



City of Austin 2024 Technical Code Changes

Engagement Format



- Presentation followed by question and answer session
- Two ways to participate:
 - Speak by raising your hand on the control panel. You will be asked to unmute. Please mute yourself when finished.
 - Written questions using the Q&A function at the bottom of your screen.



Background

The City of Austin updates the technical codes in accordance with the International Code Council (ICC), International Association of Plumbing & mechanical Officials (IAPMO) code cycle schedules. The International Codes are the most trusted source of model codes and standards.

City of Austin 2024 Technical Code Updates

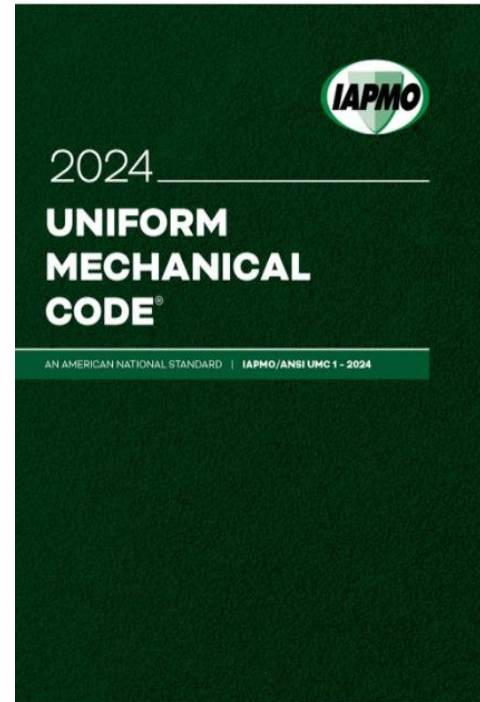
1. Uniform Mechanical Code (UMC) - DSD Lead
2. Uniform Plumbing Code (UPC) - DSD Lead
3. International Residential Code (IRC) - DSD Lead
4. International Property Maintenance Code (IPMC) - DSD Code Compliance Lead
5. International Energy Conservation Code (IECC) - Austin Energy Lead
6. International Fire Code (IFC) - Austin Fire Lead
7. International Wildland Urban Interface Code (IWUIC) - Austin Fire Lead



Development
SERVICES DEPARTMENT

Building a Better and Safer Austin Together

2024 Uniform Mechanical Code



Reducing Amendments

GOAL: To minimize the number of amendments and return to model code.

Reasons for amendments:

1. Council mandated
2. Business needs (chapter 1)
3. Clarification purposes
4. ISO rating

~~Strikethrough means deleted from amendments~~ — underline is a new amendment

Amendment 1

104.1.1 Commercial Mechanical Change-Out Program. For buildings not covered under the Residential Code, the building official may establish, by rule, an inspection program for commercial mechanical components identified in this section or a change-out program authorized in other technical or building codes. The buildings must be located within the zoning jurisdiction of the City, outside of the zoning jurisdiction under agreement with a municipal utility district, or where the City provides electrical service. ~~The program applies to replacing roof top equipment; refrigeration equipment; and heating, ventilation, and air conditioning (HVAC) equipment.~~

Amendment 2

CHAPTER 2: DEFINITIONS

202.1.1 Supplemental Definitions. The definitions in this subsection apply throughout this code and amend or supplement the definitions in Chapter 2

~~**Alternate Water Source.** Non-potable source of water that includes but is not limited to recycled manufacturing process water, air conditioner condensate, rainwater, storm water, gray water, black water, cooling tower blow down, and foundation drain water.~~

~~**Treatment System.** A method, device or process for the treatment of the water quality of cooling tower blowdown, air conditioning condensate, or other onsite alternative water necessary for the authorized end uses provided under city and state permitting requirements contained in Chapters 15 and 16 of the City's Adopted Plumbing Code & 30 TAG Chapter 210 Subchapter F.~~

Note: These definitions were deleted at AW request.

Amendment 3

~~**305.3.1 Gas and Oil-Fired Furnaces.** A float-operated automatic control valve shall be installed in the fuel supply line for a heating system that uses a gas or oil-fired furnace. The automatic control valve shall shut off fuel supply when floodwaters reach an elevation equal to the floor level of the spaces where the furnace equipment is installed. A manually operated gas valve that can be operated from a location above the regulatory flood datum (RFD) shall be provided in the fuel supply line to act as a supplementary safety provision for fuel cutoff.~~

Notes: This section was deleted from the amendments, was not part of the model code.

Chapter 25-12-53 requires elevation of equipment two feet above design flood elevation with some exceptions making this section only applicable to existing installations located in flood zones.

Requires an automatic control valve and a manual valve to shut off the fuel supply to keep fuel out of the water although obsolete due to compliance requirements in 25-12-53.

Has existed in the amendments since the implementation of the 1982 UMC on November 20, 1993.

Amendment 4

318 cooling systems. Interior spaces intended for human occupancy shall be provided with active or passive cooling systems capable of maintaining an indoor temperature of not more than 80°F (27°C) at a point 3 feet (914 mm) above floor on the design cooling day. The installation of portable cooling systems shall not be used to achieve compliance with this section.

Exceptions:

1. Interior spaces where the primary purpose is not associated with human comfort.
2. Group F, H, S and U occupancies.

Note: New section added, not covered in model code to improve living conditions in extreme heat cycle.

Amendment 5

~~**310.8 Standards for Air Conditioner Condensate Recovery Systems for New Development.** Commercial and multi-family facilities constructed after September 5, 2017, with an evaporative cooling tower system with a combined cooling capacity equal to or greater than 200 tons shall use a single and independent condensate wastewater line to collect and use the condensate wastewater for authorized beneficial purposes. For purposes of this section, authorized beneficial purposes include using condensate wastewater for process water; to make up cooling tower water; to flush indoor toilets; to irrigate landscapes; or other approved non-potable water uses.~~

Note: This section and exceptions deleted from amendments and moved to proposed water forward mandate.

Amendment 6

~~**318.0 Protection of Openings.** A duct opening, such as an exhaust or outdoor air intake, which terminates outdoors, shall be protected with corrosion-resistant screens, louvers, or grilles. Duct openings located in exterior walls shall comply with the Building Code's fire resistance rating requirements for an exterior wall opening.~~

Note: These requirements exist in the model code and the industry standards are also in compliance with the code requirements.



Amendment 6

~~Chapter 4 Ventilation Air~~ ~~402.3.1 Intake Opening Location.~~

Note: Model code has now incorporated latest addition of ASHRAE 62.1: Table 5.5.1, this table provides intake air minimum separation distance.

Amendment 7

405.4.1 Residential Kitchen Exhaust Rate. For intermittent-controlled operations, the exhaust rate shall be not less than 100 ft³/min (47.2 L/s) and 300 ft³/min (142 L/s) for downdraft appliances. For continuous operation the exhaust rate shall be not less than 50 ft³/min (23.6 L/s).

Note: This section was amended due to local concerns with over sized equipment that would create installation problems, and this also matches the ASHRAE table

Amendment 8

523.0 Hazardous Exhaust Systems. 2024 International Mechanical Code Section 509, subsections, and associated tables and referenced sections.

Note: In previous years, this section was inserted into the local amendments, for the purpose of consistency and to capture all the requirements a pointer was created to the source instead of attempting to duplicate. With this change we capture all the hazardous exhaust requirements from one source which is important due to the correlation with the fire code.

Amendment 9

524.0 Manicure and pedicure stations. 2024 International Mechanical Code Section 502.20, subsections, and associated tables and referenced sections.

Note: Many of us go to nail salons to relax and to be pampered. We don't think of these places as potentially hazardous work environments, yet for many manicurists, regular on-the-job exposure to toxic chemicals is a reality. Workers often experience headaches, dizziness, rashes and other acute symptoms. Some chemicals are known to cause cancer and reproductive, developmental, and respiratory harm"

The intent of these suggested modifications is to (1) better clarify the requirements for a source capture exhaust system at manicure and pedicure stations where ambiguity exists, and to **(2) better ensure the effectiveness of the exhaust system by specifically requiring makeup air and prohibiting the recirculation of exhausted air so as to provide a healthy, safe environment for nail salon workers and their clients.** The industry already provides the equipment to able to provide exhaust at the point of use.

Amendment 10

609 Smoke Detection Systems Control. 2024 International Mechanical Code Section 606, subsections, and associated tables and referenced sections.

Note: in the past this section was language amended from IMC section 606, for the purpose of consistency a pointer was created to the sources and placing the requirements all in one place. One of the differences will be the smoke detector would be installed in the supply side with this change the new requirement would be on the return side, staff has determined that the important issue is that the detection be installed; either location would be acceptable.

Amendment 11

~~Chapter 18 Fireplaces, Solid Fuel-Burning Equipment, and Other Specific Appliances.~~

- ~~• 1803.2 Hearth Extensions~~
- ~~• 1803.3 Unvented Gas Log Heaters~~
- ~~• 1804.1 Pellet Fuel-Burning Appliances~~
- ~~• 1814.5 Sauna Room~~
- ~~• 1818.4 Circulating Air Ducts for Forced-Air Warm-Air Furnaces~~
- ~~• 1822.1 Kerosene and Oil-Fired Stoves~~

Note: None of these appliances are covered in the UMC, since 2003 we have copied the language directly from the IMC, because these appliance are not covered in the UMC then the IMC would pertain as per adopted language in our building code.

With sauna rooms a separate pointer was created due to the large use of this type of appliance to eliminate any confusion.

