

STAIRWAYS

REVISION DATE: JANUARY 2017



Width (2012 IRC Section R311.7.1)

Stairways shall not be less than 36 inches in clear width at all points above the permitted handrail height and below the required headroom height (see photo 1). Handrails shall not project more than 4 ½ inches on either side of the stairway (see photo 2) and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31 ½ inches where a handrail is installed on one side and 27 inches where handrails are provided on both sides (see photo 3).



Exception: The width of spiral stairways shall be in accordance with the section for spiral stairways.

Headroom (2012 IRC Section R311.7.2)

The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches (see photo 4) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway (see photo 5).

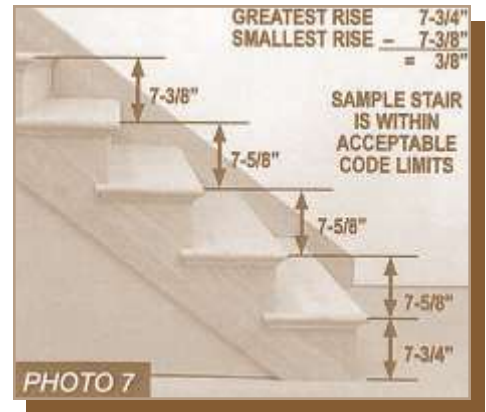
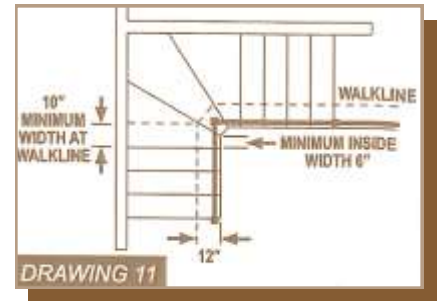
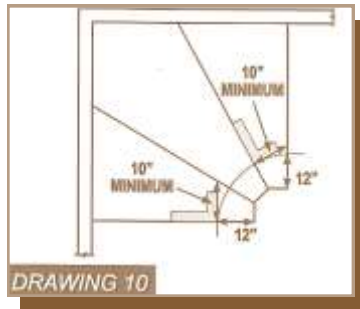
Exception: Where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom a maximum of 4 ¾ inches.



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Vertical Rise (2012 IRC Section R311.7.3): A flight of stairs shall not have a vertical rise larger than 12 feet between floor levels or landings.

Walk Line (2012 IRC Section R311.7.4): The walk line across winder treads shall be concentric to the curved direction of travel through the turn and located 12 inches from the side where the winders are narrower (see drawing 10). The 12 inch dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder. If winders are adjacent within the flight, the point of the widest clear stair width of the adjacent winders shall be used (see drawing 11).



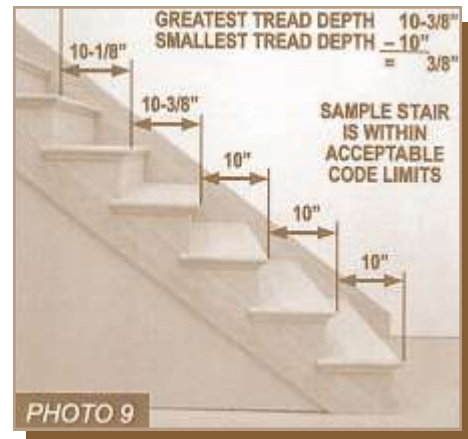
Treads (2012 IRC Section R311.7.5.2): The minimum tread depth shall be 10 inches (see photo 8). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch (see photo 9). The walking surface of treads and landings of stairways shall be sloped no steeper than one unit vertical in 48 inches horizontal (2% slope).

Winder Treads (2012 IRC Section R311.7.5.2.1): Winder treads shall have a minimum tread depth of 10 inches measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walk line. Winder treads shall have a minimum tread depth of 6 inches at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walk line shall not exceed the smallest winder tread by more than $\frac{3}{8}$ inch. Consistently shaped winders at the walk line shall be allowed within the same flight of stairs as rectangular treads and do not have to be within $\frac{3}{8}$ inch of the rectangular tread depth.



