NFPA 101, Life Safety Code

2015-2018 Changes

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NFPA 101®, Life Safety Code® 2015–2018 Editions Changes	
Subject/2018 Edition Text	Notes
Chapter 1 Administration 1.1.5* Hazardous Materials Emergencies. The *Code* also addresses other considerations that provide for occupant protection during emergency events involving hazardous materials. 1.1.6 Injuries from Falls. The *Code* also addresses reducing injury to occupants from falls. 1.1.7 Emergency Communications. The *Code* also addresses other considerations that provide for communications to occupants under emergency conditions and to others.	New Section New Section New Section
Chapter 2 Referenced Publications 2.2* NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. NFPA 4, *Standard for Integrated Fire Protection and Life Safety System Testing*,2018 edition. NFPA 10, *Standard for Portable Fire Extinguishers*, ~~2013~~ 2017 edition. NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam*, ~~2010~~ 2016 edition. NFPA 12, *Standard on Carbon Dioxide Extinguishing Systems*, ~~2011~~ 2018 edition. NFPA 12A, *Standard on Halon 1301 Fire Extinguishing Systems*, ~~2009~~ 2018 edition. NFPA 13, *Standard for the Installation of Sprinkler Systems*, ~~2013~~ 2016 edition. NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, ~~2013~~ 2016 edition. NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, ~~2013~~ 2016 edition. NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, ~~2013~~ 2016 edition.	*See new understood text*

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NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection*, ~~2012~~ 2017 edition. NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems*, ~~2011~~ 2015 edition. NFPA 17, *Standard for Dry Chemical Extinguishing Systems*, ~~2013~~ 2017 edition. NFPA 17A, *Standard for Wet Chemical Extinguishing Systems*, ~~2013~~ 2017 edition. NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, ~~2014~~ 2017 edition. NFPA 30, *Flammable and Combustible Liquids Code*, ~~2015~~ 2018 edition. NFPA 30B, *Code for the Manufacture and Storage of Aerosol Products*, 2015 edition. NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, ~~2011~~ 2016 edition. NFPA 40, *Standard for the Storage and Handling of Cellulose Nitrate Film*, ~~2011~~ 2016 edition. NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals*, ~~2011~~ 2015 edition. NFPA 54, *National Fuel Gas Code*, ~~2015~~ 2018 edition. NFPA 55, *Compressed Gases and Cryogenic Fluids Code*, 2016 edition. NFPA 58, *Liquefied Petroleum Gas Code*, ~~2014~~ 2017 edition. *NFPA 70®*, *National Electrical Code®*, ~~2014~~ 2017 edition. *NFPA 72®*, *National Fire Alarm and Signaling Code*, ~~2013~~ 2016 edition. NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, ~~2013~~ 2016 edition. NFPA 82, *Standard on Incinerators and Waste and Linen Handling Systems and Equipment*, 2014 edition. NFPA 88A, *Standard for Parking Structures*, 2015 edition. NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, ~~2015~~ 2018 edition.	

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NFPA 90B, *Standard for the Installation of Warm Air Heating and Air-Conditioning Systems,* ~~2015~~ 2018 edition. NFPA 91, *Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids,* ~~2010~~ 2015 edition. NFPA 92, *Standard for Smoke Control Systems,* ~~2012~~ 2015 edition. NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations,* ~~2014~~ 2017 edition. NFPA 99, *Health Care Facilities Code,* ~~2015~~ 2018 edition. NFPA 101A, *Guide on Alternative Approaches to Life Safety,* ~~2013~~ 2016 edition. NFPA 105, *Standard for Smoke Door Assemblies and Other Opening Protectives,* ~~2013~~ 2016 edition. NFPA 110, *Standard for Emergency and Standby Power Systems,* ~~2013~~ 2016 edition. NFPA 111, *Standard on Stored Electrical Energy Emergency and Standby Power Systems,* ~~2013~~ 2016 edition. NFPA 150, *Standard on Fire and Life Safety in Animal Housing Facilities,* 2016 edition. NFPA 160, *Standard for the Use of Flame Effects Before an Audience,* ~~2011~~ 2016 edition. NFPA 170, *Standard for Fire Safety and Emergency Symbols,* ~~2012~~ 2015 edition. NFPA 204, *Standard for Smoke and Heat Venting,* ~~2012~~ 2015 edition. NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances,* ~~2013~~ 2016 edition. NFPA 220, *Standard on Types of Building Construction,* ~~2015~~ 2018 edition. NFPA 221, *Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls,* ~~2015~~ 2018 edition. NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations,* 2013 edition. NFPA 252, *Standard Methods of Fire Tests of Door Assemblies,* ~~2012~~ 2017 edition.	

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NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source,* ~~2011~~ 2015 edition. NFPA 257, *Standard on Fire Test for Window and Glass Block Assemblies,* ~~2012~~ 2017 edition. NFPA 259, *Standard Test Method for Potential Heat of Building Materials,* 2013 edition. NFPA 260, *Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture,* 2013 edition. NFPA 261, *Standard Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes,* 2013 edition. NFPA 265, *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls,* ~~2011~~ 2015 edition. NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth,* ~~2011~~ 2015 edition. NFPA 288, *Standard Methods of Fire Tests of Horizontal Fire Door Assemblies Installed in Horizontal Fire Resistance–Rated Assemblies,* ~~2012~~ 2017 edition. NFPA 289, *Standard Method of Fire Test for Individual Fuel Packages,* 2013 edition. NFPA 400, *Hazardous Materials Code,* ~~2013~~ 2016 edition. NFPA 415, *Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways,* ~~2013~~ 2016 edition. NFPA 418, *Standard for Heliports,* ~~2011~~ 2016 edition. NFPA 495, *Explosive Materials Code,* 2013 edition. NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films,* ~~2010~~ 2015 edition.	

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NFPA 703, *Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials,* ~~2015~~ 2018 edition. NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, ~~2015~~ 2018 edition. NFPA 731, *Standard for the Installation of Electronic Premises Security Systems,* ~~2015~~ 2017 edition. NFPA 750, *Standard on Water Mist Fire Protection Systems,* 2015 edition. NFPA 914, *Code for Fire Protection of Historic Structures,* ~~2010~~ 2015 edition. NFPA 1126, ~~*Standard for the Use of Pyrotechnics Before a Proximate Audience,* 2016 edition.~~ NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, 2016 edition. NFPA 2001, *Standard on Clean Agent Fire Extinguishing Systems,* ~~2012~~ 2015 edition.	
2.3.1 ACI Publications. American Concrete Institute, ~~P.O. Box 9094~~ 38800 Country Club Drive, Farmington Hills, MI ~~48333~~ 48331-3434. www.concrete.org ACI 216.1/TMS 0216.1, *Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies,* 20082014.	See new understood Text
2.3.2 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th floor, New York, NY 10036. ANSI A14.3, ~~*Safety Requirements for Fixed Ladders Ladders – Fixed – Safety Requirements*, 1992~~ 2008. ICC/ANSI A117.1, ~~*American National Standard for*~~ *Accessible and Usable Buildings and Facilities*, 2009. ANSI/BHMA A156.3,*Exit Devices,* ~~2008~~ 2014. ANSI/BHMA A156.10, *Power Operated Pedestrian Doors*, 2011. ~~BHMA/ANSI~~ ANSI/BHMA A156.19, ~~*American National Standard for*~~ *Power Assist*	See new understood Text

