



Plans Review and Inspections

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# 2018 - 2024 Significant MEP Updates

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# Source Material



2018, 2021, & 2024 I-Codes  
-International Plumbing Code  
-International Mechanical Code  
-International Fuel Gas Code

2017, 2020, & 2023 NFPA 70  
-National Electrical Code

# Significant Updates with Text

- . I-Codes have a new format.
- . Single page instead of two columns.
- . Updates in I-Codes text now have a QR code.



# Updates Throughout



- I-codes update section numbers.
- Referenced standards are updated regularly.

# Significant updates to Code



- What is the main focus of code updates?
  - Items that affect plans review.
    - Desire to have these shown on review.
  - Items that affect field inspections.
    - What you need to know about our field inspections.
  - Clarifications
  - New sections with significant impact in our area

Without further adieu!!!

# Section 104

## Duties of the Code Official



- . Occurs in all 2024 I-Codes.
- . Clarification and updates to the previous Code Official section.
- . Combines previous sections “Duties of the Code Official” and “Approval”
  - . Intent of this section is to place the authority for what we inspect and what we expect.
  - . Desire in PRI is to lay out the duties clearly and understand who is responsible at each stage.

# Section 108.3 Permit Valuations



2024 brought simplified fee updates based on Valuation.



# International Plumbing Code



## Section 306.2.4 **Tracer Wire**



- . For plastic sewer pipe an insulated copper wire (min 14 AWG) shall be installed along the length of the building sewer.
- . Intended for detection and location of building sewer for maintenance and repair.

## Section 314.1.1

# Condensate Identification



- . Concealed condensate termination must be labeled to identify whether connected to primary or secondary drain.
- . Continued initiative with local Utilities to ensure condensate is routed properly in new construction. Labeling terminations help in the field.

# Section 403.1.1 ex #2

## Fixture calculations



Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated at 100%.  
Do not divide occupant load in half to determine required amount.

## Section 403.2

# Separate facility exception



Separate facilities are not required where water closets and lavatories are installed in a water closet compartment.

Some facilities may choose to combine the male and female facilities as long as privacy and separate compartments are provided.

# Section 403.4 **Signage**



Must state if facilities are to be used by males, females, or by all persons regardless of sex.

## Section 403.3.3 ex #2

# Travel distance $S$ occupancy



- . Required travel distance can be exceeded where approved.
  - Helpful in self-storage facilities.

## Section 403.6

# Service Sinks in Malls



Service sinks not required in every tenant space in a covered mall as long as within 300 ft of shared service sink.

# Section 410

## Drinking Fountains



410.3.1 High and Low water fountains required.

410.3.2 Where more than required are installed 50/50 high and low.

410.4 Where three or more required not more than 50% substituted with water dispensers.



## Section 606.1 # 2.1

# Location of full open valves



In multi-tenant buildings three stories or less in height with a common water supply system, each tenant is to be provided with a main shut off valve.

## Section 609.2

# Water service for I-2 condition 2



I-2 Condition 2 occupancies require two water service pipes. In the event the main service goes down the secondary service will still cover the required supply.



# International Mechanical Code

# 301.18 Seismic Restraints



2024 uses the latest seismic maps to classify areas. Many areas are changed back to a seismic C which is helpful in design. Check the following to confirm.

ASCE Hazard Tool

<https://ascehazardtool.org>

# Section 304.11

Roof hatch guards required.



# Section 306.5



Updates to railing dimensions and locations required for appliances on roofs.

# Section 307.1.1 and 307.2.1.1



Condensate termination must be labeled.

Condensate shall not discharge to sanitary sewer per guidelines set forth by local Utility.

IFGC 307.2

## Section 501.2 & 501.6



Dryer, domestic kitchen, and hazardous exhaust shall be independent.

Exhaust fans service dwelling or sleeping cannot be connected to common ducts unless under negative pressure.



# Section 502.20.1



Mani/Pedi must have continuous exhaust systems when occupied.

## Section 504.6



Domestic booster fans shall not be installed in dryer exhaust systems. Power ventilators still allowed per 504.5.

