

Ergo2.0Mine

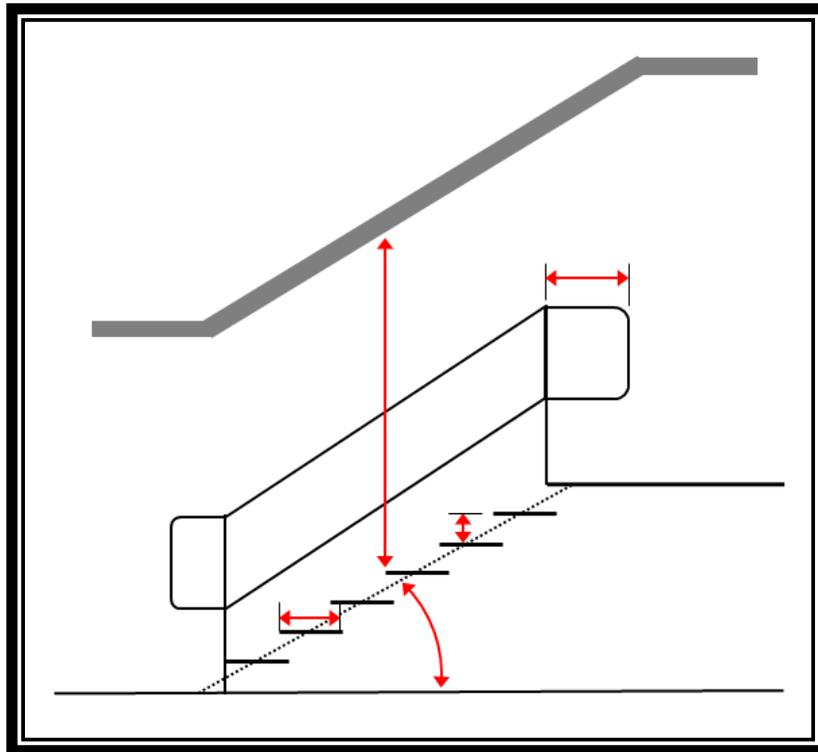


Stairway Checklist



**Centers for Disease Control
and Prevention**
National Institute for Occupational
Safety and Health

Stairway Checklist



This checklist assesses slip, trip, and fall hazards on stairways. These hazards may be due to the design of the fixed ladder or issues due to maintenance and upkeep or housekeeping. Some conditions may require the ladder to be removed from service. The checklist is divided into twelve sections including general, maintenance, design, clearance, tread, rise, nosing, landings, guardrails, handrails, spiral stairways, and illumination.

Stairway Checklist Instructions

This checklist package contains four documents. Three documents are necessary to conduct the audit. The third is optional and can be used as needed or when assessing multiple stairways. A description and intended use of each document is provided below.

1. **Stairway Information Page** – This document is required and allows the audit user to record pertinent information to be filed with the audit results and recommendations. A separate Stairway Information Page should be used for each location and time when assessing multiple location or at multiple times.
2. **Stairway Checklist Answer Sheet** – This document is optional and can be used to record responses to the checklist items, thereby allowing the user to reuse the Stairway Checklist document multiple times without the need for additional copies of the checklist items. A separate Stairway Answer Sheet should be used for each location and time when assessing multiple location or at multiple times.
3. **Stairway Checklist** – This document is required and contains all the checklist items and should be used to assess the stairway. The checklist is divided into twelve sections including general, maintenance, design, clearance, tread, rise, nosing, landings, guardrails, handrails, spiral stairways, and illumination. To complete this checklist, you will need a tape measure, an inclinometer (or the built-in inclinometer on your smart device) attached to a piece of straight wood/metal at least 18 inches long, and a light (lux) meter. A separate Stairway Checklist should be used for each stairway audited if the Stairway Checklist Answer Sheet is not used.

4. **Stairway Recommendations** – This document is required and contains all the recommendations for the checklist items. Each recommendation corresponds to the answer “yes” for that item on the Stairway Checklist or the Stairway Checklist Answer Sheet.

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Stairway Information Sheet

Name of Auditor: _____

Location: _____

Date: _____

Time: _____:_____ AM / PM

Operational status of mine: In operation / Not in operation

Brief description of the environment at the location of this stairway (Ex.: wet, dry, inside, outside, transitional area):

Comments:

Stairway Checklist Answer Sheet

General

1.1 _____

Maintenance

2.1 _____

Design

3.1 _____

3.2 _____

Clearance

4.1 _____

Tread

5.1 _____

5.2 _____

5.3 _____

5.4 _____

5.5 _____

Rise

6.1 _____

6.2 _____

Nosing

7.1 _____

7.2 _____

Landing

8.1 _____

8.2 _____

8.3 _____

8.4 _____

8.5 _____

8.6 _____

Guardrails

9.1 _____

9.2 _____

9.3 _____

9.4 _____

Handrails

10.1 _____

10.2 _____

10.3 _____

10.4 _____

10.5 _____

10.6 _____

10.7 _____

10.8 _____

10.9 _____

10.10 _____

10.11 _____

10.12 _____

10.13 _____

10.14 _____

Spiral Stairways

11.1 _____

11.2 _____

11.3 _____

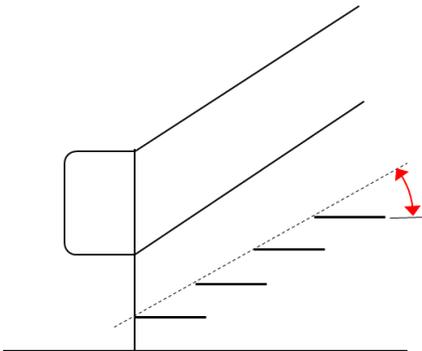
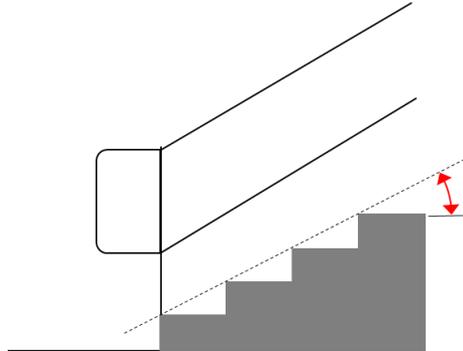
11.4 _____

