

*International Fire Code, 2024 Edition and Amendments, Additions and Deletions Thereto
and 2024 Amendments to the Flagstaff City Code, Title 5, Fire Code*

5-02-001-0005 AMENDMENTS

The following provisions shall have the effect of either amending, adding to, or deleting from the International Fire Code, 2024 Edition:

CHAPTER 1. IFC. Administration

Amend Section 101.1 Title, to read:

These regulations shall be known as the Fire Code of City of Flagstaff, hereinafter referred to as "this code."

Delete and replace section 101.2.1 as follows:

[A] 101.2.1 Appendices: The following appendices are adopted and amended as part of this Code by the City of Flagstaff: B, C, D, E, F, G, H, I, J, L, and N as added and/or amended.

Appendix B Fire-Flow Requirements for Buildings

Appendix C Fire Hydrant Locations and Distribution

Appendix D Fire Apparatus Access Roads

Appendix E Hazard Categories

Appendix F Hazard Ranking

Appendix G Cryogenic Fluids – Weight and Volume Equivalents

Appendix H Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) Instructions

Appendix I Fire Protection Systems—Noncompliant Conditions

Appendix J Building Information Sign

Appendix L Requirements for Fire Fighter Air Replenishment Systems

Appendix N Indoor Trade Shows and Exhibitions

Amend Section 102.7 entitled "Reference codes and standards", by adding:

Referenced codes and standards as listed in Chapter 80, and in this document are adopted in their entirety.

Amend Section 105.5.36 Open Burning, by deleting

Exception: Recreational fires.

Add Section 105.6.26 Electronic access control systems:

Construction permits are required to install or modify an electronic access control system, as specified in Chapter 10. A separate construction permit is required to install or modify a fire alarm system that may be connected to the access control system. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

Add Section 105.6.27 Electric vehicle (EV) charging stations:

Construction permits are required to install or modify an electric vehicle charging station. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

Add to section 110.3 as follows: [A] 110.3 Recordkeeping:

Fire system annual maintenance inspection reports shall be submitted through the web-based third-party reporting service, The Compliance Engine.

Amend Section 113.4 entitled "Violation penalties", to read:

Persons who violate a provision of this code or fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under a provision or provisions of this code, shall be guilty of a class one misdemeanor and upon conviction shall be punishable by a fine and/or imprisonment set forth by the governing laws of the jurisdiction. Each separate day or any portion thereof, during which any violation of this Code occurs or continues, shall be deemed to constitute a separate offense.

CHAPTER 2. IFC. Definitions

Amend Section 202 entitled "Definitions; Detached Building" to read:

DETACHED BUILDING: A separate standalone structure that is separated from other buildings in accordance with the requirements of the International Building Code, greater than 200 square foot and/or within 15 feet of the existing or primary structure. This classification shall include, but not limited to the following

- Casitas
- Gazebos
- Storage Sheds
- Garages
- Green Houses
- Ramadas
- Barns
- Work Shop

Chapter 3, IFC, General requirements

Add Section 323 Electric Vehicles (EVs).

323.1 Electric Vehicle Charging Stations. Electric vehicle (EV) charging stations shall not be located inside buildings, except where approved for parking garage locations as per the National Electrical Code.

323.1.1 Charging Stations Inside Parking Garage. EV charging stations located in parking garages shall be located at grade level along the exterior perimeter walls and shall be within 150 feet of fire apparatus access roadway or shall be located on the top level of the garage with no roof above.

323.1.2 Charging Stations inside R-3 and R-4 occupancies. Approved charging stations in the private garage shall have a listed heat alarm installed in the garage and interconnected to the smoke alarms inside the dwelling.

323.2 Disconnect. Locations containing electric vehicle charging stations shall be provided with a clearly identified and readily accessible emergency disconnect installed in an approved location. The emergency disconnects for exterior electric vehicle charging stations shall be located within 100 feet (30 480 mm) of, but not less than 20 feet (6096 mm) from the charging stations, unless otherwise approved by the fire code official.

323.2.1 Height. The height of the emergency disconnect switch shall be not less than 42 inches (1067 mm) and not more than 48 inches (1219 mm) measured

vertically, from the floor level to the activating button.

323.2.2 Emergency Disconnect Sign. Emergency disconnect devices shall be distinctly labeled as: "EMERGENCY ELECTRIC VEHICLE CHARGER DISCONNECT." Signs shall be placed in an approved location and shall consist of all of the following:

1. White reflective background with red letters.
2. Weather-resistant durable material.
3. Lettering not less than 2 inches (51 mm) high.
4. Permanently affixed to the building or structure in an approved manner.

CHAPTER 5. IFC. Fire Service Features

Amend Section 503.2.3 Surface, to read:

Fire apparatus access roads shall be designed and maintained to support a minimum 80,000 pounds gross vehicle weight shall be surfaced as to provide all-weather driving capabilities. A maintenance agreement for private roads or other fire access may be required showing the responsibility for roadway maintenance and snow plowing.