Nosings

(2012 IRC



Section



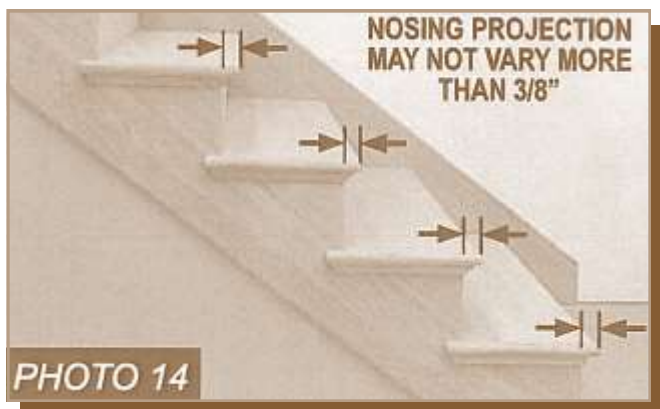
PHOTO 12



PHOTO 13

R311.7.5.3): The radius of curvature at the nosing shall be no greater than $\frac{9}{16}$ inch (see photo 12). A nosing not less than $\frac{3}{4}$ inch but not more than $1\frac{1}{4}$ inches shall be provided on stairways with solid risers (see photo 13). The greatest nosing projection shall not exceed the smallest nosing projection by more than $\frac{3}{8}$ inch between two stories (see photo 14), including the nosing at the level of floors and landings. Beveling of nosings shall not exceed $\frac{1}{2}$ inch (see photo 15).

Exception: A nosing is not required where the tread depth is a minimum of 11 inches.



Landings (2012 IRC Section R311.7.6): There shall be a floor or landing at the top and bottom of each stairway. The minimum width perpendicular to the direction of travel shall be no less than the width of the flight served. Landings of shapes other than square or rectangular shall be permitted provided the depth at the walk line and the total area is not less than that of a quarter circle with a radius equal to the required landing width. Where the stairway has a straight run, the minimum depth in the direction of travel shall be not less than 36 inches.

Exception: A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs.

Spiral stairways (2012 IRC Section R311.7.10.1): Spiral stairways are permitted, provided the minimum clear width at and below the handrail shall be 26 inches with each tread having a 7 ½ inch minimum tread depth at 12 inches from the narrower edge. All treads shall be identical, and the rise shall be no more than 9 ½ inches. A minimum headroom of 6 feet 6 inches shall be provided.

Handrails (2012 IRC Section R311.7.8): Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers (see drawing 20). Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches and not more than 38 inches (see photo 21).

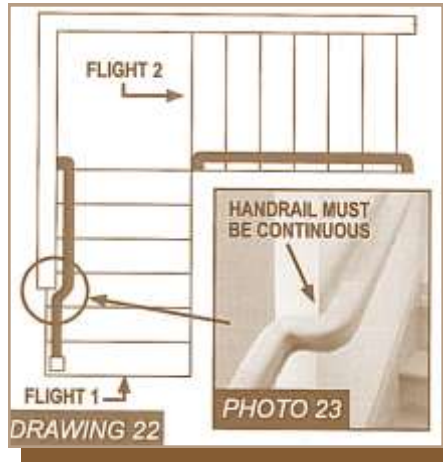
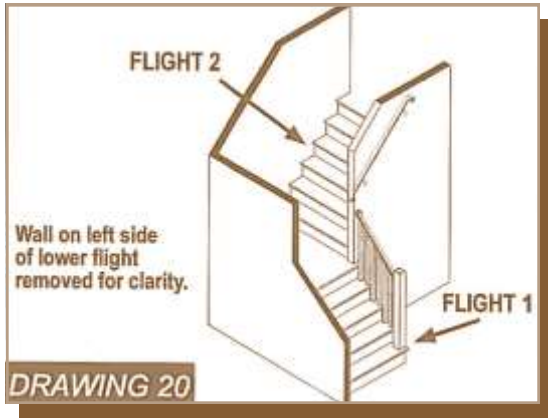
Exceptions:

1. The use of a volute, turnout or starting easing shall be allowed over the lowest tread.
2. When handrail fittings or bendings are used to provide continuous transition between flights, transitions at winder treads, the transition from handrail to guardrail, or used at the start of a flight, the handrail height at the fittings or bendings shall be permitted to exceed the maximum height.