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and Low Energy Power Operated Doors, ~~2007~~ 2013. ANSI/BHMA A156.27, *Power and Manual Operated Revolving Doors*, 2011. ANSI/BHMA A156.38, *Low Energy Power Operated Sliding and Folding Doors*, 2014. ANSI Z223.1, *National Fuel Gas Code*, ~~2006~~ 2015.	
ASCE/SEI 7, *Minimum Design Loads for Buildings and Other Structures*, ~~2010~~ 2016,including Supplement 1, 2017.	See new understood Text
~~ASCE/SFPE 29~~ ASCE/SEI/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*, 2005.	See new understood Text
2.3.4 ASME Publications. ~~American Society of Mechanical Engineers~~ ASME International, Two Park Avenue, New York, NY 10016-5990. www.asme.org	See new understood Text
ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, ~~2007~~ 2013.	
ASME A17.3, *Safety Code for Existing Elevators and Escalators*, ~~2008~~ 2011.	
ASME A17.7/CSA B44.7, *Performance-Based Safety Code for Elevators and Escalators*, 2007, reaffirmed 2012.	
2.3.5 ASSE Publications. American Society ~~of Sanitary Engineering, 901 Canterbury Road, Suite A, Westlake, OH 44145-1480~~ Safety Engineers, 520 N. Northwest Highway, Park Ridge, IL 60068.	See new understood Text
ASTM C1629/C1629M, *Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels*, ~~2006 (2011)~~ 2014a.	
ASTM D1929, *Standard Test Method for Determining Ignition Temperatures of Plastic*, ~~2012~~ 2014	

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ASTM D3201, *Standard Test Method for Hygroscopic Properties of Fire-Retardant-Wood and Wood-Based Products*, 2008ae1.	New Section
ASTM D5516, *Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant-Treated Softwood Plywood Exposed to Elevated Temperatures*, 2009.	New Section
ASTM D5664, *Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant-Treated Lumber*, 2010.	New Section
ASTM D6305, *Standard Practice for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood Roof Sheathing*, 2008.	New Section
ASTM D6841, *Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber*, 2008.	New Section
ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, ~~2013~~ 2015a.	See new understood Text
ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, ~~2012a~~ 2014.	See new understood Text
ASTM E648, *Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, ~~2010 e~~ 12014c.	See new understood Text
ASTM E814, *Standard Test Method for Fire Tests of Through-Penetration Fire Stops*, ~~2011a~~ 2013a.	See new understood Text
ASTM E1354, *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*, ~~2011b~~ 2015a.	See new understood Text

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ASTM E1537, *Standard Test Method for Fire Testing of Upholstered Furniture*, ~~2012~~ 2013. ASTM E1590, *Standard Test Method for Fire Testing of Mattresses*, ~~2012~~ 2013.	See new understood Text
ASTM E1591, *Standard Guide for Obtaining Data for Deterministic Fire Models*, ~~2007~~ 2013.	See new understood Text
ASTM E2072, *Standard Specification for Photoluminescent (Phosphorescent) Safety Markings*, ~~2010~~ 2014.	See new understood Text
ASTM E2073, *Standard Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings*, 2010.	See new understood Text
ASTM E2307, *Standard Test Method for Determining Fire Resistance of Perimeter Fire ~~Barrier Systems~~ Barriers Using Intermediate-Scale, Multi-Story Test Apparatus*, ~~2010~~ 2015a	See new understood Text
ASTM E2404 ~~*Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate*~~ *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics*, ~~2012~~ 2015a	See new understood Text
ASTM E2579, *Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning Characteristics*, 2015.	New Section
ASTM E2599, *Standard Practice for Specimen Preparation and Mounting of Reflective Insulation, Radiant Barrier, and Vinyl Stretch Ceiling Materials for Building Applications to Assess Surface Burning Characteristics*, ~~2011~~ 2015	See new understood Text
ASTM E2837, *Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies*, 2013.	New Section

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ASTM F851, *Standard Test Method for Self-Rising Seat Mechanisms*, 1987 (~~2005~~ 2013).	
ASTM F1085, *Standard Specification for Mattress and Box Springs for Use in Berths in Marine Vessels*, 2014.	New Section
ASTM G155, *Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials*, ~~2005a~~ 2013.	See new understood Text
Chapter 3 Definitions 3.3.3 Accessible Route. A continuous unobstructed path that complies with this *Code* and ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities.* (SAF-MEA)	See new understood Text
3.3.6 ~~Air~~ Airport Traffic Control Tower. See 3.3.291.1.	See new understood Text
3.3.7 Aircraft Loading Walkway. An aboveground device through which passengers move between a point in an airport terminal building and an aircraft. Included in this category are walkways that are essentially fixed and permanently placed, or walkways that are essentially mobile in nature and that fold, telescope, or pivot from a fixed point at the airport terminal building. [**415,** ~~2013~~ 2016] (SAF-AXM)	See new understood Text
3.3.19* Animal Housing Facility. Area of a building or structure, including interior and adjacent exterior spaces, where animals are fed, rested, worked, exercised, treated, exhibited, or used for production. [**150,** 2016] (SAF-FUN)	New Section
3.3.23.1 Accessible Area of Refuge. An area of refuge that complies with the accessible route requirements of ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~	See new understood Text

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Accessible and Usable Buildings and Facilities. (SAF-MEA)	
3.3.24.1 Door Assembly. Any combination of a door, frame, hardware, and other accessories that is placed in an opening in a wall that is intended primarily for access or for human entrance or exit. [**252,** ~~2012~~ 2017] (SAF-MEA)	See new understood Text
3.3.24.1.1 Fire Door Assembly. Any combination of a fire door, a frame, hardware, and other accessories that together provide a specific degree of fire protection to the opening. [**80,** ~~2013~~ 2016] (SAF-FIR)	See new understood Text
3.3.24.1.1.1 Horizontal Fire Door Assembly. A combination of a fire door, a frame, hardware, and other accessories installed in a horizontal plane, which together provide a specific degree of fire protection to a through-opening in a fire resistance–rated floor or roof. [**288,** ~~2012~~ 2017] (SAF-FIR)	See new understood Text
3.3.24.2 Fire Window Assembly. A window or glass block assembly having a fire protection rating. [**80,** ~~2013~~ 2016] (SAF-FIR)	See new understood Text
3.3.37.1 Airport Terminal Building. A structure used primarily for air passenger enplaning or deplaning, including ticket sales, flight information, baggage handling, and other necessary functions in connection with air transport operations. This term includes any extensions and satellite buildings used for passenger handling or aircraft flight service functions. Aircraft loading walkways and "mobile lounges" are excluded. [**415,** ~~2013~~ 2016] (SAF-AXM)	See new understood Text
3.3.37.2 Anchor Building. A building housing any occupancy having low or ordinary hazard contents and having direct access to a ~~mall~~ ~~building~~ mall structure, but	See new understood Text

