



## 2021 Significant Code Changes for the IRC

This summary includes changes to the International Residential Code (IRC), including the Chapter 11 Energy Efficiency provisions extracted from the International Energy Conservation Code (IECC) Residential Provisions. This is not all the changes that were approved.

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**IRC Section R301.2.1.2 Protection of openings:** Wind-borne debris protection in hurricane-prone regions is now required for any site within one mile of the mean high-water line of an Exposure D condition instead of just one mile from a coastal mean high-water line. This will include buildings adjacent to wide rivers or large inland lakes but not directly fronting on the Atlantic Ocean or Gulf of Mexico.

**IRC Section 301.2.2.6 Cripple Wall Clear Height:** Hillside light-frame construction is added as an irregular building type to be addressed by an engineered design for the transfer of lateral forces from the house to the foundation. The irregularity applies where the slope exceeds 1-unit vertical in 5-units horizontal, the tallest cripple wall clear height exceeds 7-feet, and the area under the lowest floor is less than 50% finished space.

**IRC Section 301.3 Story Height:** The ability is restored to construct a story of a dwelling using 12-foot high bearing walls if the wall studs are engineered for gravity loads, wall bracing amounts are increased, and a roof or ceiling diaphragm provides support to the studs.

**IRC Section Table 301.5 Minimum Uniformly Distributed Live Loads:** The live load requirement for guards and handrails are separated, and guards are only required to resist a 200-pound load in the outward and downward directions. The change would reduce the amount of connection hardware needed to construct a guard along a deck or other elevated walking surface.

**IRC Section 326 Habitable Attics:** Habitable attics are required to be considered a story above grade plane unless it meets the same restrictions as mezzanines. A dwelling may need to be sprinklered in order to permit a habitable attic to be constructed.



**IRC Tables 403.1(1), 403.1(2), 403.1(3) Minimum Thickness for Concrete Footings for Light-Frame Construction:** The minimum footing width tables are revised to remove overly conservative assumptions or correct underlying calculations to match common engineering practice for light-frame construction. In most cases footing sizes will be modestly reduced from the 2015 and 2018 IRC requirements.

**IRC Sections 403.1.6 Foundation Anchorage:** Requirements are added for wet-setting of anchor bolts in foundations, including the need for proper consolidation of concrete around wet-set bolts.

**IRC Section 703.4 Flashing at Window and Door Openings:** An insulation stop is required be installed around window and door openings to allow for drainage of water to the surface of the exterior wall finish. The insulation stop is to be located 1 to 2 inches from the face of exterior sheathing.

**IRC Sections 703.7 Lath and Furring:** The lath and attachment requirements for exterior lath and plaster (stucco) are revised to correlate with ASTM C926 and C1063 and attachment and placement requirements for furring. Fasteners for lath are required to be spaced 7 inches vertically along studs or furring and horizontally at the spacing of the studs or furring.

**IRC Sections 703.7.3 Water Resistive Barriers:** The water-resistive barrier requirements behind stucco where applied to wood-based sheathing are divided into separate sections for dry and moist climate zones. A 3/16-inch air space or material with high drainage efficiency is required in moist climate zones.

**IRC Tables N1102.1.2 and N1102.1.4 Insulation and Fenestration Requirements:** Prescriptive wall, ceiling and slab edge insulation levels are increased as follows:

- Wall insulation in Climate Zones 4 and 5 increased from R-20 in the cavity to R-20 in the cavity +R-5 continuous.
- Slab edges in Climate Zone 3 are required to be insulated with a minimum R-10 at 2-foot depth.
- The depth of the required R-10 slab edge insulation for Climate Zone 4 and 5 is increased from 2 feet to 4 feet minimum.
- Attic insulation levels are increased in Climate Zones 2 and 3 from R-38 to R-49, and in Climate Zones 4-8 from R-49 to R-60.

**IRS Sections N1104.1-N1104.2 Lighting Controls:** 100% of permanently installed lighting fixtures must have high efficacy lamps with efficiency of as 70 lumens per watt. All permanently installed lighting fixtures must have dimmers or occupant sensor controls. **IRC Section N1105.2 Performance-Based Compliance:** A backstop is added in the performance path requiring the building thermal envelope to achieve equal or greater levels of energy efficiency to the 2009 IECC.



**IRC Tables N1105.4.2(1) and N1103.6.2 Mechanical Ventilation Reference Design:**

The mechanical ventilation system used in the standard reference design used in a performance path analysis is required to be the same system used in the proposed design. The table of whole house mechanical ventilation fan efficacy is modified to specify fan efficacy by system type rather than fan location.

**IRC Section N1106.3 Energy Rating Index:** The maximum Energy Rating Index (ERI) thresholds are lowered by 5-8 points (9-13% increase in stringency) depending on the climate zone. In addition, the amount of total energy use reduction from on-site renewable is limited to 5%.

**IRC Section 1101.6 and 1106.6 Renewable Energy Certificate and Verification:** A renewable energy certification is required to be given to the code official when on-site renewables are used in the ERI path. The certificate must demonstrate the homeowner owns the solar energy system or that a certain quantity of the energy generated belongs to the homeowner.

**IRC Section N1101.13.5 Additional Efficiency Package Options:** An additional efficiency package is required beyond base requirements. It is intended to increase stringency by about 5% of building energy use. For prescriptive or performance path, five individual packaged options are added: (1) insulation and glazing, (2) HVAC, (3) water heating, (4) ducts entirely within conditioned space, and (5) air sealing and ventilation. Performance path may choose a 5% modeled improvement in lieu the package requirement. ERI requires a 5% improvement over its baseline.

**IRC Section P2905.3 Hot Water Supply to Fixtures:** A new section is added limiting the maximum length of hot water piping to 100-feet.