Continuity (2012 IRC Section R311.7.8.2): Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight (see photo 22 and 23). Handrail ends shall be returned or shall terminate in newel posts or safety terminals (see photo 24). Handrails adjacent to a wall shall have a space of not less than 1 ½ inch between the wall and the handrails (see photo 25).

Exceptions:

1. Handrails shall be permitted to be interrupted by a newel post at the turn.
2. The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.

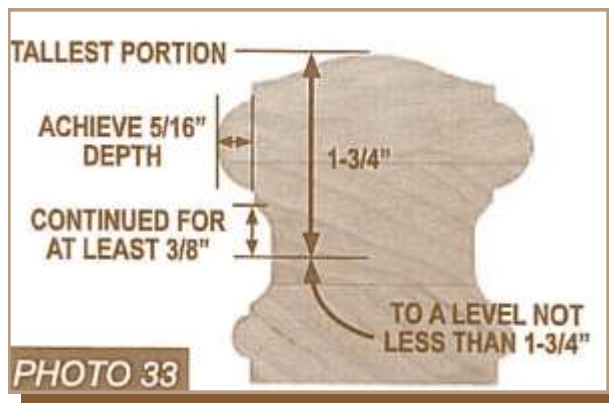
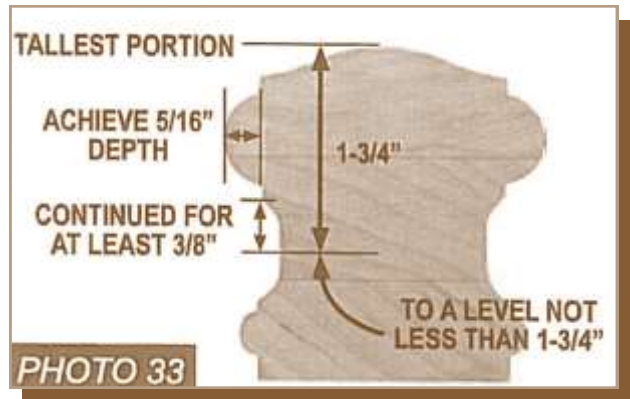
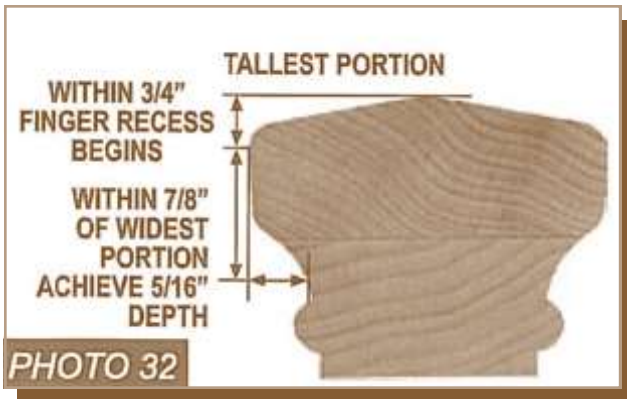
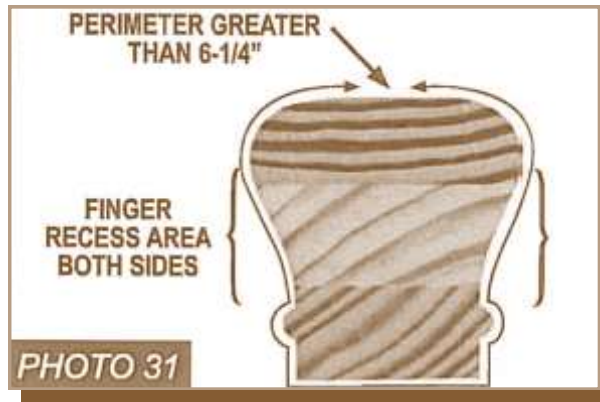


Grip-Size (2012 IRC Section R311.7.8.3): All required handrails shall be of one of the following types or provide equivalent graspability.