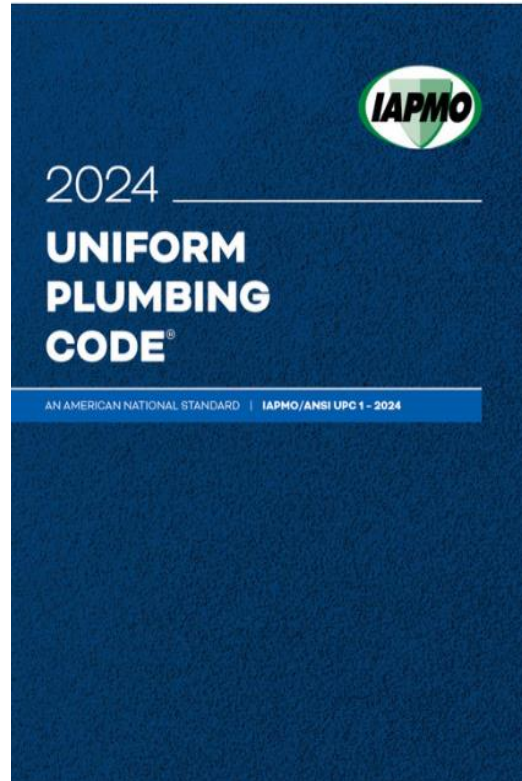
2021 IBC Amendment, 101.4.2 Mechanical. The provisions of the International Mechanical Code and the Uniform Mechanical Code shall apply to the installation, alterations, repairs, and replacement of mechanical systems, including equipment, appliances, fixtures, fittings, and/or appurtenances, including ventilating, heating, cooling, air conditioning, and refrigeration systems, incinerators, and other energy related systems. The Uniform Mechanical Code supersedes the International Mechanical Code to the extent of conflict.



Development
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Building a Better and Safer Austin Together

2024 Uniform Plumbing Code



Reducing Amendments

GOAL: To minimize the number of amendments and return to model code.

Reasons for amendments:

1. Council mandated
2. Business needs (chapter 1)
3. Clarification purposes
4. ISO rating

~~Strikethroughs means deleted from ordinance and returning to model code~~ underline means a new added section.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

202.1.1 Supplemental Definitions.

LAUNDRY TO LANDSCAPE SYSTEM means an alternate water system that utilizes the collection of gray water discharged from clothes washing machines located at private one- and two-family dwellings for landscape irrigation.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

~~**309.6 Private Hydrant Lines.** Water lines from a private water main to a private fire hydrant with more than 100 gallons capacity shall have backflow prevention protection as required by Chapter 15-1 (*Cross-Connection Regulations*).~~

Note: 309.6 is reverting to model code

Chapter 25-12: Local Amendments to Uniform Plumbing Code

3212.0 Elevator sump pumps. ~~If a pump and associated piping and materials required for elevators is installed under~~ See Texas Administrative Code, Title 16, Part 4, Chapter 74 for elevator sump pump requirements., ~~the pump and associated piping and materials must also comply with Sections 322.1 through 322.4.~~

3212.1 Acceptable discharge location. ~~In a new elevator shaft,~~ An elevator sump pump must discharge to the storm system outside of the building, detention pond, or other location approved for each project by the authority having jurisdiction. A hydraulic elevator must be equipped with a hydraulic oil alarm and a secondary containment must be installed and approved for each project by the authority having jurisdiction.

Note: The section was deleted and a pointer to the state requirements was created, and 321.1 was left in place because TAC doesn't provide an acceptable location of discharge.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

~~322.2 Discharge piping.~~

~~322.3 Materials.~~

~~322.4 Sample port.~~

~~411.2 Water closets.~~

~~412.1 Urinals.~~

~~420.3 Pre-rinse spray valve.~~

Note: Water conservation requirements now align with Austin requirements, these sections were deleted from the amendments and returning to model code.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

613.0 Plumbing for multi-family sub-meters. A newly constructed multi-family housing unit or a residential unit in a mixed-use facility must have a single cold water stub out that supplies all fixtures within each dwelling unit that is supplied by the master meter. A City meter or privately-owned water meter must be installed for each newly constructed unit at the time of construction. Each stub out must have a shut off valve immediately ahead of the private meter location. The meter must have a clearance of at least four inches on each side. The private meter must be installed in a location that is accessible for reading, testing, replacement, and inspection.

Exception: A multifamily development utilizing alternate or reclaimed water for toilet flushing or development with a centralized hot water system is not required to comply with this section.

Note: The exception was extended for using alternate or reclaimed water for toilet flushing

Chapter 25-12: Local Amendments to Uniform Plumbing Code

614.1 Requirements for one- and two-family dwelling landscape irrigation installation. A new irrigation system for a one- or two-family dwelling must be designed and installed to include:

1. spray irrigation is that limited to areas that are more than six feet wide (medians, buffer strips, and parking lots islands should not be spray irrigated);
2. above-ground irrigation emission devices that are located at least six inches from impervious surfaces;
3. a master valve for the system;
4. circuit remote control valves have adjustable flow controls;
5. serviceable in-head check valves are adjacent to paved areas where elevation differences may cause low head drainage;
6. a rain shut-off device shuts off the irrigation system automatically at or before $\frac{1}{2}$ inch rainfall;
7. zone valves and circuits that are separated based on hydrozoning; and
8. an isolation valve that is located between the meter and the backflow prevention device.
9. pressure compensating heads unless the static pressure at the backflow protection device is measured at or below forty-five pounds per square inch
10. a mainline pressure regulating valve that complies with ASSE 1003, is located downstream of the backflow protection device if the static pressure at the backflow protection device is measured at or above eighty pounds per square inch.

Note: Two new subsections were added to section 614.1 for the purpose of water conservation.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

614.1.1 Limitations for one- and two-family dwelling landscape irrigation installation. A new irrigation system for a one- or two-family dwelling permitted must be designed and installed to cover no more than fifty percent of the total landscaped area, including the front and side yard or the back and side yard.

Note: Added for the purpose of water conservation.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

~~707.2.1 Two-way cleanout tees. A single rise two-way cleanout tee may be installed with a maximum 18-inch extension to grade.~~

Note: Reverting to model code without a maximum height extension.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

~~710.3 Sewage ejector and pumps.~~ A sewage ejector or sewage pump that receives the discharge of water closets or urinals:

- ~~1. must have a discharge capacity of at least 20 gallons per minute (gpm) (1.26 L/s); and~~
- ~~2. in single dwelling units, the ejector or pump must be capable of passing a 1.5 inch (40 mm) diameter solid ball; or~~
- ~~3. in a building that is not a single dwelling unit, the ejector or pump must be capable of passing a 1.5 inch (40 mm) diameter solid ball; and~~
- ~~4. the discharge piping of each ejector or pump must have a backwater valve and valve gate and be at least 2 inches (50 mm) in diameter.~~

Exceptions: 710.10.1 Simplex sumps . A single 1.0 or 2.0 DFU fixture that is not a required plumbing fixture under the Plumbing Code may be served by a single pump or ejector system.

1. A single pump ejector system that serves an accessible break room sink with 1½ inch outlet and a 1½ inch inlet is allowed.
2. A 1½ inch outlet service sink may be drained by a single pump ejector system.

Note: Back to model code and leaving the simplex exception as existed.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

1007.3 Barrier-type trap seal protection device.

A barrier-type trap seal protection device shall protect the floor drain trap seal from evaporation.

Barrier-type floor drain trap seal protection devices shall conform to [ASSE 1072](#). The devices shall be installed in accordance with the manufacturer's instructions.

Note: Added a new section for a device that has all the required approvals; also a water conservation device that takes the place of a trap primer, which has not been accepted in the international model code.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

~~**1103.5 Sizing of rain piping.** The required size of rainwater piping is based on a maximum of five inches of rainfall per hour that falls on a given roof area calculated in square feet. Five inches per hour must be used to size both primary rainwater systems and overflow or emergency rainwater systems.~~

Note: Section deleted, tables 1103.1 and 1103.2 covers the requirements when sizing roof drains, leaders, vertical and horizontal rainwater piping.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

1503.10.1 General. This section applies when installing, altering, or repairing a laundry to landscape systems.

New Construction. A gravity gray water drainage system shall be installed in new construction in one- and two-family dwelling constructed after January 1, 2025 for future use. A gray water system shall be installed to allow for the separate discharge of gray water for direct landscape irrigation from a cloth washing machine installed adjacent to an exterior wall or a wall perpendicular to an exterior wall.

Exception: Where soil conditions do not provide adequate infiltration, where setbacks cannot be maintained, or other such limitations are prohibited by the Land Development Code. Project applicants shall submit documentation satisfactory to the Authority Having Jurisdiction for an exemption.

Note: A new water conservation requirement was added to meet city and state mandates.

Chapter 25-12: Local Amendments to Uniform Plumbing Code

1503.10.2 System design. A laundry to landscape system must be designed:

3. To include a manifold with a 1", 3-way accessible diverter valve. The valve to be located in an accessible location and be identified as a gray water system.
4. So that the 3-way diverter valve and piping is supported to relieve any potential stress on the piping when in use
8. With an informational card at least four by six inches in size and containing information specified by Austin Water about the usage of laundry to landscape plumbing which shall be affixed adjacent to the three-way diverter valve.
9. With gray water piping and stub out(s) clearly identified with a label having a purple (Pantone color No. 512, 522C, or equivalent) background and black uppercase lettering. Labeling shall be field, or factory marked as follows: "CAUTION: NONPOTABLE GRAY WATER, DO NOT DRINK"; and
10. For new construction one- and two-family dwellings,
 - a. The inlet of the 3-way valve will require a direct connection from the washing machine drain outlet.
 - b. Outlet one of the 3-way valve will terminate no more than 4" into the washing machine standpipe.
 - c. Outlet two of the 3-way valve will require an air admittance valve then the stub out will terminate outside above finish grade or be located in a valve box when below grade, for future use. Both stub out methods must be labeled with black letters in a purple background.
 - d. The standpipe trap will require periodic use for the purpose of maintaining a water level in the trap to prevent sewer gas release.

