AUSTIN FIRE DEPARTMENT

2021 International Fire Code Adoption

2021 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 2021 International Fire Code (IFC) on **September 1, 2021.**

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

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.

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

Chapter 1

Minimum Aggregate Quantity table for hazardous materials operational permit, as required by section 105.5.22.2 has been updated to reflect the new and changing technology for battery systems and when an operational permit will be required for these systems.

Flammability	Rating	Quantity
4	Extreme	0.5 pounds or 5 gallons
3	High	12 pounds or 10 gallons
2	Moderate	60 pounds or 120 gallons
Toxicity	**Rating**	**Quantity**
4	Extreme	0.35 ounces or 0.3 fluid ounces
3	High	10 pounds or 1 gallon
2	Moderate	110 pounds or 55 gallons
Instability	**Rating**	**Quantity**
4	Extreme	0.35 ounces or 0.3 fluid ounces
3	High	10 pounds or 1 gallon
2	Moderate	110 pounds or 55 gallons
Carbon Dioxide System		101 pounds
Compressed gases and liquefied compressed gases		100 cubic feet @ NTP
Cryogenic fluids		1 gallon
Stationary and Mobile Energy Storage System (ESS)		**Energy Capacity or Quantity**
Capacitor ESS – nameplate rating		3 kWh
Flow batteries – nameplate rating		20 kWh
Lithium ion ESS – nameplate rating		20 kwh
Nickel metal hydride – nameplate rating		70 kWh
Other battery technologies – nameplate rating		10 kWh
Other electrochemical ESS technologies – nameplate rating		3 kWh
Stationary lead-acid batteries - flooded and valve regulated, and Nickel-Cadmium ESS. Mobile ESS utilizing lead acid battery technology are exempt.		15 gallons

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Chapter 2 and 3

Chapter 2 – removed definition of 'Blaster's License'. The requirement for a Blaster's License is being removed from the 2021 IFC Local Amendments Ordinance therefore the definition is no longer needed.

Chapter 3 – No changes to current adopted amendments.

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Chapter 4

Current local amendment 408.12 AED in high rise buildings relocated as proposed amendment 611. More intuitive to be located in Chapter 6 – Building Service and Systems.

New section 409 for First Responder Emergency Plans. New initiative by Emergency Planning department to create walkable maps for large and complex buildings and multi-family structures to aid First Responders in navigating unfamiliar buildings.

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Chapter 4

Added new proposed amendment for First Responder Emergency Plans – section 409

409 FIRST RESPONDER EMERGENCY PLANS

409.1 Scope. First Responder Emergency Plans shall be plans assembled by AFD to aid First Responders in familiarity with the building and its fire safety features in the event of an emergency. Plans will also aid with annual maintenance inspections.
409.2 Building Floor Plans. At the completion of new projects, the Architect/Engineer shall submit to AFD an electronic set of building floor plan as-builts in an approved format (PDF, DWG, DXF).
409.2.1 Existing Buildings. Existing buildings shall have 3 years to submit building floor plan of AFD.
409.3 Plan Requirements. Building floor plans submitted to AFD shall contain the following information, as applicable:
a) Locations of exits, exit passageways and horizontal exits.
b) Location of fire alarm control panel and remote annunciator panel.
c) Location of fire department connection.
d) Location of all standpipes and hose valve connections.
e) Rated wall locations.

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Chapter 5

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.91.5. Where required fire apparatus access roads are located on property other than a public right-of-way, the required fire apparatus access road shall be located within the legal boundaries of the property unless otherwise approved by the fire code official.

503.1.1 Buildings and facilities. Exception 3

Where approved by the fire code official, the fire apparatus access roads for a facility, building or portion of a building hereafter constructed, may be located on adjacent property(s), provided the fire apparatus access roads on the adjacent property(s) are bound in perpetuity to any and all associated properties necessary to comply with the fire apparatus road requirements herein by either a Unified Development Agreement (UDA) or a Joint Use Access Easement (JUAE) that is approved and recorded with the county in which the properties are located.

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Chapter 5

503.1.5 Official records. All required fire apparatus access roads that are not located within a public right-of-way shall be registered with the City of Austin fire department.

505.1 Address identification. New and existing buildings shall be provided with approved address identification in accordance with the City of Austin Fire Protection Criteria Manual, fire protection rules.

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Chapter 5

510.1 Emergency responder ~~radio~~ communication coverage in buildings. ~~All buildings shall have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communications system of the jurisdiction at the exterior of the building. This section shall not require improvement of the existing public safety communication system~~. Approved in-building, two-way emergency responder communication coverage for emergency responders shall be provided in all new buildings. In-building, two-way emergency responder communication coverage within the building shall be based on the existing coverage levels of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building. This section shall not require improvement of the existing public safety communication systems.

Exceptions:

~~1. Where approved by the building official and the fire chief, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained in lieu of an approved radio coverage system in buildings where a floor for human occupancy is not located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access.~~

2. Where it is determined by the fire code official that the radio coverage system is not needed.

Removed current amendment sections 510.1.1 and 510.1.2 – Time Frames. Not needed for new buildings, and covered in Chapter 11 for existing buildings.

