



2021 INTERNATIONAL BUILDING CODES ADOPTION

OR-22-003

January 18, 2022

Construction Codes locations:

- 10 construction codes are located in **Chapter 8 – *Building and Construction Regulations***
- The Fire Code is located in **Chapter 11- *Fire Prevention and Protection***
- International Residential Code
- International Building Code
- International Existing Building Code
- International Plumbing Code
- International Fuel Gas Code
- International Mechanical Code
- International Electrical Code
- International Energy Conservation Code
- International Swimming Pool and Spa Code
- International Property Maintenance Code
- International Fire Code

The code adoption process is normally a repeating 3-Year Cycle. Our history is:

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<u>Code Set</u>	<u>Effective Date</u>	<u>Years Enforced</u>
1988 SBC / 1990 NEC	May 1990	12 years
2000 IBC & IFC / 1999 NEC	May 2002	4 years
2003 IBC & IFC / 2005 NEC	Feb 2006	3 years
2006 IBC & IFC / 2009 NEC	Feb 2009	3 years
2009 IBC & IFC / 2008 NEC	Feb 2011	5 years
2012 IBC / 2011 NEC	(Skipped)	
2015 IBC & IFC / 2014 NEC	Jan 2016	3 years
2018 IBC & IFC / 2017 NEC	Jan 2019	3 years
2021 IBC & IFC / 2020 NEC	Mar 2022?	

Code Adoption - Area Cities Report:

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□ **Currently:**

- Killeen is on the 2018 Codes and the 2017 NEC
- Harker Heights since Jan 1, 2022 is on the **2021 Codes** and **2020 NEC**
- Temple is on the 2015 Codes and 2008 NEC
- Copperas Cove is on the 2015 Codes and 2014 NEC
- Waco is on 2018 Codes and **2020 NEC**

□ **Future Code Adoptions:**

- Killeen is considering to adopt the new codes effective Mar 1, 2022.
- Copperas Cove, Temple and Waco all report no timeline to adopt 2021 Codes

FYI-Codes adopted by the State of Texas:

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□ **Currently:**

- 2012 Building Code
- 2012 Residential Code
- **2020 Electrical Code**
- 2018 Plumbing Code
- 2015 Mechanical Code
- 2015 Energy Code
- **2021 Swimming Pool and Spa Code**
- 2015 Fire Code

These codes are the minimum standards that apply to construction in Texas.

Benefits of Adopting New Codes

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- ❑ Provide up to date, **highest quality codes**, standards and products in which to construct with.
- ❑ Improve the health, safety, and general welfare for our citizens by creating **safer buildings**.
- ❑ Improve the standards for **energy-efficient buildings**.
- ❑ Maintain and/or improve our **ISO** (Insurance Services Office) Rating.

ISO Building Code Effectiveness

Grading Schedule

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Grading ranges are between 1 and 10 with 1 being favorable. This audit occurs every 4 to 6 years.

The City of Killeen's past scores:

Year	Residential	Commercial
2018	4	4
2014	5	4
2008	5	5

Waco, HH and Pflugerville all report they all scored 5 and 4 respectfully; Leander received 6 and 4.

The state average score in 2018 was 6 and 6

ISO's Building Code Effectiveness Grading Schedule is Based upon:

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- The building codes in effect at the time of audit.
- Well-enforced, up-to-date codes demonstrates a lower loss experience during **natural disasters**.
- Benefits include **safer** buildings and less damage.
- Grading is based upon;
 - ▣ Adoption of **newer** construction codes;
 - ▣ Level of **certified** staff;
 - ▣ Use of **check list** in plans review and inspections; and
 - ▣ Level of enforcement through **Stop Work Orders**.

Joint public review of new codes:

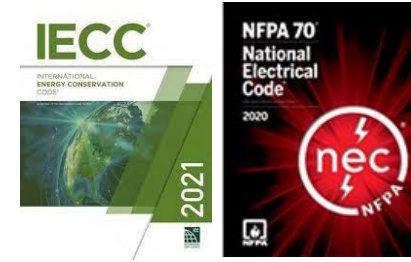
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On **Nov 4 & 9, 2021**, staff hosted two public meetings with the local building community with the construction board of appeals to review **significant** code changes affecting Killeen construction.

Staff presented over 80 significant code changes affecting construction in Killeen.

On **November 9, 2021**, the **construction board of appeals** made recommendation to the **city council** for the adoption of the new 2021 International Construction Codes, the 2020 National Electric Code and local amendments to Chapter 8 as presented; **with one code amendment – to keep the attic insulation at R38 (14”) instead of the new code level of R49 (18”).**

Significant Construction Code Changes



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- Most significant overall code changes are primarily in the:
 - ▣ **Energy Code** and
 - ▣ **Electrical Code.**
- Major **Energy Code** items identified:
 - ▣ Increase the attic insulation from:
 - R38 to **R49**
 - From 14” to **18”** (4” increase)
 - ▣ Increased attic vent baffles to be continuous.
 - ▣ Require air barriers and air leakage testing of new apartments and new commercial buildings less than 5,000 sq ft.

Significant **Energy Code** Changes



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- The one code amendment from the Construction Board:
 - *The Construction Board per the request of some attending homebuilders recommended keeping **R38** attic insulation as it is now and not require the new **R49** increase.*
 - *Cost increase would be about \$1,600*
 - *Benefit energy savings would be about 3%*



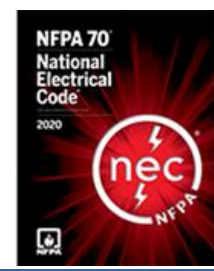
Significant **Residential and Commercial Electrical Code** Changes



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- ❑ State adopted the 2020 NEC effective November 1, 2020. It has been law in Texas for little over one year.
- ❑ State requires all licensed electricians to wire per the new 2020 NEC Code.
- ❑ Harker Heights and Waco has already adopted 2020 NEC.
- ❑ If adopted, Killeen will be current with this state code.

Significant **Electrical Code** Changes



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Most major safety changes in the new **2020 Electric Code** code changes are related about:

- **Surge protection**
- **GFCI protection**
- **Fire department's disconnect**
- **Solar power**
- **Electric vehicle charging**

Residential Estimated Code Cost of Compliance



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- Total estimate (without electrical or attic insulation increase) = **\$650 to \$1,050** depending on size of house.



Fire Alarm in R-1 Hotel/Motel

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- Manual fire alarm required in existing R-1 hotel or motel when > 1 story or > 20 sleeping rooms.

Exceptions:

1. Fire alarm system not required if only 1-story with > 20 sleeping rooms AND each room has direct access to public way AND each sleeping room is separated by 1-HR
2. Fire alarm system not required if ≤ 3 stories with ≤ 20 sleeping rooms AND is sprinklered with NFPA 13 or 13R
3. Fire alarm system I required but only 1 manual fire alarm box IF sprinklered with NFPA 13 or 13R



CO Detection in Existing Buildings

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- CO detection required in existing:
 - ▣ Group I-1, I-2, I-4
 - ▣ Group R
 - ▣ Classrooms in Group E

Can be battery operated CO alarms if the code in effect at the time of construction did not require CO detection.

Code Review Conclusion

The Killeen Construction Board of Appeals and the Building Inspections staff both recommends the adoption of the new construction codes with changes to Chapter 8 as presented and the Fire Marshal's office recommends the adoption of the new fire code as amended in Chapter 11:

- ❑ New 2021 International Construction Code Set
- ❑ New 2020 National Electric Code
- ❑ New 2021 International Fire Code
- ❑ Local amendments to both Chapter 8 and 11