Note: New subsections were added to 1503.10.2 for the purpose of water conservation and government mandates.

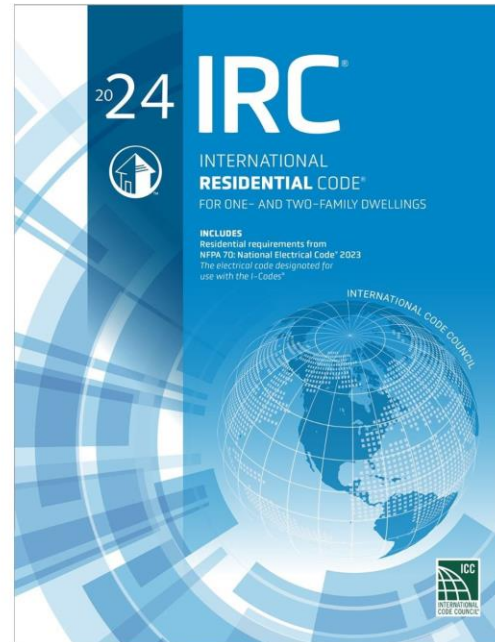


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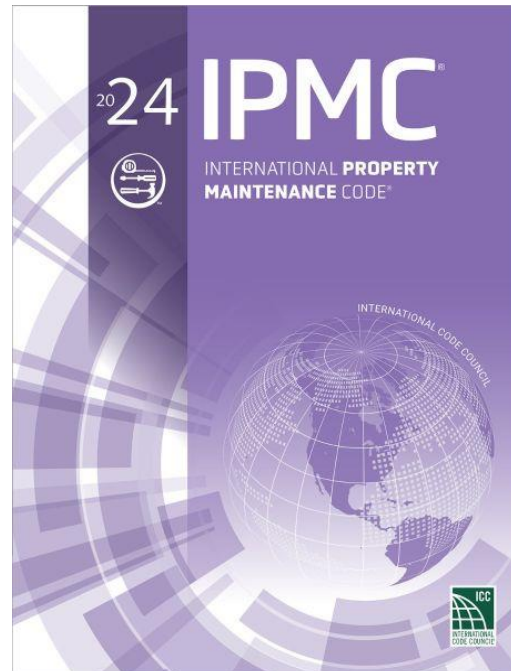
2024

International Residential Code (IRC)





2024 International Property Maintenance Code (IPMC)



The IPMC is a model code intended to establish minimum standards for structural conditions, lighting, ventilation, sanitation, and fire safety. The IPMC is administered by local building code officials nationwide with local amendments that are approved by City Council.



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Purpose of Presentation

To provide an overview of the 2024 International Property Maintenance Code (IPMC) amendment process and share major proposed changes



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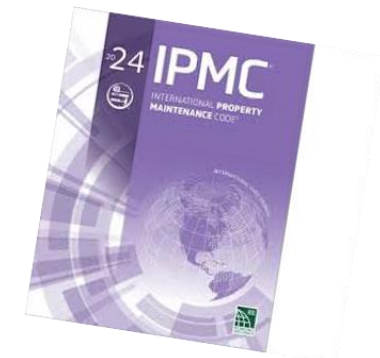
Code
Compliance

Background

The City of Austin will adopt the International Code Council (ICC)'s 2024 IPMC updates from the current 2021 IPMC

The DSD Code Compliance Division established an internal amendment committee to draft proposed amendments to the code

Purpose of proposed changes is to ensure public safety and maintain consistency with other city codes



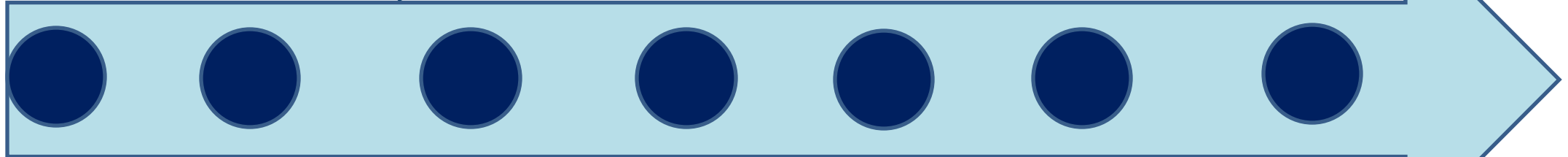
2024 IPMC Adoption Timeline

Review Phase
#1 (Internal)
October 2023 –
December 2023

Stakeholder
Engagement
March 25, 2024 –
May 2024

Legal Review
July 2024

Implementation –
January 1, 2025



Review Phase
#2 (Internal)
December 2023
– February 2024

Building and
Standards
Commission –
June 26, 2024

City Council
Hearing –
September
12, 2024

309.1 Infestation

- ~~309.1 Infestation. Structures shall be kept free from insect and rodent infestation. Structures in which insects or rodents are found shall be promptly exterminated by approved processes that will not be injurious to human health. After pest elimination, proper precautions shall be taken to prevent reinfestation.~~
- 309.1 Infestation. Structures shall be kept free from insect, scorpion, bed bug, and rodent infestation. Structures in which insects or rodents are found shall be promptly exterminated by approved processes that will not be injurious to human health. After pest elimination, proper precautions shall be taken to prevent reinfestation.



Primary Goal

The proposed amendments aim to **ensure public safety** when unsafe or hazardous conditions are found on a property by requiring:

- 100 amps minimum for a single family dwelling.
- Cooling Facilities

Major Changes in the 2024 IPMC Draft

The following language was added as section 603 Cooling Facilities



603.7 Cooling Facilities Required.

(1) Air conditioning.

(A) An owner shall:

(i) provide, and maintain, in operating condition, refrigerated air equipment capable of maintaining a room temperature of at least 15 degrees cooler than the outside temperature, but in no event higher than 85° F. in each habitable room;

(ii) maintain all air conditioning systems, including air conditioning unit covers, panels, conduits, and disconnects, properly attached, and in operating condition.

(B) The required room temperatures shall be measured 3 feet (914 mm) above the floor near the center of the room and 2 feet (610 mm) inward from the center of each exterior wall

(C) It is a defense to prosecution under this paragraph that at least one habitable room is 85° F, if the outside temperature is over 110° F.”

111.1.3 - Structure unsafe for human occupancy.

A structure is unfit for human occupancy whenever the code official finds that such structure is unsafe, unlawful or, because of the degree to which the structure is in disrepair or lacks maintenance, is insanitary, vermin or rat infested, contains filth and contamination, or lacks ventilation, illumination, sanitary, cooling facilities or heating facilities or other essential equipment required by this code, or because the location of the structure constitutes a hazard to the occupants of the structure or to the public. If the code official finds a structure unsafe, the owner of the property shall provide an action plan for repairs to the code official within two days of notice.

Major Changes in the 2024 IPMC Draft

The following language was added as section 604.2 Service



604.2 Service. The size and usage of appliances and equipment shall serve as a basis for determining the need for additional facilities in accordance with NFPA 70. *Dwelling units* shall be served by a three-wire, 120/240 volt, single-phase electrical service having a minimum rating of 100 amperes.



Definitions

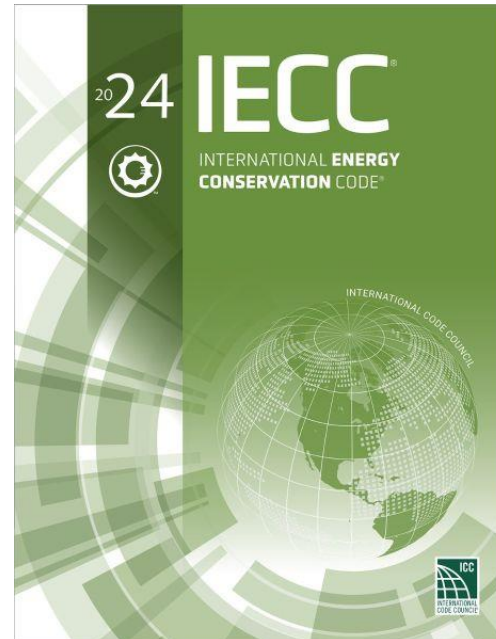
INFESTATION. The presence, within or contiguous to, a structure or premises of insects, rodents, scorpions, vermin or other pests.

SURCHARGE. The vertical load imposed on retained soil that may impose a lateral force in addition to the lateral earth pressure of retained soil.