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having all required means of egress independent of the ~~mall~~ mall concourse. (SAF-MER)	
3.3.51.2 Food Court. A public seating area located in a ~~mall~~ mall concourse that serves adjacent food preparation tenant spaces. (SAF-MER)	See new understood Text
3.3.56 Delayed Action Closer. Self-closing device that incorporates a delay prior to the initiation of closing. Mechanical self-closing device that incorporates an adjustable delay prior to the initiation of closing. (SAF-MEA)	New Section
3.3.63.2 Multiple-Station Alarm Device. Two or more single-station alarm devices that can be interconnected so that actuation of one causes all integral or separate audible alarms to operate; or one single-station alarm device having connections to other detectors or to a manual fire alarm box. [***72,***~~2013~~ 2016] (SAF-BSF)	See new understood Text
3.3.74 Emergency Control Functions. Building, fire, and emergency control elements or systems that are initiated by the fire alarm or signaling system and either increase the level of life safety for occupants or control the spread of the harmful effects of fire or other dangerous products. [***72,*** 2016] (SAF-BSF)	New Section
3.3.106 Fire Safety Functions. Building and fire control functions that are intended to increase the level of life safety for occupants or to control the spread of the harmful effects of fire. (SAF-BSF)	New Section
3.3.108 Fire Watch. The assignment of a person or persons to an area for the express purpose of notifying the fire department, the building occupants, or both of an emergency; preventing a fire from occurring; extinguishing small fires; or	See new understood Text

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protecting the public from fire or life safety dangers. [**1,** ~~2015~~ 2018] (SAF-BSF)	
3.3.111 Fire-Retardant–Treated Wood. A wood product impregnated with chemical by a pressure process or other means during manufacture, treated to exhibit reduced surface-burning characteristics and resist propagation of fire. [**703,** ~~2015~~ 2018] (SAF-FIR)	See new understood Text
3.3.174 Major Tenant. A tenant space, in a ~~mall building~~ mall structure, with one or more main entrances from the exterior that also serve as exits and are independent of the ~~mall~~ mall concourse. (SAF-MER)	See new understood Text
3.3.175 ~~Mall~~ Mall Concourse. ~~A roofed or covered~~ common pedestrian area within ~~a mall building~~ mall structure that serves as access for two or more tenants and does not exceed three levels that are open to each other. (SAF-MER)	See new understood Text
3.3.176 ~~Mall Building~~ Mall Structure. See 3.3.282.4.	See new understood Text
3.3.177.2 Hazard Material.	New Section
3.3.177.2.1 Health Hazard Material. A chemical or substance classified as a toxic, highly toxic, or corrosive material in accordance with definitions set forth in this code. [**5000,** 2018] (SAF-IND)	New Section
3.3.177.2.2 Physical Hazard Material. A chemical or substance classified as a combustible liquid, explosive, flammable cryogen, flammable gas, flammable liquid, flammable solid, organic peroxide, oxidizer, oxidizing cryogen, pyrophoric, unstable (reactive), or water-reactive material. [**400,** 2016] (SAF-IND)	New Section

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3.3.177.3 Hazardous Material. A chemical or substance that is classified as a physical hazard material or a health hazard material, whether the chemical or substance is in usable or waste condition. [**400,** 2016] (SAF-IND)	New Section
3.3.177.7 Toxic Material. A material that produces a lethal dose or a lethal concentration within any of the following categories: (1) a chemical or substance that has a median lethal dose (LD50) of more than 50 mg/kg but not more than 500 mg/kg of body weight when administered orally to albino rats weighing between 200 g and 300 g each; (2) a chemical or substance that has a median lethal dose (LD50) of more than 200 mg/kg but not more than 1000 mg/kg of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the bare skin of albino rabbits weighing between 2 kg and 3 kg each, or albino rats weighing 200 g to 300 g each; (3) a chemical or substance that has a median lethal concentration (LC50) in air of more than 200 parts per million but not more than 2000 parts per million by volume of gas or vapor, or more than 2 mg/L but not more than 20 mg/L, of mist, fume, or dust when administered by continuous inhalation for 1 hour, or less if death occurs within 1 hour, to albino rats weighing between 200 g and 300 g each. [**5000,** 2018] (SAF-IND)	New Section
3.3.177.7.1 Highly Toxic Material. A material that produces a lethal dose or lethal concentration that falls within any of the following categories: (1) a chemical that has a median lethal dose (LD50) of 50 mg/kg or less of body weight when administered orally to albino rats weighing between 200 g and 300 g each; (2) a chemical that has a median lethal dose (LD50) of 200 mg/kg or less of body weight when administered by continuous contact for 24 hours, or less if death occurs within 24 hours, with the bare skin of albino rabbits weighing between 2 kg and 3 kg each or	New Section

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albino rats weighing 200 g to 300 g each; (3) a chemical that has a median lethal concentration (LC50) in air of 200 parts per million by volume or less of gas or vapor, or 2 mg/L or less of mist, fume, or dust, when administered by continuous inhalation for 1 hour, or less if death occurs within 1 hour, to albino rats weighing between 200 g and 300 g each. [**400,** 2016] (SAF-IND)	
3.3.216 Physical Hazard Material. See 3.3.177.2.2.	New Section
3.3.222 Power Doors.	New Section
3.3.222.1* Low-Energy Power-Operated Door. Swinging, sliding, or folding door that opens automatically upon an action by a pedestrian, closes automatically, and operates with decreased forces and decreased speeds.	New Section
3.3.222.2* Power-Assisted Door. Swinging door that opens by reduced pushing or pulling force on the door operating hardware, closes automatically after the pushing or pulling force is released, and functions with decreased forces.	New Section
3.3.222.3 Power-Operated Door. Swinging, sliding, or folding door that opens automatically when approached by a pedestrian or opens automatically upon an action by a pedestrian, closes automatically, and includes provisions to prevent entrapment.	New Section
3.3.239 Renovation. The replacement-in kind, strengthening, or upgrading of building elements, materials, equipment, or fixtures that does not result in a reconfiguration of the building spaces within.	New Section
3.3.251 Self-Preservation Capability (Health Care and Ambulatory Health Care Occupancies).The ability of a patient to act on an innate desire to protect oneself from harm without staff intervention.	New Section

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3.3.282.4* ~~Mall Building~~ Mall Structure. A single ~~building~~ structure enclosing a number of tenants and occupancies wherein two or more tenants or tenant buildings have a main entrance into one or more ~~mall~~ mall concourses. For the purpose of this *Code*, anchor buildings shall not be considered as a part of ~~the mall building~~ mall structure. (SAF-MER)	See new understood Text
3.3.282.12* Underground Structure. A structure or portions of a structure in which the floor level is ~~below the level of~~ located more than 30 ft (9.1 m) below the lowest level with an exit discharge. (SAF-IND)	See new understood Text
3.3.292 Toxic Material. See 3.3.177.7.	New Section
Chapter 4 General 4.1.2* Comparable Emergencies. An additional goal is to provide life safety during emergencies that can be mitigated using methods comparable to those used in case of fire.	New Section
4.2.3* Hazardous Materials Emergencies Protection. Fundamental safeguards shall be provided to reasonably prevent or mitigate events involving hazardous materials as addressed in 4.1.4 to allow the time needed to evacuate, relocate, or defend in place occupants who are not intimate with the initial emergency incident.	New Section
4.6.10.2 Where required by Chapters 11 through 43, construction, alteration, and demolition operations shall comply with NFPA 241.	New Section
4.6.14.2 The material, in the form in which it is used, shall exhibit a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg) where tested in accordance with NFPA 259, ~~*Standard*~~	See new understood Text