Amend Section 503.2.4 entitled "Fire Service Features; Fire Apparatus Access Roads; Specifications; Turning Radius", to read:

The required minimum turning radius of a fire apparatus access road shall be 35 feet inside, 55 feet outside, or 45 feet on center

Amend Section 503.2.5 Dead ends, by adding:

There shall be no parking or other obstructions in fire apparatus turnaround areas that would impair turning of apparatus. When parking or other design features are desired, the proper design must be approved. Accumulation of snow must also be accounted for to prevent winter time obstructions.

Amend Section 503.2.7 entitled "Fire Service Features; Fire Apparatus Access Roads; Specifications; Grade, to read:

The gradient for a fire apparatus access road shall not exceed 10 percent on straight sections of roadway and 5 percent side slope on turnarounds and curves

Amend Section 505.1 Address Numbers, to Read:

505.1 Address Identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 6 inches (152.4 mm) high with a minimum stroke width of 1/2 inch (12.7 mm). Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road, buildings do not immediately front a street, and/or the building cannot be viewed from the public way, a monument, pole or other sign with approved 6 inch (152.4 mm) height building numerals or addresses and 4 inch (101.6 mm) height suite/apartment numerals of a color contrasting with the background of the building or other approved means shall be used to identify the structure. Buildings in multi-building complexes must be marked with 12" minimum height numbers. Approved identification shall also be provided on the rear door(s) at any location where access into the building may be difficult to determine.

Address identification shall be maintained.

Exception: R-3 Single Family occupancies shall have approved numerals of a minimum 4 inches (88.9 mm) in height and a color contrasting with the background clearly visible and legible from the street fronting the property.

Amend Section 507.2 Type of water supply, by adding:

Water supply for a major system component as described by the American Water Works Association must provide a continuous and uninterrupted supply of fire protection water through redundancy. Fire mains in excess of 1,000 feet in length or which have more than 3 hydrants affixed shall be looped to a second source of water. All fire mains hereafter constructed shall be a minimum of 8-inch diameter but in all cases shall be of sufficient size to adequately supply the required fire flow.

Add a new section as follows: 510.5.6 Emergency responder communication enhancement system (ERCES) infrastructure: New buildings or structures shall be required to install, at a

minimum, two-inch (2") Electrical Metallic Tubing (EMT) conduit (between floors where applicable) dedicated for potential ERCES use. The conduit will have a breakout box in an equipment room for cables to be pulled. Guide wire will be provided in the conduit (between each floor, where applicable) in the breakout box. Conduit and breakout boxes shall be installed in accordance with NFPA 70. The conduit and breakout box will be labeled "PUBLIC SAFETY USE ONLY!". If it is determined that after all construction is complete that ERCES equipment is required, the conduit will make installation easier and more economical to the building owner. Such ERCES infrastructure shall be provided for the following:

1. New multi-story or multi-level buildings or structures;
2. New single-story buildings or structures totaling 45,000 square feet (4180 m²) or more in size;
3. New buildings or structures containing a basement or other subterranean space totaling 250 square feet (23 m²) in size.
4. Any new building or structure that the fire code official has determined to have been constructed in a manner which may limit, or with materials likely to limit, the ability of emergency response personnel to effectively use emergency radio communication while within that building or structure.

New building or structures containing any underground parking areas will be required to provide the capability for a future rooftop antenna to be installed, if deemed necessary, in addition to the above requirements for ERCES infrastructure.

CHAPTER 9. IFC. Fire Protection Systems

Add to section 901.4 as follows:

901.4 Installation: The layout, calculation, and installation of fire protection systems shall be performed by persons knowledgeable and trained in such systems. Only qualified professionals (NICET Level III or higher) or qualified Arizona registrants shall design or

modify fire alarm systems or sprinkler systems requiring hydraulic calculation engineered to the standards outlined in Section 903.3.1.1. Contractors are required to possess a current Arizona License from the Register of Contractors to install fire protection systems. The installer shall follow all manufacturer guidelines for installation, inspection and testing. Contractors shall maintain certification when required by the manufacturer.

Add a new subsection as follows:

901.4.7.5 Minimum size: Rooms containing fire pump equipment and fire riser rooms for sprinkler systems installed in accordance with Section 903.3.1.1 shall be a minimum of four feet (121 cm) by four feet (121 cm) in size.

Add a new subsection as follows:

901.4.7.6 Room access: Pump and fire riser rooms shall have a door directly accessible from the exterior of the building.

Amend Section 903 entitled Automatic Sprinkler Systems by adding

903.2 Where Required. Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12. In addition to the requirements of the fire and building codes, an approved automatic monitored sprinkler system shall be installed throughout all levels of all new Group A, B, E, F, M, U and S occupancies 5,000 square feet (464m²) or greater and in all buildings over 3 stories in height regardless of the total square footage. Such systems shall be in accordance with the International Fire Code, International Building Code and installed in accordance with NFPA 13, 13D or 13R as specified by the fire code official. Notwithstanding the foregoing, an automatic monitored fire sprinkler system may be installed in any building regardless of floor area.

Amend Section 903.2.1.1 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group A-1, to read:

An automatic sprinkler system shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multi theater complex.