2024

International Energy Conservation Code (IECC)





Building Energy Codes

2024 Update

International Energy Conservation Code (IECC)



May 20, 2024

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Speakers



Patricia Chawla

Conservation Program
Coordinator Green Building and
Emerging Tech Austin Energy



Mark Leger

Engineer
Green Building and Emerging Tech
Austin Energy

Agenda



Introduction



**National News, Proposed Timeline,
Stakeholder Engagement**



Expected Changes



New "Readiness" and DR Codes



Next Steps

2024 IECC (Model Code) Updates

- Appeals process is complete
- ICC Board makes final decision
 - Readiness codes move to appendices
 - DR codes moved to appendices
 - Commercial All-electric and glide path Appendices converted to resources
 - Residential All-electric Appendix retained but cautionary note added
- Waiting on publication of model code



The International Code Council Board of Directors Makes Final Decision on 2024 IECC Appeals and Addresses Preemption Challenges

On March 18, 2024, the International Code Council Board of Directors voted to affirm in part and reject in part nine appeals filed by five appellants to a draft of the 2024 commercial and residential editions of the International Energy Conservation Code® (IECC®). The Board also addressed several claims that aspects of the draft 2024 IECC codes were preempted by the federal Energy Policy and Conservation Act.

CHAPTER 11 [RE] ENERGY EFFICIENCY



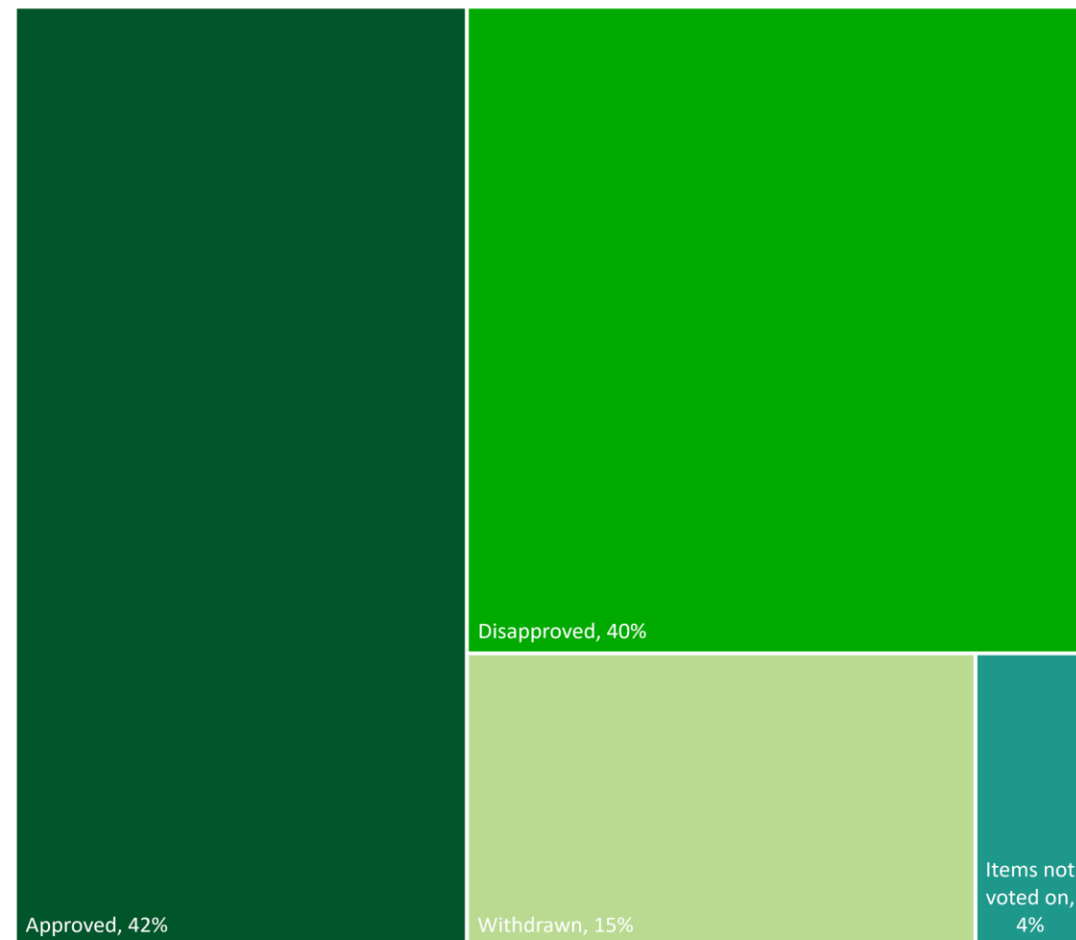
The 2024 *International Energy Conservation Code* (IECC), Chapter 11 of the 2024 *International Residential Code* (IRC) and IRC energy appendices are in the final stages of the development process. Upon completion of the appeals process in accordance with Code Council Policy CP-01 and the federal preemption process in accordance with CP-49, this content will be finalized and included in the body of this document.

2024 IECC Model Code

Significant Changes

2024 IECC Changes

CODE ACTIONS	RESIDENTIAL	COMMERCIAL
APPROVED	279	293
DISAPPROVED	339	209
WITHDRAWN	105	96
NO VOTE	27	21
TOTAL	750	619



Expected Changes – Residential

2024 IECC (Proposed)

- Conversion of the current Additional Energy Efficiency requirement into a point system with envelope, mechanical, demand response and onsite solar options for prescriptive path users. Modeling path users to demonstrate up to 20% energy savings.
- Demand response controls must be included on electric water heaters (currently allowed in Austin Energy Code).
- Bathrooms with intermittent exhaust fans must include controls to help remove excess moisture. Can include timers, occupant sensors, humidity control or contaminant control (similar to requirement in AEGB program).
- Air leakage target reduction from 5 ACH50 to 4 ACH50 for this climate zone.
- Prescriptive attic insulation requirement decreased from R49 to R38.



Expected Changes - Commercial

2024 IECC (Proposed)



- Air Leakage
 - Documentation/inspection option removed for Group R and I
 - Stringency increase from 0.4 cfm/ft² to 0.35 cfm/ft² and from 0.3 cfm/ft² to 0.27 cfm/ft² for Group R and I
- Updates to HVAC Efficiency tables
 - Align with ASHRAE standard 90.1 2022 and federal standards
 - Increases in efficiency levels
- Clarified lighting control requirements for sleeping and dwelling units (C405.2.10)
- Updates to Additional Efficiency section C406 that provide additional credit paths that to align with ASHRAE standard 90.1 2022

Local Code Proposals

Readiness Codes and DR

ESS and Renewable Energy

2024 IECC (Proposed)

- Prescriptive requirements for renewable energy systems were introduced
 - Provide system with 0.75 W/ft² based on the combined gross conditioned floor area of the three largest floors
 - Provisions for off-site renewables and procurement are given, including RECs and green retail tariff
- Requirements to either provide an Energy Storage System (ESS) or to have a space that is ESS ready were moved to an optional appendix by the ICC board
- Working with solar team to determine whether to adjust renewable energy systems and/or adopt ESS requirements



Demand Response



Residential

- DR controls required on electric storage water heaters
- Demand responsive thermostat option in R408
- Coordinating with DR team for their recommendations



Commercial

- DR requirements were included in the COA energy code through amendments
- DR provisions are now included in the 2021 IECC, though they have been moved to optional appendices
- Coordinating with DR team to determine whether IECC language can replace our existing language

Electric Vehicle Readiness

2024 IECC (Proposed)

Residential

- One- and two-family dwellings and townhouses = one EV-capable, EV-ready or EVSE per dwelling unit
- R-2 occupancies = EV-capable, EV-ready or EVSE space for 40% of dwelling units or automobile parking spaces, whichever is less

Commercial

EV-capable, EV-ready, or EVSE quantities required determined by building occupancy type(s)

Required EV Power Transfer Infrastructure

Occupancy	EVSE Spaces	EV Ready Spaces	EV Capable Spaces
Group A	10%	0%	10%
Group B	15%	0%	30%
Group E	2% 15%	0%	5% 30%
Group F	2%	0%	5%
Group H	1%	0%	0%
Group I	2% 15%	0%	5% 30%
Group M	40% 15%	0%	40% 30%
Group R-1	20%	5%	75%
Group R-2	20%	5%	75%
Group R-3 and R-4	2%	0%	5%
Group S exclusive of parking garages	1%	0%	0%
Group S-2 parking garages	1% 15%	0%	0% 30%

Definitions

EV-Capable - Capacity and conduit

EV-Ready - Capacity, conduit, wiring and outlet

EVSE - Capacity, conduit, wiring and charging station

Electric Readiness

2024 IECC (Proposed)



Residential

- Capacity to be included in load calculations
- Dedicated branch circuit outlets shall be installed and terminate within three feet of and with a rating not less than
 - Cooking appliances: 240-volts, 40-amps
 - Clothes dryers: 240-volts, 30-amps
 - Water heaters: either 240-volts, 30-amps or 120V, 20-amps
- Exceptions allowed for equipment not installed or serving multiple dwelling units



Commercial

- Requirements included in Appendix CH
- Combustion space heating
- Combustion service water heating
- Combustion cooking/clothes drying
- Reserved space for future electric equipment
- Dedicated branch circuits

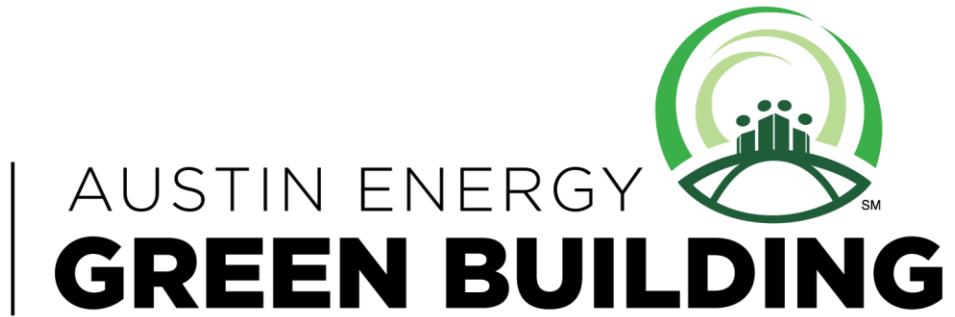
Space Clearances

Research

AEGB is contacting local and national partners to determine the practicability of a local code amendment to include space clearances minimums for water heaters.

