



2021 Residential Building Code (IRC) – Most Significant Changes for One and Two-Family Dwellings

- The state added Ch. 45 – Existing buildings and structures. The scoping provisions state that repairs, alterations, additions, and relocation of existing buildings and structures must comply with the requirements of new construction except as modified in this chapter. Users are directed to the IEBC only when there is a change in occupancy or change of height or egress that pushes the scope out of the IRC. WS IRC R102.7.1 and WS IRC Chapter 45.
- The definition of Townhouse changed and a new definition for Townhouse Unit was added and modified by the state. IRC R202 & WS IRC R202.
TOWNHOUSE. A building that contains three or more attached townhouse units.
TOWNHOUSE UNIT. A single-family dwelling unit in a townhouse that extends from foundation to roof and that has a yard or public way on not less than two sides that extends at least 50 percent of the length of each of these two sides.
- The state added a definition of Enclosed Kitchen and Loft (to replace Sleeping Loft) and modified Landing Platform. WS IRC R202.
ENCLOSED KITCHEN. A kitchen whose permanent openings to interior adjacent spaces do not exceed a total of 60 square feet (6 m²).
LOFT. A space on an intermediate level or levels between the floor and ceiling of a dwelling or sleeping unit, open on one or more sides to the room or space in which the loft is located, and in accordance with Section R333.
- The use of Intermodal Shipping Containers is now recognized in the IRC and criteria for minimum structural requirements is referenced to Section 3115 of the IBC. IRC R301.1.4.
- Wind speeds have been updated and reduced in many areas. Design criteria can be verified using <https://asce7hazardtool.online/>. IRC R301.2.1.
- Scope added for anchorage of water heaters to include thermal storage units. WS IRC R301.2.2.10.
- The live load requirement for guards and handrails are separated and the requirements for guards have been lessened. Now only handrails must apply a single concentrated load applied in any direction at any point along the top. For guards not required to serve as a handrail, the load need not be applied to the top element of the guard in a direction parallel to such element thus reducing the amount of connection hardware needed to construct a guard along a deck or other elevated walking surface. Guards must still be designed with the concentrated load in the downward direction and in the horizontal direction away from the walking surface. IRC Table R301.5.
- While the model code was amended to clarify that the separation of dwelling units in two-family dwellings to be not less than 1-hour regardless of whether a lot line existed between the units, the state chose not to include that language and added an exception to not

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require separation of an ADU added to an existing single-family residence to create a two-family dwelling when smoke alarms are interconnected. WS IRC R302.3.1.

- The state made several modifications to the fire-resistance requirements in two-family dwellings regarding protection at the wall separating units, separation from shared accessory rooms, and penetrations. WS IRC R302.3.4 – R302.3.5.3.
- Doors at the dwelling-to-garage opening now must be self-latching in addition to being equipped with a self-closing or automatic-closing device. IRC R302.5.1.
- New section added regarding electric vehicle charging to require a dedicated 40-ampere circuit. WS IRC R309.6.
- The provisions for window wells and area wells serving emergency escape and rescue openings have been merged into one section for area wells. IRC R310.4.
- The state relocated requirements for replacement windows from R310.5 to R4502.5. WS IRC R4502.5.
- Access to 200 s.f. or less can now utilize alternating tread devices and ship's ladders under certain conditions. WS IRC R311.4.
- The state did not adopt the exception for alternating tread devices or ship's ladders. WS IRC R311.7.11 & WS IRC R311.7.12.
- A new location requirement for smoke alarms was added to address high ceilings adjacent to hallways serving bedrooms and the state clarified that a smoke alarm is required within the room to which a loft is open. IRC R314.3 & WS IRC R314.3.
- The provisions for protection of wood against decay have been reorganized and clarified. IRC R317.1.
- The accessibility provisions for live/work units and owner-occupied lodging houses constructed under the IRC are clarified. IRC R320.
- Habitable attics are now limited to one-third the floor area of the story below except if the dwelling unit is equipped with a fire sprinkler system, it can be not greater than one-half the floor area. IRC R326.
- The state requirement that pools and spas comply with the ISPSA has been relocated from R328 to R327 with the same revisions as previously adopted. WS IRC R327.1.
- The state amended section for Energy Storage Systems has been relocated from R329 to R328 and modified. WS IRC R328.
- The state added a new section for Lofts including a definition in R202. Other code sections modified to include loft requirements where applicable. WS IRC R333.
- The state added a new section for Stationary Fuel Cell Power Systems and refers to the IFC for compliance requirements. WS IRC R334.
- 6 mil waterproofing no longer allowed at concrete foundations. IRC R406.2.
- A minimum 10 mil vapor retarder conforming to ASTM E1745 Class A requirements is now required below slabs-on-grade. IRC R506.2.3.
- New section added specific to exterior deck guards. IRC R507.10.
- The location of braced wall lines and permitted offsets are more limited. IRC R602.10.1.2.
- Clarifications added for use of brick veneer in prescriptive designs by adjusting seismic factors. IRC Table R602.10.3(4).
- Limitations added for stone and masonry veneer in prescriptive designs. IRC R602.10.6.5.

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- Garage door labeling required to identify wind pressure rating among other information. IRC R609.4.1.
- Requirements for vapor retarders have been reorganized and clarified. Several new tables have been provided to assist designers in determining what vapor retarders are required, and where these vapor retarders should be located in the wall assembly. IRC R702.7.
- Some previous state amendments for exterior coverings regarding water-resistive barriers and flashing have been removed to rely on the model code language. IRC R703.
- Larger air gaps are allowed behind veneer to accommodate thicker continuous insulation. IRC Table R703.8.4(1).
- A new section added to provide prescriptive guidance on materials, design, and installation of soffits. IRC R704.
- Revised wood roof framing language to clarify where a ridge beam is required when ceiling joists or rafter ties do not provide continuous ties across the structure. IRC R802.3.
- The state modified local exhaust requirements in kitchens and differentiates between open and enclosed kitchens. Enclosed Kitchen added to definitions. WS IRC R202 & WS IRC M1505.4.4.1.
- The state modified local exhaust fan requirements to limit sones at kitchen fans. WS IRC M1505.4.4.2.
- The state added a new section for local intermittent kitchen exhaust systems including field verification and diagnostic testing requirements. WS IRC M1505.4.4.3.
- A new section added for oil-fired appliances to be equipped with a safety device which will stop burner operation in the event that the venting system is obstructed. IRC M1802.4.
- The provisions for ground source heat pump loop piping systems in Section M2105 have been duplicated in Section M2101 to apply to all hydronic piping systems in this modified section. IRC M2101.11 – M2101.31.
- The exception allowing new exhausts to be run through existing un-lined chimneys has been removed. IRC G2427.5.5.1.
- The exception allowing commercial cooking appliances where the installation is designed by a licensed Professional Engineer has been removed. Commercial cooking appliances lack many safeguards that are found in residential appliances and are now **fully prohibited** by the IRC. IRC G2447.2.

NOTE: This handout summarizes most significant changes within the 2021 Washington State Residential Code (also known as the IRC) for those buildings defined in the code as Residential Buildings. See complete code text for all changes.