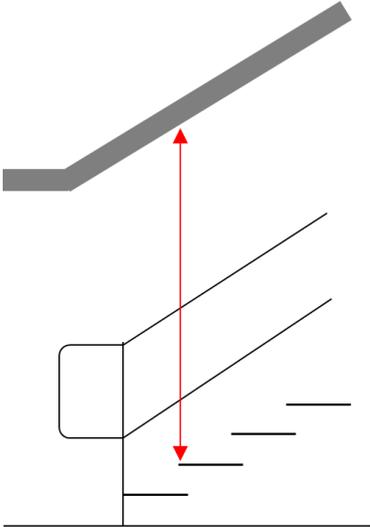
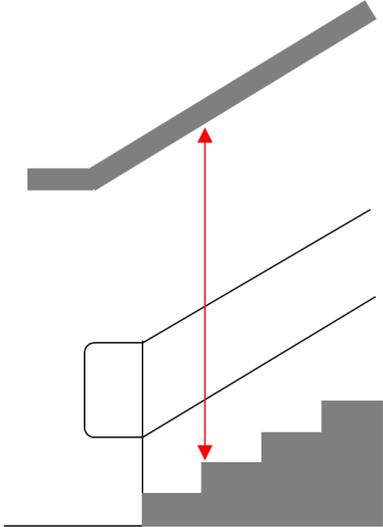
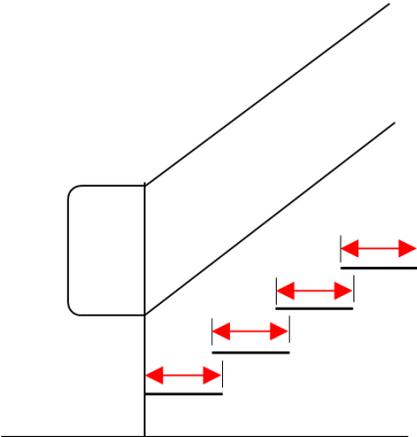
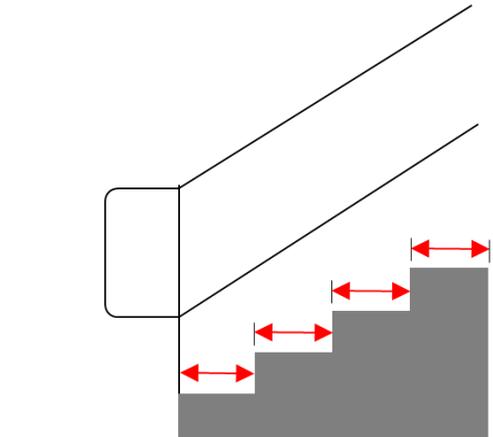
11.5 _____

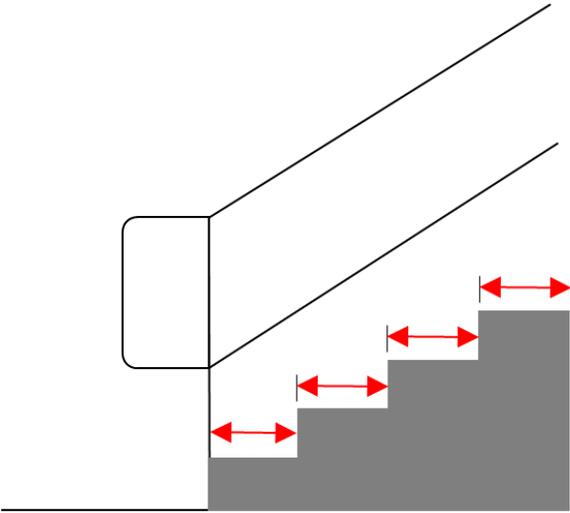
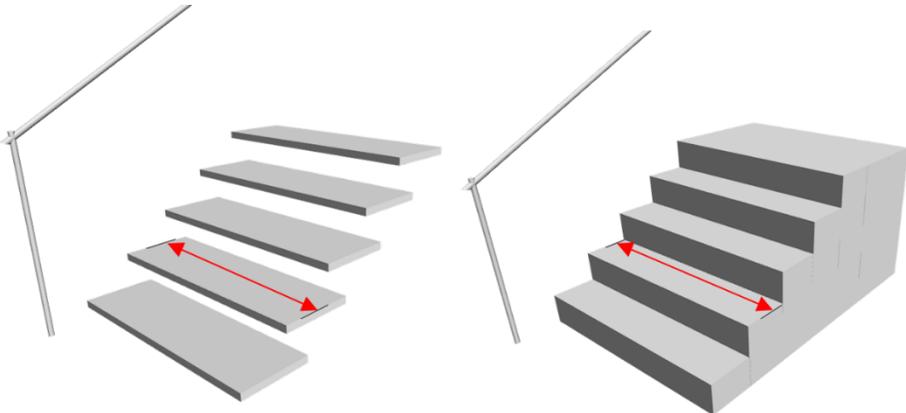
Illumination

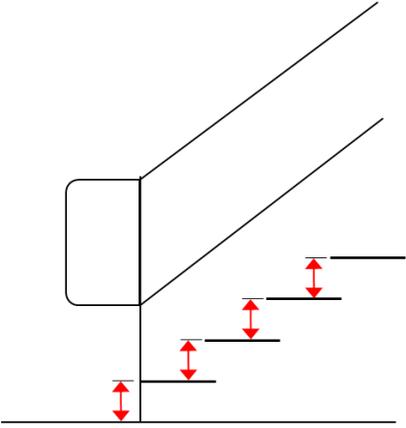
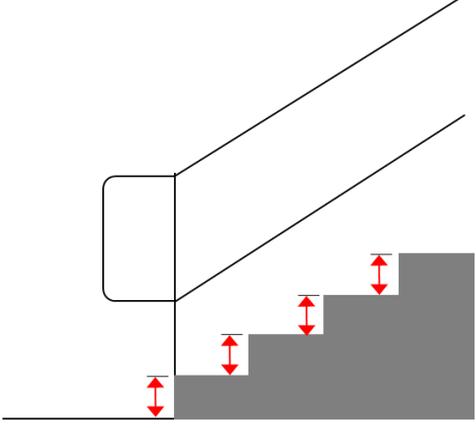
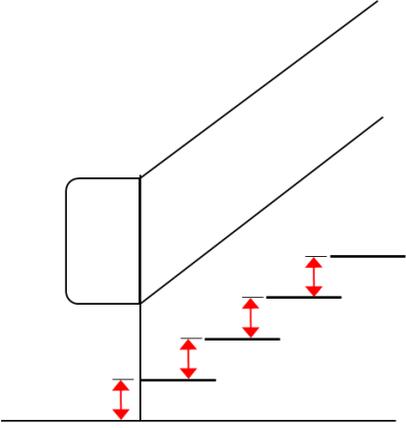
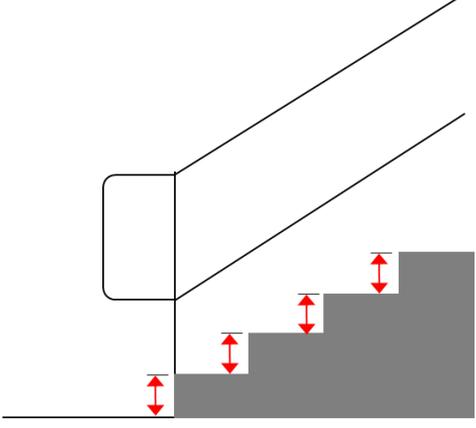
12.1 _____

