



# Basement Finish Requirements

2018 International Residential Code  
2018 International Energy Conservation Code  
2020 National Electrical Code

## STRUCTURAL:

1. All bedrooms require at least one window to meet egress with a minimum 5.7 sq. ft. opening. The minimum dimension for width is 20" and the minimum dimension for height is 24", but the 5.7 sq. ft. must still be met. For example, windows with an opening width of 20" must be a minimum of 41" in height. A window that is 24" in height must be a minimum of 34.2" in width.
  - For window wells 44" in depth and greater an attached egress ladder must be installed.
  - Minimum egress window well horizontal projection is 36".
  - The interior window sill shall be a maximum of 44" above the floor.
2. All bottom-plate lumber in contact with the concrete shall be treated or decay-resistant.
3. Minimum ceiling height is 7'. Beams and ductwork may be 6'4" from the floor. Minimum ceiling height in bathrooms and laundry rooms is 6'8". Unfinished areas may have a ceiling at 6'8" with beams and ductwork at 6'4".
4. Floating walls are **NOT** required within the city limits of Greeley.
5. The mechanical room preferably shall not have any openings connected to a bedroom or bathroom. If the door to the mechanical room must open into a bedroom or bathroom, the door must be tight fitting, gasketed (weather stripping is acceptable and shall be self-closing. A carbon monoxide detector is required to be installed in the bedroom or bathroom adjoining the mechanical room.
6. Firestop all soffits, chases, dropped ceilings, and any other concealed spaces where a fire might spread throughout the structure of the house. Wood with a minimum thickness of  $\frac{3}{4}$ " or fiberglass insulation may be used.
  - The typical places where firestopping is required is at the top of walls where a dropped ceiling or duct chase leaves an open cavity from the wall into the chase, or a furred wall against a concrete foundation which leaves a space open to the floor joists above between it and the house exterior frame wall at the ceiling.

7. 10. Framed walls against the concrete foundation shall have a minimum R15 insulation installed in the stud cavities, or a continuous R19 blanket. Do not use any type of vapor or moisture barrier.
8. Under-stair storage, when enclosed with a door and no side open to another space, shall have 5/8" fire-resistive sheetrock (Type X), taped & mudded, on all surfaces made of combustible materials.
9. Moisture-resistant sheetrock when installed on ceilings, must have the framing installed at 12" centers. Typical framing is 16", 19.2", or 24" on-centers, thus, greenboard is not recommended for installation on the ceiling.
10. Cement board or glass mat gypsum board must be used for tile backer in tub or shower walls. Greenboard is not an acceptable backer for tile.
11. Typical screw spacing for 1/2" drywall is 12" on either wall or ceiling installation.

## **ELECTRICAL:**

1. Bathroom receptacles shall be supplied with a dedicated 20 amp GFCI protected circuit. The existing bathroom receptacle circuit may be utilized for the receptacle only, with the fan and light supplied by a general use lighting circuit, OR the receptacle, bath fan and lights may all be on a new 20 amp dedicated circuit, if the circuit is for that bath room only (If this method is used, it is advised to wire it so if the GFCI trips it will not turn off the light).
2. Each bedroom shall have a hard-wired smoke detector, as well as any adjoining hallways, which requires a combination smoke and carbon monoxide detector. These shall be inter-connected and hard-wired with the existing smoke detectors in the house. If your house does not currently have smoke detectors, it may be required that they be installed throughout the entire house, in both old & new areas. See specific notes on the approved plans and/or call the Building Department for requirements.
3. All lighting circuits shall be Arc Fault protected.
4. All receptacles shall be Arc Fault and GFCI protected, except bathrooms and crawl spaces, which are only GFCI protected.
5. Recessed can lighting shall be I.C. ("insulation contact") rated.
6. Receptacles shall be installed within 6' of any doorway, and spaced every 12' maximum measured lineally along the wall line. Any wall space 2' or longer will require a minimum of one receptacle.
7. Unfinished, storage, and mechanical rooms are required to have one GFCI protected receptacle each, which may be supplied from any non-dedicated circuit.