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Chapter 6

Fuel Oil Storage Systems was moved from Section 603 to Section 605. Changes were made to include restrictions on inside storage consistent with previous amendment and clarify that fuel tanks and piping for generators must meet Chapter 57.

Section 605.4.1.2 was added to added to allow up to 20,000 gallons of fuel oil for generators meeting certain requirements.

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Chapter 6

~~603.3.2 Fuel oil storage inside buildings.~~
~~603.3.2.1 Quantity limits~~
~~603.3.2.2 Restricted use and connection~~
~~603.3.2.3 Installation~~
~~603.3.2.4 Tanks in basements.~~

605.4.Fuel oil storage systems
605.4.1.2 Fuel oil storage for stationary generators
605.4.2. Fuel oil storage inside buildings
605.4.2.2 Quantity limits.
605.4.2.3 Restricted use and connection.
605.4.2.6 Separation.

605.4.1.2 Fuel oil storage for stationary generators

Aboveground outdoor fuel oil storage for stationary generators in quantities exceeding 660 gallons shall meet the following requirements.

1) All storage must be located 50 ft. from a property line that is or can be built upon, including the opposite side of a public way.
1) For installations storing all fuel oil in UL 2085 Aboveground Storage Tanks the distance from a property line that is or can be built upon, including the opposite side of a public way shall be in accordance with NFPA 30.
2) All tank openings shall be above the tank liquid level
3) All installations exceeding an aggregate volume of 20,000 gallons (75708 L) shall be subject to public notification requirements of Section 5704.2.9.6.1, Exception 3.

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Chapter 9

Taking all of Chapter 9 from the IBC and integrating into the IFC.

~~901.5 Installation acceptance testing~~

903.2.4.2 Group F-1 distilled spirits and beverages. An automatic sprinkler system shall be provided throughout a Group F-1 fire area used for the manufacture or mixing of over 20% by volume (15.8% by weight) of ethyl alcohol distilled spirits in an aqueous solution in a volume exceeding the Maximum Allowable Quantity per Control Area.

~~903.2.8.3 Group R-4 Condition 2.~~

~~903.2.9.3 Group S-1 distilled spirits or wine.~~

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Chapter 9

~~904.134Domestic cooking facilities~~ Returning to published code, but keeping exception for Foster Care facilities <6.

~~905.3.4.1 Hose and cabinet.~~ Returning to published code.

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required interior exit stairway, a hose connection shall be provided for each story above and below grade plane. Hose connections shall be located at the intermediate floor landing unless otherwise approved by the fire code official.

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Chapter 9

~~907.2.13.2 Two-Way, In-Building Wired Fire Department Communication System~~ New buildings, specifically high rises will be required to have a ERRC system and move away from hard-wired communication system.

~~907.6.5 Monitoring.~~

Retaining smoke control section 909.22 amendments, but replacing into 909.20.

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Chapter 9

Additions to Section 916 were made to bring requirements in line with model code requirements for gas detection.

916.1 Gas detection system
916.4 Power connections.
916.5 Emergency and standby power.
916.6 Gas detector locations.
916.6.1 Gas detector selection.
916.7 Gas sampling.
916.8 System activation.
916.10 Fire alarm system connections.

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Chapter 10

1001.1 Scope. The provisions of this chapter shall specify the requirements of means of egress and shall apply to the design, installation of means of egress. For those requirements, refer to Chapter 25-12 Article 1 Building Code for combined amendments and the 2021 International Building Code Chapter 10. Refer to section 1032 of the International Fire Code for maintenance of the means of egress.

Chapter 10 moved to IBC. Exception is section 1032 Maintenance of Means of Egress

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Chapter 11

Shifted amendment due to re-organized and added section.

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Chapter 12

Chapter 12 – Energy Systems was added in the 2018 IFC. Chapter Amendments were made to maintain consistency with previous lead acid battery requirement, remove exclusion of utilities, add requirements for thermal runaway for lithium – ion batteries, and limit location of lithium ion batteries.

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Chapter 12

1207.1.1 Scope. ESS having capacities exceeding the values in Table 1207.1.1 shall comply with this section.

TABLE 1207.1.1
ENERGY STORAGE SYSTEM (ESS) THRESHOLD QUANTITIES

TECHNOLOGY	ENERGY CAPACITY[a]
Capacitor ESS	3 kWhr
Flow Batteries[b]	20 kWhr
Lead-acid batteries, all types	See Section 1207.1.2, item 3
Lithium-ion batteries	20 kWhr
Nickel metal hydride (Ni-MH)	70 kWhr
Nickel-cadmium batteries (Ni-Cd)	See Section 1207.1.2, item 3
Other battery technologies	10 kWhr
Other electrochemical ESS technology	3 kWhr

a. Energy capacity is the total energy capable of being stored (nameplate rating), not the usable energy rating. For units rated in amp-hours, kWhr shall equal rated voltage time amp-hour rating divided by 1,000

b. Shall include vanadium, zinc-bromine, polysulfide-bromide and other flowing electrolyte-type technologies.

