

TO: Tubac Fire Board

FROM: Genaro Rivera, Deputy Chief

RE: Discussion and Possible Action to Adopt 2018 International Fire Code with Amendments

DATE: July 21, 2022

BACKGROUND: The voters of the Tubac Fire District first adopted the fire code at the general election in November of 1992. Since then there have been several amendments and updates to the nationally and internationally recognized fire code which the District has adopted. The District adopted the 2012 International Fire Code with amendments in 2015-2016, and has been working off this Code since then.

Building and Safety Codes in general are updated approximately every three years, though jurisdictions do not automatically readopt with each of these cycles. The reasons for this are varied and complex, but, basically, jurisdictions adopt new codes when there are sufficient changes to warrant it. Lacking that, many jurisdictions simply adopt amendments to their existing codes, almost all of which account for local conditions and circumstances.

This request is to adopt the 2018 International Fire Code with Amendments. Most of the amendments reflect the changes the District made to the 2012 Code when adopted. Therefore, these do not reflect any changes from what is currently being enforced. New requirements include automatic sprinklers in triplexes and a description and treatment of the District's Knox box program for access.

Attached is a comparison between the 2015 and 2018 Fire Codes for your use.

FISCAL IMPACT: There are some costs associated with the statutory public noticing that will take place after the Board approves this as well as the cost for the new code books.

SUGGESTED MOTION: I move to adopt the 2018 International Fire Code with Amendments as presented by staff.

ATTACHMENTS: Amendments
2018 IFC Update Handout

Tubac Fire District

2018 International Fire Code Amendments

June 2022 Tubac Fire District adopted the International Fire Code 2018 edition in its entirety unless otherwise amended below.

CHAPTER 1 SCOPE AND ADMINISTRATION

SECTION 101 - SCOPE AND GENERAL REQUIREMENTS

Section 101.1 Title. Is amended to read:

Title. These regulations shall be known as the *Fire Code* of Tubac Fire District, hereinafter referred to as “this code.”

Section 101.2.1 Appendices. Is amended to read:

Appendices. The following appendices are adopted as part of this code:

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

SECTION 106-FEES

Section 106.2 Schedule of permit fees. Is amended to read:

Schedule of permit fees. Permit fees shall be in accordance with Tubac Fire District fee schedule.

CHAPTER 2 DEFINITIONS

SECTION 202 - GENERAL DEFINITIONS

Driveway. Is added to read:

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Driveway. A vehicular ingress and egress route that serves no more than two buildings or structures, not including accessory structures, or no more than five dwelling units.

Institutional Group I-1. The first sentence is amended to read:

Institutional Group I-1. This occupancy shall include buildings, structures or parts thereof for more than 10 persons who reside on a 24-hour basis in a supervised environment and receive custodial care.

Institutional Group I-1, Six to sixteen persons receiving care. Is amended to read:

Six to ten persons receiving care. A facility such as above, housing at least six and not more than 10 persons receiving such care, shall be classified as Group R-4.

Residential Group R-3. Is amended to read:

Residential Group R-3. Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

- Boarding houses (transient or non-transient) with 10 or fewer occupants
- Buildings that do not contain more than two *dwelling units*
- Care facilities that provide accommodations for five or fewer persons receiving care
- Congregate living facilities (transient or non-transient) with 10 or fewer occupants

Residential Group R-4. The first sentence is amended to read:

Residential Group R-4. This occupancy shall include buildings, structures or portions thereof for more than five but not more than 10 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care.

CHAPTER 3 GENERAL REQUIREMENTS

SECTION 311 - VACANT PREMISES

Section 311.5 Placards. Is amended to read:

Placards. When determined by the *fire code official* any vacant or abandoned buildings or structures determined to be unsafe pursuant to Section 110 of this code relating to structural or interior hazards shall be marked as required by Sections 311.5.1 through 311.5.5.

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CHAPTER 5 FIRE SERVICE FEATURES

SECTION 505 - PREMISES IDENTIFICATION

Section 505.1 Address numbers. Is amended to read:

Address numbers. New and existing buildings shall have *approved* address numbers, building numbers or *approved* building identification placed in a position that is plainly legible and visible from the street or road fronting the property. Address numbers shall be in accordance with Santa Cruz County address display requirements. Address numbers shall be maintained at all times.

CHAPTER 9 FIRE PROTECTION SYSTEMS

SECTION 901 - GENERAL

Section 901.2 Construction Documents. Is amended by adding a second paragraph:

Automatic fire protection system hydraulic calculations shall be based upon 90 percent of the available water supply as determined by the local water purveyor or flow test information.

