



Residential Construction **IMPORTANT INFORMATION**

Your residential plans have been checked for compliance with the current edition of the International Residential Code, National Electrical Code, and other related ordinances and state statutes. Many code-required items are not listed in detail on all building plans; however this does not exempt them from inspection or the requirements for compliance. For your convenience, the following list code-required items has been compiled:

GENERAL REQUIREMENTS:

1. Min ceiling height = 7ft
2. Min ½ in anchor bolts required at max 6ft apart and within 12” of each end of sole plate and embedded a min. of 7”.
3. Fire block and draft stop concealed areas in framing per IRC.
4. Post address at all times on job site.
5. House wrap required on all exterior walls.
6. Exterior walls of a structure or portions thereof must be 1hr fire resistant construction if the wall is located less than 5ft from the property line. Projections shall be protected on the underside if less than 4 feet.

BUILDING SITE AND FOOTING:

1. Foundations shall be designed and construction drawings stamped by a Colorado registered professional engineer or licensed architect. The foundation design must be based on an engineer’s soils report.
2. The frost line depth is 30 inches.
3. A site certification prepared by State of Colorado licensed professional is required for setback verification on all new Group R Division 3 occupancies.
4. All foundation drains shall be designed and inspected by an engineer licensed and registered in the State of Colorado.

FRAMING:

1. Follow your plans. All changes must be approved by the Building Department prior to construction.
2. Roof rafters and trusses require approved framing clips at each end. Trusses must be designed by Colorado Licensed Engineer.
3. Floor joist blocking is required at all bearing points or follow manufactured joist installation instructions.
4. All windows used for egress shall have a minimum clear opening of 5.7 square feet. Clear opening shall provide 20 inches minimum of clear width and 24 inches minimum clear height, with a maximum sill height of 44 inches.
5. Window wells at emergency escape and rescue openings (item #6 above) shall have a minimum horizontal area of 9 square feet, with a minimum horizontal projection and width of 3 feet. If over 44” deep must have egress ladder or stairs affixed. Wells must be covered or have guardrail if within 36” of

walking surface and deeper than 30". Top of well must also have 36" clearance from projections above (cantilevers). Emergency escape windows are allowed to be installed under decks as long as there is a 36" high path to a yard or court.

6. Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with ½-inch gypsum board.
7. Minimum stair requirements-maximum 7 ¾ inch rise, minimum 10 inch run (measured to finished floor), minimum head clearance 6 feet 8 inches, 36 inch minimum finished stair width.
8. Provide for proper attic access and ventilation.
9. The garage shall be separated from the residence and its attic area by not less than ½ inch gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from those rooms by 5/8 inch Type X gypsum board (supporting structures shall also be protected by not less than ½ inch gypsum board). Door(s) between garage and house must be 1 3/8 inch solid core or steel doors or 20-minute fire-rated doors.
10. The landing at an exterior door shall not be more than 7 ¾ inches below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing. Where a stairway of two or fewer risers is located on the exterior side of a door, other than the required exit door, a landing is not required for the exterior side of the door.
11. Minimum guardrail height 36 inches residential. Maximum opening between rails is such that a 4 inch ball cannot pass through.
12. Handrails shall be placed between 34 inches to 38 inches above the nosing of treads and landing. Stairways for dwellings with four or more risers shall have handrails.
13. Dwellings shall be ready for occupancy at the time of final inspection.
14. Swimming pools, spas, and hot tubs to be installed as per IRC Appendix G.
15. Minimum hallway width = 36in. finished
16. Floor joist IRC span table- 30psf sleeping area/ 40psf living areas and decks
17. Girder joints must occur over supports
18. All wood in contact with concrete or soil must be pressure treated.
19. Windows that are located 72in. or more above grade or surface below must have a minimum sill height of 24" above finished floor or be provided with an approved window guard.

PLUMBING AND MECHANICAL:

1. Install an approved air-gap fitting on discharge side of dishwasher. (Secure dishwasher drain to standpipe).
2. Provide vent for dryer to outside (max 25 foot length. Subtract 5 feet for each 90 degree elbows).
3. Install heating and air conditioning equipment according to manufacturer's specifications. When in a closet or alcove, the space shall be a minimum of 12 inches wider than the furnace with a minimum of 3" clearance at rear, sides, and top of furnace.
4. Screws or rivet fasteners are required at all joints on ductwork. Seal all joints in ductwork with mastic or approved tape (ordinary duct tape not adequate).
5. All appliances or equipment that generate a glow or spark shall not be located within 18 inches of the garage floor.
6. Provide outside combustion air to all gas appliances.
7. A furnace or water heater that depends on the combustion of fuel shall not be installed or accessed through a bedroom, closet, or bathroom.
8. Vent bath fan directly to exterior.

9. Shower areas shall be finished with non-absorbent material (must be cement, fiber-cement, or glass mat gypsum.(green gypsum board is no longer allowed) to a height of 72” above drain inlet.
10. Stools- Min. 21” clearance in front and 15” from center to any sidewall or obstruction.
11. Backwater valve is required on all waste lines located below the next upstream manhole cover serving the system.
12. Plastic fuel gas piping must be installed a minimum of 18” below grade.
13. Flex pipe gas line installers must be certified by the manufactures of the pipe (approved striker plates from pipe manufacturer shall be used for protection of pipe).
14. Striker plates for pipe protection shall extend 2 inches above sole and below top plates.
15. Attics containing appliances shall have a passageway from the attic access to the appliance with solid flooring not less than 24 inches wide for the full length of the passageway. Passageway shall not exceed 20 foot in length. There shall be a minimum 30 inch by 30 inch platform on the front or working side of the appliance. All structural members supporting the appliance shall have the weight of the appliance designed into the supporting members.
16. Bathtubs and whirlpool tubs require a temperature limiting device.