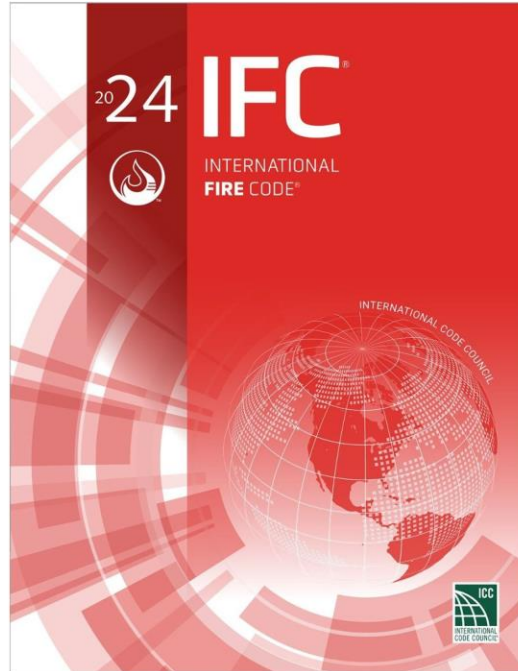


Electrify Now Webinar: 120 Volt Plug-In Heat Pump Water Heaters





2024 International Fire Code (IFC)





AUSTIN FIRE DEPARTMENT

2024 International Fire Code Adoption

2024 International Fire Code

Local Amendment
Adoption

The Our Mission Goes Beyond Our Name is the cornerstone of the Austin Fire Department. A leader in the fire service, AFD is on the cutting-edge of technology and training. A leader in the fire service, the Austin Fire Department protects lives and property through extensive fire prevention and safety education efforts, in addition to a quick and effective response to emergencies.



Proposed Adoption

In accordance with ICC latest publication, Austin Fire Department is on track to implement the 2024 International Fire Code (IFC) on **January 1, 2025**.



Coordinate and Clarify

Goal: To clarify previously adopted local amendments with changing technology and published code and coordinate changed or outdate references to other adopted codes and standards.

Reasons for amendments:

1. To support operating procedures for Operations, both in and outside of structures
2. Clarification purposes
3. Provide higher level of safety for properties utilizing hazardous materials



2024 IFC Significant Changes

- Chapter 2 § 202 Definitions

- Flammable Gas Definition - A material which is a gas at 68°F or less at 14.7 psia subdivided as follows:
 - 1. Category 1A. A gas that meets either of the following:
 - 1.1. A gas which is ignitable at 14.7 psia when in a mixture of 13% or less by volume with air; or
 - 1.2. A gas with a flammable range at 14.7 psia with air of not less than 12%, regardless of the lower limit, unless data shows compliance with Category 1B.
 - 2. Category 1B. A gas which meets the flammability criteria for Category 1A, is not pyrophoric or chemically unstable, and meets one of more of the following:
 - 2.1. A lower flammability limit of more than 6% by volume of air; or
 - 2.2. A fundamental burning velocity of less than 3.9 inches/second.
 - The limits specified shall be determined at 14.7 psi and a temperature of 68°F in accordance with ASTM E681. Where not otherwise specified, the term “flammable gas” includes both Category 1A and 1B.
- Occupiable Roof – an exterior space on a roof that is designed for human occupancy, other than maintenance and repair, and which is equipped with a means of egress system meeting requirements of this code.
 - **Not** considered a floor
 - Does **not** change building height
 - Must meet all egress requirements applicable to occupancy classification, as well as accessibility requirements
 - Elevator required if 4 stories or more (3rd floor above Level of Exit Discharge)



2024 IFC Significant Changes

- **Chapter 3 § 320 – Storage of Lithium Batteries**

- Permit required for lithium battery storage $\geq 15 \text{ ft}^3$
- Fire safety and evacuation plan required
- 3 storage configuration options
 - A single facility may use more than one storage configuration
 - 1. Containers
 - 2. Indoor storage room
 - 3. Outdoor storage room.
- In mixed-use buildings, the battery storage area shall be separated from the remainder by 2-HR fire barriers
- Technical opinion and report to evaluate the fire and explosion risks associated with the indoor storage of lithium-ion and lithium metal batteries and evaluate.
- Where the state of charge is demonstrated to be $\leq 30\%$ for lithium-ion or lithium metal batteries, the following protection features are not required:
 - Technical opinion and report
 - Separation with 2-HR construction
 - Explosion control



2024 IFC Significant Changes

- **Chapter 9 § 903.2 – Where Required, exceptions**

- Batteries for telecommunications equipment are no longer exempt from fire sprinkler requirements
- **IF** §1207 requires fire sprinklers for the ESS system, then fire sprinklers must be installed, and the exception does not apply

- **Chapter 9 § 903.2.2 – Group B**

- **§ 903.2.2.2 Laboratories involving research and development or testing.** An automatic sprinkler system shall be installed through out the fire areas utilized for the research and development or testing of lithium-ion or lithium metal batteries.

- **Chapter 9 § 903.2.4 – Group F-1**

- 4. A Group F-1 occupancy is used to manufacture lithium-ion or lithium metal batteries.
- 5. A Group F-1 occupancy is used to manufacture vehicles, energy storage systems or equipment containing lithium-ion or lithium metal batteries where the batteries are installed as part of the manufacturing process.

- **Chapter 9 § 903.2.7 – Group M**

- **§ 903.2.7.3 Lithium-ion or lithium metal battery storage.** An automatic sprinkler system shall be provided in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries by Section 320 or Chapter 32.



2024 IFC Significant Changes

- **Chapter 9 § 905 Standpipe Systems**
 - **905.3 – Required Installations**
 - New exemption is R-2 townhouses
 - Currently not requiring in these
 - **905.3.4 – Stages** – section removed. Standpipes at stages no longer required
 - **905.4 – Location of Class I Standpipe Hose connections**
 - Now required at *exterior exit stairways* in addition to interior exit stairways
- **Chapter 9 § 907 Fire Alarm and Detection Systems**
 - **907.2.2.2 – Laboratories involving research and development or testing (B Occupancy)**
 - Fire alarm system activated by air-sampling smoke detection or radiant energy sensing detection installed throughout entire fire area utilized for research and development or testing of lithium-ion or lithium metal batteries.
 - **907.2.4.1 – Manufacturing involving lithium-ion or lithium metal batteries (F Occupancy)**
 - Similar requirement for Labs.
 - Includes manufacturer of vehicles, ESS or equipment containing lithium-ion or lithium metal batteries.
 - **907.2.7.2 – Storage of lithium-ion or lithium metal batteries (M Occupancy)**
 - Similar requirement as Labs
 - Limits to room or space where stored in accordance with §320
 - **907.2.10.2 – Storage of lithium-ion or lithium metal batteries (S Occupancy)**
 - Similar requirement as Labs
 - Fire area where stored in accordance with §320



2024 IFC Significant Changes

- **Chapter 9 § 915 Carbon Monoxide (CO) Detection**
 - **§ 915.1 – General**
 - Now required in all buildings except unoccupied Group F, Group S and Group U
 - **§ 915.1.1 – Where Required**
 - In buildings containing CO source
 - In buildings containing or being supplied by a CO-producing forced-air furnace.
 - In buildings with attached private garages.
 - In buildings that have CO-producing vehicle that is used within the building.
 - **§ 915.2 – Locations**
 - **§ 915.2.3 – Group E occupancies** - revised to be located throughout, not just classrooms.
 - **§ 915.2.4 – CO-Producing Forced-air Furnace** – installed in all enclosed rooms and spaced served by furnace
 - Not required where CO detector provided in first room or space served by each main duct
 - Not required in dwelling units complying with §915.2.1.
 - **§ 915.2.5 – Private Garages** - installed within enclosed occupiable rooms or spaces contiguous to private garage
 - Not required in buildings w/o contiguous openings between garage and building
 - Not required in rooms or spaces located more than one story above or below garage
 - Open parking garage (IBC § 406.5) or enclosed parking garage (IBC § 406.6) not a private garage
 - Where private garage connects to building via open-ended corridor.
 - Not required in dwelling units complying with §915.2.1



2024 IFC Significant Changes

- **Chapter 9 § 915 Carbon Monoxide (CO) Detection**
 - **§ 915.2 – Locations**
 - **§ 915.2.6 – All other locations** – installed on ceiling of enclosed rooms or spaces containing CO producing devices or served by CO furnaces.
 - Exception where environmental conditions prohibit installation within space, detector to be placed in approved contiguous space.
 - **§ 915.2 – Detection**
 - **§ 915.3.1 – Alarm limitations** – CO alarms shall be installed in dwelling units and sleeping rooms only. Not installed where code requires CO detectors.
 - **§ 915.3.2 – FA System Required** - New buildings required to have FA system shall have CO detectors connected to system.
 - **§ 915.3.3 – FA System Not Required** - New buildings not required to have FA system shall have CO detectors installed by:
 - CO detectors connected to approved CO detection system per NFPA 72
 - CO detectors connected to approved combination system per NFPA 72
 - CO detectors connected to approved FA system per NFPA 72
 - Where approved by FCO, CO alarms maintained in accordance with manufacturer’s instructions
 - **§ 915.3.4 – Installation** – Installed in accordance with NFPA 72 and manufacturer’s instructions.