Section 901.4 Installation. Is amended to read:

Installation. *Fire protection systems* shall be maintained in accordance with the original installation standards for that system. Systems shall be extended, altered, or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. *Alterations to fire protection systems* shall be done in accordance with applicable standards.

Section 901.4.2 Nonrequired fire protection systems. Is deleted in its entirety.

Section 901.4.6.1 ACCESS. Is amended to read:

Automatic sprinkler system risers, fire pumps and controllers shall be located inside buildings in dedicated rooms provided with ready access. Automatic fire sprinkler risers, fire pumps and controller doors shall be arranged to allow direct access to the exterior of the building. Where located in a pump room or automatic sprinkler system riser room, the door shall be permitted to be locked provided that the key is available at all times in an approved Knox key box.

Section 903 - AUTOMATIC FIRE SPRINKLER SYSTEMS

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Section 903.2.1 Group A. Is amended to read:

Group A. An *automatic sprinkler system* shall be provided throughout all Group A occupancies.

Section 903.2.1.1 through Section 903.2.1.5. Is deleted in its entirety.

Section 903.2.3 Group E. Is amended to read:

Group E. An *automatic sprinkler system* shall be provided throughout all Group E occupancies.

Section 903.2.4 Group F-1. Is amended to read:

Group F. An *automatic sprinkler system* shall be provided throughout all Group F occupancies.

Section 903.2.4.1. Is deleted in its entirety.

Section 903.2.6 Group I. Is amended to read:

Group I. An *automatic sprinkler system* shall be provided throughout all Group I occupancies.

Section 903.2.7 Group M. Is amended to read:

Group M. An *automatic sprinkler system* shall be provided throughout all Group M occupancies.

Section 903.2.8.1 Group R-3 or R-4 congregate residences. Is amended to read:

Group R-3 or R-4 congregate residencies. An *automatic sprinkler system* shall be installed in accordance with section 903.3.1.3 shall be permitted in Group R-3 or R-4 congregate living facilities with 10 or fewer residents.

Section 912 - FIRE DEPARTMENT CONNECTIONS

Section 912.2 Location. Is amended to read:

Location. Fire department connections shall be located a maximum of 200 feet (60,960mm) from the nearest fire hydrant. With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be *approved* by the *fire code official*.

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CHAPTER 12 ENERGY SYSTEMS

SECTION 1204- SOLAR PHOTOVOLTAIC POWER SYSTEMS

Section 104.3.1 Perimeter pathways. The **Exception.** Is deleted in its entirety.

APPENDIX D FIRE APPARATUS ACCESS ROADS

SECTION D103 - MINIMUM SPECIFICATIONS

Section D103.1.1 Driveways. Is added to read:

Driveways. Driveways providing access to single family *dwelling units* shall provide a minimum unobstructed width of 14 feet (4,267mm) and a minimum unobstructed height of 13 feet 6 inches (4,115mm). Driveways in excess of 150 feet (45,720mm) in length shall provide turnarounds. Driveways in excess of 200 feet (6,096mm) in length and less than 20 feet (6,096mm) in width shall provide turnouts in addition to turnarounds. Driveway turnouts shall be an all-weather road surface at least 10 feet (3,048mm) wide and 30 feet (9,144mm) long. Driveway turnouts shall be located as required by the *fire code official*.

Driveway turnarounds shall have an inside turning radius of not less than 30 feet (9,144mm) and an outside turning radius of not less than 45 feet (13,716mm). Driveways that connect with a road or roads at more than one point may be considered as having a turnaround if all changes of direction meet the radius requirements for driveway turnarounds.

A driveway shall not serve in excess of five dwelling units.

Section D103.5 Fire apparatus access road gates. Item 1. Is amended to read:

1. The minimum gate width shall be an unobstructed 20 feet (6,096mm) when serving two directions, or an unobstructed 14 feet (4,267mm) when serving a single direction.

Section D103.5 Fire apparatus access road gates. Item 5. Is amended to read:

5. All electric gates shall be equipped with and have installed, *approved* key switch compatible with the fire department's existing system.

Section D103.5 Fire apparatus access road gates. Item 10. Is added to read:

10. A key box shall be installed outside the access road gate and shall contain keys to gain access on to the property. The key box shall be maintained in accordance with Section 506.2.

2018 IFC Update

Based on the 2018 International Fire Code,[®] (IFC[®])

ICC LEARNING CENTER

The *International Fire Code*[®] (IFC[®]), establishes minimum regulations for fire safety.

