



RESIDENTIAL BUILDING CODE OVERVIEW

BASIC CLIMATIC AND GEOGRAPHICAL DESIGN CRITERIA FOR DEKALB COUNTY

- Wind Speed 90 MPH – Shall be determined on a site-specific basis
- Seismic Zone “B”
- Snow Load 30 pounds per square foot (PSF)
- Foundation Depth 36 inches – Is minimum foundation depth to bottom of footing from the top of finished grade above the footing.
- Winter Design Temperature - 1 degree Fahrenheit
- Decay - Slight to Moderate
- Termite – Moderate to Heavy
- Weathering – Severe
- Ice Shield Under-Layment Required – YES
- Air Freezing Index -1389
- Mean Annual Temp - 50.0 F
- Grade of Masonry units shall be from ASTM C34, C55, C62, C73, C90, C129, C216 or C562.

STAIR LANDING

There shall be a floor or landing at the top and bottom of each stairway. The floor or landing at the door shall not be more than 1.5 inches lower than the top of threshold. The landing at an exterior doorway shall not be more than 8 inches below top of threshold, provided the door, other than exterior storm or screen door does not swing over the landing.

STAIRS

- Stairways – Required Exits, Interior
- Maximum Riser Height - 8 1/4 inches
- Maximum Tread Depth – 9 inches
- Note: The greatest riser height and tread depth shall not exceed the smallest by more than 3/8 inch within any flight of stairs.
- Note: The walking surface of the landing and stairway shall not exceed one unit vertical in 48 units horizontal. (2 % slope).
- Note: The minimum headroom height in all parts of stairway shall not be less than 6 feet 8 inches.
- Stairways – Non-Required Exits Requiring 2 or fewer Risers
- Maximum Riser Height - 8 1/4 inches
- Minimum Tread Depth – 11 1/4 inches

STAIR TREAD LOAD

Individual stair treads shall be designed for the uniformly distributed live load of 40 pounds per square foot or a 300 pound concentrated load acting over an area of 4 square inches, whichever produces the greater stress.

HANDRAIL

Handrail Height is 34 to 38 inches on at least one side and shall serve each tread the full length of interior stairs with 3 or more risers and exterior stairs with two or more risers from a point directly above the top riser of a flight to a point directly above the lowest riser . Both ends shall be returned / terminated in newel posts or safety terminals.

Rail grip size shall not be greater than 2 7/8 inches and not less than 1 1/2 inches space between wall and rail.

UNDER STAIR PROTECTION

Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 1/2 inch gypsum board.

STAIRWAY ILLUMINATION

For interior stairs the artificial light source shall be capable of illuminating the landings and the treads to levels not less than 1 foot-candle (11) lux measured at the center of the treads and landings. Exterior stairways shall be provided with an artificial light source located so that the top landing of the stairway is illuminated. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located so that the bottom landing of the stairway is illuminated. The control for activation of the required interior stairway lighting shall be accessible at the top and bottom of each stair without traversing any step of the stair. Illumination of the exterior stairs shall be controlled from inside the dwelling.

FOOTING CONCRETE MINIMUM WIDTH

A one (1) story structure for all soil strengths is twelve (12) inches. Check the code for other foundation information.

FOOTING SIZES

Detached Garages, Detached Carports, or Accessory Structures

Construction Requirements	Local Code-Portable 120 Square Feet Maximum	Monolithic Footings 721 Square Feet Maximum	Structures with Conventional Foundation
Footings & Foundation	No Requirements	8" W x 18" D – 12" W x 12" D	Indiana Residential Code
Floors	No Requirements	Indiana Residential Code	Indiana Residential Code
Exterior Walls	No Requirements	Indiana Residential Code	Indiana Residential Code
Girders & Headers	No Requirements	Indiana Residential Code	Indiana Residential Code
Roof System	No Requirements	Indiana Residential Code	Indiana Residential Code
Electrical Power Limits	One 15 Amp Circuit	Indiana Residential Code	Indiana Residential Code
Water Supply/Sanitation	No Requirements	(1)	Indiana Residential Code
Permanent Heat	No Requirements	(1)	Indiana Residential Code
Max Number of Stories	1	1	3

Notes:

1. In structures utilizing monolithic floor systems, the water and sanitation systems and permanent heating facilities may be installed when approved flexible connectors are provided.
2. 6 x 6 - W2.9 x W2.9 welded wire fabric or equivalent is required when monolithic slab footing system is used.
3. One (1) Story unless otherwise approved by the building official.

MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS

Use	Live Load (Pounds per Square Foot)
Attics – Non-accessible	0

Attics – Accessible	10
Attics – Uninhabitable	20
Attics – Inhabitable	30 (5)
Balconies – Exterior	60
Decks	40
Rooms – Other than sleeping rooms	40
Fire Escapes	40
Garages (6), (8)	50
Guards & Handrails (9)	200
Sleeping Rooms	30
Stairs	40/300 (7)

1. Attics where access is not required by section R807
2. Attics where access is provided as required by section R807 and a disappearing stairway or permanent stairway is not provided
3. Attic spaces having a minimum clear height greater than (6) six feet and are not capable of containing the prism described in footnote 4, and are served by a disappearing or permanent stairway.
4. Attic spaces that are capable of containing a rectangular prism seven (7) feet high by six (6) feet wide by eight (8) feet long of any structural member.
5. For trusses, the thirty (30) pounds per square foot live load shall be applied over the entire length of the truss panel that contains the prism required by footnote 4.
6. Passenger cars only.
7. Individual stair treads shall be designed for the uniformly distributed live load of forty (40) pounds per square foot or a three hundred (300) pound concentrated load acting over an area of four (4) square inches, whichever produces the greater stress.
8. Elevated garage floors shall be capable of supporting a two thousand (2,000) pound load applied over a twenty (20) square inch area.
9. A single concentrated load applied in any direction at any point along the top.

EMERGENCY ESCAPE AND RESCUE OPENINGS

Every sleeping room shall have at least one (1) openable emergency escape rescue opening. This includes those in a basement.

Doors on required exits can swing out over landing.

Egress windows in bedrooms and basement the sill height has to be 44 inches maximum above finished floor have a minimum net clear opening of 5.7 square feet., plus the required minimum net clear opening height of 22 inches and minimum net clear opening width of 20 inches. Window well dimensions shall have horizontal dimensions that allow the door or window escape opening to be fully opened. The horizontal dimensions of the shall have a minimum net clear area of 9 square feet with a minimum horizontal projection and width of 36 inches. Window wells will depths greater than 44 inches shall be equipped with permanently fixed stairs or ladder for the full height of well.

TRUSSES

Truss design drawings shall be provided to the building official. Trusses shall be braced to prevent rotation and to provide lateral stability. Truss members shall not be cut, notched, drilled, spliced, or otherwise altered in any way.

DRILLING AND NOTCHING - STUDS

Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeded 25 percent of its width. In non-bearing partitions 40 percent of a single stud width.

Any stud may be bored or drilled provided that the diameter of the resulting hole is no greater than 40 percent of the stud width, the edge of the resulting hole is a minimum of 5/8 inch from the edge of the stud and it is not located in the same cross section as a cut or notch.

A Stud may be bored to a diameter not exceeding 60 percent of its width, provide those located in a bearing partition or exterior wall are doubled and that not more than two successive studs are bored.

DRILLING AND NOTCHING – TOP PLATE

When piping or ductwork is placed in or partly in an exterior wall or interior, braced or load bearing wall necessitating a cutting of the top plate by more than 50 percent of its width a galvanized metal tie rod not less than 0.054 inch thick and 1.5 inches wide shall be fastened to each plate across and to each side of the opening with not less than six 16d Nails. Or when wood structural panel sheathing shall cover the entire side of the wall with the notch or cut.

HOUSE / GARAGE SEPARATION

Openings from a private garage directly into a sleeping room is not permitted, other openings between garage and the residence shall be equipped with a 20-minute fire rated door or approved alternate. Ducts in the garage and ducts penetrating the walls or ceilings separating the garage and dwelling shall be of 26-gage sheet steel or alternate approved material and shall have no openings to the garage.

The garage and dwelling shall be separated as will the attic area by not less than 1/2-inch gypsum board applied to the garage side.

Fire blocking shall be provided to cut off all concealed draft openings both vertically and horizontally and form an effective barrier between stories and between top story and the roof space. Chimneys and fireplaces as well as, any penetrations between stories including any shafts, wiring, piping and ducts.

ANCHOR BOLTS

Placement of all bolts shall be a maximum of (6) feet on center and located no more than twelve (12) inches from each end of each plate section. Bolts shall have a minimum diameter of one-half (1/2) inch and extend into the masonry or concrete a minimum of seven (7) inches and tighten with a nut and washer on each bolt to the top of the plate. Other approved fasteners may be used. Approved, means a tested and listed fastener with a report number by an approved agency for its' intended purpose. When used the manufacturers instructions must be followed and the report given to the local building inspector at time of inspection.

