

# 2021 TECHNICAL CODES & LOCAL AMENDMENTS

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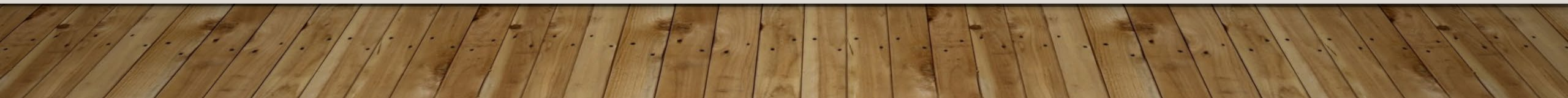
CITY COUNCIL WORKSHOP 12/07/2021


CONTRACTORS MEETING 12/9/2021



# CURRENT CODE HISTORY

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- Ord. 99-01, passed 1-12-99;
  - Am. Ord. 2002-14, passed 8-13-02;
  - Am. Ord. 2004-33, passed 8-24-04;
  - Am. Ord. 2007-06, passed 2-13-07;
  - Am. Ord. 2009-11, passed 4-14-09;
  - Am. Ord. 2010-03, passed 2-9-10;
  - Am. Ord. 2011-07, passed 4-12-11;
  - Am. Ord. 2012-23, passed 9-25-12;
  - Am. Ord. 2014-29, passed 11-18-14;
  - Am. Ord. 2015-25, passed 12-8-15;
  - Am. Ord. 2016-03, passed 2-9-16;
  - Am. Ord. 2018-09, passed 2-13-18;
  - Am. Ord. 2019-22, passed 8-13-19;
  - Am. Ord. 2020-33, passed 8-25-20;
  - Am. Ord. 2020- 34, passed 8-25-20
- 



Entity	Current Codes *	Future Plans
Copperas Cove	2015 Codes / 2014 NEC	No timeline to adopt 2021 Codes
Killeen	2018 Codes / 2017 NEC	Jan. 2022 - Adopt 2021 Codes w/ March 2022 Effective Date
Harker Heights	2015 Codes / 2020 NEC	Dec. 2021 - Adopt 2021 Codes w/ January 1, 2022 Effective Date
Nolanville	2015 Codes / 2017 NEC	No timeline to adopt 2021 Codes
Belton	2015 Codes / 2014 NEC	October 2022- to adopt 2021 Codes
Temple	2015 Codes / 2008 NEC	End of 2022- to adopt 2021 Codes

\* On June 30, 2020 the Texas Commission on Licensing and Regulation adopted the 2020 NEC as the electrical code for the state of Texas and established it as the minimum standard for all electrical work in Texas covered by the Act.





## 2021 INTERNATIONAL CODES



★ IFC to be brought forward by the Fire Marshal in January 2022 for consideration.



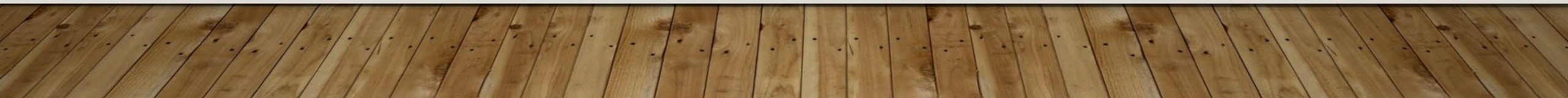
# 2021 INTERNATIONAL BUILDING CODE (IBC)

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## CHANGE

- Working without a permit penalty = the greater of \$250 or 100% of the permit fee in addition to the required permit fees.
- Some definition changes and additions
- Sprinkler requirement for both the manufacturing and bulk storage of distilled spirits.

## REASON / COST

- Discourage repeat offenders
  - Provide clarification
  - Cost of fire suppression system depends on size of facility
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# 2021 IBC (cont.)

