depth or be continuous to the handrail of an adjacent stair flight protruding objects.

Extensions as Protruding Objects

Objects mounted on posts with leading edges higher than 27" cannot protrude into circulation paths more than 12" (§307.3). With handrails, this applies only to horizontal portions, not sloped portions. Horizontal top extensions that return to posts can protrude any amount if the leading edge is 27" max. above the finish floor or ground.



Recommendation: Treat free-standing bottom extensions as protruding objects if they have leading edges higher than 27".

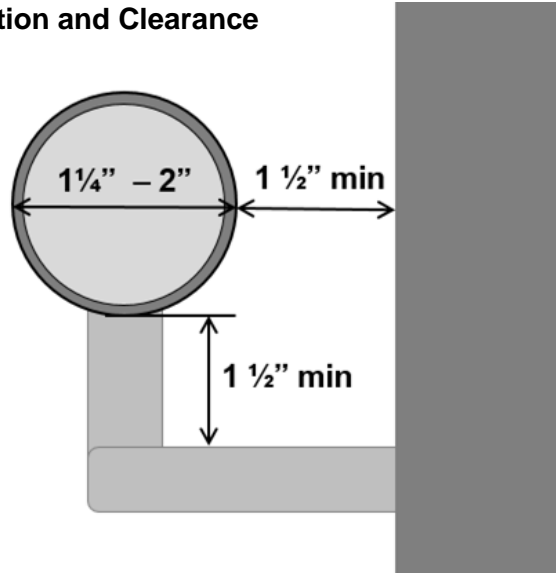


Handrail Clearance and Cross Section [§505.5, §505.7]

Surface requirements and clearances facilitate a power grip along the length of handrails. Handrails can have circular or non-circular cross-sections, but must have rounded edges. The gripping surface and adjacent surfaces must be free of abrasive or sharp elements. Wall-mounted handrails with leading edges higher than 27" cannot protrude more than 4½" into circulation paths (§307.2).

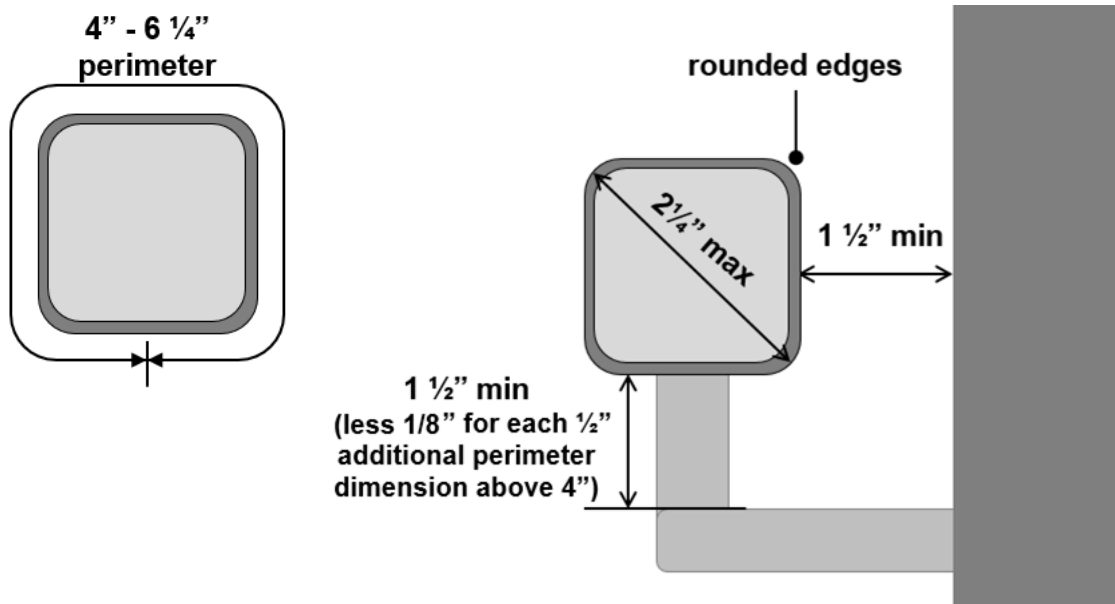
Circular Cross Section and Clearance


Specifications for handrails also address the diameter of circular cross sections and required knuckle clearance.