This handout will identify important changes in the IFC from 2015 to 2018 edition. Participants will be presented with those changes that will most impact their use of the code when they adopt these I-Codes. The learner will receive an overview of the most important code changes.

Goal

Participants will be able to use this document to identify changes between the 2015 and 2018 IFC allowing them to apply these code requirements to design, plan submittals and/or inspection.

The lecture and activity format allows participants to discuss the changes, reasons for the changes, and answer knowledge review questions. Information presented will allow participants to apply these new code requirements to design, plan review, and/or inspection.

Objectives

Upon completion, participants will be better able to:

- Identify the most significant differences between the 2015 and the 2018 IFC.
- Explain the differences between the current and previous edition.
- Identify changes in organization and code requirements.
- Identify the applicability of design, plan review and inspection requirements.

Content

Chapters of the IFC included in this handout:

- Chapter 3, General Requirements
- Chapter 4, Emergency Planning and Preparedness
- Chapter 5, Fire Service Features
- Chapter 6, Building Services and Systems
- Chapter 7, Fire and Smoke Protection Features
- Chapter 8, Interior Finish, Decorative Materials and Furnishings
- Chapter 9, Fire Protection and Life Safety Systems
- Chapter 10, Means of Egress
- Chapter 11, Construction Requirements for Existing Buildings
- Chapter 12 Energy Systems
- Chapter 22, Combustible Dust-Producing Operations
- Chapter 23, Motor Fuel-Dispensing Facilities and Repair Garages
- Chapter 24, Flammable Finishes
- Chapter 28, Motor Fuel-Dispensing Facilities and Repair Garages
- Chapter 31, Tents, Temporary Special Event Structures and Other Membrane Structures
- Chapter 32, High-Piled Combustible Storage
- Chapter 33, Fire Safety During Construction and Demolition
- Chapter 38, Higher Education Laboratories
- Chapter 39, Processing and Extraction Facilities
- Chapter 50, Hazardous Materials—General Provisions
- Chapter 51, Aerosols
- Chapter 53, Compressed Gases
- Chapter 57, Flammable and Combustible Liquids
- Chapter 61, Liquefied Petroleum Gases
- Appendix E, Hazard Categories

2018 IFC Chapter 3: General Requirements			
Code Section		Section Title	Description of Change
2018	2015		
Section 314 Modification	Section 314	Indoor Displays	This section is revised to clarify it applies to both liquid-fueled vehicles and gaseous-fueled vehicles. Additionally, it has been modified to allow the Fire Code Official the ability to determine the best method of safeguarding the vehicle regarding the battery and electrical system.
Section 315.3.1 Modification	Section 315.3.1	Ceiling Clearance for Indoor Storages	Exceptions have been added which allow an increase in the height of storage along walls in sprinklered and nonsprinklered buildings.
315.7 Addition		Outdoor Pallet Storage	Requirements are added to the code to height limitation and separation to buildings and property lines for the outdoor storage of idle pallets constructed of wood or plastic. See also Significant Change to Section 2810 for pallet storage at pallet recycling and manufacturing facilities.

2018 IFC Chapter 4: Emergency Planning and Preparedness			
Code Section		Section Title	Description of Change
2018	2015		
403.12.3 Modification		Crowd Managers	The threshold for crowd managers dropped from 1,000 to 500 people for certain events.
404.2.3 Addition		Lockdown Plans	Updates and prescribes details for facility lockdown plans.

2018 IFC Chapter 5: Fire Service Features			
Code Section		Section Title	Description of Change
2018	2015		
510 Modification		Emergency Responder Radio Coverage	Requirements for emergency responder radio coverage have been revised to address industry and equipment enhancements with a new reference to NFPA 1221.

