



**City of Auburn**  
Home of Auburn University

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**DATE: December 1, 2022**

**TO: All Contractors**

**FROM: John R. Hoar  
Inspections Services Director/Building Official**

**RE: Updated Fire Codes Effective Date January 1, 2022**

On January 1, 2022, the City of Auburn will place into effect the 2021 edition of the International Code Council updated code changes. The new code standards which will be followed are the 2021 Residential, Building, Plumbing Mechanical, Gas, and Fire Codes. We have also adopted the 2020 NEC (National Electrical Code) and 2017 ICC A117.1 Accessibility Code. Any residential permits submitted on or after January 1, 2022 will fall under the 2021 Residential Code.

The following are some of the significant changes associated with the adoption of the 2021 Fire Code. We hope to make this an easy transition for everyone by giving you information on some of these significant changes.

### **International Fire Code Changes**

- **Indoor Display of Vehicles**-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.
- **Ceiling Clearance for Indoor Storage**-Exceptions have been added which allow an increase in the height of storage along walls in sprinkled and non-sprinkled buildings.
- **Outdoor Pallet Storage**-Requirements are added to the code for 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.

- **Crows Managers**-The threshold for crowd managers dropped from 1,000 to 500 people for certain events.
- **Lockdown Plans**-Updates and prescribes details for facility lockdown plans.
- **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.
- **Fuel-fired Appliances**-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 sprinkled and the tank is listed to UL 142.
- **Refrigerants with Lower Flammability**-Hazards Adds requirements regarding safety concerns for lower flammability refrigerant gases.
- **Nonmetallic Cooking Oil Storage Tanks**-Adds listing and capacity requirements for cooking oil storage.
- **Combustible Decorative Materials**-The limitations on decorative combustible materials are clarified as to where they apply.
- **Artificial Decorative Vegetation**-The limitations on decorative combustible materials are clarified as to where they apply.
- **Fire Pump and Fire Sprinkler Riser Rooms**-Additional requirements have been added for automatic sprinkler system riser rooms and fire pump rooms.
- **Fire Integrated 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 all of the integrated systems as a whole.
- **Removal of Occupant-use Hose Lines**-Authorizes code official to allow the removal of occupant-use hose lines.
- **Sprinklers in Group A Occupancies**-Clarifies the requirements for fire sprinkler protection in Group A occupancies.
- **Sprinklers in Group E Occupancies**-Provides occupant load threshold for automatic sprinkler system requirements in Group E occupancies.
- **Sprinklers in Bathrooms in Group R Occupancies**-Removes fire sprinkler requirements from small bathrooms in Group R-4 occupancies.
- **Sprinklers Beneath Balconies**-Correlates automatic sprinkler system requirements in Chapter 9 with IBC Chapter 7 for exterior balconies of Group R occupancies.
- **Protection of Attics in Group R Occupancies**-Sprinkler protection of acceptable alternative methods for the protection of attics are now addressed for mid-rise buildings housing multifamily occupancies and equipped with an NFPA 13R sprinkler system.
- **Sprinkler Obstructions**-The code now directs the user to the sprinkler design standard to address sprinkler obstructions.
- **Commercial Cooking Operations**-The installation of fire-extinguishing systems as protection for commercial cooking operations must now comply with NFPA 96. In addition, commercial cooking systems are now permitted to be protected with a water mist fire-extinguishing system.
- **Domestic Cooking in Institutional Occupancies**-Requires an automatic fire-extinguishing system to protect domestic cooking appliances in care facilities.
- **Aerosol Fire-extinguishing Systems**-Requires automatic fire suppression in domestic cooking systems in care facilities.

- **Class III Standpipes**-Standpipe systems are now required in buildings four or more stories in height. In addition, a Class I standpipe is allowed in Group B and Group E occupancies rather than a Class III.
- **Class I Standpipe Hose Connections**-Allows a modification of hose connection locations for Class I standpipes serving open stairways.
- **Locking Caps on Standpipe Outlets**-This revision authorizes the code official to require locking caps on dry standpipe hose connection outlets.
- **Portable Fire Extinguishers**-Provides schools options for fire extinguisher placement.
- **Fire Alarm Construction Documents**-Aligns requirements for fire alarm plans and documentation requirements with NFPA 72.
- **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.
- **Group R-4 Fire Alarm System**-Fire alarm systems are no longer required in Group R-4 occupancies.
- **Emergency Voice/ Alarm Communication System Captions**-Large public venues are required to provide real-time captions that are integrated with the emergency voice/alarm communication system.
- **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.
- **Gas Detection Systems**-Requirements for gas detection systems are clarified and consolidated in a new Section 916.
- **Occupant Load Calculation in Business Use Areas**-The method of calculating occupant load in business areas is revised, which allows for larger occupant loads.
- **Spaces with One Exit or Exit Access Doorway**-Determination of cumulative occupant loads is clarified and correlated with other code requirements.
- **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 sprinkled with NFPA 13D sprinkler systems.
- **Exits on Adjacent Stories**-Determining egress requirements has been clarified when the occupants travel to an adjacent story to reach the exit.
- **Illumination of the Exit Discharge**-Illumination of exit discharge can now terminate at a safe dispersal area.
- **Emergency Illumination in Group I-2**-Emergency egress lighting in Group I-2 must meet minimum illumination levels even when one lamp fails in a single luminaire.
- **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.
- **Size of Doors**-Requirements for the size of doors is revised to correlate with ICC A117.1.
- **Locking Arrangements in Educational Occupancies**-Guidance is provided to allow enhanced security measures yet still meet egress requirements for classroom doors.
- **Delayed Egress**-Additional occupancies are allowed to install delayed egress, including small Group E occupancies and Group A courtrooms.
- **Electrically Locked Egress Doors** -Criteria for electrically locked egress doors have been clarified and correlated.

