# BUILDING AND ZONING DEPARTMENT CITY OF SPRINGFIELD, ILLINOIS FORM REVISED October 25, 2019 - 2018 IECC & 2012 IRC BUILDING PERMIT APPLICATION - CROSS SECTION DIAGRAM

# R311.7 Stairway

R311.7.1 Width. Stairways shall not be less than 36 inches (914 mm) in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4.5 inches (114 mm) on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31½ inches (787 mm) where a handrail is installed on one side and 27 inches (698 mm) where handrails are provided on both sides.

Exception: The width of spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.2 Headroom. The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches (2032 mm) 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.

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  $4^{1}l_{4}$  inches (121 mm).

R311.7.5 Stair treads and risers. Stair treads and risers shall meet the requirements of this section. For the purposes of this section all dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.

R311.7.5.1 Risers. The maximum riser height shall be 7½ inches (196 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than ¾ inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted provided that the opening between treads does not permit the passage of a 4-inch-diameter (102 mm) orhere.

Exception: The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or less.

R311.7.5.2 Treads. The minimum tread depth shall be 10 inches (254 mm). 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  ${}^{1}I_{4}$  inch (9.5 mm).

R311.7.8 Handrails. Handrails shall be provided on at least one side of each continuous run of treads or flight

R311.7.8.1 Height. Handrail beight, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965

## Exceptions

- 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. 'n
- R310.1 Emergency escape and rescue required. Basement. habitable attics and every sleeping room shall have at
  least one operable emergency escape and rescue opening.
  Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each
  sleeping room. Where emergency escape and rescue openings
  are provided they shall have a sill height of not more than 44
  inches (1118 mm) measured from the finished floor to the
  bottom of the clear opening. Where a door opening having a
  threshold below the adjacent ground elevation serves as an
  emergency escape and rescue opening and is provided with a
  bulkhead enclosure, the bulkhead enclosure shall comply
  with Section R310.3. The net clear opening from the
  inside. Emergency escape and rescue openings with a finished sill heigh below the adjacent ground elevation shall be
  provided with a window well in accordance with Section
  R310.2. Emergency escape and rescue openings shall open
  directly into a public way, or to a yard or court that opens to a
  public way.

R310.1.1 Minimum opening area. and rescue openings shall have a mi ing of 5.7 square feet (0.530 m²). All emergency escape nimum net clear open-

Exception: Grade floor openings shall have a minimum net clear opening of 5 square feet (0.465 m²).

R310.1.2 Minimum opening height. The mining clear opening height shall be 24 inches (610 mm). net

R310.1.3 Minimum opening width. The minimum clear opening width shall be 20 inches (508 mm). net

R310.1.4 Operational constraints. Emergency and rescue openings shall be operational from the in the room without the use of keys, tools or special

110.2 Window wells. The minimum ndow well shall be 9 square feet (0.9 rizontal projection and width of 36; a of the window well shall allow the screw opening to be fully opened. imum horizontal area of the et (0.9 m³), with a minimum of 36 inches (914 mm). The llow the emergency escape

Exception: The ladder or steps required by Section R310.2.1 shall be permitted to encroach a maximum of 6 inches (152 mm) into the required dimensions of the win-

R310.2.1 Ladder and steps. Window wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable R with the window in the fully open position. Ladders or is steps required by this section shall not be required to comply with Sections R311.7 and R311.8. Ladders or rungs is shall have an inside width of at least 12 inches (305 mm), all shall project at least 3 inches (76 mm) from the wall and pathall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the window well.

R311.7.8.2 Continuity. 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. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1½ inch (38 mm) between the wall and the handrails.