2018 IFC Chapter 6: Building Services and Systems																			
Code Section		Section Title	Description of Change																
2018	2015																		
603.3 Modification	603.3	Fuel-fired Appliances	<p>Fuel oil storage allowances in Section 603 have been revised to clarify applicability to internal combustion engines, such as generators and fire pumps. Fuel oil storage is increased to 1,320 gallons if the building is sprinklered and the tank is listed to UL 142.</p> <p>TABLE 603-1 Maximum Capacity of Fuel Oil Based on Type of Tank and Automatic Sprinkler System Design</p> <table border="1"> <thead> <tr> <th>TANK DESIGN</th> <th>NONSPRINKLERED BUILDING</th> <th>FIRE SPRINKLERS PROVIDED IN THE ROOM</th> <th>FIRE SPRINKLERS PROVIDED IN THE BUILDING</th> </tr> </thead> <tbody> <tr> <td>UL 80</td> <td>660 gallons</td> <td>660 gallons</td> <td>660 gallons</td> </tr> <tr> <td>UL 142</td> <td>660 gallons</td> <td>660 gallons</td> <td>1,320 gallons</td> </tr> <tr> <td>UL 2085</td> <td>660 gallons</td> <td>3,000 gallons</td> <td>3,000 gallons</td> </tr> </tbody> </table>	TANK DESIGN	NONSPRINKLERED BUILDING	FIRE SPRINKLERS PROVIDED IN THE ROOM	FIRE SPRINKLERS PROVIDED IN THE BUILDING	UL 80	660 gallons	660 gallons	660 gallons	UL 142	660 gallons	660 gallons	1,320 gallons	UL 2085	660 gallons	3,000 gallons	3,000 gallons
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605.13 Addition		Refrigerants with Lower Flammability Hazards	Adds requirements regarding safety concerns for lower flammability refrigerant gases.																
608.3 Modification	608.3	Non-metallic Cooking Oil Storage Tanks	Provide listing and capacity requirements for cooking oil storage.																

2018 IFC Chapter 8: Interior Finish, Decorative Materials and Furnishings			
Code Section		Section Title	Description of Change
2018	2015		
807.1 Modification	807.1	Combustible Decorative Materials	The limitations on decorative combustible materials are clarified as to where they apply.
807.4 Modification	807.4	Combustible Decorative Materials	The limitations on decorative combustible materials are clarified as to where they apply.

2018 IFC Chapter 9: Fire Protection and Live Safety Systems			
Code Section		Section Title	Description of Change
2018	2015		
901.4.6 Addition		Fire Pump and Fire Sprinkler Riser Rooms	Additional requirements have been added for automatic sprinkler system riser rooms and fire pump rooms.
901.6.2 Addition		Integrated Fire Protection System Testing	Test criteria has been added to the code with a reference to NFPA 4 to ensure that where multiple fire protection systems or life safety systems are integrated, that the acceptance process and subsequent testing must evaluate the all of the integrated systems as a whole.
901.8.2 Modification	901.8.2	Removal of Occupant Use Hoselines	Authorizes code official to allow the removal occupant use hoselines.
903.2.1 Clarification	903.2.1	Sprinklers in Group A Occupancies	Clarifies the requirements for fire sprinkler protection in Group A occupancies.
903.2.3 Modification	903.2.3	Sprinklers in Group E Occupancies	Provides occupant load threshold for automatic sprinkler system requirements in Group E occupancies.
903.3.1.1.2 Modification	903.3.1.1.2	Sprinklers in Bathrooms in Group R-4 Occupancies	Removes fire sprinklers requirements from small bathrooms in Group R-4 occupancies.
903.3.1.2.1 Modification	903.3.1.2.1	Sprinklers Beneath Balconies	Correlates automatic sprinkler system requirements in Chapter 9 with Chapter 7 for exterior balconies of Group R occupancies.
903.3.1.2.3 Modification	903.3.1.2.3	Attics	Provides fire protection options for attics in multi-family occupancies
903.3.3 Modification	903.3.3	Sprinkler Obstructions	The code now directs the user to the sprinkler design standard to address sprinkler obstructions.
904.12 Modification	904.12	Commercial Cooking Operations	Directs users to NFPA standards to address sprinkler obstructions.
904.13 Modification	904.13	Domestic Cooking in Institutional Occupancies	Requires automatic fire-extinguishing system to protect domestic cooking appliances in care facilities.