- **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.
- **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 is only required on swinging doors.
- **Turnstiles**-This new section allows security turnstiles, or similar barriers, in the means of egress path.
- **Stairway Landings**-The method of determining the required width and depth of a stairway landing is clarified.
- **Floor-level Exit Signs in Group R-1**-The location of low-level exit signs can now be 18 inches above the floor.
- **Fall Arrest for Rooftop Equipment**-The specific criteria in the code on fall arrest systems is removed and the ANSI/ASSE Z395.1 standard now governs the installation.
- **Common Path of Egress Travel**-Common path of egress travel must be applied to each room or space on every story.
- **Stairway Extension**-Fire-resistance-rated separation is not required between an interior exit stairway and exit passageways if stairway pressurization is provided.
- **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.
- **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.
- **Refuge Areas for Horizontal Exits**-Guidance is provided to allow enhanced security measures yet still meet egress requirements on classroom doors.
- **Open-air Assembly Seating**-A new term and definition is added for open-air assembly seating.
- **Minimum Aisle Width** Minimum aisle widths in assembly occupancies are clarified with a reference added for minimum widths for accessible routes.
- **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.
- **Operation of Emergency Escape and Rescue Openings**-Fall prevention devices are allowed on emergency escape and rescue openings provided that they comply with ASTM F2090.
- **Locking Arrangements in Existing Educational Occupancies**-Guidance is provided to allow enhanced security measures yet still meet egress requirements on classroom doors.
- **Exit Signs in Existing Buildings**-The application of exit sign requirements in existing buildings has been clarified for both installation and maintenance.
- **Inspection and Testing of Emergency Egress Lighting**-Inspection and testing requirements for emergency egress lighting are relocated into Chapter 10 Means of Egress and revised to allow self-diagnostics.
- **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.
- **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.

- **Wall Openings Adjacent to Fire Escapes**-Door and window openings within 10 feet of a fire escape must be protected with  $\frac{3}{4}$ - hour opening protectives unless the building is sprinklered.
- **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.
- **Energy Systems**-This new chapter has been added to the IFC to address all configurations of energy systems. This chapter contains the emergency power, standby power, and stationary battery storage system requirements from Chapter 6 of the 2015 IFC along with new requirements for other methods of energy generation and storage.
- **Rapid Shutdown for Solar Photovoltaic Power Systems**-Rapid shutdown is required on solar photovoltaic systems to reduce the shock hazard to emergency responders.
- **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.
- **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.
- **Height of Emergency Disconnect Switch**-This new section provides specific height limitations for emergency disconnect switches for fuel dispensing operations.
- **Protection from Vehicle Impact**-The fire code official has the authority to require additional vehicle impact protection at fuel dispensing facilities.
- **Defueling of Hydrogen Fueled Vehicles** -The requirements for repairing vehicles fueled by compressed or liquefied hydrogen gas have been updated to address current technologies and processes.
- **Repair of Vehicles Fueled by CNG and LNG**-The requirements for repairing vehicles fueled by compressed or liquefied natural gas have been updated to address current technologies and processes.
- **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.
- **Classified Electrical Areas around Spray Booths**-The size of the classified area around spray booth openings is reduced to 3 feet.
- **Spray Rooms and Spray Booths**-Requirements for spray booths and spray operations are correlated between the IFC and the IBC.
- **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.
- **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.
- **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.

- **Fabrics for Tents and Membrane Structures** -The application of testing criteria for flame spread of tent and membrane structures has been clarified.
- **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.
- **Outdoor Assembly Events** -This section adds requirements specific to outdoor public gatherings and improves the correlation of requirements in the IBC and IFC.
- **LP-gas Containers and Tanks Adjacent to Tents and Membrane Structures**-Requirements for the use and separation of LP gas containers in and around tents and membrane structures have been revised.
- **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.
- **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.
- **Higher Education Laboratories**-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.
- **Processing and Extraction Facilities**-A new chapter has been added to the IFC to specifically regulate the process of extracting oils from plant material.
- **Consumer Fireworks**-Addresses the explosive nature of Division 1.4G explosives and removes the 100 percent increase in quantity for sprinklers where these items are stored
- **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
- **Construction of Control Areas**-The fire-resistance rating of the floor of a control area in a Type IV building is allowed to be reduced to 1-hour if the building is sprinkled and does not exceed three stories in height.
- **Protection of Hazardous Materials Piping Systems**-Requirements for leak detection and emergency shutoff for high hazard gases and liquids only apply when the maximum allowable quantity per control area is exceeded.
- **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.
- **Aerosol Cooking Spray Products**-Specific fire protection requirements are added to address aerosol cooking spray products.
- **Medical Gas Storage**-Requirements for construction and ventilation of interior medical gas rooms and gas cabinets are revised.
- **Liquid Carbon Dioxide Systems for Beverage Dispensing**-Requirements for liquefied CO<sub>2</sub> in beverage dispensing applications have been correlated with requirements for gas detection systems.
- **Carbon Dioxide Enrichment Systems**-Carbon dioxide enrichment systems are now regulated by the International Fire Code when the system contains more than 100 pounds of CO<sub>2</sub>, or when the refill connection is remote from the tank or vessel.
- **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.
- **Location of LP-gas Containers**-New Footnote g specifies separations between above-ground LP-gas containers and public ways.