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~~*Test Method for Potential Heat of Building Materials.*~~	
4.6.14.5 Where the term *limited-combustible* is used in this *Code*, it shall also include the term *noncombustible*.	See new understood Text
4.6.15 Fire-Retardant-Treated Wood. Fire-retardant-treated wood shall be a wood product impregnated with chemical by a pressure process or impregnated with chemical by other means during manufacture meeting the requirements in 4.6.15.1 through 4.6.15.6. [**703:**4.1.1]	New Section
4.6.15.1 Fire-retardant-treated wood shall be tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*. [**703:**4.1.1.1]	New Section
4.6.15.2 Fire-retardant-treated wood shall have a listed flame spread index of 25 or less. [**703:**4.1.1.2]	New Section
4.6.15.3 Fire-retardant-treated wood shall not show evidence of significant progressive combustion when the test is continued for an additional 20-minute period. [**703:**4.1.1.3]	New Section
4.6.15.4 The flame front shall not progress more than 10.5 ft (3.2 m) beyond the centerline of the burners at any time during the test. [**703:**4.1.1.4]	New Section
4.6.15.5 For wood products manufactured using a means other than a pressure process, all sides of the wood product shall be tested. [**5000:**45.5.16.1.5]	New Section

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4.6.15.6 Wood structural panels shall be permitted to test only the front and back faces. [**703:**4.1.1.6]	New Section
4.6.16 Fire-Retardant-Treated Wood Treatment.	New Section
4.6.16.1 Pressure Process. For wood products impregnated with chemicals by a pressure process, the process shall be performed in closed vessels under gauge pressures not less than 50 psi (345 kPa). The treatment shall provide permanent protection to all surfaces of the wood product. [**703:**4.1.2.1]	New Section
4.6.16.2 Other Means During Manufacture. For wood products impregnated with chemicals by other means during manufacture, the treatment shall be an integral part of the manufacturing process of the wood product. The treatment shall provide permanent protection to all surfaces of the wood product. [**703:**4.1.2.2]	New Section
4.6.16.3 Wood Structural Panels. Adjustment to design values for wood structural panels shall be in accordance with the following: 1. The effect of the treatment, the method of redrying after treatment, and the exposure to high temperatures and high humidities on the flexure properties of fire-retardant-treated softwood plywood shall be determined in accordance with ASTM D5516, *Standard Test Method for Evaluating the Flexural Properties of Fire-Retardant-Treated Softwood Plywood Exposed to Elevated Temperatures.* 2. The test data developed by ASTM D5516 shall be used to develop adjustment factors or maximum loads and spans, or both, for untreated plywood design values in accordance with ASTM D6305, *Standard Practice*	New Section

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for Calculating Bending Strength Design Adjustment Factors for Fire-Retardant-Treated Plywood Roof Sheathing. 3. Each manufacturer shall publish the allowable maximum loads and spans for service as floor and roof sheathing for their treatment. [**5000:**45.5.16.2.2.1] 4.6.16.4 Lumber. Adjustment to design values for lumber shall be in accordance with the following: 1. For each species of wood treated, the effect of the treatment, the method of redrying after treatment, and the exposure to high temperatures and high humidities on the allowable design properties of fire-retardant-treated lumber shall be determined in accordance with ASTM D5664, *Standard Test Method for Evaluating the Effects of Fire-Retardant Treatments and Elevated Temperatures on Strength Properties of Fire-Retardant-Treated Lumber.* 2. The test data developed by ASTM D5664 shall be used to develop modification factors for use at or near room temperature and at elevated temperatures and humidity in accordance with ASTM D6841, *Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-Retardant-Treated Lumber.* 3. Each manufacturer shall publish the modification factors for service at ambient temperatures of up to 100°F (37.8°C) and for service as roof framing. 4. The roof framing modification factors shall take into consideration the climatological location. [**5000:**45.5.16.2.2.2]	New Section

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4.6.16.5 Exposure to Weather or Damp or Wet Locations. Where fire-retardant-treated wood is exposed to weather or damp or wet locations, it shall be identified as "exterior" to indicate that there is no increase in the listed flame spread index when subjected to ASTM D2898, *Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing*. [**5000:**45.5.16.3]	New Section
4.6.16.6 Interior Applications. Interior fire-retardant-treated wood shall have a moisture content of not over 28 percent when tested in accordance with the procedures of ASTM D3201, *Standard Test Method for Hygroscopic Properties of Fire-Retardant-Wood and Wood-Based Products*, at 92 percent relative humidity. Interior fire-retardant-treated wood shall be tested in accordance with 4.6.16.3 or 4.6.16.4. [**5000:**45.5.16.4]	New Section
4.6.16.7 Moisture Content. Fire-retardant-treated wood shall have a moisture content of 19 percent or less for lumber and 15 percent or less for wood structural panels before use. For wood kiln dried after treatment (KDAT), the kiln temperatures shall not exceed the temperatures used in drying the lumber and plywood submitted for the testing described in 4.6.16.3 or 4.6.16.4. [**5000:**45.5.16.5]	New Section
Chapter 5 Performance-Based Option	N/A
Chapter 6 Classification of Occupancy and Hazard of Contents 6.1.8.1.1* Definition — One- and Two-Family Dwelling Unit. A building that contains not more than two dwelling units, ~~with independent cooking and bathroom facilities~~ each dwelling unit occupied by members of a single family with not more than three outsiders, if any, accommodated in rented rooms.	See new understood Text

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6.1.14.2.3 Separated Occupancy. A multiple occupancy where the occupancies are separated by fire ~~resistance-rated assemblies~~ barriers.	See new understood Text
6.1.14.4.1 Where separated occupancies are provided, each part of the building comprising a distinct occupancy, as described in this chapter, shall be completely separated from other ~~occupancies by fire resistive assemblies, as specified in~~ occupancies by fire barriers, as specified in Table 6.1.14.4.1(a), Table 6.1.14.4.1(b), and 6.1.14.4.2 through 6.1.14.4.4, ~~6.1.14.4.3, Table 6.1.14.4.1(a), and Table 6.1.14.4.1(b)~~ unless separation is provided by approved existing separations or as otherwise permitted by 6.1.14.4.6.	See new understood Text
6.1.14.4.3 The fire barrier minimum fire resistance rating specified in Table 6.1.14.4.1(a) and Table 6.1.14.4.1(b) shall be permitted to be reduced by 1 hour, but in no case shall it be reduced to less than 1 hour, where the building is protected throughout by an approved automatic sprinkler system in accordance with ~~9.7.1.1~~ 9.7.1.1(1)(1) and supervised in accordance with 9.7.2, unless prohibited by the double-dagger footnote entries in the tables.	See new understood Text
6.1.14.4.4 Occupancy ~~separations~~ separation fire barriers shall be vertical, horizontal, or both or, when necessary, of such other form as required to provide complete separation between occupancy divisions in the building.	See new understood Text
6.1.14.4.6 Where permitted in Chapters 11 through 43, atrium walls shall be permitted to serve as part of the separation required by 6.1.14.4.1 for creating separated occupancies on a story-by-story basis, provided all of the following are met:	See new understood Text