2018 IFC Chapter 9: Fire Protection and Live Safety Systems, Continued			
Code Section		Section Title	Description of Change
2018	2015		
904.14 Modification	904.14	Aerosol Fire-extinguishing System Maintenance	Requires automatic fire suppression in domestic cooking systems in care facilities.
905.3.1 Modification	905.3.1	Class III Standpipes	Establishes standpipe requirements based on stories and addresses standpipes in Groups B and E occupancies.
905.4 Modification	905.4	Class I Standpipe Hose Connections	Allows a modification of hose connection locations for Class I standpipes serving open stairways.
905.11 Modification	905.11	Locking Caps on Standpipe Outlets	This revision authorizes the code official to require locking caps on dry standpipe hose connection outlets.
906.1 Modification	906.1	Portable Fire Extinguishers	Provides schools options for fire extinguisher placement.
907.1.2 Modification	907.1.2	Fire Alarm Construction Documents	Aligns requirements for fire alarm plans and documentation requirements with NFPA 72.
907.2.1 Modification	907.2.1	Fire Alarms in Group A Occupancies	A new fire alarm threshold has been added for Group A occupancies where an occupant load of 100 or more is located on a level other than the level of exit discharge.
907.2.10 Deletion	907.2.10	Group R-4 Fire Alarm System	Fire alarm systems are no longer required in Group R-4 occupancies.
907.5.2.2.4 Modification	907.5.2.2.4	Emergency Voice/Alarm Communication System Captions	Requires automatic fire suppression in domestic cooking systems in care facilities.
910.5 Modification	910.5	Maintenance of Smoke and Heat Removal Equipment	Maintenance and testing frequencies for smoke and heat vents and mechanical smoke removal are specified in the code.
916 Modification	916	Gas Detection Systems	Requirements for gas detection systems are clarified and consolidated in a new Section 916.

2018 IFC Chapter 10: Means of Egress			
Code Section		Section Title	Description of Change
2018	2015		
1004.8 Modification	1004.8	Occupant Load Calculation in Concentrated Business Use Area	The method of calculating occupant load in business areas is revised, which allows for larger occupant loads.
1006.2.1, Table 1006.2.1 Modification	1006.2.1, Table 1006.2.1	1006.2.1, Table 1006.2.1 Spaces with One Exit or Exit Access Doorway	Determination of cumulative occupant loads is clarified and correlated with other code requirements
1006.2.2.6, Table 1006.2.1, Table 1017.2 Addition		Groups R-3 and R-4 Protected with NFPA 13D Sprinkler System	Exit access travel distances are provided for Groups R-3 and R-4 when sprinklered with NFPA 13D sprinkler systems.
1006.3, 1006.3.1 Modification	1006.3, 1006.3.1	Exits on Adjacent Stories	Determining egress requirements has been clarified when the occupants travel to an adjacent story to reach the exit.
1008.2.3 Addition		Illumination of the Exit Discharge	Illumination of exit discharge can now terminate at a safe dispersal area.
1008.3.5, 1008.2.2 Modification	1008.3.5, 1008.2.2	Emergency Illumination in Group I-2	Emergency lighting must meet minimum illumination levels even when one lamp fails in a single luminaire.
1009.7.2 Modification	1009.7.2	Protection of Exterior Areas of Assisted Rescue	The 1-hour fire-resistance-rated separation between an exterior of assisted rescue and the building is not required if the building is protected with an automatic sprinkler system designed to NFPA 13 or 13R.
1010.1.1 Clarification	1010.1.1	Size of Doors	The requirements for the door size are revised to correlate with ICC A117.1.
1010.1.4.4, 1010.1.4.4.1 Modification	1010.1.4.4, 1010.1.4.4.1	Locking Arrangements in Educational Occupancies	Guidance is provided to allow enhanced security measures yet still meet egress requirements on classroom doors.
1010.1.9.8, 1010.1.9.8.1 Modification	1010.1.9.8, 1010.1.9.8.1	Delayed Egress	Guidance is provided to allow enhanced security measures yet still meet egress requirements on classroom doors.
1010.1.9.9, 1010.1.9.10 Clarification	1010.1.9.9, 1010.1.9.10	Electrically Locked Egress Doors	Criteria for electrically locked egress doors have been clarified and correlated.
1010.1.9.12 Modification	1010.1.9.12	Locks on Stairway Doors	The limitation is removed which prohibited locking doors on the stairway side when the stairway was more than four stories, but less than a high-rise.