2024 IFC Significant Changes

- **Chapter 9 § 915 Carbon Monoxide (CO) Detection**
 - **§ 915.4 – CO Alarms**
 - **§ 915.4.4 – Interconnection**– Where one or more alarms required, CO alarms to be interconnected such that activation of one causes activation of all alarms.
 - **§ 915.5 – CO detection systems**
 - **§ 915.5.4 – Occupant notification** – Activation of detector shall annunciate at the control unit and initiate audible and visual alarm notification throughout building
 - Notification permitted to be limited to area of origin in accordance with approved fire safety plan.
 - **§ 915.5.5 – Duct Detection** – CO detectors in ductwork or plenums not a substitute for required protection.
- **Chapter 9 § 917 Mass Notification**
 - **§ 917.2 – Group E Occupancies** – Prior to new construction with occupant load greater than 500, mass notification risk analysis per NFPA 72 is required. When determined, MNS shall be provided in accordance with findings of risk analysis.



2024 IFC Significant Changes

- Chapter 27 Semiconductor Fabrication Facilities
 - Table 2704.2.2.1- Limits for HazMat in Single Fabrication Facility
 - Increased to allow more production and efficiency.
 - Max quantity at a single workstation remains the same.

TABLE 2704.2.2.1 (excerpts)
 QUANTITY LIMITS FOR HAZARDOUS MATERIALS IN A SINGLE FABRICATION AREA IN GROUP H-5^a

HAZARD CATEGORY	SOLIDS (pounds/ft ²)	LIQUIDS (gallons/ft ²)	GAS (ft ³ @ NTP/square foot)
PHYSICAL-HAZARDOUS MATERIALS			
Combustible liquid			
Class II	Not Applicable	0.04 <u>0.02</u>	Not Applicable
Class IIIA		0.02 <u>0.04</u>	
Combination Class I, II and IIIA		0.04 <u>0.08</u>	
Flammable liquid			
Class IA	Not Applicable	0.0025 <u>0.005</u>	Not Applicable
Class IB		0.025 <u>0.05</u>	
Class IC		0.025 <u>0.05</u>	
Combination Class IA, IB and IC		0.025 <u>0.05</u>	
Combination Class I, II and IIIA		0.04 <u>0.08</u>	
Organic peroxide			
Unclassified detonable	Note b	Not Applicable <u>Note b</u>	Not Applicable
Class I	Note b	<u>Note b</u>	
Class II	0.025 <u>0.05</u>	<u>0.0025</u>	
Class III	0.4 <u>0.2</u>	<u>0.02</u>	



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2024 IFC Significant Changes

- **Chapter 33 – Safeguards for Construction**
 - **§ 3312.1 –Additional safeguards for Type IV Construction**
 - When Type IVA or IVB construction reaches 6 stories, the 2021 IFC requires a single layer of noncombustible protection to be installed on all exposed wood surfaces up to 4 stories below the top floor under construction
 - In other words, never more than 4 stories of unprotected wood during the construction
 - 2024 IFC exempts the floor from this



2024 IFC Significant Changes

- Chapter 50 – Hazardous Materials – General Provisions

- Table 5003.1.1(5) – Hazardous Materials Exemptions

MATERIAL CLASSIFICATION	OCCUPANCY OR APPLICATION	EXEMPTION
Combustible fiber	Baled cotton	Densely packed baled cotton shall not be classified as combustible fiber, provided that the bales comply with the packing requirements of ISO 8115.
Corrosive	Building materials	The quantity of commonly used building materials that are classified as corrosive materials is not limited.
	Personal and household products	The quantity of personal and household products that are classified as corrosive materials is not limited in retail displays, provided that the products are in original packaging.
	Retail and wholesale sales occupancies	The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids, with the remainder of the solutions not being flammable, is not limited. To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.
Explosives	Groups B, F, M and S	Storage of special industrial explosive devices is not limited.
	Groups M and R-3	Storage of black powder, smokeless propellant, and small arms primers is not limited.
Flammable and combustible liquids and gases	Aerosols	Buildings and structures occupied for the storage of aerosol products, aerosol cooking spray products, or plastic aerosol 3 products shall be classified as Group S-1.
	Alcoholic beverages	The quantity of alcoholic beverages in liquor stores and distributors without bulk storage is not limited.
		The quantity of alcoholic beverages in distilling or brewing of beverages is not limited.
		The storage quantity of beer, distilled spirits and wines in barrels and casks is not limited.
		The quantity of alcoholic beverages in retail and wholesale sales occupancies is not limited. To qualify for this allowance, beverages shall be packaged in individual containers not exceeding 1.3 gallons.

Cleaning establishments with combustible liquid solvents	The quantity of combustible liquid solvents used in closed systems and having a flash point at or above 140°F is not limited. To qualify for this allowance, equipment shall be listed by an approved testing agency and the occupancy shall be separated from all other areas of the building by 1-hour fire barriers or 1-hour horizontal assemblies, or both, constructed in accordance with the <i>International Building Code</i> .
	The quantity of combustible liquid solvents having a flash point at or above 200°F is not limited.
Closed piping systems	The quantity of flammable and combustible liquids and gases utilized for the operation of machinery or equipment is not limited.
Flammable finishing operations using flammable and combustible liquids	Buildings and structures occupied for the application of flammable finishes shall comply with Section 416.
Fuel	The quantity of liquid or gaseous fuel in fuel tanks on vehicles or motorized equipment is not limited.
	The quantity of gaseous fuels in piping systems and fixed appliances regulated by the <i>International Fuel Gas Code</i> is not limited.
	The quantity of liquid fuels in piping systems and fixed appliances regulated by the <i>International Mechanical Code</i> is not limited.
Fuel oil	The quantity of fuel oil storage complying with Section 605.4.2 is not limited.
Hand sanitizer	The quantity of alcohol-based hand rubs (ABHR) classified as Class I or II liquids in dispensers installed in accordance with Sections 5705.5 and 5705.5.1 is not limited. The location of the ABHR shall be provided in the construction documents.
Retail and wholesale sales occupancies with flammable and combustible liquids	The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids, with the remainder of the solutions not being flammable, is not limited. To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.

Highly toxic and toxic materials	Retail and wholesale sales occupancies	The quantity of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids, with the remainder of the solutions not being flammable, is not limited. To qualify for this allowance, such materials shall be packaged in individual containers not exceeding 1.3 gallons.
Any	Agricultural materials	The quantity of agricultural materials stored or utilized for agricultural purposes on the premises is not limited.
	Energy storage	The quantity of hazardous materials in stationary storage battery systems is not limited.
		The quantity of hazardous materials in stationary fuel cell power systems is not limited.
	Refrigeration systems	The quantity of refrigerants in refrigeration systems is not limited.

For SI: 1 gallon = 3.785 L, °C = (°F – 32)/1.8.

a. Exempted materials and conditions listed in this table are required to comply with provisions of this code that are not based on exceeding maximum allowable quantities in Section 5003.



2024 IFC Significant Changes

- Chapter 50 – Hazardous Materials – General Provisions

- Table 5003.11.2 – Max Allowable Quantity of Low Burning Velocity 1B

TABLE 5003.11.2
MAXIMUM ALLOWABLE QUANTITY OF LOW BURNING VELOCITY CATEGORY 1B
FLAMMABLE GAS IN GROUP M AND S OCCUPANCIES PER CONTROL AREA*

CATEGORY 1B (Low BV) ^d	SPRINKLERED IN ACCORDANCE WITH NOTE B	NONSPRINKLERED
Gaseous	39,000 ft ³	195,000 ft ³
Liquified	40,000 lb ^c	20,000 lb

For SI: 1 pound = 0.454 kg, 1 cubic foot = 0.028 m³.

- a. Control areas shall be separated from each other by not less than a 1-hour fire barrier.
- b. The building shall be equipped throughout with an approved automatic sprinkler system with a minimum sprinkler design density of Ordinary Hazard Group 2 in the area where flammable gases are stored or displayed.
- c. Where storage areas exceed 50,000 square feet in area, the maximum allowable quantities area is allowed to be increased by 2 percent for each 1,000 square feet of area in excess of 50,000 square feet, up to not more than 100 percent of the table amounts. Separation of control areas is not required. The aggregate amount shall not exceed 80,000 pounds.
- d. "Low BV" Category 1B flammable gas has a burning velocity of 3.9 in/s (10 cm/s) or less.