- Handrails shall be permitted to be interrupted by a newel post at the turn.
- Ŋ The use of a volute, turnout, st starting newel shall be allowed g easing or r the lowest

R311.7.8.3 Grip-size. All required handrails shall be one of the following types or provide equivalent gras

- 1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 11/2 inches (32 mm) and not greater than 2 inches (51 mm). If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 61/2 inches (160 mm) with a maximum cross section of dimension of 21/2 inches (57 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

  2. Type II. Handrails with a perimeter greater than 61/2 inches (160 mm) shall have a graspable finger recess shall begin within a distance of 1/2 inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 51/4 inch (8 mm) within 71/4 inch (22 mm) below the widest portion of the profile. This required depth shall continue for at least 31/4 inch (10 mm) to a level that is not less than 11/2 inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 11/2 inches (32 mm) to a maximum of 21/4 inches (70 mm). Edges shall have a minimum radius of 0.01 inch (0.25 mm).

R312.1 Guards. Guards shall be provided in accordance Sections R312.1.1 through R312.1.4.

R312.1.1 Where required. Guards shall be located alo open-sided walking surfaces, including stairs, ramps a landings, that are located more than 30 inches (762 ml measured vertically to the floor or grade below at an point within 36 inches (914 mm) horizontally to the ed, of the open side. Insect screening shall not be consider

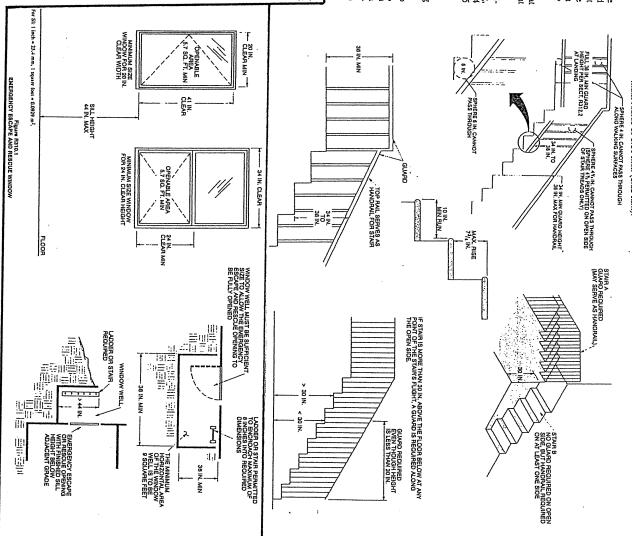
R312.1.2 Height. Required guards at open-sided walkin surfaces, including stairs, porches, balconies or landing shall be not less than 36 inches (914 mm) high measure vertically above the adjacent walking surface, adjace vertically above the functions of the line connecting the leading edges. treads

# Exceptions

- sured vertically ing edges of the t height not the open sides of stairs shall have less than 34 inches (864 mm) me cally from a line connecting the lea from a treads.
- Where the top of the guard also serves as a hand rail on the open sides of stairs, the top of it guard shall not be less than 34 inches (864 mm and not more than 38 inches (965 mm) measure vertically from a line connecting the leading edges of the treads.
- R312.1.3 Opening limitations. Required guards shall no have openings from the walking surface to the require guard height which allow passage of a sphere 4 inche (102 mm) in diameter.

# Exceptions:

- The triangular openings at the open side of stail formed by the riser, tread and bottom rail of guard, shall not allow passage of a sphere inches (153 mm) in diameter.
   Guards on the open side of stairs shall not hav openings which allow passage of a sphere 4<sup>3</sup>/<sub>2</sub> inches (111 mm) in diameter.
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# SMOKE ALARMS

oke alarms shall be installed in the 햔

- In each sleeping room
- ? 듮
- Outside each separate sleeping area vicinity of the bedrooms.
   On each additional story of the d basements and habitable attics but n spaces and uninhabitable attics. In a spaces and uninhabitable attics.
- in spaces and uninhabitable artics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a snoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

  be one full story below the upper level.

  be rost interconnection. Where more than one smoke alarm or is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be upsical interconnection of smoke alarms shall not be upsical interconnection of smoke alarms shall not be rost interconnection of smoke alarms shall not be rost interconnection of smoke alarms are installed and all alarms sound upon activation of one alarms.