2018 IFC Chapter 10: Means of Egress, Continued			
Code Section		Section Title	Description of Change
2018	2015		
1010.1.10 Modification	1010.1.10	Panic Hardware and Fire Exit Hardware	Sensor release of electrically locked doors is now allowed on egress doors in Groups A and E. Also, the section is clarified to state that panic hardware or fire exit hardware are only required on swinging doors.
1010.3, 1010.3.1, 1010.3.1.1, 1010.3.2, 1010.3.3, 1010.3.4 Modification	1010.3, 1010.3.1, 1010.3.1.1, 1010.3.2, 1010.3.3, 1010.3.4	Turnstiles	This new section allows security turnstiles, or similar barriers, in the means of egress path.
1011.6 Clarification	1011.6	Stairway Landings	The method of determining the required width and depth of a stairway landing is clarified.
1013.2 Modification	1013.2	Floor Level Exit Signs in Group R-1	The location of low-level exit signs can now be 18 inches above the floor.
1015.6, 1015.7 Modification	1015.6, 1015.7	Fall Arrest for Rooftop Equipment	The specific criteria in the code on fall arrest systems are removed and the ANSI/ASSE Z395.1 standard now governs the installation.
1017.3, 202 Clarification	1017.3, 202	Common Path of Egress Travel	Common path of egress travel must be applied to each room or space on every story.
1023.3.1 Modification	1023.3.1	Stairway Extension	Fire-resistance-rated separation is not required between an interior exit stairway and exit passageways if stairway pressurization is provided.
1023.5, 1024.6 Modification	1023.5, 1024.6	Exit Stairway and Exit Passageway Penetrations	Security system and two-way communication system components are allowed to penetrate the fire-resistant rated enclosure of exit passageways and interior exit stairways and ramps.
1025.1 Modification	1025.1	Luminous Egress Path Marking in Group I Occupancies	Luminous egress path marking is no longer required in high-rise buildings classified as Groups I-2, I-3, and I-4.
1026.4, 1026.4.1 Modification	1026.4, 1026.4.1	Refuge Areas for Horizontal Exits	Guidance is provided to allow enhanced security measures yet still meet egress requirements on classroom doors.
1029.6, 1029.6.3, 1029.7, 202 Modification	1029.6, 1029.6.3, 1029.7, 202	Open-air Assembly Seating	A new term and definition is added for open-air assembly seating.
1029.9.1 Modification	1029.9.1	Minimum Aisle Width	Minimum aisle widths are clarified with a reference added for minimum widths for accessible routes.

2018 IFC Chapter 10: Means of Egress, Continued			
Code Section		Section Title	Description of Change
2018	2015		
1030.1 Modification	1030.1	Emergency Escape and Rescue Openings	Emergency escape and rescue openings are required in Groups R-3 and R 4, and Group R-2 provided with only one means of egress from a story. Also, it is possible to eliminate some, or all, emergency escape and rescue openings from a sprinklered basement.
1030.1.1 Addition		Operation of Emergency Escape and Rescue Openings	Fall prevention devices are allowed on emergency escape and rescue openings provided they comply with ASTM F2090.
1031.1, 1031.10.1, 1031.10.2 Modification	1031.1, 1031.10.1, 1031.10.2	Inspection and Testing of Emergency Egress Lighting	Inspection and testing requirements for emergency egress lighting are relocated into the Chapter 10 Means of Egress and revised to allow self-diagnostics.
1031.2.2 Addition		Locking Arrangements in Existing Educational Occupancies	Guidance is provided to allow enhanced security measures yet still meet egress requirements on classroom doors.
1031.4 Modification	1031.4	Exit Signs in Existing Buildings	The application of exit sign requirements in existing buildings has been clarified for both installation and maintenance.

2018 IFC Chapter 11: Construction Requirements for Existing Buildings			
Code Section		Section Title	Description of Change
2018	2015		
1103.5.1 Addition		Fire Sprinklers in Existing Group A-2 Occupancies	A section has been added to Chapter 11 which requires the retrofit installation of a fire sprinkler system in existing Group A-2 occupancies where alcoholic beverages are consumed if the occupant load is 300 or more.
1103.9 Modification	1103.9	Carbon Monoxide Alarms in Existing Buildings	Carbon monoxide alarms are no longer required to be retroactively installed in existing Groups I-1, I-2, I-4, and R based on occupancy classification. The retroactive installation of carbon monoxide alarms is only required in existing sleeping rooms and dwelling units.
1104.16.2 Modification	1104.16.2	Wall Openings Adjacent to Fire Escapes	Door and window openings within 10 feet of a fire escape must be protected with ¾-hour opening protectives unless the building is sprinklered.
1105.5.4 Addition		Fire-protection-rated Doors in Existing Group I-2	Fire protection rated doors in existing Group I-2 occupancies have three options for automatic closing operations.

2018 IFC Chapter 12: Energy Systems			
Code Section		Section Title	Description of Change
2018	2015		
Chapter 12 Addition		Energy Systems	This chapter is new.
Section 1204.5 Addition		Rapid Shutdown for Solar Photovoltaic Power Systems	Rapid shutdown is required on solar photovoltaic systems to reduce the shock hazard to emergency responders.
1206.2 Modification	1206.2	Stationary Storage Battery Systems	This revision moves the stationary battery storage system requirements from Section 608 to Section 1206.2 and includes new battery technologies and required safety features.