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1. The atrium is separated from adjacent areas by walls that are smoke partitions in accordance with Section 8.4. 2. Doors in the smoke partitions required by 6.1.14.4.6(1)(a) are equipped with positive latching hardware. 3. The atrium meets the provisions of 8.6.7 that are applicable to new atriums.	
Chapter 7 Means of Egress 7.1.3.2.1 Where this *Code* requires an exit to be separated from other parts of the building, the separating construction shall meet the requirements of Section 8.2 and the following: 1. *The separation shall have a minimum 1-hour fire resistance rating where the exit connects three or fewer stories. 2. The separation specified in 7.1.3.2.1(1), other than an existing separation, shall be supported by construction having not less than a 1-hour fire resistance rating. 3. *The separation shall have a minimum 2-hour fire resistance rating where the exit connects four or more stories, unless one of the following conditions exists: a. In existing non-high-rise buildings, existing exit stair enclosures shall have a minimum 1-hour fire resistance rating. b. In existing buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7, existing exit stair enclosures shall have a minimum 1-hour fire resistance rating. c. The minimum 1-hour enclosures in accordance with 28.2.2.1.2, 29.2.2.1.2, 30.2.2.1.2, and	See new understood Text

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31.2.2.1.2 shall be permitted as an alternative to the requirement of 7.1.3.2.1(3).

4. Reserved.
5. The minimum 2-hour fire resistance–rated separation required by 7.1.3.2.1(3) shall be constructed of an assembly of noncombustible or limited-combustible materials and shall be supported by construction having a minimum 2-hour fire resistance rating, unless otherwise permitted by 7.1.3.2.1(7).
6. *Structural elements, or portions thereof, that support exit components and either penetrate into a fire resistance–rated assembly or are installed within a fire resistance–rated wall assembly shall be protected, as a minimum, to the fire resistance rating required by 7.1.3.2.1(1) or 7.1.3.2.1(3).
7. ~~In Type III, Type IV, and Type V construction, as defined in~~ Fire-retardant-treated wood enclosed in noncombustible or limited-combustible materials shall be permitted in accordance with NFPA 220. ~~NFPA 220, *Standard on Types of Building Construction(see 8.2.1.2)*,~~
8. Openings in the separation shall be protected by fire door assemblies equipped with door closers complying with 7.2.1.8.
9. *Openings in exit enclosures shall be limited to door assemblies from normally occupied spaces and corridors and door assemblies for egress from the enclosure, unless one of the following conditions exists:
    a. Vestibules that separate normally unoccupied spaces from an exit enclosure shall be permitted, provided the vestibule is separated from adjacent spaces by corridor walls and related opening protectives as required for the occupancy involved but not less than a

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smoke partition in accordance with Section 8.4.

b. In buildings of Type I or Type II construction, as defined in NFPA 220, *Standard on Types of Building Construction,(see 8.2.1.2)*, fire protection–rated door assemblies to normally unoccupied building service equipment support areas as addressed in Section 7.14 shall be permitted, provided the space is separated from the exit enclosure by fire barriers as required by 7.1.3.2.1(3).

c. Openings in exit passageways in mall buildings as provided in Chapters 36 and 37 shall be permitted.

d. In buildings of Type I or Type II construction, as defined in NFPA 220, ~~*Standard on Types of Building Construction*~~*,(see 8.2.1.2)*, existing fire protection–rated door assemblies to interstitial spaces shall be permitted, provided that such spaces meet all of the following criteria:

i. The space is used solely for distribution of pipes, ducts, and conduits.

ii. The space contains no storage.

iii. The space is separated from the exit enclosure in accordance with Section 8.3.

e. Existing openings to mechanical equipment spaces protected by approved existing fire protection–rated door assemblies shall be permitted, provided that the following criteria are met:

i. The space is used solely for non-fuel-fired mechanical equipment.

ii. The space contains no storage of combustible materials.

iii. The building is protected throughout by an approved, supervised automatic sprinkler

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system in accordance with Section 9.7or the mechanical equipment space is provided with sprinkler protection in accordance with Section 9.7 and provided with complete smoke detection in accordance with Section 9.6.

10. Penetrations into, and openings through, an exit enclosure assembly shall be limited to the following:
    a. Door assemblies permitted by 7.1.3.2.1(9)
    b. *Electrical conduit serving the exit enclosure
    c. Pathways for devices for security and communication systems serving the exit enclosure, where pathways are installed in metal conduit
    d. Required exit door openings
    e. Ductwork and equipment necessary for independent stair pressurization
    f. Water or steam piping necessary for the heating or cooling of the exit enclosure
    g. Sprinkler piping
    h. Standpipes
    i. Existing penetrations ~~protected in accordance with 8.3.5~~
    j. Penetrations for fire alarm circuits, where the circuits are installed in metal conduit ~~and the penetrations are protected in accordance with 8.3.5~~
11. Penetrations or communicating openings shall be prohibited between adjacent exit enclosures
12. All penetrations in fire barriers separating the exit from other parts of the building shall be protected in accordance with 8.3.4.
13. Membrane penetrations shall be permitted on the exit access side of the exit enclosure and shall be protected in accordance with 8.3.4.7.

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7.1.5.3 Headroom on stairs and stair landings shall be not less than 6 ft 8 in. (2030 mm) and shall be measured vertically above a plane parallel to, and tangent with, the most forward projection of the stair tread.	See new understood Text
7.1.6.5* Grab Bars for Bathtubs, Bathtub-Shower Combinations, and Showers.	New Section
7.1.6.5.1 General.	New Section
7.1.6.5.1.1 Where required by Chapters 11 through 43, new bathtubs, bathtub-shower combinations, or showers, for use by occupants, shall be provided with grab bars complying with 7.1.6.5.2 through 7.1.6.5.5, except as otherwise permitted for showers in 7.1.6.5.1.2, with all dimensions referring to the centerline of the grab bar unless otherwise stipulated.	New Section
7.1.6.5.1.2* Where a dedicated shower does not expose users to changes in elevation exceeding 0.5 in. (13 mm), as described in 7.1.6.2, and it provides slip resistance for all surfaces when wet, as a foreseeable condition described in 7.1.6.4, the requirements of 7.1.6.5.2 through 7.1.6.5.5 shall apply only if grab bars are installed.	New Section
7.1.6.5.2 Vertical Grab Bar. A vertical grab bar shall be provided either installed on the control end wall of the bathtub, bathtub-shower combination, or shower as specified in 7.1.6.5.2.1 or as a free-standing external pole as specified in 7.1.6.5.2.2.	New Section
7.1.6.5.2.1* Vertical Grab Bar on Control End Wall. (A) A vertical grab bar, with a minimum length of 24 in. (610 mm), and its lower end between 36 and 39 in. (915 and 990 mm) above the finished floor, shall be installed on the entry/egress side	New Section