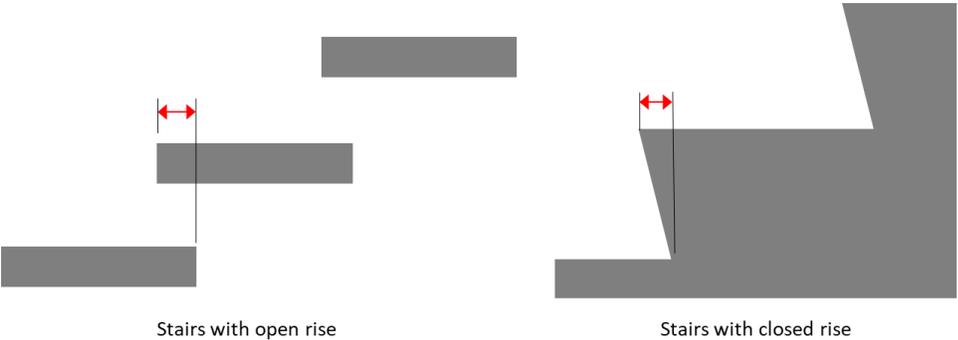
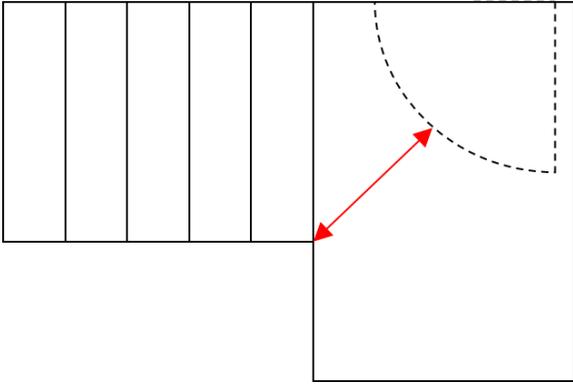
Stairway Checklist

Category	Select all conditions present	X = Yes
General	1.1 If 3 or less stairs, visual cues such as handrails, delineated nosing edges, tactile cues, warning signs, surface color contrast, and/or accent lighting are not provided.	
Maintenance	2.1 Pooled liquid, spillage, or debris are on the stair treads or landings.	
Design	3.1 Pitch of the stairway is less than 30° or more than 50°. <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;">  <p>Stairs with open rise</p> </div> <div style="text-align: center;">  <p>Stairs with closed rise</p> </div> </div>	
	3.2 Stair treads, nosing, and landings are not corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize slipping.	

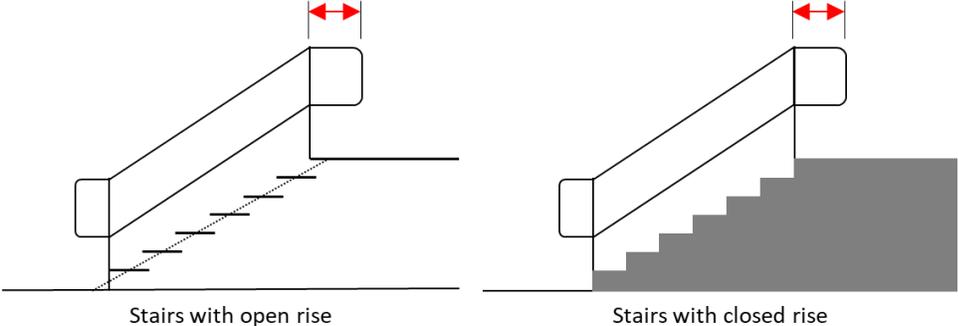
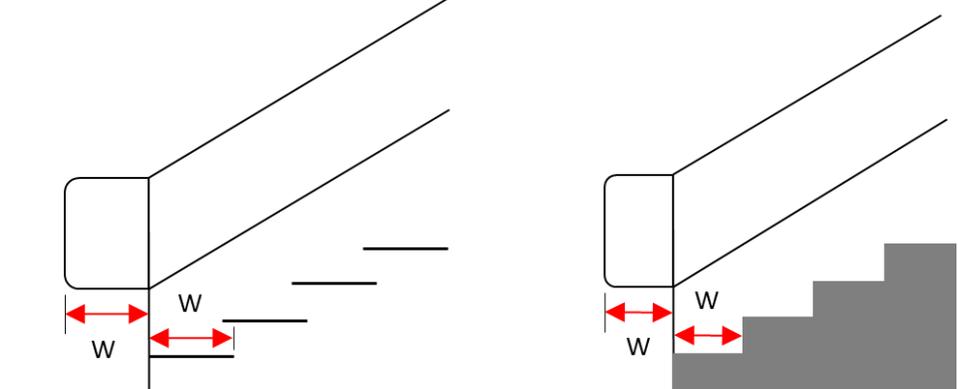
Category	Select all conditions present	X = Yes
Clearance	<p data-bbox="370 268 1338 352">4.1 There is less than 7 feet of vertical clearance along the stairway (including the first and last step).</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p data-bbox="553 919 735 942">Stairs with open rise</p> </div> <div style="text-align: center;">  <p data-bbox="959 919 1141 942">Stairs with closed rise</p> </div> </div>	
Tread	<p data-bbox="370 997 873 1024">5.1 Treads are bent, deformed or not level</p> <p data-bbox="370 1066 1308 1094">5.2 Tread depth is not uniform along the stairway (including first and last step).</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p data-bbox="472 1581 695 1604">Stairs with open rise</p> </div> <div style="text-align: center;">  <p data-bbox="954 1581 1187 1604">Stairs with closed rise</p> </div> </div>	

Category	Select all conditions present	X = Yes
	<p>5.3 Tread depth is less than 9.5 inches for stairs with closed risers.</p>  <p>The diagram shows a side view of a staircase with closed risers. Red double-headed arrows indicate the horizontal distance between the vertical faces of adjacent steps, representing the tread depth. A callout box highlights the measurement area.</p> <p>Stairs with closed rise</p>	
	<p>5.4 If 3 or less stairs, tread depth is less than 13 inches.</p>	
	<p>5.5 Width of the stairway across any tread is less than 22 inches.</p>  <p>The diagram shows two types of stairs. On the left, 'Stairs with open rise' are shown as a series of parallel treads. A red double-headed arrow indicates the width of the stairway across the treads. On the right, 'Stairs with closed rise' are shown as a solid block of steps. A red double-headed arrow indicates the width of the stairway across the treads.</p> <p>Stairs with open rise</p> <p>Stairs with closed rise</p>	