2018 IFC Chapter 22: Combustible Dust-Producing Operations			
Code Section		Section Title	Description of Change
2018	2015		
Chapter 22 Modification		Combustible Dust	Reference to the new NFPA 652, "Standard on the Fundamentals of Combustible Dust", is added to provide guidance and criteria when evaluating combustible dust hazards.

2018 IFC Chapter 23: Motor Fuel-Dispensing Facilities and Repair Garages			
Code Section		Section Title	Description of Change
2018	2015		
2303.2.1 Addition		Height of Emergency Disconnect Switch	This new section provides specific height limitations for emergency disconnect switches for fuel dispensing operations.
2306.7.3.1 Addition		Protection from Vehicle Impact	The fire code official has the authority to require additional vehicle impact protection at fuel dispensing facilities.
2309.6, 2309.6.1 Modification	2309.6, 2309.6.1	Defueling of Hydrogen Fueled Vehicles	The requirements for repairing vehicles fueled by compressed or liquefied compressed gas have been updated to address current technologies and processes.
2311.6 Addition	2311.6	Repair of Vehicles Fueled by CNG and LNG	The requirements for repairing vehicles fueled by compressed or liquefied compressed gas have been updated to address current technologies and processes.
2311.8 Modification	2311.8	Repair of Vehicles Fueled by Lighter-than-air Fuels	The requirements for repairing vehicles fueled by compressed or liquefied compressed gas have been updated to address current technologies and processes.

2018 IFC Chapter 24: Flammable Finishes			
Code Section		Section Title	Description of Change
2018	2015		
2403.2.1.3 Modification	2403.2.1.3	Classified Electrical Areas Around Spray Booths	The size of the classified area around spray booth openings is reduced to 3 feet.
2404.2, 2404.3.1, 2404.3.1.1, 202, 914.9 Modification	2404.2, 2404.3.1, 2404.3.1.1, 202, 914.9	Spray Rooms and Spray Booths	Requirements for spray booths and spray operations are correlated between the IFC and IBC.

2018 IFC Chapter 28: Motor Fuel-Dispensing Facilities and Repair Garages			
Code Section		Section Title	Description of Change
2018	2015		
2810 Addition		Outdoor Storage of Pallets at Pallet Manufacturing and Recycling Facilities	This new section adds criteria for outdoor pallet storage at pallet manufacturing facilities and pallet recycling facilities. It provides specific height limits and separation to property lines and buildings, but also allows for the distances to be modified based on providing additional fire protection features.

2018 IFC Chapter 31: Tents, Temporary Special Event Structures and Other Membrane Structures			
Code Section		Section Title	Description of Change
2018	2015		
Chapter 31 Clarification		Umbrella Structures	A new definition is added for umbrella structures which results in regulation of umbrella structures when they exceed 400 square feet.
3103.3.1 Addition		Tents and Membrane Structures Used as Special Amusement Buildings	Special amusement buildings located in temporary tents are required to be equipped with an automatic sprinkler system.
3103.6, 3103.9, 3103.9.1, 3103.9.2, 3103.9.3 Modification	3103.6, 3103.9, 3103.9.1, 3103.9.2, 3103.9.3	Structural Stability of Tents	Temporary tents and membrane structures are required to provide construction documents which address their structural stability and load carrying capacity. Larger tents and membrane structures have been added to the list of temporary facilities which must comply.
3104.2 Addition		Fabrics for Tents and Membrane Structures	The application of testing criteria for flame spread of tent and membrane structures has been clarified.
3105, 202, 105.6.47, 105.7.22 Addition		Temporary Special Event Structures	The requirements for temporary stage structures are expanded to include all temporary structures greater than 400 square feet when used at special events.
Section 3106 Addition		Outdoor Assembly Events	This section adds requirements specific to outdoor public gatherings and improves the correlation of requirements in the IBC and IFC.
3107.3, 3107.13.1, 3107.13.2, 3107.13.3 Modification		LP-gas Containers and Tanks Adjacent to Tents and Membrane Structures	Requirements for the use and separation of LPgas containers in and around tents and membrane structures have been revised.

2018 IFC Chapter 32: High-Piled Combustible Storage			
Code Section		Section Title	Description of Change
2018	2015		
Modification		Chapter 32 High-piled Combustible Storage	The requirements in the chapter have been updated to correlate with current NFPA 13 requirements and recent FM Global fire tests.

2018 IFC Chapter 33: Fire Safety During Construction and Demolition			
Code Section		Section Title	Description of Change
2018	2015		
3304.5, 3308, 3309.1 Modification	3304.5, 3308, 3309.1	Fire Watch During Construction and Demolition	Criteria for requiring fire watch has been added to the code along with clarification to the functions and duties of the fire watch personnel.

