

Boone County Building Department

1212 Logan Ave, Belvidere, Illinois 61008 (815) 544-6176

Residential Decks

This handout serves *only* as a guide and does not contain all of the requirements of Boone County Building Codes.

Building permits are required for all decks/porches/piers within unincorporated Boone County.

Deck: Exterior floor system supported on at least two opposing sides for an adjoining structure and/or posts, piers, or other independent supports, as approved by the Building Department.

Required information when applying for a deck permit:

- ☐ Site plan: size of deck, distance of deck to lot lines, location of well and septic, location of all existing buildings/structures
- ☐ Construction Drawings: depth and location of footings and posts, size and span of joists, posts, beams, and headers, grade and species of lumber, height above finished grade, roof framing detail and roof coverings, if applicable
- ☐ Health Department approval (815-544-2951)
- ☐ Value of Construction: total value of finished construction
- ☐ All applicable contractor's information: including name, address, and phone number

Guidelines for building a deck:

1. Setbacks: Contact the zoning inspector for property setback requirements.
2. Live Load: All decks shall be constructed to support a live floor load of forty (40) pounds per square foot.
3. Footings: All deck footings attached to dwelling unit must extend a minimum 42" below grade. Unattached deck footings must extend a minimum of 36" below grade.
4. Treated lumber: All structural lumber used for exterior decks must be treated.
5. Fasteners: All fasteners shall be non-corrosive.
6. Flashing: Flashing is required to prevent water from entering the exterior wall envelope at all connections between the deck and the dwelling unit.
7. Ledger Board: Decks supported by an exterior dwelling wall must be positively anchored to the primary structure by use of ledger board and lag bolts. To achieve this anchoring the siding must be removed. Attachment shall not be accomplished by the use of toenails or nails subject to withdrawal.
8. Posts: For minimum post sizes, please contact our department.
9. Joists/Beams: For minimum joist and beam sizes, please contact our department.
10. Joist Hangers: Joist framing into the side of a beam or ledger must be supported by approved framing anchors such as joist hangers.
11. Guards, stairs, and handrails: Refer to enclosed stairway handout.

Required inspections:

1. Footing: After holes are dug, but before concrete is poured.
2. Rough-In: When sub-framing is complete, but prior to installation of decking and guardrails.
3. Final: When deck is completed, but before occupancy.

SECTION R311.5 STAIRWAYS

R311.5.1 Width

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.

R311.5.3.1 Riser Height

The maximum riser height shall be 7 $\frac{3}{4}$ inches. The riser height 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 $\frac{3}{8}$ inch.

R311.5.3.2 Tread Depth

The minimum tread depth shall be 10 inches. 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 [measured nose to nose]. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than $\frac{3}{8}$ inch.

R311.5.3.3 Profile

The radius of curvature at the leading edge of the tread shall be no greater than $\frac{9}{16}$ inch. A nosing not less than $\frac{3}{4}$ inch but not more than 1 $\frac{1}{4}$ inch shall be provided on the stairways with solid risers. The greatest nosing projection shall not exceed the smallest by more than $\frac{3}{8}$ inch between two stories, including the nosing at the level of floors and landings. Beveling of nosing shall not exceed $\frac{1}{2}$ inch. Risers shall be vertical or sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees from the vertical. **Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch diameter sphere.**

Exceptions:

1. A nosing is not required where the tread depth is a minimum of 11 inches.
2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches or less.

R311.5.6 Handrails

R311.5.6.1 Height

Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or finish surface of ramp slope, shall not be less than 34 inches and not more than 38 inches.

R311.5.6.2 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 lowest riser of the flight.

SECTION R12 GUARDS

R312.1 Guards required

Porches, balconies, or raised floor surfaces located more than 30 inches above the floor or grade below shall have guards not less than 36 inches in height. Open sides of stairs with a total rise or more than 30 inches above the floor or grade below shall have guards not less than 34 inches in height measured vertically from the nosing of the treads.

R316.2 Guard opening limitations

Required guards on open sides of stairways, raised floor areas, balconies, and porches shall have intermediate rails or ornamental closures which do not allow the passage of a sphere 4 inches or more in diameter.

Exceptions:

1. The triangular openings formed by the riser, tread and bottom rail of a guards at the open side of a stairway are permitted to be of such a size that a sphere 6 inches cannot pass through.
2. Openings for required guards on the sides of a stair treads shall not allow a sphere 4 $\frac{3}{8}$ inches to pass through.