Category	Select all conditions present	X = Yes
Rise	<p data-bbox="370 268 1268 352">6.1 Rise height is not uniform along the stairway (including the first and last step).</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p data-bbox="467 825 678 852">Stairs with open rise</p> </div> <div style="text-align: center;">  <p data-bbox="987 825 1203 852">Stairs with closed rise</p> </div> </div>	
	<p data-bbox="370 907 1110 940">6.2 Rise height is less than 4 inches or greater than 9-½ inches.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p data-bbox="467 1413 678 1440">Stairs with open rise</p> </div> <div style="text-align: center;">  <p data-bbox="987 1413 1203 1440">Stairs with closed rise</p> </div> </div>	
Nosing	<p data-bbox="370 1495 841 1528">7.1 The stair nosing is not highly visible.</p>	

Category	Select all conditions present	X = Yes
	<p>7.2 The projection of nosing is greater than 1-½ inch over the lower tread.</p>  <p style="text-align: center;">Stairs with open rise Stairs with closed rise</p>	
Landing	<p>8.1 The top tread is not level with the landing.</p> <p>8.2 The landing is less than the width of the stairway or less than 22 inches wide.</p> <p>8.3 The landing is less than 30 inches long (in the direction of travel).</p> <p>8.4 A landing is not provided for every 12 feet of climbing height.</p> <p>8.5 A landing is not provided when a door or gate opens over/onto the stairway.</p> <p>8.6 When a door or gate opens onto the landing, the usable width on the landing is less than 22 inches.</p> 	
Guardrails	<p>9.1 A guardrail has a missing or damaged top rail, intermediate rail, post, screen, or mesh between the top guardrail and the stair tread.</p> <p>9.2 An intermediate guardrail is not approximately halfway between the top guardrail and the stair tread.</p>	

Category	Select all conditions present	X = Yes
	9.3 When a screen or mesh is used, it does not extend from the top guardrail to the stair tread for the entire length between posts.	
	9.4 A guardrail has a vertical height of less than 42 inches from the walking/working surface.	
Handrails	<p>10.1 For a stairway that is less than 44 inches wide:</p> <ul style="list-style-type: none"> - Enclosed: No handrail is provided on the right side when descending. - Open on one side: No handrail is provided on at least the open side. - Open on both sides: No handrail provided on both open sides. 	
	10.2 For a stairway between 44 and 88 inches wide (enclosed and open), no handrail is provided on both sides.	
	10.3 For a stairway that is more than 88 inches wide, no handrail is provided on both sides and no additional handrail is provided in the middle of the stair width.	
	10.4 Handrails rotate or move within the fitting.	
	10.5 Handrails have protrusions, burrs, or sharp edges.	
	10.6 Handrails have an obstruction on the top or sides.	
	10.7 There is less than 2-¼ inches of clearance around handrails at any point along the stairway.	
	10.8 Handrails are not continuous with adjacent handrails or are not continuous for the entire length of stairway.	
	10.9 Handrail height is not consistent above the stair nosing.	
	10.10 The height of the top handrail is less than 34 inches or more than 38 inches above the stair tread.	

Category	Select all conditions present	X = Yes
	<p>10.11 The handrail extends less than 12 inches horizontally above the top landing.</p>  <p style="text-align: center;">Stairs with open rise Stairs with closed rise</p>	
	<p>10.12 The handrail extends less than one tread depth horizontally beyond the bottom tread.</p>  <p style="text-align: center;">Stairs with open rise Stairs with closed rise</p>	
	<p>10.13 Circular handrails have an outer diameter less than 1-¼ inches or more than 2 inches.</p>	
	<p>10.14 Noncircular handrails have a cross-section of less than 1 inch or more than 2-¼ inches.</p>	
<p>Spiral stairways</p>	<p>11.1 A spiral stairway is provided where there is adequate space and it is feasible to provide conventional fixed stairs.</p>	
	<p>11.2 There is less than 78 inches of vertical clearance along the spiral stairway.</p>	
	<p>11.3 Width of the spiral stairway across any tread is less than 26 inches.</p>	

Category	Select all conditions present	X = Yes
	11.4 Tread depth is less than 7-½ inches, at a point 12 inches from the narrow edge, on the spiral stairway.	
	11.5 The riser height is more than 9-½ inches on the spiral stairway.	
Illumination	12.1 Less than 108 lux (10 foot-candles) of illuminance is provided on the stairway and landings.	

Stairway Recommendations

General

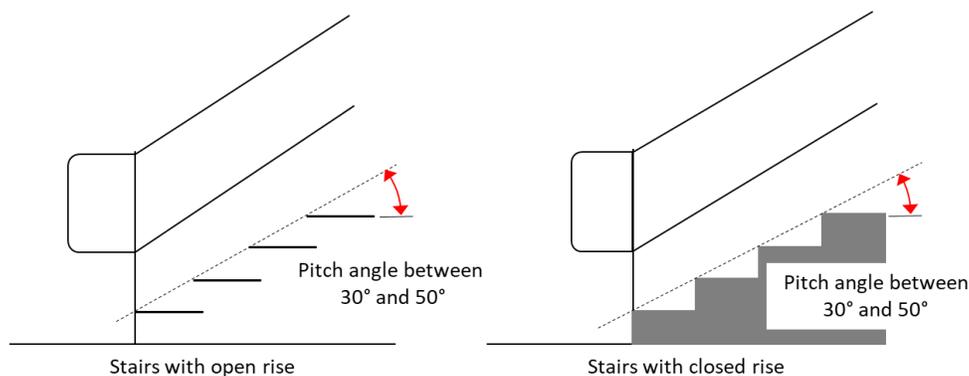
- **(S Q 1.1)** You indicated that visual cues are not provided on a short flight of stairs (3 or less stairs). It is best to avoid short flights of stairs (less than 3 steps) as they can be especially dangerous as they are not easily identifiable by the worker, leading to falls. Provide visual cues such as handrails, delineated nosing edges, tactile cues, warning signs, surface color contrast, or accent lighting to identify the short flights of stairs. Routinely examine and maintain (clean, repair, replace) visual cues to ensure that they are visible and easily identifiable.

Maintenance

- **(S Q 2.1)** You indicated that there is pooled liquid, spillage, or debris on the stair treads or landings. Install stairway treads and landings that facilitate drainage and minimize or eliminate the pooling of liquid. Use grated metal materials and install drains if necessary. Routinely inspect, clean, and maintain treads and drains to ensure that they allow for sufficient drainage. Provide alternate routes and restrict access to the stairway using barricades and signs if the entire stairway or landing is covered with liquid, spillage, or debris. Only employees aware of the risks and authorized to access the area for cleaning or maintenance should be allowed access. Promptly remove the barricades and signs when the hazard is mitigated.