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of the control end wall of the bathtub, bathtub-shower combination, or shower unit. (B) The grab bar shall be located at least 6 in. (150 mm), measured horizontally, from any shower curtain rod fixing point on the wall.	
7.1.6.5.2.2* Vertical Grab Bar as Free Standing, Vertical Pole. A vertical, pole-type grab bar fixed to the floor and either the room ceiling or an adjacent wall shall be installed outside of the bathtub, bathtub-shower combination, or shower unit within 6 in. (150 mm), measured horizontally, outside of the outer edge of the bathtub, bathtub-shower combination, or shower and within 30 in. (760 mm), measured horizontally, of the vertical plane of the control end wall if there is such a wall.	New Section
7.1.6.5.3 Back Wall Grab Bar. For bathtubs and bathtub-shower combinations bounded on three sides by walls, a grab bar shall be provided on the back wall either as a diagonal grab bar as specified in 7.1.6.5.3.1 or as a horizontal grab bar as specified in 7.1.6.5.3.2.	New Section
7.1.6.5.3.1* Diagonal Grab Bar on Back Wall. (A) A diagonal grab bar shall be installed on the back wall with a minimum length of 24 in. (600 mm) with its higher end placed closer to the control end wall and located a maximum of 12 in. (305 mm) from the control end wall, with a height of 25 to 27 in. (635 to 685 mm) above rim of the bathtub. (B) The lower end of the diagonal grab bar shall be located at a height of 8 to 10 in. (205 to 255 mm) above the rim of the bathtub and 28 to 30 in. (710 to 760 mm) from the control end wall.	New Section
7.1.6.5.3.2 Horizontal Grab Bar on Back Wall. A horizontal grab bar shall be installed on the back wall at a height of 8 to 10 in. (205 to 255	New Section

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mm) above the bathtub rim with one end located a maximum of 12 in. (305 mm) from the control end wall and the other end located a maximum of 24 in. (610 mm) from the opposite, or head, end of the bathtub.	
7.1.6.5.4* Grab Bar Details.	New Section
7.1.6.5.4.1 Grab bars shall be circular in cross section with a minimum diameter of 1 1⁄4 in. (32 mm) and a maximum diameter of 2 in. (51 mm).	New Section
7.1.6.5.4.2 If attached to a wall, the grab bar shall provide a minimum clearance of 1 1⁄2 in. (38 mm) for hand grasp.	New Section
7.1.6.5.4.3 The size and clearance dimensions required by 7.1.6.5.4.1 and 7.1.6.5.4.2 shall be provided, as a minimum, within the height requirements range and the minimum length requirements range of the other provisions of 7.1.6.5.	New Section
7.1.6.5.5 Grab Bar Structural Loading. Grab bars shall be designed and constructed to the structural loading conditions in accordance with the building code.	New Section
7.1.9 Impediments to Egress. Any device or alarm installed to restrict the improper use of a means of egress, and any device or system installed to monitor or record use of a means of egress, shall be designed and installed so that it cannot, even in case of failure, impede or prevent emergency use of such means of egress, unless otherwise provided in 7.2.1.6 and Chapters 18, 19, 22, and 23.	See new understood Text
7.2.1.3.2 The elevation of the floor surfaces required by 7.2.1.3.1 shall be maintained on both sides of the door openings for a distance not less than the width of the widest leaf and, for other than	See new understood text

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existing installations, not less than 36 in. (915 mm). 7.2.1.4.1* Swinging-Type Door Assembly Requirement. Any door assembly in a means of egress shall be of the side-hinged or pivoted-swinging type, and shall be installed to be capable of swinging from any position to the full required width of the opening in which it is installed, unless otherwise specified as follows: 1. Door assemblies in dwelling units, as provided in Chapter 24, shall be permitted. 2. Door assemblies in residential board and care occupancies, as provided in Chapters 32 and 33, shall be permitted. 3. Where permitted in Chapters 11 through 43, horizontal-sliding or vertical-rolling security grilles or door assemblies that are part of the required means of egress shall be permitted, provided that all of the following criteria are met: a. Such grilles or door assemblies shall remain secured in the fully open position during the period of occupancy by the general public. b. On or adjacent to the grille or door opening, there shall be a readily visible, durable sign in letters not less than 1 in. (25 mm) high on a contrasting background that reads as follows: THIS DOOR TO REMAIN OPEN WHEN THE SPACE IS OCCUPIED. c. Door leaves or grilles shall not be brought to the closed position when the space is occupied. d. Door leaves or grilles shall be operable from within the space without the use of any special knowledge or effort.	See New understood text

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e. Where two or more means of egress are required, not more than half of the means of egress shall be equipped with horizontal-sliding or vertical-rolling grilles or door assemblies. 4. Horizontal-sliding door assemblies shall be permitted under any of the following conditions: a. Horizontal-sliding door assemblies in detention and correctional occupancies, as provided in Chapters 22 and 23, shall be permitted. b. Special-purpose horizontally sliding accordion or folding door assemblies complying with 7.2.1.14 shall be permitted. c. Unless prohibited by Chapters 11 through 43, horizontal-sliding door assemblies serving a room or area with an occupant load of fewer than 10 shall be permitted, provided that all of the following criteria are met: i. The area served by the door assembly has no high hazard contents. ii. The door assembly is readily operable from either side without special knowledge or effort. iii. The force required to operate the door assembly in the direction of door leaf travel is not more than 30 lbf (133 N) to set the door leaf in motion and is not more than 15 lbf (67 N) to close the door assembly or open it to the minimum required width.	

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iv. The door assembly complies with any required fire protection rating, and, where rated, is self-closing or automatic-closing by means of smoke detection in accordance with 7.2.1.8 and is installed in accordance with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives.*~~	
7.2.1.5.6 ~~Electrically Controlled~~ Door Hardware Release of Electrically Locked Egress Door Assemblies. Door assemblies in the means of egress shall be permitted to be ~~electrically locked if~~ equipped with approved, ~~listed hardware~~, electrical locking systems released by the operation of door hardware provided that all of the following conditions are met: 1. The hardware for egress-side occupant release of the electrical lock is affixed to the door leaf. 2. The hardware has an obvious method of operation that is readily operated in the direction of egress under all lighting conditions. 3. The hardware is capable of being operated with one hand in the direction of egress. 4. Operation of the hardware directly interrupts the power ~~supply~~ directly to the electric lock and unlocks the door assembly in the direction of egress. 5. *Loss of power to the listed releasing hardware automatically electrically unlocks the door assembly in the direction of egress. 6. Hardware for new installations is listed in accordance with ANSI/UL 294,	See new understood text

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Standard for Access Control System Units.	
7.2.1.5.10.2 The releasing mechanism shall open the door leaf with not more than one releasing operation, unless otherwise specified in 7.2.1.5.10.3, 7.2.1.5.10.4~~, or~~ 7.2.1.5.10.6, <u>or 7.2.1.5.10.7.</u>	See new understood text
7.2.1.5.11 Where pairs of door leaves are required in a means of egress, one of the following criteria shall be met: 1. Each leaf of the pair shall be provided with a releasing device that does not depend on the release of one leaf before the other. 2. Approved automatic flush bolts shall be used and arranged such that both of the following criteria are met: a. The door leaf equipped with the automatic flush bolts shall have no doorknob or surface-mounted hardware <u>on the egress side of the door.</u> b. Unlatching of any leaf shall not require more than one operation.	See new understood
<u>7.2.1.5.10.7</u> <u>Two releasing operations shall be permitted for educational occupancy classroom doors secured against unwanted entry in accordance with the provisions of Chapter 15.</u>	New Section
7.2.1.6.1 Delayed-Egress <u>Electrically</u> Locking Systems.	See new understood text
7.2.1.6.1.1 Approved, ~~listed~~, delayed-egress <u>electrically</u> locking systems shall be permitted to be installed on door assemblies serving low- and ordinary-hazard contents in buildings protected throughout by an approved, supervised	See new understood text