- §5003.11.2.1 – Fire Protection and Storage Arrangements

- Storage

- Separate ≥20' from flammable liquids
- Separate ≥10' from flammable liquids if secondary containment or diking is provided
 - Edge of secondary containment or diking ≥10' from Category 1B flammable gas
- Shelf storage ≥6' in height

- Fire Protection

- Rack storage, palletized storage or solid piles ≥6' in height shall be sprinklered
- Sprinklers designed for Extra Hazard Group 1
- Shelf storage shall be on metal shelves
- Combustible commodities shall not be stored above

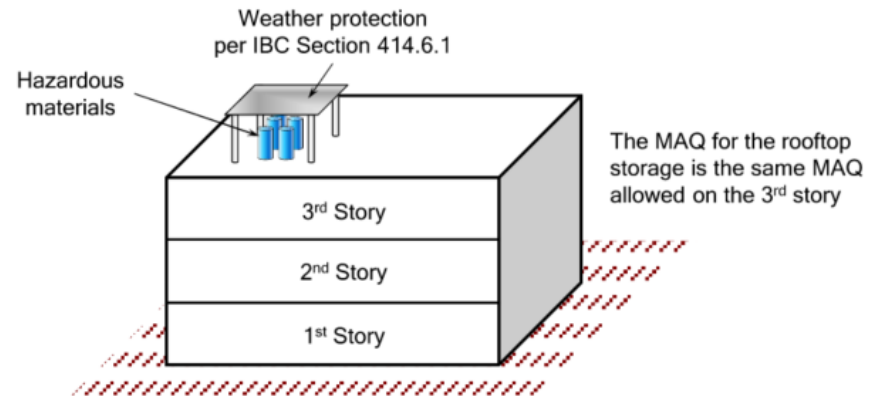
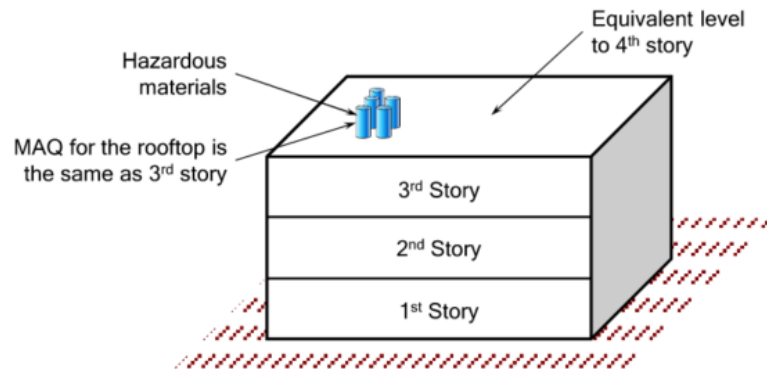


2024 IFC Significant Changes

- Chapter 50 – Hazardous Materials – General Provisions

- § 5003.13 – Outdoor Rooftop Storage, Use and Handling

- Storage on roofs or on top of canopies is considered rooftop storage
- Rooftop storage quantities shall NOT be included in the MAQ for the building
- Rooftop storage does NOT create another story
- Quantity in rooftop storage shall not exceed the MAQ for the story below



Chapter 25-12: Local Amendments to the International Fire Code

Chapter 1

Historically, AFD has amended out the required operational permits required by section 106. This has been revised to section 105 in the 2021 IFC, so references were updated to correspond. Similar to other sections of the chapter as it was reformatted in published code.



2024 International Fire Code

Significant Changes and
Proposed Local Amendments

Questions?

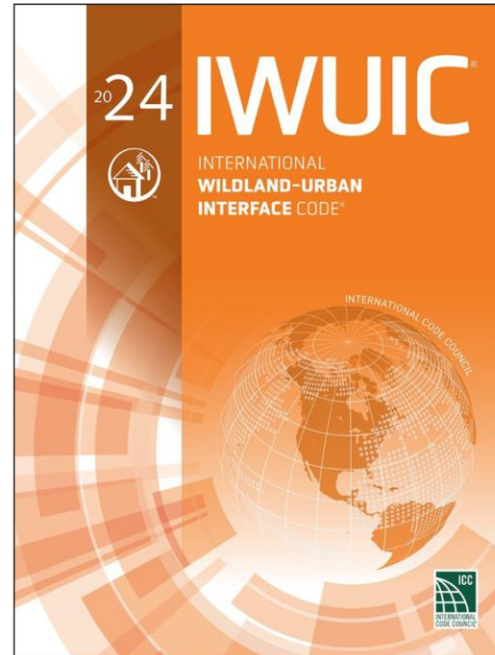
Thank you for your
time!





2024

International Wildland Urban Interface Code(IWUIC)





AUSTIN FIRE DEPARTMENT

2024 International Wildland Urban Interface
Code Adoption

2024 International Wildland Urban Interface Code

Local Amendment
Adoption

Our Mission Goes Beyond Our Name is our cornerstone

As a leader in the fire service:

We are on the cutting-edge of technology and training.

We protect lives and property through extensive fire prevention and safety education efforts, in addition to a quick and effective response to emergencies.



Proposed Adoption

In accordance with ICC latest publication, Austin Fire Department is on track to implement the 2024 International Wildland Urban Interface Code (IWUIC) and local amendments on **January 1, 2025**.



Coordinate and Clarify

Goals: Clarify previously adopted local amendments with changing technology and published code.

Adjust requirements based on challenges and successes of initial implementation of the IWUIC.

Reasons for amendments:

1. To support operating procedures for Wildfire Operations.
2. Formalize WUI Proximity Zones to clarify structure hardening requirements.
3. Align requirements with current wildfire research.
4. Clarification purposes and formalizing 2015 WUIC interpretations.



2024 IWUIC Significant Changes

Significant Changes to IWUIC model code:

- 104 Determination of Compliance (*COA amendments refer to Fire Code*)
 - Outlines requirements for technical opinions, reports, and alternative materials, design and methods
- 503.2 Ignition-resistant building material. Reorganized and clarified.
- 504.5.1 Flashing. Additional requirements above International Residential Code.
- 504.10, 505.10, 506.5 Vents
 - Performance and Prescriptive requirements
 - 1/8" max. mesh openings, in alignment with current COA regulation



2024 WUIC Highlights

Changes

- Unofficial “Proximity Classes” defined and renamed Proximity Zones A, B, and C
 - Zone A & B modified protection of accessory structures
 - Zone B enhanced protection of walls
 - Zone C enhanced eave and ceiling protection
 - Zone C reduced roofing, underfloor enclosure, and slope requirements
- NEW Ember Ignition Zone
- Expiration of initial code launch leniency
- Driveways serve up to max of 4 dwelling units, or provide full width fire lane
- Reduced full roof replacement requirement
- Reduced boat dock requirements

Continued...



2024 WUIC Highlights

Reformatting

- Separate code sections for WUI Proximity Zones
 - 504 Zone A
 - 505 Zone B
 - 506 Zone C
- Subsections for eave components
- Table of modified changes indicates three (3) types of amendments to the base code
 - Single asterisk * for Amended (edited/modified) items
 - Double asterisks ** for Deleted (removed, unadopted) items
 - T-Cross † for Added (new/clarifying) items

Continued...



2024 WUIC Highlights

Clarifications

- Formalize allowances and interpretations
 - Increased use of the Fire Protection Criteria Manual
- Added reference alignment to the Fire Code
- Extreme Hazard Condition clarified
- Wildland definition clarified
- Compliance with roof fire-rating
 - No wood or green roof coverings
 - Raised-deck systems to comply with IBC
- Exterior ceilings, same treatment as soffits
- Artificial turf requirements provided



Wildland

An area in which development is essentially nonexistent including but not limited to grassland, pastures and farmland, shrub-covered and treed areas, easements, unmitigated parkland, and other natural surfaces that are not regularly maintained.

- Wildland is no longer defined as 40 acres or 750 acres.
- Wildland mapping will reflect approximately 10 acres, to be specified within Fire Protection Criteria Manual.
- Expands examples of wildland types and includes easements.
 - Compared to the model code, the amendment does not exempt roads, railroads, power lines or similar facilities from being wildland.
 - Additional guidance will be included in the Fire Protection Criteria Manual.



Ember Ignition Zone (EIZ)

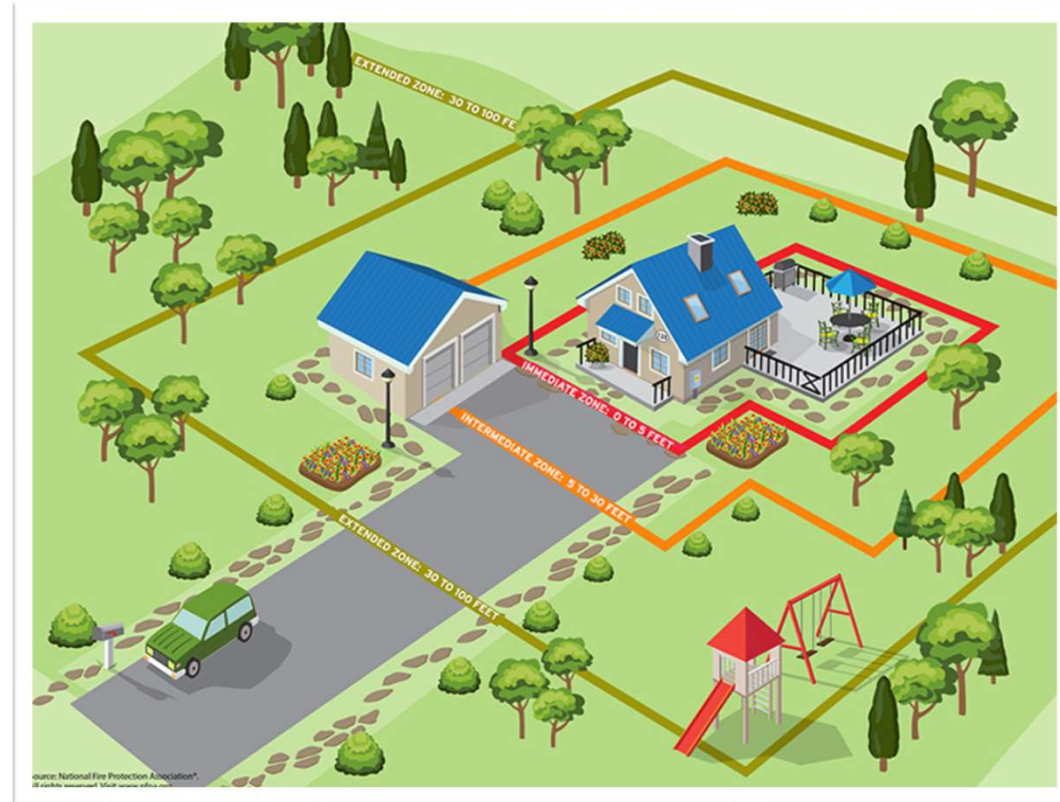
Section 603.2.1

Research from the National Fire Protection Association (NFPA) and Insurance Institute for Business & Home Safety (IBHS) show