Non-Circular Cross Section and Clearance

Non-circular cross sections must have rounded edges and meet perimeter and cross-section dimensions. Other profiles meeting these criteria are permitted.



 **Recommendation:** Projecting objects above handrails can impact their usability. Keep wall surfaces above handrails free of any protrusions.

Escalators

The ADA Standards address escalators in rail and fixed guideway stations (§810.9) but not those provided in other types of facilities. Escalators must have a clear width of at least 32" and meet specific provisions in the ASME A17.1 Safety Code for Elevators and Escalators. The referenced ASME criteria require steps to be demarcated by yellow lines 2" wide maximum along the back and sides (§6.1.3.5.6) and specify at least 2, but no more than 4, flat steps at escalator entrances and exits (§6.1.3.6.5).



Recommendation: Apply the requirements for escalators in rail and fixed guideway stations to escalators provided in other types of facilities.

Common Questions



Are stairs that are not part of means of egress required to comply with the Standards?

No, interior or exterior stairs that are not part of a required means of egress do not have to meet the Standards.

Are exterior stairs required to comply with the Standards?

The Standards apply to both exterior and interior stairs that are part of a required means of egress. This includes exterior stairs that are part of exit discharge (i.e., the path from an exit to a public way such as a street or alley).

Is there a minimum number of risers a stairway must have for it to be covered?

No, the Standards apply to any stairs that are part of a means of egress regardless of the number of risers.

Are stairs in residential dwelling units covered by the Standards required to comply?

Yes, stairs that are part of a means of egress must comply in mobility accessible residential dwelling units covered by the Standards. Egress stairs of residential facilities that are located outside individual dwelling units also must comply.

Can stair treads and risers be perforated?

Stair treads must meet requirements for floor or ground surfaces which specify that surface openings not allow passage of a sphere more than ½ inch in diameter (§302.3).

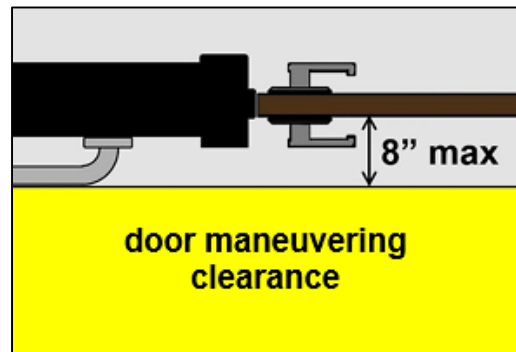
Risers cannot be open, but perforations or openings in riser surfaces that prohibit passage of a sphere not more than ½ inch in diameter are acceptable.

Can handrail extensions wrap or turn?

Handrail extensions must be in the same direction as the stair flight, but continuous handrails can wrap at the inside turn of switchback or dogleg stairways. In alterations where the required extension would project into circulation paths and pose a hazard, they can turn, wrap, or be shortened as necessary.

Can handrails overlap door maneuvering clearances?

No, door maneuvering clearances must be free of any overlapping objects, even those providing knee and toe clearance, which can interfere with maneuvering at doors and doorways. However, door maneuvering clearances can be offset up to 8" from the face of the door or gate to accommodate wall thickness, casework, shelves, or other elements adjacent to doorways, including handrails. The door maneuvering clearance must be measured from the leading edge of such elements so that the full clearance is free of any obstruction.



Handrails and other elements cannot overlap the door maneuvering clearance but can be located within the 8" max. offset from the face of the door.

Can handrails be attached to guard rails?

Yes, handrails can be installed on guard rails if all applicable requirements are met.

Is a center handrail required at wide stairways?

No, a center handrail at stairs is not required by the Standards. If a center handrail is provided, compliance with the handrail specifications, while advisable, is not required.

Is color contrast required for stair nosings?

Visual contrast on stair nosings or the leading edges of treads is helpful for people with low vision, but it is not required by the Standards except at escalators in rail and fixed guideway stations which must meet the ASME A17.1 Safety Code for Elevators and Escalators. The ASME A17.1 code requires escalator steps to be demarcated by yellow lines 2" wide maximum along the back and sides.

Can guards or collars be attached to handrails to prevent skateboard traffic?

No, handrail gripping surfaces at egress stairs subject to the Standards must be unobstructed on the top and sides and free of sharp or abrasive elements so that users can maintain a continuous grip along the full length (§505.6 and §505.8).



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