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automatic fire detection system in accordance with Section 9.6 or an approved, supervised automatic sprinkler system in accordance with Section 9.7, and where permitted in Chapters 11 through 43, provided that all of the following criteria are met:

1. The ~~door leaves shall unlock in the direction of~~ delay of the delayed-egress electrically locking system shall deactivate allowing unobstructed egress upon actuation of one of the following:
    a. Approved, supervised automatic sprinkler system in accordance with Section 9.7
    b. Not more than one heat detector of an approved, supervised automatic fire detection system in accordance with Section 9.6
    c. Not more than two smoke detectors of an approved, supervised automatic fire detection system in accordance with Section 9.6
2. The ~~door leaves shall unlock in the direction~~ of delay of the delayed-egress electrically locking system shall deactivate allowing unobstructed egress upon loss of power controlling the lock or locking mechanism.
3. *An irreversible process shall release the electrical lock in the direction of egress within 15 seconds, or 30 seconds where approved by the authority having jurisdiction, upon application of a force to the release device required in 7.2.1.5.10 under all of the following conditions:
    a. The force shall not be required to exceed 15 lbf (67 N).
    b. The force shall not be required to be continuously applied for more than 3 seconds.
    c. The initiation of the release process shall activate an audible

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signal in the vicinity of the door opening. d. Once the electrical lock has been released by the application of force to the releasing device, ~~relocking~~ rearming the delay electronics shall be by manual means only. 4. *A readily visible, durable sign ~~in letters not less than 1 in. (25 mm) high and not less than 1/8 in. (3.2 mm) in stroke width on a contrasting background~~ that conforms to the visual characters requirements of ICC/ANSI A117.1, *Accessible and Usable Buildings and Facilities*, shall be located on the door leaf adjacent to the release device in the direction of egress, and shall read as follows: a. PUSH UNTIL ALARM SOUNDS, DOOR CAN BE OPENED IN 15 SECONDS, for doors that swing in the direction of egress travel b. PULL UNTIL ALARM SOUNDS, DOOR CAN BE OPENED IN 15 SECONDS, for doors that swing against the direction of egress travel 5. The egress side of doors equipped with delayed-egress ~~locks~~ electrically locking system shall be provided with emergency lighting in accordance with Section 7.9. 6. Hardware for new installations shall be listed in accordance with ANSI/UL 294, *Standard for Access Control System Units*.	
7.2.1.6.2 ~~Access-Controlled Egress Door Assemblies~~ Sensor-Release of Electrical Locking Systems. Where permitted in Chapters 11 through 43, door assemblies in the means of egress shall be permitted to be equipped with sensor-release	See new understood text

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electrical ~~lock hardware that prevents egress~~, locking system hardware provided that all of the following criteria are met: 1. A sensor shall be provided on the egress side, arranged to electrically unlock the door leaf in the direction of egress upon detection of an approaching occupant. 2. Door leaves shall automatically electrically unlock in the direction of egress upon loss of power to the sensor or to the part of the ~~access control system~~ locking system that electrically locks the door leaves. 3. Door locks shall be arranged to electrically unlock in the direction of egress from a manual release device complying with all of the following criteria: a. The manual release device shall be located on the egress side, 40 in. to 48 in. (1015 mm to 1220 mm) vertically above the floor, and within 60 in. (1525 mm) of the secured door openings, except as otherwise permitted by 7.2.1.6.2(3)(c). b. The requirement of 7.2.1.6.2(3)(a) to locate the manual release device within 60 in. (1525 mm) of the secured door opening shall not apply to previously approved existing installations. c. The manual release device shall be readily accessible and clearly identified by a sign that reads as follows: PUSH TO EXIT. d. When operated, the manual release device shall result in direct interruption of power to the electrical lock — independent of the locking system electronics — and the lock shall remain unlocked for not less than 30 seconds.	New part added to the section

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4. Activation of the building fire-protective signaling system, if provided, shall automatically electrically unlock the door leaves in the direction of egress, and the door leaves shall remain electrically unlocked until the fire-protective signaling system has been manually reset. 5. The activation of manual fire alarm boxes that activate the building fire-protective signaling system specified in 7.2.1.6.2(4) shall not be required to unlock the door leaves. 6. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically electrically unlock the door leaves in the direction of egress, and the door leaves shall remain electrically unlocked until the fire-protective signaling system has been manually reset. 7. The egress side of ~~access-controlled~~ sensor-release electrically locked egress doors, other than existing ~~access-controlled~~ sensor-release electrically locked egress doors, shall be provided with emergency lighting in accordance with Section 7.9.	
8. Hardware for new installations shall be listed in accordance with ANSI/UL 294, *Standard for Access Control System Units.*	New part added to the section
7.2.1.6.3 Elevator Lobby Exit Access Door Assemblies Locking. Where permitted in Chapters 11 through 43, door assemblies separating the elevator lobby from the exit access required by 7.4.1.6.1 shall be permitted to be electrically locked, provided that all the following criteria are met: 1. The ~~lock~~ electrical locking hardware is listed in accordance with ANSI/UL 294, *Standard for Access Control System Units*.	See new understood text

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2. The building is protected throughout by a fire alarm system in accordance with Section 9.6. 3. The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7. 4. Waterflow in the sprinkler system required by 7.2.1.6.3(3) is arranged to initiate the building fire alarm system. 5. The elevator lobby is protected by an approved, supervised smoke detection system in accordance with Section 9.6. 6. Detection of smoke by the detection system required by 7.2.1.6.3(5) is arranged to initiate the building fire alarm system and notify building occupants. 7. Initiation of the building fire alarm system by other than manual fire alarm boxes unlocks the electrical locks on the elevator lobby door assembly. 8. Loss of power to the elevator lobby ~~electronic~~ electrical lock system unlocks the electrical locks on the elevator lobby door assemblies. 9. Once unlocked, the elevator lobby door assemblies remain electrically unlocked until the building fire alarm system has been manually reset. 10. Where the elevator lobby door assemblies remain mechanically latched after being electrically unlocked, latch-releasing hardware in accordance with 7.2.1.5.10 is affixed to the door leaves. 11. A two-way communication system is provided for communication between the elevator lobby and a central control point that is constantly staffed. 12. The central control point staff required by 7.2.1.6.3 is capable, trained, and authorized to provide emergency assistance. 13. The provisions of 7.2.1.6.1 for delayed-egress electrically locking systems are	