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## **CHANGE**

- Manual fire alarm systems are no longer required in assisted living facilities up to 16 persons but a system is still required
- Retaining Walls over 2 ft. high are required to be engineered and site specific (also in IRC)

## **REASON / COST**

- Savings because considered “overly restrictive”
- Provide clarification & safety





# 2021 IBC (cont.)

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## **CHANGE**

- Criteria for Intermodal Shipping Containers as buildings & structures has been established to address the minimum safety requirements without duplicating existing code provisions
- 8 out of the 13 Appendices Adopted

## **REASON / COST**

- Provide clarification & safety
- Provide clarification & safety



# 2021 INTERNATIONAL PLUMBING CODE (IPC)

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## CHANGE

- Reinspection Fee (Also IRC)
- No fixture shall be more than 50 linear foot from the source of hot water. (Also IRC)
- Definitions added and amended

## REASON / COST

- Discourage Repeat Offenders
- Uniformity between Codes
- Clarification and Safety





# 2021 INTERNATIONAL PLUMBING CODE (IPC)

## CHANGE

- Separate facilities shall not be required in business occupancies in which the maximum occupant load is 25 or fewer
- At least three required drinking fountains must be installed before 50% of the additional required drinking fountains can be substituted with water dispenser.

## REASON / COST

- Savings





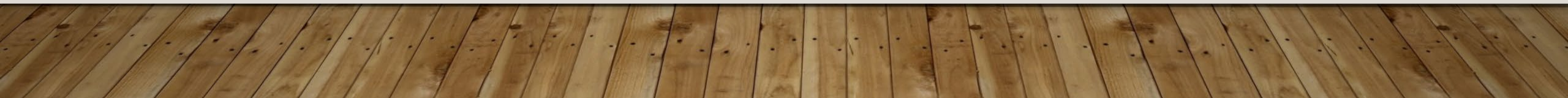
# 2021 INTERNATIONAL PLUMBING CODE (IPC)

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## CHANGE

- In multiple-tenant buildings, where a common water supply piping system is installed to supply other than one- and two-family dwellings, a main shutoff valve shall be provided for each tenant
- A minimum of one (1) clean-out conforming with 708.1.3 and one (1) clean-out within 5' inside of the property line shall be installed. Where a Clean-out is in conflict with any easement, public or private, the placement of the clean-out shall be coordinated with the city building official.

## REASON / COST

- Safety
  - Containment & Repair Costs
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# 2021 INTERNATIONAL MECHANICAL CODE (IMC)

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## **CHANGE**

- Condensate drains shall not discharge into a plumbing fixture other than a floor sink, floor drain, trench drain, mop sink, hub drain, standpipe, utility sink or laundry sink.

## **REASON / COST**



# 2021 INTERNATIONAL FUEL & GAS CODE (IFGC)

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## CHANGE

- Chimneys shall be lined in accordance with NFPA 211.
- Cooking appliances designed, tested, listed and labeled for use in commercial occupancies shall not be installed within dwelling units or within any area where domestic cooking operations occur.

## REASON / COST

- Uniformity between codes.





# 2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

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- **CHANGE**

- Addition to the ceiling insulation.
- Adding R-11 to the R-38.
- New requirement is R-49.

- **REASON / COST**

- Added insulation = \$200 to \$300 added cost per 1,000 square foot
- 6-mil poly to 10-mil = \$30 to \$60 added cost per 1,000 square foot
- Duct leakage test = \$200 added cost for spray foam only. (Loose fill has been required since 2015.)

# 2021 INTERNATIONAL RESIDENTIAL CODE (IRC)

## CHANGE

- Smoke Alarms Required
- Carbon Monoxide Alarms Required
- The habitable attic provisions added.
- Tiny Homes Standards



## REASON / COST

- Now required for permitted non-electrical alterations (except those that are exempt) for safety.



# 2021 IRC (cont.)

## CHANGE

- Rooftop Mounted Solar Panels
- Lighting Equipment (Mandatory). All permanently installed fixtures, excluding kitchen appliance light, shall contain only high-efficacy lighting.



## REASON / COST

- Safety
- To match up with IECC





# 2021 IRC (cont.)

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## CHANGE

- Vapor Retarder - Thicker vapor retarder is now required. (6-mil to 10-Mil)
- An emergency service disconnect is required in a readily accessible outdoor location.
- A surge protection device (SPD) is now required at the service panel.
- GFCI additional standards

## REASON / COST

- Increase initial costs in exchange for longer life cycle
- Per 2020 NEC





# 2021 IRC (cont.)

## CHANGE

- Garage Doors – Wind Rating
- Internal Garage Doors – Self Latching
- Electrical and communication boxes installed in the building thermal envelope must be sealed, tested and marked for compliance.
- The exception for duct testing of ducts located entirely in conditioned space has been removed.