ENERGY AND CONSERVATION:

1. Insulation/ energy requirements in residential buildings shall conform to one of the following three standards:

Prescriptive: Chapter 11

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| a. Ceilings | R-38 minimum insulation R value. |
| b. Exterior Walls | R-19 minimum insulation R value. or
R-13+5 minimum insulation R value. |
| c. Sub-floors over unheated crawl spaces. | R-30 minimum insulation R value. |
| d. Windows & Doors. | U-factor of .35 |

Trade-Off:

ResCheck compliance package

Energy Analysis:

Home Energy Rating Certificate

2. Seal all penetrations in the building envelope, i.e. holes drilled in top plates, around windows, doors, etc.

SAFETY GLAZING REQUIRED:

1. All glazing panels greater than 9 sq. ft. with a bottom edge less than 18” to a walking surface and a top edge greater than 36 inches above a walking surface.
2. All glazing within 24 inch arc of either side of a door.
3. Glazing in tub or shower enclosure less than 60 inches above the drain inlet.
4. Glazing adjacent to stairways, landings and ramps with-in 36 inches horizontally of a walking surface when the exposed surface of the glass is less than 60 inches above the plane of the adjacent walking surface.
5. Glazing adjacent to stairways within 60 inches horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glass is less than 60 inches above the nose of the tread.

RESIDENTIAL WIRING REQUIREMENTS:

The following list of requirements represents some of the most often overlooked items in residential wiring. It must be used only as a guideline and is not intended as a technical document. To determine proper wire size and type, proper electrical equipment and proper wiring methods, you are advised to consult with a licensed electrical engineer, a licensed electrician, or your codebook.

RECEPTACLE OUTLETS:

1. In every habitable room, receptacle outlets shall be installed so that no point along the floor line in any wall space is more than 6 feet measured horizontally from an outlet in that space, including any wall space 2 feet or more in width. Fixed glass panels railings and other fixed room dividers such as freestanding bar type counters shall be included in the 6 foot measurement.
2. Minimum of one receptacle outlet in hallways 10' or more in length shall be installed.
3. All bedroom circuits including lighting and smoke detectors to be AFCI protected.

KITCHEN:

1. Provide a minimum of 2 (two) 20 amp. Circuits for the kitchen counter.
2. A receptacle outlet shall be installed at each counter space wider than 12 inches.
3. All receptacles installed to serve the countertop surface in a kitchen to be protected by ground-fault circuit interrupters.
4. Kitchen counter receptacles shall be installed so that no point along a wall line is more than 24 inches measured horizontally from an outlet; measured in such a manner that there is an outlet for every 4 linear feet or fraction thereof of counter length.
5. All receptacles installed within 6 feet of a wet bar shall be protected by ground-fault circuit interrupters.

BATHROOMS:

1. At least one wall receptacle outlet shall be installed within 3 feet of the basin location.
2. All outlets located in the bathroom shall be protected by a ground-fault circuit interrupter.
3. Bathroom receptacle outlet(s) shall be supplied by at least one 20-ampere circuit.
4. Hanging fixtures, lighting tracks, pendant or ceiling fans shall not be located within a zone measured 3 feet horizontally and 8 feet vertically from the top of the bathtub rim.

OUTDOOR AND GARAGE OUTLETS:

1. All outlets located outdoors, in crawl spaces, at or below grade level or in a garage shall be protected by a ground-fault circuit interrupter. Exception: garage door opener and outlets in a dedicated space.
2. At least 2 (two) outlets, accessible at grade level shall be installed outdoors and located at the front and rear of the dwelling and shall be waterproof and not installed on the small appliance branch circuit.
3. At least 1 (one) outlet shall be located in an attached garage.
4. At least 1 (one) outlet shall be located in a basement. Outlets in basements used as non-habitable rooms shall be GFCI protected.
5. Provide one outlet within 25 feet of equipment on the exterior of the structure. IE: A/C unit

LIGHTING:

1. At least 1 (one) wall switch-controlled lighting outlet shall be installed in every habitable room, in bathrooms, hallways, basements, attached garage, and at outdoor entrances. Exception: in habitable rooms, other than kitchens and basements, one or more receptacles controlled by a wall switch shall be permitted in lieu of a lighting outlet.
2. Interior stairs with more than 6 risers require a lighting control wall switch at each level.

LAUNDRY CIRCUIT:

1. Provide at least 1 (one) 20 amp circuit.
2. Receptacles located within 6 ft. of laundry and utility sinks must be GFCI protected.

SMOKE DETECTORS Section R313, IRC:

3. Provide a smoke alarm in each sleeping room.
4. Provide a smoke alarm outside each separate sleeping area in the immediate vicinity of the bedrooms.
5. Provide a smoke alarm on each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwelling units with split levels and without an intervening door between the adjacent levels, a smoke 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.
6. In new construction, the required smoke alarms shall receive their primary power from the building wiring, and when primary power is interrupted, shall receive power from a battery.
7. When one or more smoke alarms are required to be installed within an individual dwelling unit the alarm devices shall be interconnected.
8. When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in an existing building smoke alarms shall be provided as required for new construction. Note: The alarms may not be required to be interconnected.

SPAS, HOT TUBS:

1. Spas and Hot Tubs must be installed per National Electrical Code Article 680.

GROUNDING:

1. Water pipe and Ufer ground required. – See 2005 NEC handout for Ufer ground requirements.