



[savvy special report]

# 2018 I-Codes **Now** Ratified Across Texas as **2021** Code Hearings Begin

By Paul Evans

**B**uilders understand that change and advancement in minimal standards for residential construction are needed and necessary. Still, industry advocates also work hard to prevent excessive design standards that hurt housing affordability. The building codes process involves a series of proposed changes and hearings, and then the new codes are published every three years to establish minimum regulations. Municipalities then have their own set of hearings to decide which ones to adopt, reject, or modify. It is a time-consuming process. For example, as the 2021 building code development process gets underway, 162 changes to the 2018 codes are only ratified and accepted by all 254 Texas counties.

*Paul Evans, who has served on the International Code Council's structural and energy committees, said about 94 true code changes between the 2015 and 2018 International Residential Code® (IRC), mainly involving definition changes with clarifications.*

Paul identified the following list of changes between the 2015 and 2018 codes that will most impact code enforcement and inspection once these I-Codes are fully adopted:

### **Chapter 3: BUILDING PLANNING**

R301.2 To assist the designer, jurisdictions will now include variables for HVAC local calculation Manual J assessments with other climatic and geographic design criteria available from the building department.

R301.2.2.1. New seismic design category (SDC) maps are included in the 2018 IRC. Notably, North Texas is now included.

R302.13. Fire-resistant membrane protection is now required for the applicable floor framing materials above crawl spaces containing fuel-fired or electric- powered heating appliances. (Note: This is not just related to furnaces, but any appliance that heats, including stoves and cooktops.)

R314. The exemption for interconnection of alarms during alterations based on feasibility has been removed from the code.

R324.6 Requirements for roof access and pathways for firefighters have been introduced into the IRC provisions for rooftop-mounted photovoltaic solar energy systems. Rooftop-mounted photovoltaic solar energy panels and modules are not permitted to be installed below emergency escape and rescue openings.

R325.6 The definition of habitable attic has been revised and the technical requirements have been placed with mezzanines.

#### **CHAPTER 5: FLOORS**

R507 Requirements for fasteners and fastener connections, flashing and alternative materials are added. Paul notes that inspectors are receiving special instruction for this in in some cases, municipalities will be using inspectors that solely inspect decks.

A new section on footing minimum size is added to help describe minimum prescriptive (non-engineered) requirements for an exterior deck footing based on snow load, soil quality, and footing shape and size. Maximum joist spacing and total length have been clarified. Decking material options and fastener systems are clarified. Vertical and horizontal support of an exterior deck is updated while support and attachment of ledgers is added to the decking section.

#### **CHAPTER 6: WALL CONSTRUCTION**

To help clarify when studs greater than 10 feet long may be used, an exception is added to Section R602.3.1 as well as a reference to new Table R602.3(6) which applies only to 11- and 12-foot tall walls in one- and two- story buildings.

R602.10.3. Seismic Adjustment Factors attempts to clarify roof and ceiling dead loads in the top story of a multi- story dwelling and use of the BV-WSP bracing method have been added. Table R602.10.3(4) now allows use of Methods WSP and CS-WSP with brick veneer in the second story of a dwelling.

R602.10.4.1 Mixing of continuous sheathing methods with an intermittent alternate bracing method is clarified. Braced wall line(s) containing an alternate method must have sufficient bracing length for an intermittent method, not just for the continuous sheathing method when the alternate method is Method PFH, PFG or ABW

#### **CHAPTER 7: WALL COVERING**

R703.2 Water-resistive barrier materials other than No. 15 asphalt felt must be installed following the manufacturer's installation instructions. The exemption for detached accessory buildings is deleted.

R703.8.4 Masonry veneer is explicitly allowed to attach to through insulation into the underlying wood structural panels.

#### **CHAPTER 9: ROOF ASSEMBLIES**

New Section R905.17 addresses installation and attachment of building- integrated photovoltaic (BIPV) roof panels

R308.4.2. Glazing within 24 inches of the hinge side of an in-swinging door now requires safety glazing where the glazing is at an angle less than 180 degrees from the plane of the door. (If an in-swing door can hit the adjacent wall glazing is required.)