Design

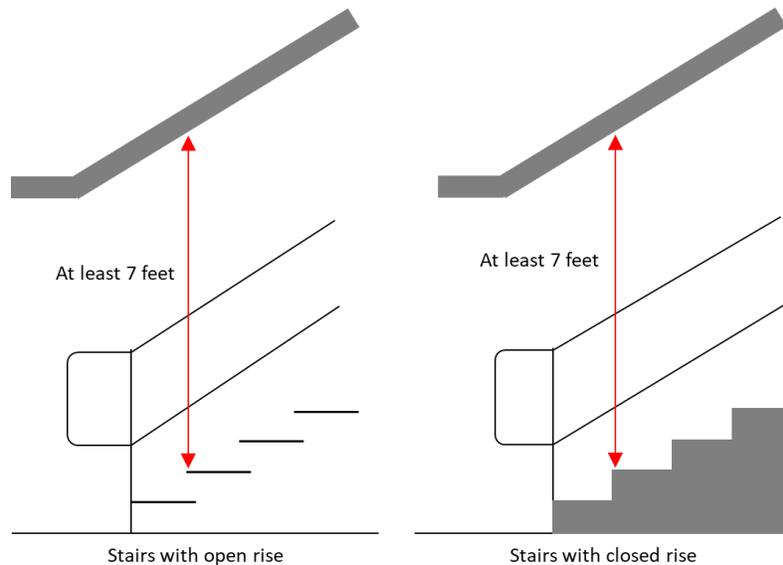
- **(S Q 3.1)** You indicated that the pitch of the stairs is less than 30° or more than 50°. Install stairs with a pitch between 30° and 50°. Outside of this range it is hard to design stairways with the required tread depth and rise. For a pitch/grade less than 15°, use an inclined walkway. For a pitch/grade between 15° and 30°, use a combination of stairs and level walkways. If the pitch/grade is between 70° and 90°, it is recommended to use ladders.



- **(S Q 3.2)** You indicated that the stair treads, nosing, and landings are not treated to minimize slipping. Install or treat treads, nosings, and landings so that they are slip-resistant. Slip-resistant treatments include corrugations, dimples, knurling, or coatings of skid-resistant material. Repair/replace the treatment when the surface becomes smooth. Routinely examine and maintain stairway surfaces.

Clearance

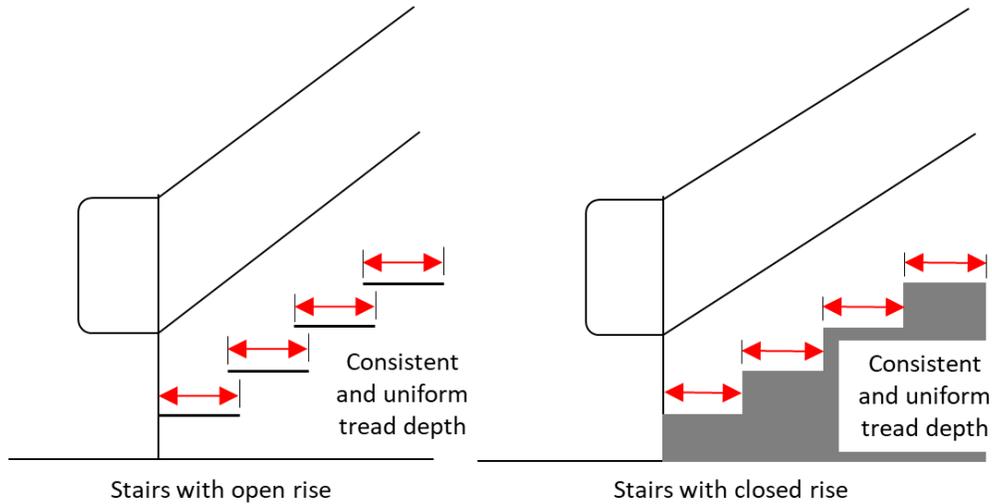
- **(S Q 4.1)** You indicated that there is less than 7 feet of vertical clearance along the stairway (including the first and last step). Design stairways with at least 7 feet of vertical clearance. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) that result in less than 7 feet of vertical clearance. Unavoidable permanent obstructions reducing vertical clearances to below 7 feet should be painted in a high visibility color and signage provided (before and at the low clearance) to indicate low clearance. Routinely examine and maintain stairways and warning signs.



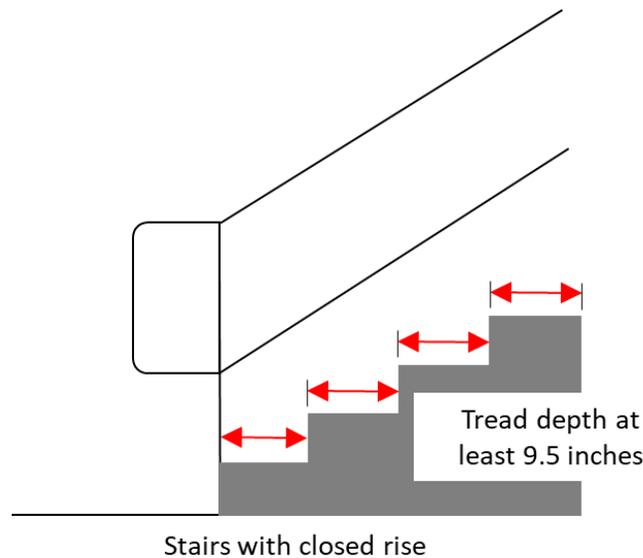
Tread

- **(S Q 5.1)** You indicated that the stair treads are bent, deformed, or not level. Workers can have difficulty traversing stairs with bent, deformed, or skewed treads as it leads to a nonuniform rise height and can lead to trips and falls. In addition, treads that are inclined in the direction of travel can lead to the foot slipping off the step. Install stair treads that are level. Remove debris or repair/replace stair treads that are not level due to wear or damage. Routinely examine and maintain stair treads.