Amend Section 903.2.1.3 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group A-3", to read:

An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

Amend Section 903.2.1.4 entitled "Fire Protection Systems, Automatic Sprinkler Systems;

Where required; Group A-4", to read:

An automatic sprinkler system shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

Amend Section 903.2.2 entitled Group B, by adding:

An automatic monitored sprinkler system shall be provided throughout all Group B occupancies where any of the following exist:

1. Where Group B fire area is 5,000 square feet (464m²) and greater, or
2. Fire area is located more than three stories above grade

Amend Section 903.2.3 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group E", to read:

An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 5000 square feet (462m²) in area.
2. The Group E fire area is located on a floor other than a level of exit discharge serving such occupancies.

Exception: An automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area where every classroom throughout the building has at least one exterior exit door at ground level.

3. The Group E area has an occupant load of 300 or more

Amend Section 903.2.4 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group F-1", to read:

An automatic sprinkler system shall be provided throughout all buildings containing Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds 5,000 square feet (464m²).
2. A Group F-1 fire area is located more than three stories above grade plan.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 5,000 square feet (464m²).
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, or equipment containing lithium-ion or lithium batteries where the batteries are installed during manufacturing process.

Amend Section 903.2.7 entitled "Fire Protection Systems; Automatic Sprinkler Systems; Where required; Group M", to read:

An automatic sprinkler system shall be provided throughout buildings containing Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 5,000 square feet (464m²).
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 5,000 square feet (464m²).

Amend 903.2.8 entitled Group R, to read:

An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

Exception: As limited by Arizona Revised Statute

Amend Section 903.2.9 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Group S-1", to read:

An automatic sprinkler system shall be provided throughout all buildings containing Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 5,000 square feet (464m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 5,000 square feet.
4. A Group S-1 fire area used for the storage of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m²).
5. A group S-1 fire area used for the storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet.

Amend Section 903.2.9.1 entitled "Fire Protection Systems, Automatic Sprinkler Systems; Where required; Repair Garages", to read:

An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406.8 of the International Building Code, as shown:

1. Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 5,000 square feet (464m²).
2. Buildings no more than one story above grade plane, with a fire area containing a repair garage exceeding 5,000 square feet (464m²).
3. Buildings with repair garages servicing vehicles parked in basements.
4. A Group S-1 fire area used for the repair of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m²).
5. A group S-1 fire area used for the storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet.

Amend Section 903.2.10 entitled "Fire Protection Systems, Automatic Sprinkler Systems;

Where required; Group S-2 enclosed parking garages", to read:

An automatic sprinkler system shall be provided throughout buildings classified as enclosed parking garages in accordance with Section 406.6 of the International Building Code as follows:

1. Where the fire area of the enclosed parking garage exceeds 5,000 square feet (464m²)
2. Where the enclosed parking garage is located beneath other groups.
Exception: Enclosed parking garages located beneath Group R-3 occupancies.
3. Where the fire area of open parking garage exceeds 48,000 square feet.

Amend Section 1103.5 Sprinkler systems, deleting section 1103.5.1;

~~**1103.5.1 Group A-2** Where alcoholic beverages are consumed in a Group A-2 occupancy having an occupant load of 300 or more, the fire area containing the Group A-2 occupancy shall be equipped with an automatic sprinkler system in accordance with section 903.3.1.1.~~

Amend Section 3107 Outdoor Assembly Events, addition table 3107.3

Outdoor Assembly Events Table 3107.3

Occupant Load	Minimum number of Exits
1-500	2
501-1000	3
1001-1500	4
Each additional 500 Persons	36" of additional exit width for each exit

3107.3.3 Exit Width The aggregate clear width of exits shall be a minimum of 36 "width wide for each 500 persons to be accommodated

3107.3.4 Exit Signs Exits shall be identified with signs that read -EXIT – The signs shall be weather resistant with letters on a contrasting background. Lettering shall be of sufficient height and brush stroke to be visible within 100 feet. Placement of the exit signs shall be approved by the fire code official.

3107.4 - Outdoor Concerts / Crowd Management, section added

3106.4.1 Front Stage Isle/Separation Minimum 10 foot aisle space for front of stage, adequate crowd manager's during the concert or event to maintain minimum widths. Main isle shall be a minimum of 10 feet in width.

Amend Section 5004.9 Emergency alarm to read:

An approved manual emergency alarm system shall be provided in buildings, rooms or areas used for storage of hazardous materials. The emergency alarm system shall be designed using the manual fire alarm requirements of the *National Fire Alarm Code*, NFPA 72. Emergency alarm initiating devices shall be installed outside of each interior exit or exit access door of the storage buildings, rooms or areas. Activation of an emergency alarm-initiating device shall sound an audible signal distinctly different than that of the fire alarm signal. Emergency alarm notification devices shall be yellow or amber in color.

APPENDIX D Fire Apparatus Access Roads

Amend Section D102 Required Access to read:

D102.1 Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be an accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved all-weather driving surface capable of supporting the imposed load of fire apparatus weighing at least 80,000 pounds.

Amend Section D107 One- or Two-family dwelling residential developments to read:

D107.1 One- or two- family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads.

Exceptions:

1. Where there are ~~more than~~ 31 to 50 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3, access from two directions shall not be required.