8. The dedicated sump pump circuit shall not be used for any other purpose, whether or not a pump is installed.
9. Incandescent light fixtures in clothes closets shall be a minimum of 12" from the vertical plane of the shelving and/or rod to the edge of the fixture; fluorescents and recessed cans at 6" from the vertical plane of shelf or rod. No unprotected bulbs may be placed in closets of any kind.
10. Sub panels shall not be placed in closets or bathrooms. Minimum clear working space directly in front of sub panel to be 36", with a 30" clear working space measured horizontally. The sub panel does not have to be centered within the 30" horizontal clearance space. No duct work, pipes, or equipment shall be directly above the sub panel.
11. Secure electrical cable (Romex) at four and a half foot intervals, and within 12" of any electrical mounted box.
12. All splices shall be placed within a junction box, and be accessible at the finished stage. Hidden, covered, or non-accessible junction boxes are not allowed. A cover plate is required at final inspection.
13. When terminating electrical cables (Romex) into metal boxes, bath fans, or similar applications a Romex connector is required to secure the cable.

All receptacles shall be of the tamper-resistant type.

## **PLUMBING:**

1. A temperature/pressure balanced "anti-scald" valve is required on all tubs and showers.
2. Shower base to encompass a minimum 30" circle inside the shower walls, with a minimum area of 1024 square inches.
3. Minimum 30" wide space for toilet, measured 15" on each side from center of toilet stub to sidewalls, cabinets, and shower/tub basins.
4. Minimum 24" clear space in front of toilet, lavatory, and shower.
5. Plumbing groundwork modifications shall be inspected prior to covering.
6. Backwater protection is required for all basement plumbing fixtures.
7. Vents shall be taken to atmosphere wherever possible; mechanical air inlet valves only allowed upon approval,

8. If P2904 fire sprinkler system is present, the sprinkler heads (and water pipe). may be removed in all rooms that will have sheetrock on the ceiling. Heads shall remain in all unfinished areas.

## **MECHANICAL:**

1. A window with minimum 1.5 square feet of openable area is required in bathrooms, or an exhaust fan vented to the exterior terminating a minimum of 36" away from any openings into the house.
2. Provide adequate combustion air to mechanical room:
3. Grills from the interior rooms, minimum of 100 square inches each, one high, one low. These shall not come from bedrooms or bathrooms, and their use may be limited by the cubic feet of the area with which they communicate.
4. Minimum 30" free clearance is required in front of the furnace and water heater.
5. All habitable rooms shall be able to maintain minimum 68 degrees at 3' above the floor, typically with added heat runs. It is recommended to install additional return air inlets to aid in balancing the heating/cooling loads, but if installed they shall not draw from bathrooms, storage areas or mechanical rooms.

## **REQUIRED INSPECTIONS:**

### **1. Rough-In Inspections**

#### **a. Electrical Rough**

Inspection of wiring, sub panel, smoke detectors.

#### **b. Mechanical Rough**

Inspect installation of exhaust fan, combustion air, heat runs, and return air.

#### **c. Plumbing Rough**

Inspect shower or tub install, toilet clearance, vanity rough-in and bar sink.

#### **d. Structural Rough**

Inspect framing, fire blocking, draft stopping, and check clearances of mechanical equipment.

### **2. Structural Insulation**

Inspect for conformance with the 2018 IECC, check fire blocking and draft stopping.

### **3. Structural Sheetrock**

Inspect screw pattern, correct type in bathroom areas, and under stairs.

### **4. Final Inspections**

**a. Electrical Final**

Inspect that all electrical complies with the 2018 International Residential Code, wiring of devices is correct, and tamper-resistant receptacles are in place.

**b. Mechanical Final**

Inspect that exhaust fan is working, and furnace diffusers are installed. **c.**

**Plumbing Final**

Inspect water supply lines are correctly installed on sinks, tubs and showers. Inspect that DWV is connected to plumbing fixtures.

**d. Structural Final**

Inspect life safety items (escape ladders, handrails, etc.) are installed and secured where needed.