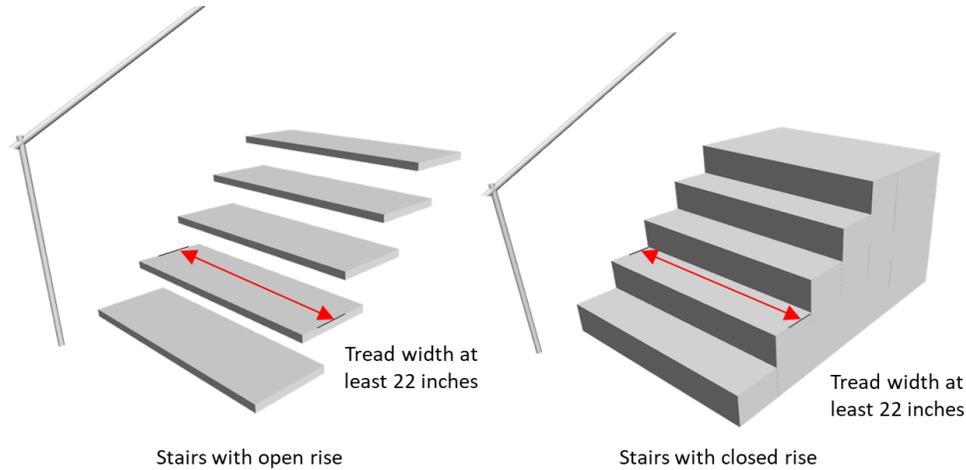
- **(S Q 5.2)** You indicated that the tread depth is not uniform along the stairway (including the first and last step). Install treads with uniform depth from the first through the last step. Any change in dimension along the stairway will require workers to pay special attention when traversing the stairs and can lead to trips and falls. Remove any debris or accumulation that may reduce the tread depth. Routinely examine and maintain stairways.



- **(S Q 5.3 or Q 5.4)** You indicated that the tread depth is less than 9-½ inches for stairs with closed risers or less than 13 inches when there are 3 or less stairs. Any change in dimension along the stairway will require workers to pay special attention when traversing the stairs and can lead to trips and falls. Install treads with uniform depth from the first through the last step. Install stairs with closed risers with tread depths of at least 9-½ inches (preferably 11 inches). Install tread depths greater than 13 inches on stairways with 3 or fewer stairs. Remove any debris or accumulation that may reduce the tread depth. Routinely examine and maintain stairways.

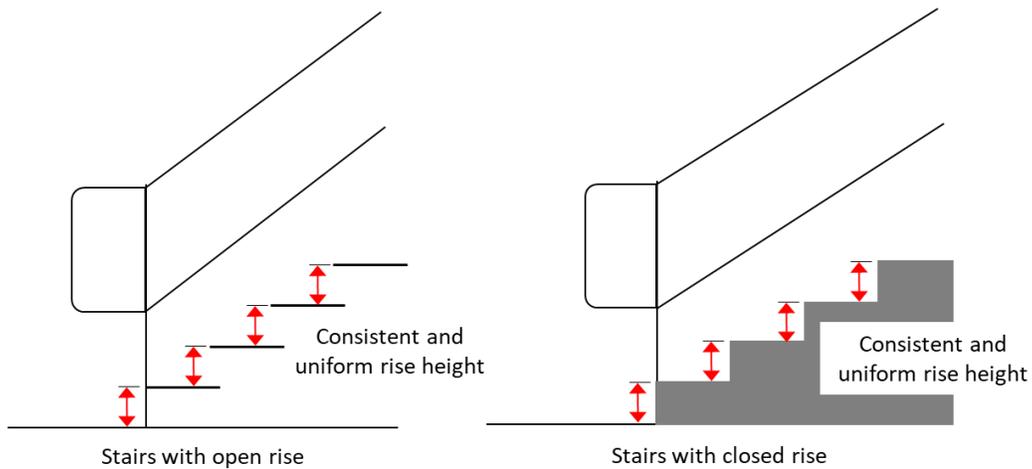


- **(S Q 5.5)** You indicated that the width of the stairway across any tread is less than 22 inches. Design stairways with tread width of at least 22 inches. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) that reduce tread width. Routinely examine and maintain stairways.

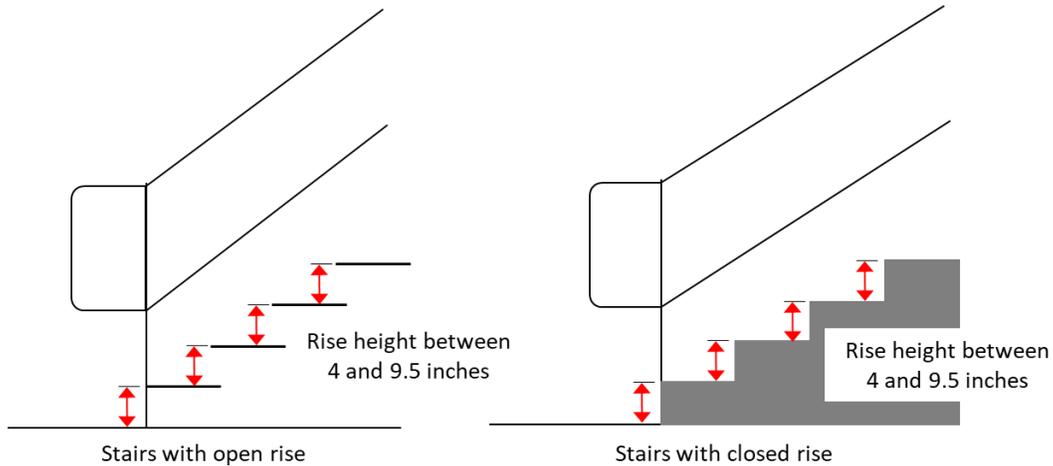


Rise

- **(S Q 6.1)** You indicated that rise height is not uniform along the stairway (including the first and last step). Any change in dimension along the stairway will require workers to pay special attention when traversing the stairs and can lead to trips and falls. Install treads with uniform rise height from the first through the last step. Remove any debris or accumulation that may affect rise height. Routinely examine and maintain stairways.

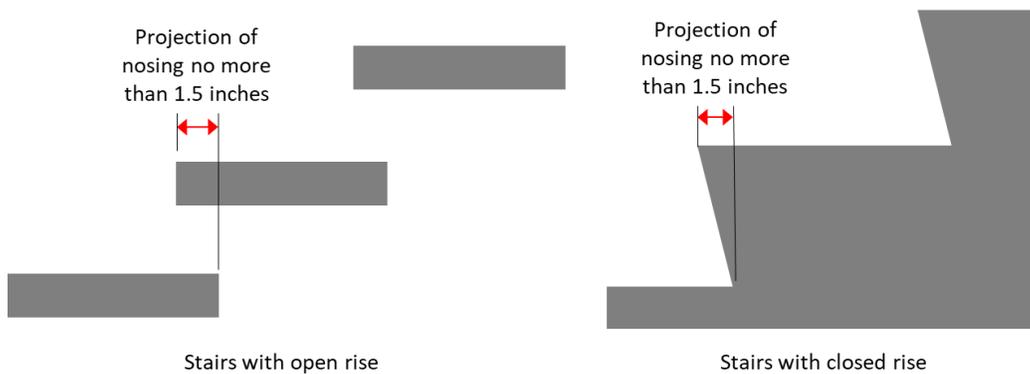


- **(S Q 6.2)** You indicated that rise height is less than 4 inches or greater than 9-½ inches for the stairway. Design stairways with uniform rise height between 4 and 9-½ inches from the first through the last step. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) that may change rise height. Routinely examine and maintain stairways.