2018 IFC Chapter 38: Higher Education Laboratories			
Code Section		Section Title	Description of Change
2018	2015		
Chapter 38 Addition		Outdoor Assembly Events	A new chapter has been added to the IFC to specifically regulate college and university laboratories. Correlating sections have been added to a new Section 427 in the IBC.

2018 IFC Chapter 39: Processing and Extraction Facilities			
Code Section		Section Title	Description of Change
2018	2015		
Chapter 39 Addition		Plant Processing and Oil Extraction Facilities	A new chapter has been added to the IFC to specifically regulate the process of extracting oils from plant material.

2018 IFC Chapter 50: Hazardous Materials—General Provisions			
Code Section		Section Title	Description of Change
2018	2015		
Table 5003.1.1, Section 202 Modification	Table 5003.1.1, Section 202	Consumer Fireworks	Addresses the explosive nature of Division 1.4G explosives and removes the 100% increase credit for sprinklers where these items are stored.
Table 5003.1.1(1), Table 5003.11.1, Section 6303.1.1.2 Modification	Table 5003.1.1(1), Table 5003.11.1, Section 6303.1.1.2	Maximum Allowable Quantity for Class 3 Oxidizers	The maximum allowable quantity for Class 3 oxidizers is increased by about 10 percent in control areas and Groups M and S occupancies.
5003.8.3.4 Modification	5003.8.3.4	Control Area Construction	Includes Type IV construction in control area fire resistance rating requirements.
5005.1.12 Modification	5005.1.12	Protection of Hazardous Materials Piping Systems	Requirements for leak detection and emergency shutoff for high hazard gases and liquids only applies when the maximum allowable quantity per control area is exceeded.

2018 IFC Chapter 51: Aerosols			
Code Section		Section Title	Description of Change
2018	2015		
5103.2, 5103.2.1, 5103.2.3, 5104.1.2, 5104.2.2 Modification	5103.2, 5103.2.1, 5103.2.3, 5104.1.2, 5104.2.2	Aerosol Products in Plastic Containers	Limitations on aerosol products in plastic containers is revised and the use of Plastic Aerosol X products is prohibited in higher life hazard occupancies.
5104.8, 5140.8.1, 5104.8.2, 5103.2.2, 5104.3.3, 5106.2.2 Addition		Aerosol Cooking Spray Products	Specific fire protection requirements are added to address aerosol cooking spray products.

2018 IFC Chapter 53: Compressed Gases			
Code Section		Section Title	Description of Change
2018	2015		
5306.1, 5306.2, 5306.2.1, 5306.2.2, 5306.2 Modification	5306.1, 5306.2, 5306.2.1, 5306.2.2, 5306.2	Medical Gas Storage	Requirements for construction and ventilation of interior medical gas rooms and gas cabinets are revised.
5307.1, 5307.3, 5307.3.1, 5307.3.2 Modification	5307.1, 5307.3, 5307.3.1, 5307.3.2	Liquid Carbon Dioxide Systems for Beverage Dispensing	Requirements for liquefied CO2 in beverage dispensing applications have been correlated with requirements for gas detection systems.
5307.4, 5307.4.1, 5307.4.2, 5307.4.3, 5307.4.4, 5307.4.5, 5307.4.6, 5307.4.7 Addition		Carbon Dioxide Enrichment Systems	Carbon dioxide enrichment systems area regulated by the Fire Code when the system contains more than 100 pounds of CO2, or when the refill connection is remote from the tank or vessel.

2018 IFC Chapter 57: Mobile Fueling Operations			
Code Section		Section Title	Description of Change
2018	2015		
5707 Addition		Mobile Fueling Operations	On-demand mobile fueling is allowed to occur at approved locations and under the control of a permit issued by the fire code official.

2018 IFC Chapter 61: Liquefied Petroleum Gases			
Code Section		Section Title	Description of Change
2018	2015		
Table 6104.3 Modification	Table 6104.3	Location of LP-gas Containers	New Footnote g specifies separations between above-ground LP-gas containers and public ways.

2018 IFC Appendix E Hazard Categories			
Code Section		Section Title	Description of Change
2018	2015		
E102.7.1 Modification	E102.7.1	Hazard Classification of Oxidizers	This change revised the oxidizer classification of sodium dichloro-s-triazinetrione anhydrous (sodium dichloroisocyanurate anhydrous).