1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1 ¼ inches and not greater than 2 inches (see photo 29). If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches and not greater than 6 ¼ inches with a maximum cross section of dimension of 2 ¼ inches. Edges shall have a minimum radius of 0.01 inch (see photo

30).

2. Type II. Handrails with a perimeter greater than 6 ¼ inches shall have a graspable finger recess area on both sides of the profile (see photo 31). The finger recess shall begin within a distance of ¾ inch measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch within 7/8 inch below the widest portion of the profile (see photo 32). This required depth shall continue for at least 3/8 inch to a level that is not less than 1 ¾ inches below the tallest portion of the profile (see photo 33). The minimum width of the handrail above the recess shall be 1 ¼ inches to a maximum of 2 ¾ inches. Edges shall have a minimum radius of 0.01 inch (see photo 34).



Guards Required (2012 IRC Section R312.1): Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches measured vertically to the floor or grade below at any point within 36 inches horizontally to the edge of the open side. Insect screening shall not be considered as a guard.

Guard Height (2012 IRC Section R312.1.2): Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36 inches high measured vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of the treads.

Exceptions:

1. Guards on the open sides of stairs shall have a height not less than 34 inches measured vertically from a line connecting the leading edges of the treads.
2. Where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall not be less than 34 inches and not more than 38 inches measured vertically from a line connecting the leading edges of the treads.

Opening limitations (2012 IRC Section R312.1.3): Required guards shall not have openings from the walking surface to the required guard height which allow passage of a sphere 4 inches in diameter.

Exceptions:

1. The triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches in diameter.
2. Guards on the open side of stairs shall not have openings which allow passage of a sphere 4 3/8 inches in diameter.

CITY OF REPUBLIC

The City of Republic is located in Greene County in the southwest corner of the State of Missouri approximately ten miles from the City of Springfield, forty-five miles from Branson, and within a two-hour drive to the states of Oklahoma, Kansas, and Arkansas.

Republic began its existence in 1871 and soon thrived due in large part to the Frisco Railroad, which ran through town. Early accounts of the City indicate the existence of grain elevators within the City, a blacksmith shop and livery stable, as well as a tomato factory and cheese factory. A flourmill was built in 1890 and soon became the largest in the Middle West and carried the slogan "The World is our Field." It is unknown how the City achieved the name "Republic" but it is believed the first postmaster may have named the town. During 1904 and 1905, iron ore was mined and shipped from Republic's limekiln located south of town. Due to the fertile, gentle rolling land of this area, Republic became known as one of the major fruit producers in the Midwest, producing apples, peaches, grapes, strawberries, and tomatoes. As was common in southwest Missouri, many early citizens worked as strawberry pickers and shipped the fruit by railcar every season.

The City of Republic is fortunate to have a broad economic base. The City has several retail shops, grocery stores, factories, etc. Republic is a great place for locating a business due to the strong residential base, which provides a large pool of qualified, available work force. Republic is a pleasant place to work without the difficulties of traffic jams and limited parking. The City has no earnings tax and has ample quality office and retail space available. The City's close proximity to Springfield makes it desirable for many.

The City of Republic has an excellent school system that believes all students should be able to manage change, become lifelong learners, and participate in the democratic process. The City has been fortunate enough to strive toward a progressive future while at the same time keeping some of its traditional characteristics. While the City has seen extensive growth over the last few years, city officials are anticipating a steady, continued increase in its development.

COMMUNITY DEVELOPMENT DEPARTMENT



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