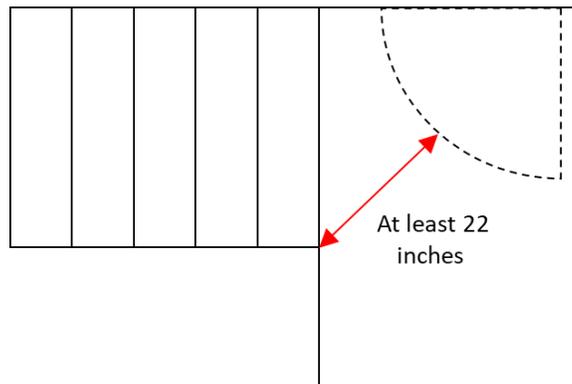
Nosing

- **(S Q 7.1)** You indicated that the stair nosing is not easily identifiable. Improved visibility of the edge leads to better edge detection and reduces the likelihood of falls. Provide visual cues to identify the stair nosing by painting the nosing of the steps (front 2 inches) with a high visibility color, use retro-reflective tape, or use different materials for the nosing to make the steps more visible and increase contrast. Routinely examine and maintain (clean, repair, replace) visual cues to ensure that they are visible and easily identifiable.
- **(S Q 7.2)** You indicated that the projection of nosing is greater than 1-½ inch over the lower tread. Large nosings can cause the foot to get caught when ascending stairs and reduces the usable tread depth when descending stairs. Install steps with nosings projecting no more than 1-½ inches over the lower tread.



Landing

- **(S Q 8.1)** You indicated that the top tread of the stairway is not level with the landing. Install a top tread that is level with the landing and ensure all other treads have a uniform tread depth and rise. Remove any debris or accumulation that may influence the top tread. Routinely examine and maintain stairways.
- **(S Q 8.2 or Q 8.3)** You indicated that the landing is less than the width of the stairway, less than 22 inches wide, or less than 30 inches long (in the direction of travel). Provide a landing at the top and bottom of the stairway that is at least 30 inches long in the direction of travel, at least as wide as the stairway (at least 22 inches wide), and that is level with the top step. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment). Routinely examine and maintain landings.
- **(S Q 8.4)** You indicated that a landing is not provided for every 12 feet of climbing height. Provide a landing every 12 feet of climbing height that is at least 30 inches long in the direction of travel, at least 22 inches wide, and that is level with the top step.
- **(S Q 8.5 or Q 8.6)** You indicated that a landing is not provided when a door or gate opens over/onto the stairway or the usable width of the landing with the door open is less than 22 inches. Whenever a door or gate opens either over or onto a stairway, provide a landing with at least 22 inches of usable width when the door is open. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) that reduce the width of the landing. Routinely examine and maintain landings to ensure that they remain clear.



Guardrails

- **(S Q 9.1)** You indicated that the guardrail has a missing or damaged top rail, intermediate rail, post, screen, or mesh along the stairway. Install guardrails with top and intermediate rails, posts, screens, or mesh along stairways. The top rail of the guardrail can be used as a handrail only if the top rail is between 36 and 38 inches above the stair tread. Routinely examine and maintain guardrails.
- **(S Q 9.2)** You indicated that the intermediate guardrail is not approximately halfway between the top guardrail and the stair tread. Intermediate guardrails serve as a barrier to prevent workers from slipping off the stairway between the top rail and the floor. Intermediate guardrails also prevent larger objects from falling to the lower level posing a hazard to those working below. Install guardrails with intermediate rails that are approximately halfway between the top guardrail and stair tread. Routinely examine and maintain guardrails.

- **(S Q 9.3)** You indicated that the screen or mesh used does not extend from the top guardrail to the stairway surface for the entire length between posts. Screens and mesh serve as barriers to prevent workers from slipping off the stairway between the top rail and the stair. Screens and mesh also prevent larger objects from falling to the lower level posing a hazard to those working below. When using screens and mesh, they should be installed from the top guardrail to the stair tread and along the entire length between posts. Routinely examine and maintain mesh and screens.
- **(S Q 9.4)** You indicated that a guardrail has a vertical height of less than 42 inches from the walking surface. Guardrails should be installed with a minimum vertical height of 42 inches from the walking/working surface to the upper surface of the top rail.

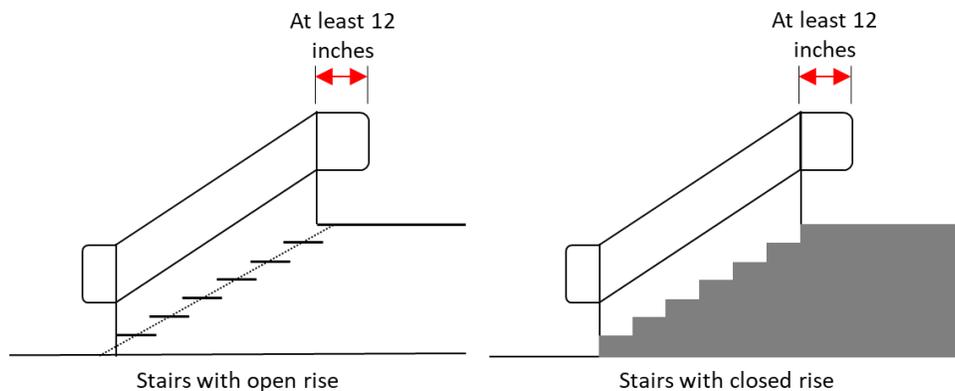
Handrails

- **(S Q 10.1 or 10.2 or 10.3)** You indicated that adequate handrails are not provided along the stairway. For enclosed stairs less than 44 inches wide, provide handrails on one side; preferably the right side when descending. For stairs open on one side and less than 44 inches wide, provide handrails on at least the open side. For stairs open on both sides and less than 44 inches wide, provide handrails on both open sides. For stairs between 44 and 88 inches wide (enclosed or open), provide handrails on both sides. For stairs more than 88 inches wide, provide handrails on both sides and an additional handrail in the middle of the stair width.

