



**Boulder County
Land Use Department
Publications**

Basement Finishing

Land Use Department
Courthouse Annex Building
2045 13th Street
PO Box 471
Boulder, CO 80302

**Building Safety &
Inspection Services:**
Phone: 303-441-3926

Email: building_official@bouldercounty.org
Website: www.bouldercounty.org/lu

Office Hours:

8 a.m.-4:30 p.m. Mon., Wed., Thurs., Fri.
10 a.m.-4:30 p.m. Tuesday

Building Permits can be applied for
and issued until 4 p.m.

Finishing a Basement

Based on the 2015 Boulder County Building Code and the 2015 International Residential Code (IRC).

Building Permit submittal requirements

Two complete sets of printed plans and a digital copy of the PDF files are to be submitted to Building Safety and Inspection Services for plan review.

Energy Conservation Requirements

See *Boulder County BuildSmart Checklist* at www.BoulderCounty.org for Energy Conservation Requirements.

Plan Requirements

Providing the following details to your basement finish plans allows the plan review process to proceed smoothly and avoids unnecessary delays. Minimum 1/4" scale plans.

Provide a Floor Plan that Contains the Following Details:

- The overall dimensions.
- Dimensions of each individual space.
- Label the use of each space.
- Show the window and door size (height and width), location, and style.
- Provide the location and dimensions of egress window well(s).
- Note the location of each plumbing fixture, mechanical appliance, and electrical panel.
- Show foundation wall.

Provide a Wall Section Detail, or Note the Following on the Plan:

- The wall insulation type and R-value must be per HERS rating or Prescriptive Path.
- The furred wall stud size and spacing.
- The partition wall stud size and spacing.
- The interior wall and ceiling finish materials.
- The height of the egress window well(s) and the dimension from the finished floor to the egress window sill(s).

Design Considerations

Framing, Insulation, and Sheetrock Requirements

- Floating slab techniques (1, 2, or 3 inch) are recommended, especially in the plains areas of the county.
- Partitions framed on concrete slabs require a treated wood bottom plate.
- Fire blocking is required at the top plate of and at all dropped ceilings and horizontally every 10 feet.
- If the area beneath a stairway is to be enclosed and used for storage, the walls and stair stringers beneath the stairway must be protected by 1/2 inch gypsum.
- Habitable rooms shall be a minimum of 7 feet in height.

Mechanical Requirements

- All habitable rooms must be provided with a source of heat capable of maintaining 68°.
- Enclosed mechanical spaces must be provided with combustion air in accordance with the equipment manufacturers listing, or in accordance with the International Residential Code. Clearances from combustibles must be maintained as per the manufacturers listing of the appliance and vent system.
- Bathrooms which do not have an exterior window (minimum 3 square feet, one-half of which must be openable), must be equipped with an exhaust fan which vents to the exterior of the building.

Electrical

- Habitable rooms must be provided with a switch-operated light or receptacle. Receptacle spacing must be such that no point along the wall is more than 6 feet from a receptacle.

Smoke Alarm Requirements

- Smoke alarms are required in each sleeping room and outside each sleeping room area adjacent to the bedrooms. A minimum of 1 smoke alarm is required at the basement level. Existing portions of the dwelling must also be updated with smoke detectors in accordance with current code.
- The smoke alarms shall be interconnected and hard wired except in existing areas where the alterations or repairs do not result in the removal of interior wall or ceiling finishes, unless there is an attic, crawl space, or basement available which could provide access for hard wiring and interconnection.
- Carbon monoxide alarm.

Fire Sprinkler Requirements

- Dwellings which have an existing automatic fire extinguishing system must have the system retrofitted to conform with the layout of the finished basement. Consult Building Safety & Inspection Services or your Fire District about sprinkler plan requirements and sprinkler inspections.

Egress Requirements

- Each sleeping room must be provided with an approved emergency escape window, emergency escape window well (if condition requires a window well), or a door (see Boulder County Land Use Department publication titled *Emergency Escape & Rescue Openings* available online at www.BoulderCounty.org or at the Building Safety & Inspection Services counter).
- Basements which do not have sleeping rooms must have at least one code-conforming emergency escape window or door.

Light & Ventilation Requirements

- Each habitable space shall be provided with natural light equal to 8% of the floor area, or provide artificial light producing an average of 6 footcandles over the area of the room at a height of 30 inches above the floor level and comply with the ventilation requirement.
- Each habitable space shall be provided with natural ventilation equal to 4% of the floor area, or provide an approved mechanical ventilation system in that room capable of producing 0.35 air changes per hour or a whole-house mechanical ventilation system capable of supplying outdoor ventilation air sufficient to meet table N1103.5.1.

Other Applicable Publications Available Online and at Building Safety & Inspection Services:

Visit www.BoulderCounty.org and search:

- *Plan Approval Requirements*
- *Residential Fire Protection Requirements*
- *Emergency Escape and Rescue Openings*
- *Safety Glazing*
- *Gas Log Requirements*
- *Boulder County BuildSmart Program*