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Chapter 12

1207.1.2 Permits.
~~1207.1.2.1 Communication Utilities~~
~~-~~1207.1.6 Fire Remediation~~.~~
1207.1.6.1 Fire Mitigation Personnel.
1207.1.6.3 Responsibility for Unauthorized Discharge.
1207.1 General
1207.5.3. Elevation
1207.5.4 Fire detection
1207.6.2.3 Special provisions for Lead-Acid ESS
1207.9.1 Rooftop Installations

TABLE 1207.6 - ELECTROCHEMICAL ESS TECHNOLOGY SPECIFIC REQUIREMENTS

COMPLIANCE REQUIRED[b]		BATTERY TECHNOLOGY				OTHER ESS AND BATTERY TECHNOLOGIES[b]	CAPACITOR ESS[b]
Feature	Section	Lead-Acid	Ni-CD & Ni-MH	Lithium-Ion	Flow		
Exhaust ventilation	1207.6.1	Yes	Yes	No	Yes	Yes	Yes
Explosion control	1207.6.3	No	Yes[a]	Yes	No	Yes	Yes
Safety caps	1207.6.4	Yes	Yes	No	No	Yes	Yes
Spill control & neutralization	1207.6.2	Yes[c]	Yes[c]	No	Yes	Yes	Yes
Thermal runaway	1207.6.5	Yes[d]	Yes	Yes[e]	No	Yes[e]	Yes
Thermal runaway detection system	1207.6.7	No	No	Yes	No	No	No

~~a. Protection shall be provided unless documentation acceptable to the fire code official is provided in accordance with Section 104.8.2 that provides justification why the protection is not necessary based on the technology used.~~
b. Applicable to vented-type (i.e., flooded) nickel-cadmium and lead-acid batteries.
c. Not required for vented-type (i.e., flooded) lead-acid batteries.
d. Thermal runaway protection is permitted to be part of a battery management

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Chapter 12

1207.6.6 Thermal Runaway Detection System

1207.6.6.1 When Required. A thermal runaway detection system shall be provided for lithium-ion battery storage systems with an energy capacity greater than 20 kWh.

EXCEPTION: Group R-3 & R-4 occupancies.

1207.6.6.1 Approvals. Devices designed to detect the thermal runaway of a lithium-ion cell containing a flammable or combustible liquid shall be listed in accordance with UL 2075, Gas and Vapor Detectors and Sensors.

1207.6.6.2 Performance. The thermal runaway detector shall activate upon detection of gas vapors produced by flammable or combustible liquid in a lithium-ion cell at the start of a thermal runaway event. Upon detection of a thermal runaway event the detection system shall shutdown the ESS rack releasing flammable or combustible gas vapors and transmit a supervisory fire alarm signal. Detection of a thermal runaway event shall
activate the mechanical ventilation when it is provided as method of explosion control. Thermal runaway detectors shall operate independently of the ESS Energy Storage Management System.

1207.6.6.3 Annunciation. The thermal runaway detector shall be capable of identifying the ESS rack where thermal runaway occurred.

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Chapter 27

2701.4 Existing buildings and existing fabrication areas. Existing buildings and existing fabrication areas shall comply with this chapter.

Exceptions:
1. Transportation and handling of HPM in corridors and enclosures for stairways and ramps shall be allowed where in compliance with Section 2705.3.2 and the Building Code.
2. The aggregate quantity of flammable, pyrophoric, toxic and highly toxic gases in a single fabrication area allowed in Table 2704.2.2.1 Footnote d. shall be limited to 9000 cubic feet at NTP.

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Chapter 50

5003.2.2.3 Emergency isolation. Where gases or liquids having a hazard ranking of Health Class 3 or 4, Flammability Class 4 or Instability Class 3 or 4 in accordance with NFPA 704 are carried in pressurized piping above 15 pounds per square inch gauge (psig) (103 kPa), an approved means of leak detection and emergency shutoff or excess flow control shall be provided. Where the piping originates from within a hazardous material storage room or area, the excess flow control shall be located within the storage room or area. Where the piping originates from a bulk source, the excess flow control shall be located as close to the bulk source as practical.

Exceptions:
1.Piping for inlet connections designed to prevent backflow.
2. Piping for pressure relief devices

~~Section 5005.1.12~~ – Relocated back to Section 5003.2.2.1 where it was in previous version of the IFC.

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Chapter 50& 56

Chapter 56 – Removing previous amendments as they were outdated in both code and practice. Section 5607 is specific to blasting requirements and is locally amended as needed based on experience from previous implosion demolitions. The blasting license was eliminated and blasting permit requirements were extended. Requirements repeated in NFPA 495 were eliminated and NFPA 495 was referenced.

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Proposed Local Amendments

Questions?

Thank you for your time!