



# Basement Finish Requirements

2018 International Residential Code

and

2018 International Energy Conservation 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 24" for height, but the 5.7 sq. ft. must still be met (For instance, an opening 20" wide must be a minimum 41" high, or one 24" high must be 34.2" wide).
  - For window wells 44" in depth and greater an attached egress ladder shall 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 lumber.
3. Minimum ceiling height is 7', beams & ductwork may be at 6'6" from floor. Unfinished areas may have a ceiling at 6'8" with beams & ducts at 6'4".
4. Floating walls are not required within the city limits of Greeley.
5. The mechanical room may not have any openings connected to a bedroom or bathroom. If the door to the mechanical room opens into a bedroom or bathroom, the door must be gasketed on sides & top (weather-stripping is acceptable) and also be self-closing. A carbon monoxide detector is required to be installed in the bedroom or bathroom.
6. Firestop all soffits, chases, and dropped ceilings, and any other concealed spaces where a fire might spread throughout the structure of the house. Wood with a minimum thickness of 3/4" or fiberglass insulation, with the paper/plastic backing removed and secured in place, 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 R19 insulation installed in the stud cavities, or a continuous R15 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" Type-X, fire resistive sheet rock, taped & mudded, on all surfaces made of combustible materials.

9. Moisture-resistant drywall (greenboard), 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 ½" 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 and the common area. 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 circuits shall be Arc Fault protected except those required to be GFCI protected.
4. Recessed can lighting shall be I.C. ("insulation contact") rated.
5. 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.
6. Unfinished, storage, and mechanical rooms are required to have one GFCI protected receptacle each, which may be supplied from any non-dedicated circuit.
7. The dedicated sump pump circuit shall not be used for any other purpose, whether or not a pump is installed.
8. 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.
9. 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.
10. Any general use receptacles within 6' of any laundry, bar or other sinks shall have GFCI protection.
11. Secure electrical cable (Romex) at four and a half foot intervals, and with in eight inches of any junction 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.
14. All receptacles shall be of the tamper-resistant type.

## **PLUMBING:**

1. A temperature/pressure balanced “anti-scald” valve is required in 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 of 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. Any plumbing groundwork modifications shall be inspected before covering.
6. Plumbing in addition to pre-existing rough-ins may require backwater protection, as may any added drains which tie into upstairs drain stacks.
7. Vents shall be taken to atmosphere wherever possible; mechanical air inlet valves only allowed upon approval of Building Department.

## **MECHANICAL:**

1. A window with minimum 1½ square feet of openable area is required in bathrooms, or an exhaust fan vented to the exterior terminating a minimum of 36” away from openings into the house.
2. Provide adequate combustion air to mechanical room:
3. Minimum two 6” diameter ducts piped from the exterior, one ending within 12” from the ceiling, and one 12” from the floor.
4. 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.
5. Louvered doors, if not in bedroom or bathroom.
6. Minimum 30” free clearance is required in front of the furnace and water heater.
7. 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.