R308.4.4 Unless laminated glass is used, structural glass baluster panels in guards now require an attached top rail or handrail.

R311.7.3 The maximum rise of a flight of stairs has increased by 4 inches, from 147 to 151 inches (meaning you no longer have to have a staircase landing where you have nine or ten foot ceilings).

R311.7.11 Ship's ladders are now permitted as a means of egress for lofts with an area that does not exceed 200 square feet (a provision created mainly in consideration of tiny houses).



**CHAPTER 10: CHIMNEYS AND FIREPLACES**

R1005.8. Factory-built chimneys, which have been required to maintain a minimum clearance to insulation, are now required to have an insulation shield to provide the clearance to the insulation.

**CHAPTER 11: ENERGY EFFICIENCY**

N1102.1.2. The prescriptive U-factors for fenestration have been lowered to .25 to improve the energy efficiency of dwellings and townhouses.

N1102.2.2 When applying the exception for insulation in ceilings without attics, the insulation must extend to the outside of the top plate.

N1102.4. A new standard for air-leakage testing, RESNET/ICC 380, is now referenced in the IRC to provide flexibility for the testing industry.

N1104.1. The required percentage of permanent lighting fixtures having high-efficacy lamps has increased from 75 to 90 percent.

**CHAPTER 13: GENERAL MECHANICAL SYSTEM REQUIREMENTS**

M1305.1.1. The appliance access requirements for furnaces in compartments have been removed from the code in favor of other code provisions and the manufacturer's instructions.

**CHAPTER 15: EXHAUST SYSTEMS**

M1503.6 Makeup air for domestic cooking exhaust systems is no longer required if all fuel-burning appliances in the dwelling unit have a direct vent or mechanical draft vent system.

**CHAPTER 16: DUCT SYSTEMS**

M1601.1.2. Underground ducts, including both direct-burial ducts and those encased in concrete, require sealing and testing. .

**CHAPTER 24: FUEL GAS**

G2420.5.1 Shutoff valves located behind movable appliances are considered as meeting the requirement for access.

G2442.2. The prescriptive duct size requirements for forced air furnaces have been deleted in favor of other sizing methods specific to the appliance.

G2447.2. Commercial cooking appliances are now permitted in dwelling units when installed in accordance with an engineered design and the manufacturer's instructions.

### **CHAPTER 27: PLUMBING FIXTURES**

P2713.1. Bathtub overflow outlets are no longer required. (While this change was added to address the fact that a lot of European tubs don't have them, Paul says this is an example of a change that's not good and recommends you should use tubs that have them!)

### **CHAPTER 29: WATER SUPPLY AND DISTRIBUTION**

P2906.18.12 A single solvent-cement transition joint is now an acceptable method for connecting a CPVC water distribution system to a PVC water service pipe. (Paul says this one is ill-conceived and still recommends using purple CPVC glue so that the inspector can see it.)

### **CHAPTER 37: BRANCH CIRCUIT AND FEEDER REQUIREMENTS**

E3703.5 A separate 20-ampere branch circuit is now required to serve receptacle outlets of attached garages and detached garages with electric power.

### **CHAPTER 39: POWER AND LIGHT DISTRIBUTION**

E3902.4. Ground-fault circuit-interrupter (GFCI) protection is now required for lighting outlets of crawl spaces. (Paul notes that he disagrees with this one because people keep crawl space lighting on to prevent pipes from freezing and the GFCI would not warn when they turned off.)

### **CHAPTER 41: APPLIANCE INSTALLATION**

E4101.3. The maximum cord lengths for range hoods and built-in dishwashers have increased and the code clarifies that the receptacle outlet for the dishwasher has to be in the space adjacent to the appliance.

### **APPENDIX Q: TINY HOUSES**

Dwellings under 400 square feet do not have to be inspected.

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