## Section 506.3.2.5.1 & .2



Outlines a light and/or water test to take place on duct systems.

# Section 507



Hood Vents!!!

507.1.3 - Locations of fuel burning appliances when hoods present.

507.3 - *light-duty cooking appliances*

## Section 508.1.1



HVAC system that serves kitchen spaces shall have capacity necessary for the latent and sensible loads that are introduced by the makeup air OR condition makeup air to be not greater than 10 degrees difference.

Thanks to the Code Council on this one. (From a former cook's perspective)

## Section 509.5.5

Makeup air updates in the 2021 codes.  
Makeup air to start when exhaust starts.



## Section 510.1.5



Explosion controls must be provided in accordance with the IFC when conveying combustible dusts or combustible refuse.

# Section 601.5

Return air openings clarified and expanded.





## Section 604.3



Coverings applied to outside of ducts must have proper flame spread index.

604.3 Exception - Polyurethane foam must conform to ASTM and UL listings as well as the IBC.

## Section 607.2.4



MEP controls not to be installed in duct systems or thru dampers unless explicitly permitted as part of the air system or damper.

# Section 607.4

Fire damper access and ID.



## Section 920.4



Suspended-type unit heaters are prohibited in multiple locations in I-2 and ambulatory care facilities.

# Section 1002.4

Addition of water heater pan requirements.



# Section 1101.7



Changing refrigerant instructions and requirements.

# Section 1104

Updates to types of refrigerants allowed.



## Section 1105.9



Means of egress from *machinery rooms* larger than 1000 sq ft.

Two exits.

Spaced according to IBC.

Panic Hardware.



# Section 1107-1110



Major updates and procedures for refrigerant piping material, joints and connections, installation, and testing.

# Background



EPA no longer allowing R410a refrigerant systems.

Manufacturer's currently halting production of systems before end of year.

2024 Codes require Shafts built to enclose A2L refrigerant lines.

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Code panel has proposed change to allow for exception if quantities are less than allowable values in Table 1103.1.

# What Knoxville Proposes



Adoption of Code Council [recommendations](#) allowing recommended quantity calculations.

Registered Design Professional must provide those calculations for review.

Quantities in excess will require construction of a shaft in accordance with IBC.

# Section 1209.6



Multiple updates to radiant tubing design, layout, and construction.



# International Fuel Gas Code

# Section 109.3

Authority to disconnect service.  
CoK process.



## Section 303.3.1



Fireplace and decorative appliances in Group I-2 occupancies prohibited in condition 2.

# Section 306.5



Updates to railing dimensions and locations required for appliances on roofs.



## Section 307.2



Condensate termination must be labeled.

Condensate shall not discharge to sanitary sewer per guidelines set forth by local Utility.

IMC 307.1

# Chapter 4



Multiple locations where *access* has been updated to *ready access*. 2021

**READY ACCESS (TO).** That which enables a device, appliance or equipment to be directly reached, without requiring the removal or movement of any panel, door or similar obstruction.

## Section 403.8.3



Further clarifies the applicable use of joint compound. Must be compatible with piping material and based on manufacturer's instructions.

# Section 403.12.1



Flanges. Prescribed conditions and inspections.



## Section 413.2.3 & 413.2.4



Residential and Nonresidential fueling appliances.

Specifies CFM for appliance types. Max 5 CFM for resi, 10 CFM for Nonresi

# Section 503.8 and Table 503.8



Full update to table for clearances with accompanying figure.

## Section 503.10.7



Connector junctions shall be a tee or a wye fitting.

## Section 614.4.1



Termination location not less than 3 feet in any direction into buildings including opening in ventilated soffits. Must have a solid soffit within 3 feet of soffit termination.



# Section 614.6

Domestic booster fans prohibited.



## 614.7.1



Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 sq inches for makeup air shall be provided in the closet enclosure, or makeup air shall be provided by other approved means.

## Section 618.6



Return air shall not be taken from a mechanical room containing a furnace.

# Next Up

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To discuss the 2017 - 2023 NEC Significant Updates