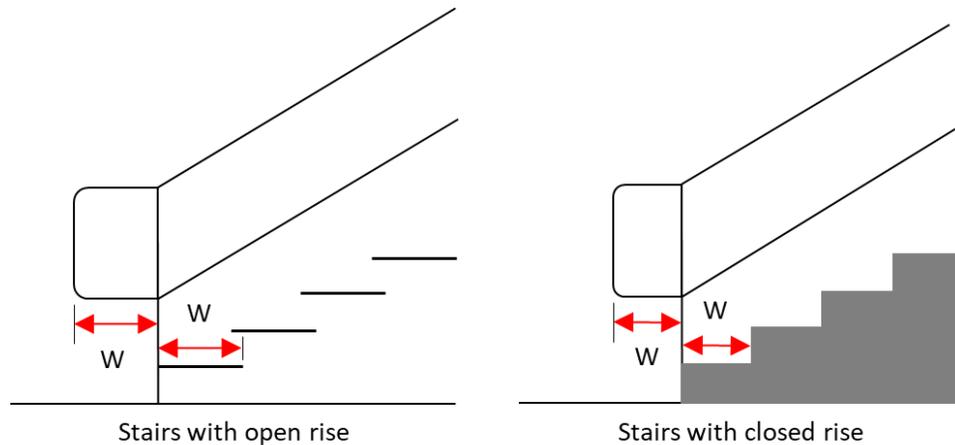
Stair width	Enclosed stairs	One side open	Two sides open
Less than 44 inches	At least one handrail (preferably on the right when descending)	Handrail on open side	Handrail on both sides
Between 44 and 88 inches	Handrail on both sides	Handrails on both sides	Handrails on both sides
Greater than 88 inches	Handrails on both sides and an additional handrail in the middle of the stair width	Handrails on both sides and an additional handrail in the middle of the stair width	Handrails on both sides and an additional handrail in the middle of the stair width

- **(S Q 10.4)** You indicated that the handrails rotate or move within the fitting. Handrails that move and rotate do not provide adequate stability when used by the workers. Handrails that move or rotate also provide little assistance when recovering from a fall. Install handrails securely in their fitting. Routinely examine and maintain handrails to ensure that they do not rotate or move.
- **(S Q 10.5)** You indicated that the handrails have protrusions, burrs, or sharp edges. Clothing can get snagged on the protrusions, burrs, or sharp edges. There is also a risk of a puncture, cut, or laceration from handrails that have protrusions, burrs, or sharp edges. Install handrails and guardrails that have a smooth finish. Routinely examine and maintain handrails.

- **(S Q 10.6 or Q 10.7)** You indicated that the handrails have an obstruction on the top or sides or that there is less than 2-¼ inches of clearance around handrails at any point along the stairway. Handrails with obstructions limit the usable length of the handrail. Install handrails that have no obstructions on the top or sides with at least 2-¼ inches of clearance from the nearest object. Routinely examine and maintain handrails.
- **(S Q 10.8)** You indicated that the handrail is not continuous with adjacent handrails or is not continuous for the entire length of the stairway. Continuous handrails can provide support to workers as they traverse the stairway and be of assistance when recovering from a fall. Install handrails that are continuous with the adjacent handrail and at a consistent height (34–38 inches above the tread) for the length of the handrail. Routinely examine and maintain handrails and stairways.
- **(S Q 10.9 or Q 10.10)** You indicated that the handrails are not at a consistent height above the stairway, or the height of the top handrail is less than 34 inches or more than 38 inches above the step. Consistent handrail height can provide support to workers as they traverse the walkway and be of assistance when recovering from a fall. Install handrails that are continuous with the adjacent handrail and at a consistent height (34–38 inches above the floor) for the length of the handrail. Routinely examine and maintain handrails and stairways.
- **(S Q 10.11)** You indicated that the handrail extends less than 12 inches horizontally above the top landing. Install handrail extensions at the top and bottom of the stairs. Handrails that extend onto the top landing can help transitions from the stairway to the landing or walkway and vice versa. Install handrails that extend at least 12 inches horizontally onto the top landing and are at a consistent height (34–38 inches above the floor) for the length of the handrail. Extensions should return to a wall, guard, or the landing surface, or should be continuous to the handrail of an adjacent stairway. Routinely examine and maintain handrails and stairways.



- **(S Q 10.12)** You indicated that the handrail extends less than one tread depth horizontally beyond the bottom tread. Install handrail extensions at the top and bottom of the stairs. Handrails that extend beyond the bottom tread can help transitions from the stairway to the ground, landing, or walkway and vice versa. Install handrails that extend at least one tread depth horizontally beyond the bottom tread and are at a consistent height (34–38 inches above the floor) for the length of the handrail. Extensions should return to a wall, guard, or the landing surface, or should be continuous to the handrail of an adjacent stairway. Routinely examine and maintain handrails and stairways.



- **(S Q 10.13 or Q 10.14)** You indicated that for circular handrails, the outer diameter is less than 1-¼ inches or more than 2 inches; or for non-circular handrails, the cross-section is less than 1 inch or more than 2-¼ inches. Providing handrails with a cross-section that is easy to grip can help prevent and recover from falls. Install circular handrails with diameters between 1-¼ and 2 inches or non-circular handrails with cross-section dimensions that are between 1 and 2-¼ inches. Ensure handrails do not have protrusions, burrs, or sharp edges. Routinely examine and maintain handrails.

Spiral Stairways

- **(S Q 11.1)** You indicated that a spiral stairway is provided where there is adequate space and it is feasible to provide conventional fixed stairs. Provide conventional fixed stairs instead of spiral staircases when space allows as using spiral stairs are more dangerous as compared to standard stairways.
- **(S Q 11.2)** You indicated that there is less than 78 inches of vertical clearance along the spiral stairway. Design stairways with at least 78 inches of vertical clearance. Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) that result in less than 78 inches of vertical clearance. Install warning signs if a hazard exists and remove the hazard as soon as possible. Routinely examine and maintain stairways and warning signs.

- **(S Q 11.3 or S Q 11.4 or S Q 11.5)** You indicated that the width of spiral stairway across any tread is less than 26 inches, the riser height is more than 9-½ inches on the spiral stairway, or the tread depth is less than 7-½ inches, at a point 12 inches from the narrow edge. Install spiral stairways with a tread width of at least 26 inches. Install treads with uniform tread depth and rise height from the first through the last step. Install spiral stairways with rise height of less than 9-½ inches and tread depths of at least 7-½ inches (at a point 12 inches from the narrow edge). Remove/reroute any obstructions (such as cables, hoses, pipes, tools, or equipment) that reduce tread width or depth or change rise height. Routinely examine and maintain staircases.

Illumination

- **(S Q 12.1)** You indicated that less than 108 lux (10 foot-candles) of illuminance is provided on the stairway and landings. Provide at least 108 lux of illumination on stairway and landings. Remove debris from light fixtures or bulbs that cause the illuminance on stairways to be less than 108 lux (10 foot-candles). Repair or replace bulbs or fixtures as needed to meet lighting recommendations. Routinely inspect and maintain light fixtures/sources. If auto lighting (or motion activated lighting) is used, ensure that stairways and landings above and below are also illuminated in unison.



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