## REASON / COST

- Manufacturer standards already doing this.
- Changed from self closing for fire protection and fumes protection
- Per IECC
- Impact to spray foam applications only



The image shows a white rectangular label with an orange border and rounded corners. At the top left, it says 'GARAGE DOOR COMPANY' in white text on an orange background. To the right of this, it says 'WINDLOAD COMPLIANCE' in white text on an orange background. Below this, in a white box with an orange border, it says 'THIS DOOR MEETS DESIGN LOADS FOR WIND SPEEDS ACCORDING TO THE ASTM STANDARD.' At the bottom, there is a table with two columns and two rows. The first row has 'Design Wind Speed' in the first column and 'psf' in the second column. The second row has '130 mph (C)' in the first column and two cells: 'low' and 'high' in the second column. Below these cells are the values '-23.9' and '21.5' respectively.

Design Wind Speed	psf	
130 mph (C)	low	high
	-23.9	21.5

# 2021 IRC (cont.)

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## CHANGE

- Where plumbing is present and passes through more than one framing member within a wall assembly, no less than 2x6 framing shall be used.

## REASON / COST

- Safety



# 2021 INTERNATIONAL PROPERTY MAINTENANCE CODE (IPMC)

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- **Minimal changes**



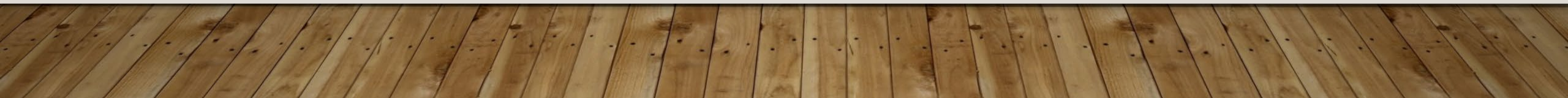
# 2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)

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- **CHANGE**

- Sprinkler requirements for level 3 alterations have been added to clarify required systems based of the specific occupancy and the location of the work area.
- Accessible toilets and bathing rooms standards
- Roof Dead Load Standard Revisions

- **REASON / COST**

- Clarify standards
  - Clarify standards
  - Clarify when allowed without a full structural analysis
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# 2021 INTERNATIONAL SWIMMING POOL AND SPA CODE (ISPSC)

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No Change

# RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC)

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## RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC).

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- Change 2015-2018
- Chapter 10 Chimneys and Fireplaces
- R1005.8 Insulation Shield. Factory built chimneys are now required to have an insulation shield to provide the clearance.



## RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC).

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- Change from 2015-2018. No Change to the 2021
- **R314.2.2.** When alterations, repairs or additions requiring a permit occurs, the dwelling unit shall be equipped with smoke alarms as required for new dwellings.





## RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC).

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- Change 2015-2018 (no change 2021)
- MI502.3.1. Dryer exhaust termination outlet must not downsize and be at least 12.5 inches in area.
- MI502.4.2. Must not deform the pipe dryer exhaust ducts installed in wall or ceiling cavities.



## RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC).

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- R506.2.3 Vapor Retarder-Thicker vapor retarder is now required.
- 6-mil to 10-Mil



# RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC).

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- Increase in ceiling R-value
- R-38 to R-49

## CHAPTER 4 [RE] RESIDENTIAL ENERGY EFFICIENCY

**TABLE R402.1.2  
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT<sup>a</sup>**

HEIGHT <sup>b</sup> TOR	GLAZED FENESTRATION SHGC <sup>b, e</sup>	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE <sup>i</sup>	FLOOR R-VALUE	B W R
	0.25	30	13	3/4	13	0
	0.25	<del>38</del> 49	13 or 0 + 10 ci	4/6	13	0
	0.25	38	20 or 13+5 <sup>h</sup>	8/13	19	5/
	0.40	49	20 or 13+5 <sup>h</sup>	8/13	19	10
	NR	49	20 or 13+5 <sup>h</sup>	13/17	30 <sup>g</sup>	15
	NR	49	20+5 or 13+10 <sup>h</sup>	15/20	30 <sup>g</sup>	15
	NR	49	20+5 or 13+10 <sup>h</sup>	19/21	38 <sup>g</sup>	15



# RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC).

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- 1103.3.5 (IECC 403.3.5) Duct Testing
- The exception for duct testing of ducts located entirely in conditioned space has been removed.
- 1104.1 (IECC R404.1)
- High-efficacy lighting is now required on ALL permanent lighting fixtures.





# RECAP-2021 INTERNATIONAL RESIDENTIAL BUILDING CODE (2021 IRC).

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