- 5 feet around a structure has greatest impact
- Noncombustible zone can protect a building from ignition due to
 - direct flame
 - radiant heat
 - wind-blown embers collecting at the base of an exterior wall or structure

<https://www.nfpa.org/education-and-research/wildfire/preparing-homes-for-wildfire>

<https://ibhs.org/wildfire/near-building-noncombustible-zone/>



Ember Ignition Zone (EIZ)

Section 603.2.1

Wildfire Defense Mesh, IBHS
Combustible Vs Non-Combustible
Burn Demonstration

- Right Side: Traditional wood deck, vegetation, wood mulch
- Left Side: Noncombustible zone with ignition-resistant deck, Wildfire Defense Mesh skirting, rock mulch



Ember Ignition Zone (EIZ)

Section 603.2.1

The **Ember Ignition Zone (EIZ)** requires a 5-foot wide, noncombustible area to surround all structures and appendages. 603.2.1.

The EIZ surface is gravel, pavers, or other non-combustible materials and maintained free of all combustible materials at all times. Artificial turf may not be used in the EIZ, and if used within any defensible space area must have Class A rating per ASTM E108.

Exceptions:

- Protected and Heritage trees are allowed to remain in all existing conditions.
 - New construction should aim to maintain appropriate distance from such trees.
 - Protective mulch for critical root zone (CRZ) is allowable during construction and shall be removed at the completion of construction.
- For structures of Type I & II construction, the EIZ shall only be required 10 feet to each side of required egress points of the structure.



Proximity Zone

Section 302.4

The designation given to a structure to determine the enhanced ignition resistant construction required to reduce the effects of a wildfire on the structure. The proximity zone is based on the distance of the structure from the wildland per Section 302.4.

302.4 Proximity Zone designation:

- Proximity Zone A structures are those that are 50 feet or closer to the wildland.
- Proximity Zone B structures are those that are greater than 50 feet and up to 150 feet from the wildland.
- Proximity Zone C structures are those that are greater than 150 feet and up to 1.5 miles from the wildland.

302.4.1 Proximity Zone Conflicts:

The more restrictive zone applies for a structure where it crosses multiple zones.



Proximity Zone A Section 504	Proximity Zone B Section 505	Proximity Zone C Section 506
Roof & Accessories	Roof & Accessories	Roof & Accessories REDUCED sloped roof underlayment
Skylights	Skylights	Skylights
Protection of Eaves	Protection of Eaves REDUCED	Protection of Eaves REDUCED eaves & rafter tails
Gutters & Downspouts	Gutters & Downspouts	Gutters & Downspouts
Appendages & structures	Appendages & structures REDUCED distance	Appendages & structures REDUCED distance & protection at slopes >10%
Ventilation	Ventilation	Ventilation REDUCED - soffit vents allowed
Boat Docks REDUCED	Boat Docks	Boat Docks
Underfloor Enclosure	Underfloor Enclosure	Underfloor Enclosure REDUCED
Exterior Walls	Exterior Walls REDUCED flashing	
Exterior Glazing		
Exterior Doors		



*REDUCED items are a reduction compared to standard Proximity Zone A Ignition-Resistant (IR) Construction Requirements

Roof & Accessories

Sections 504.2 (Zone A), 505.2 (Zone B), 506.2 (Zone C), and 507.1 (Roof Replacement)

Modified, reduction:

- The entire roof shall comply when 50% or more of the roof is replaced.
- Roof Assemblies in Zone C:
 - Sloped roofs may reduce underlayment to 30 lb felt.

Added:

- Raised-deck systems shall meet **new** 2024 IBC section 1511.9 – including residential structures.

Clarifications, 2015 WUIC interpretations:

- Woven roof valleys allowed as an option versus model code 36" wide 72-lb cap sheet.
- Skylights:
 - Housing shall be noncombustible.
 - Glazing shall be protected at all Zones.
- No wood roof coverings and no green roofs.
- Walkway pads shall not compromise the roof fire resistance rating.



Protection of Eaves

Sections 504.3 (Zone A), 505.3 (Zone B), and 506.4 (Zone C)

Created separate subsections for eave components

Eaves

- Zone A: added 5/8" Type X sheetrock as an option
- Zone B: added clarification that Zone A materials may be used
- Zone C: shall match Zone B requirements

Fasciae

- Zone A: 3/4" thick material protected by Ignition-resistant (IR) exterior finish. Per model code, backside of fascia protected by IR material or 2x lumber.
- Zone B & C: shall match Zone A requirements

Exposed Rafter Tails

- Zone A & B: Heavy timber, exterior wall shall be 1-hour rated from foundation to bottom of roof deck, roof deck shall be ASTM E 84 Class A rated material or noncombustible (48" min. either side of wall).
- Zone C: Heavy Timber

Added:

- **Gaps Between Materials** shall have ember protection similar to ventilation openings.
- **Exterior Ceilings** shall be built using ignition-resistant building materials that comply with Section 503.2.



Exterior Walls & Underfloor Enclosure

Sections 504.5 (Zone A), 505.5 (Zone B), and 506.3 (Zone C)

Modified:

- Zone A: Reverted to model code language
 - Result does not change requirements.
- Zone B: Reverted to model code language
 - Requirements now match Zone A.

Modified, reduction:

- Zone C: Underfloor enclosures may be constructed with the same material as exterior walls of Zone C.
 - No longer has to meet the more stringent Zone A or B exterior wall requirements.



Appendages

Sections 504.7 (Zone A), 505.7 (Zone B), and 506.6 (Zone C)

Clarifications, 2015 WUIC interpretations:

- Examples provided: decks, balconies, carports, pergolas, patio covers, awnings, canopies, and similar structures.
- Deck boards with gaps larger than 1/8" shall have ember protection, similar to ventilation openings.
- Underside of decks, not over a >10% slope, may be enclosed by an exterior wall/skirting to allow framing to be of any building/residential code approved material.
- Decks over a >10% slope shall have the underside enclosed to the ground.
 - Protected ventilation openings can be provided.
 - Storage and access points are not allowed.
 - Ignition-resistant framing required at sloped areas, not exempted by underdeck enclosure

Continued...



Appendages

Sections 504.7 (Zone A), 505.7 (Zone B), and 506.6 (Zone C)

Modifications:

- **REDUCED:** Decks in Zone C will no longer have special requirements for steep slopes. A compliant underdeck enclosure allows framing to be constructed of any building or residential code allowed material.
- Zone A: All unenclosed accessory structures and appendages shall be ignition-resistant. *See changes to 504.11 Detached Accessory Structures.*
- Zone B: All unenclosed accessory structures and appendages within 30' of a habitable building shall be ignition-resistant. *See changes to 505.11 Detached Accessory Structures.*
- Expiration of initial code launch leniency:
 - Residential fence requirements. All fences shall be ignition resistant within 10' of structures.
 - Residential appendages in Zones B and C. All appendages, such as exterior columns, shall comply with ignition-resistant requirements. Each Zone is outlined separately to clarify any differences.



Doors & Windows

Sections 504.8 (Zone A), 505.8 (Zone B), and 506.7 (Zone C)

Modified:

- Zone A: Reverted to model code language.
 - Result does not change requirements.
- Zone B and C: Clarification, *2015 WUIC interpretation*
 - Skylights shall be tempered glass, multilayered glazed panels, glass block, or have a 20-minute fire rating.
 - Other glazing and door requirements unchanged and shall not require protection.



Ventilation

Sections 504.10 (Zone A), 505.10 (Zone B), and 506.5 (Zone C)

2024 IWUIC model code has been clarified with separate sections for Performance Requirements and Prescriptive Requirements.

Modified, 2015 WUIC interpretation:

- Correction to model code requirements to clarify soffit vents are not allowed in Zones A or B.

Clarification, 2015 WUIC interpretations:

- Ventilation opening types that require protection: exhaust, outside air intake, enclosed attics, gable ends, ridge ends, underfloor ventilation, foundations, and crawl spaces.



Miscellaneous

Added, reduction:

- **Boat docks** shall only be required to have noncombustible or ignition-resistant walking surfaces and Class A roof assemblies as required by the Proximity Zone. **Sections 504.11.2 (Zone A), 505.11.2 (Zone B), and 506.8.2 (Zone C)**

Modified:

- **Detached accessory structures** shall comply with the requirements specific to the Proximity Zone. **Sections 504.11 (Zone A), 505.11 (Zone B), and 506.8 (Zone C)**
- **Driveways** serve up to 4 units max for residences; else fire lane will be required. **Section 403.8**
 - *Aligns with Transportation Criteria Manual (TCM) 7.3.1 for Minor Driveways.*



2024 International Wildland Urban Interface Code

Proposed Local Amendments

**Thank you for
your time!**



Questions/Comments





Public Input



Engagement Survey