675 IAC 14-4.3-37 Section R313; smoke alarms

Authority: IC 22-13-2-2; IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 37. Delete the text of Section R313 and substitute to read as follows: R313.1 Labeling. Each smoke alarm shall be listed:

R313.2 Required smoke alarm locations. At least one smoke alarm shall be installed in each of the following locations:

- (a) In the living area remote from kitchen & cooking appliances. Smoke alarms located within 20 feet (6.1 m) horizontally of a cooking appliance must incorporate a temporary silencing feature or be photoelectric type.
- (b) In each room designed for sleeping.
- (c) On the ceiling of the upper level near the top or above each stairway, other than a basement stairway, in any multistory dwelling. The alarm shall be located so that smoke rising in the stairway cannot be prevented from reaching the alarm by an intervening door or obstruction.
- (d) On the basement ceiling near the stairway.

R313.2.1 Alterations and additions. When interior alterations or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be provided with smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and hard wired.

Exceptions:

1. Smoke alarms in existing areas shall not be required to meet the requirements of R313.5 where the alterations do not result in the removal of the interior wall or ceiling finishes exposing the structure unless there is an attic, crawlspace, or basement available that could provide access for hard wiring and interconnection without the removal of interior finishes.
2. Repairs are exempt from the requirements of this section.

R313.3 Prohibited smoke alarm locations. A smoke alarm required under this section shall not be placed:

1. within 3 feet (914 mm) horizontally from any grille moving conditioned air within the living space; or
2. in any location or environment that is prohibited by the terms of the listing.

R313.4 Mounting requirements. Smoke alarms required by Section R313.2 shall be mounted in accordance with their listing, installation instructions, and the requirements of this section.

R313.4.1 Flat Ceilings. In rooms with flat, peaked sloping or single slope ceilings with a slope of less than 1.5/12, smoke alarms shall be mounted either:

1. on the ceiling at least 4 inches (102 mm) from each wall; or
2. on a wall with the top of the alarm not less than 4 inches (102 mm) below the ceiling and not farther from the ceiling than 12 inches (305 mm) or the distance from the ceiling specified in the smoke alarm manufacturer's listing and installation instructions, whichever is less.

R313.4.2 Peaked Sloping Ceilings. In rooms with peaked sloping ceilings with a slope of 1.5/12 or greater, smoke alarms shall be:

1. mounted on the ceiling or wall within 3 feet (914 mm) measured horizontally, from the peak of the ceiling;
2. at least 4 inches (102 mm), measured vertically, below the peak of the ceiling; and
3. at least 4 inches (102 mm) from any projecting structural element.

R313.4.3 Single Slope Ceilings. In rooms with single slope ceilings with a slope of 1.5/12 or greater, smoke alarms shall be:

1. mounted on the ceiling or wall within 3 feet (914 mm), measured horizontally, of the high point of the ceiling; and
2. not closer than 4 inches (102 mm) from any adjoining wall surfaces or any projecting structural element.

R313.4.4 Visible notification appliances. In addition to the smoke alarms required pursuant to this section, listed visible notification appliances, when installed, shall meet the following:

R313.4.4.1 Candela Rating-Sleeping Room. A visible notification appliance, when installed in a room designed for sleeping, shall have a minimum rating of 177 candela, except that when the visible notification appliance is wall-mounted or suspended more than 24 inches (610 mm) below the ceiling, a minimum rating of 110 candela is permitted.

R313.4.4.2 Candela Rating-Nonsleeping Room. A visible notification appliance, when installed in an area other than a room designed for sleeping, shall have a minimum rating of 15 candela.

R313.5 Connection to Power Source. Each smoke alarm shall be powered from:

1. the electrical system of the home as the primary power source and a battery as a secondary power source; or
2. a battery rated for a 10 year life, provided the smoke alarm is listed for use with a 10 year battery.

Exception: Visible notification appliances are required to operate from the primary power source but are not required to operate from a secondary power source.

R313.5.1 Circuitry. Each smoke alarm whose primary power source is the home electrical system shall be mounted on an electrical outlet box and be connected by a permanent wiring method to a general branch circuit. The same branch circuit may serve more than one smoke alarm. The branch circuit for the alarm shall not include any switches between the branch circuit overcurrent protective device and the alarm and shall not be protected by a ground-fault circuit-interrupter.

R313.5.2 Interconnection. When more than one smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

(Fire Prevention and Building Safety Commission; 675 IAC 14-4.3-37; filed Jun 13, 2005, 3:00 p.m.: 28 IR 3267, eff 90 days after filing with the Secretary of State; filed Mar 6, 2008, 11:13 a.m.: 20080402-IR-675070483FRA; readopted filed Aug 4, 2011, 8:35a.m.: 20110831-IR-675110254RFA; readopted filed Mar 10, 2017, 9:37 a.m.: 20170405-IR-675170005RFA)