



Residential Building Code Guide

This guideline has been prepared to assist the public during the residential construction process. The building department's function is not designing or engineering, but to ensure that the provisions of the Building Codes are met. The following items are not totally inclusive but are intended to highlight common code sections.

GENERAL BUILDING

R301.2.2 Seismic

- <https://hazards.atcouncil.org/>

R301.2.1 Wind Speeds

- <https://hazards.atcouncil.org/>

R308 Glazing:

Tempered windows required if:

- Within 2' unbroken arc of doors,
- Within 60" of tub floor
- Larger than 9 sq. ft, and bottom edge less than 18" above floor, and top edge greater than 36" above floor, and walking surface within 36",
- Within 60" hor. and vert. of all stair landings (top and bottom)

R309 Garages:

- Separation from the residence and attic by ½" gypsum on garage side.
- 5/8" type X in ceiling if habitable space is above.
- Solid wood or steel doors not less than 1 3/8" thick or 20-minute fire rated doors.
- No glass unless fire rated.

R310 Emergency Escape and Rescue Openings:

- Required in basements with habitable space and every sleeping room.
- Windows 5.7 sq. ft openable area – cannot remove sash to measure.
- Exceptions – grade floor window 5.0 sq. ft.

R311 Means of Egress:

- Minimum (1) one 3/0 x 6/8 door (landing always required).
- R311.3 floor or landing required on each side of exterior door.
- Exception – where two or fewer riser is located on the exterior side.
- Landing not to be more than 7 ¾" below threshold.
- No double cylinder deadbolt on ANY egress door.
- R311.7 Stairways – not less than 36" in width – 6'8" headroom – maximum riser height 7 ¾" – minimum tread depth 10" – riser height nor tread depth may vary more than 3/8" within the flight of stairs – open risers permitted 30" or less – flight of stairs not to exceed 147" -- sheet rock under accessible area – handrails required when 4 or more risers – sphere openings 4 3/8" – graspable handrails required 1 ¼" to 2 and must be returned or end in newel post.

**R312 Guards:**

- Required on porches, screened porches, balconies or raised floor surfaces more than 30 inches above the floor or grade (grade is measured from the lowest point 6' out) must be 36 inches high and not allow passage of a sphere 4 inches in diameter.

R317 Protection Against Decay – Treated Lumber:

- In contact with masonry or concrete
- Girders within 12" of ground
- Joist within 18" of ground
- Siding within 6" of ground

R318 Protection Against Termites:

- Chemical soil treatment
- Provide soil treatment letter to Building Department

R319 Site Address:

- Display 3" numbers visible from both directions on home side of the street.

FOUNDATIONS**R403.1.4 Footings/Slabs:**

- 12" below undisturbed ground surface
- 2 # 4 rebar set on chairs -- rebar must turn corners
- 3000 psi concrete
- Footing width must be installed per plans.
- Slabs must be free of all grass and roots, 6 mil poly-ethylene vapor retarder installed, and termite treated.
- Anchors tying building to slab 12" from corners and every 4' O.C.
- Vertical rebar 4' O.C. from footing up into foundation wall or piers in grouted cells.

R404 Foundation Walls:

- Approved anchors tying the frame to the foundation 12" from corners and every 4' O.C.
- Types M or S mortar required
- Foundation vents installed 3' from each corner and one per every 150 sq. ft.

R404.1.5.1 Pier and Curtain Wall Foundations:

- Approved anchors tying the floor frame to the foundation 12" from corners and every 4' O.C.
- Maximum height 4 feet.
- Consult the Code for seismic or special conditions.

R408 Under Floor Space:

- Foundation vents installed 3' from each corner and one for every 150 sq. ft of crawl space, see R408.2 for exceptions.
- Minimum access opening – through the floor 18" x 24" – perimeter wall 16" x 24".
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- Under floor space shall be graded, free of any vegetation or organic matter, wood, and construction debris.

FLOORS

R501 Framing – General:

- R507.2 (tables) Decks must be attached to home using ½” min. through bolts or shall be self-supporting.
- R502.6 Joist, beam or girder shall bear a min. of 1 ½” on wood or metal and 3” on masonry.
- R502.8.2 Engineered wood products shall not be cut, notched, or bored unless considered in the design.
- Header and girder spans – see tables R505.5 (1) and R502.5 (2).
- Cutting and notching of joists and stud walls.

WALL CONSTRUCTION

R601 General

- R602.8 Fire blocking required.
- Wall bracing see table R602.10.1 and R602.10.3.
- R802.5.1 Purlins permitted to reduce rafter spans. Purlins shall be sized no less than the required size of the rafters.

ROOF-CEILING CONSTRUCTION

R801 Roof Ceiling Construction General

- R807 Attic access opening minimum of 22” x 30”. 10. Provide truss installation plan at rough-in inspection.

Energy: 2009 International Energy Code

- Windows U factor .50 or less.
- R-19 min. in floor system/crawl space.
- R-13 min. in the walls.
- R-30 min. in attic with 1” airspace between insulation and roof deck.

MECHANICAL

Heating and Cooling:

- M1401.3 HVAC equipment shall be sized in accordance Manual J.
- M1305.1.3 Appliances in attics.
- M1502 Dryer exhaust must be rigid metal duct, maximum length 35’, deduct 5’ for each 90-degree bend and 2 ½’ for each 45-degree bend, tape (airtight) all joints NO SCREWS.
- M1505.4.4 (table) Bath fans must be 50 cfm and vented to the exterior.



Plumbing:

- One vent minimum of 1 1/4" must vent through the roof.
- Washer standpipe shall extend a minimum of 18" and a maximum of 42" above trap weir.
- Cleanouts at all changes of direction greater than 45 degrees.
- Three-inch cleanout within 30" outside of building.
- Water heater T & P valve must be piped to the exterior using copper or CPVC.
- P2903.5 Water Hammer arrestor shall be installed for quick closing valves. (washer, dishwasher etc.).
- Water heaters in garage must have ignition source elevated 18" off the floor and protected from impact.
- Install gate valves on cold water supply to each water heater and near the entrance of the water service.

Electrical:

- E3405 Panel locations prohibited in some areas and protected work area required.
- Provide 3 wire service from meter to panel.
- Label panel in pen not pencil.
- HVAC equipment located in attic or crawl space must be provided with a light near the service side and a receptacle. Outside HVAC equipment must be provided with a receptacle within 25'.
- If water heater is not in sight of panel, a disconnect must be provided.
- GFCI protection – Kitchen counters, bathrooms, garages, storage rooms on garage level, basement and exteriors etc.
- Arc-Fault protection – In areas other than kitchen or laundry, branch circuits that supply 15 and 20-amp outlets.
- Smoke Alarm - Provide hard wired interconnected (with battery back-up) smoke alarms in each sleeping room, outside each sleeping room in the immediate vicinity, and every level including basement and bonus room, but not less than 3 ft. from bathroom opening with tub or shower.
- Carbon Monoxide Alarm – Required in dwelling units with fuel fired appliance (gas water heater, stove, furnace etc., fire place) or attached garage.