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not applied to the elevator lobby door assemblies. 14. *The provisions of 7.2.1.6.2 for ~~access-controlled egress door assemblies~~ sensor-release of electrical locking systems are not applied to the elevator lobby door assemblies.	
7.2.1.7.1 Where a side-hinged or pivoted-swinging door assembly is required to be equipped with panic or fire exit hardware, such hardware shall meet all of the following criteria: 1. It shall consist of a cross bar or a push pad, with the length of the actuating portion of ~~which extends across~~ the cross bar or push pad not less than one-half of the width of the door leaf.	See new understood text
7.2.1.8.2 In any building of low or ordinary hazard contents, as defined in 6.2.2.2 and 6.2.2.3, or where approved by the authority having jurisdiction, door leaves shall be permitted to be automatic-closing, provided that all of the following criteria are met: 1. Upon release of the hold-open mechanism, the leaf becomes self-closing. 2. The release device is designed so that the leaf instantly releases manually and, upon release, becomes self-closing, or the leaf can be readily closed. 3. The automatic releasing mechanism or medium is activated by the operation of approved smoke detectors installed in accordance with the requirements for smoke detectors for door leaf release service in *NFPA 72*~~*, National Fire Alarm and Signaling Code.*~~	See new understood text

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7.2.1.8.4 Delayed Action Closers. Doors required to be self-closing and not required to be automatic closing shall be permitted to be equipped with delayed action closers.	New section
7.2.1.9.1* General. Where means of egress door leaves are operated by power upon the approach of a person or are provided with power-assisted manual operation, the design shall be such that, in the event of power failure, the leaves open manually to allow egress travel or close when necessary to safeguard the means of egress.	New Section
7.2.1.9.1.1 New power-operated swinging doors, power-operated sliding doors, and power-operated folding doors shall comply with ANSI/BHMA A156.10, *Power Operated Pedestrian Doors*.	New Section
7.2.1.9.1.2 New power-assisted swinging doors and low-energy power-operated swinging doors shall comply with ANSI/BHMA A156.19, *Power Assist and Low Energy Power Operated Doors*.	New Section
7.2.1.9.1.3 New low-energy power-operated sliding doors and low-energy power-operated folding doors shall comply with ANSI/BHMA A156.38, *Low Energy Power Operated Sliding and Folding Doors*.	New Section
7.2.1.9.2 Self-Closing or Self-Latching Door Leaf Operation. Where door leaves are required to be self-closing or self-latching and are operated by power upon the approach of a person, or are provided with power-assisted manual operation, they shall be permitted in the means of egress where they meet the following criteria: 1. The door leaves can be opened manually in accordance with 7.2.1.9.1 to	See new understood text

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allow egress travel in the event of power failure. 2. New door leaves remain in the closed position, unless actuated or opened manually. 3. When actuated, new door leaves remain open for not more than 30 seconds. 4. Door leaves held open for any period of time close — and the power-assist mechanism ceases to function — upon operation of approved smoke detectors installed in such a way as to detect smoke on either side of the door opening in accordance with the provisions of *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~ 5. Door leaves required to be self-latching are either self-latching or become self-latching upon operation of approved smoke detectors per 7.2.1.9.2(4). 6. New power-assisted swinging door assemblies comply with BHMA/ANSI A156.19, ~~*American National Standard for Power Assist and Low Energy Power Operated Doors*~~ *Power Assist and Low Energy Power Operated Doors.*	
7.2.1.10.1 Revolving door assemblies, whether used or not used in the means of egress, shall comply with all of the following:	See new understood text
1. New revolving doors shall comply with ANSI/BHMA A156.27, *Power and Manual Operated Revolving Doors*, and shall be installed in accordance with the manufacturer's installation instructions. 2. Revolving door wings shall be capable of ~~being~~ ~~collapsed into~~ ~~a~~ book-fold ~~position~~ or breakout for egress in accordance with BHMA A156.27, unless they are existing revolving doors approved by the authority having jurisdiction.	New part added to the section

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3. When revolving door wings are collapsed into the book-fold position, the parallel egress paths formed shall provide an aggregate width of 36 in. (915 mm), unless they are approved existing revolving door assemblies. 4. Revolving door assemblies shall not be used within 10 ft (3050 mm) of the foot or the top of stairs or escalators. 5. A dispersal area acceptable to the authority having jurisdiction shall be located between stairs or escalators and the revolving door assembly. 6. The revolutions per minute (rpm) of revolving door wings shall not exceed the following: a. <u>The values in Table 7.2.1.10.1 for existing revolving doors.</u> b. <u>The values in BHMA A156.27 for new revolving doors.</u>	New parts added to the section
Table 7.2.1.10.1 <u>Existing</u> Revolving Door Assembly Maximum Speed	See new understood text
7.2.1.14 Special-Purpose Horizontally Sliding Accordion or Folding Door Assemblies. Special-purpose horizontally sliding accordion or folding door assemblies shall be permitted in means of egress, provided that all of the following criteria are met: 1. The door leaf is readily operable from either side without special knowledge or effort. 2. The force that, when applied to the operating device in the direction of egress, is required to operate the door leaf is not more than 15 lbf (67 N). 3. The force required to operate the door leaf in the direction of travel is not more than 30 lbf (133 N) to set the leaf in motion and is not more than 15 lbf (67 N) to close the leaf or open it to the minimum required width.	See new understood text

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4. The door leaf is operable using a force of not more than 50 lbf (222 N) when a force of 250 lbf (1100 N) is applied perpendicularly to the leaf adjacent to the operating device, unless the door opening is an existing special-purpose horizontally sliding accordion or folding exit access door assembly serving an area with an occupant load of fewer than 50. 5. The door assembly complies with the fire protection rating, if required, and, where rated, is self-closing or automatic-closing by means of smoke detection in accordance with 7.2.1.8 and is installed in accordance with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives.*~~	
7.2.1.15.1* Where required by Chapters 11 through 43, the following door assemblies shall be inspected and tested not less than annually in accordance with 7.2.1.15.2 through 7.2.1.15.7: 1. Door leaves equipped with panic hardware or fire exit hardware in accordance with 7.2.1.7 2.Door assemblies in exit enclosures 3. ~~Electrically controlled egress doors~~ door hardware-release of electrically locked egress door assemblies 4.Door assemblies with special locking arrangements subject to 7.2.1.6	See new understood text
7.2.1.15.6 As a minimum, the following items shall be verified: 1. Floor space on both sides of the openings is clear of obstructions, and door leaves open fully and close freely.	See new understood text

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2. Forces required to set door leaves in motion and move to the fully open position do not exceed the requirements in 7.2.1.4.5. 3. Latching and locking devices comply with 7.2.1.5. 4. Releasing hardware devices are installed in accordance with 7.2.1.5.10.1. 5. Door leaves of paired openings are installed in accordance with 7.2.1.5.11. 6. Door closers are adjusted properly to control the closing speed of door leaves in accordance with accessibility requirements. 7. Projection of door leaves into the path of egress does not exceed the encroachment permitted by 7.2.1.4.3. 8. Powered door openings operate in accordance with 7.2.1.9. 9. Signage required by 7.2.1.4.1(3), 7.2.1.5.5, 7.2.1.6, and 7.2.1.9 is intact and legible. 10. Door openings with special locking arrangements function in accordance with 7.2.1.6. 11. Security devices that impede egress are not installed on openings, as required by 7.2.1.5.12. 12. Where required by 7.2.2.5.5.7, door hardware marking is present and intact. 13. Emergency lighting on ~~access-controlled egress doors~~ sensor-release of electrical locking systems and doors equipped with ~~delayed-egress locking systems~~ delayed-egress electrically locking systems is present and functioning in accordance with Section 7.9.	
7.2.2.4.1.6 ~~Existing stairs, existing ramps, stairs within dwelling units and within guest rooms, and ramps within dwelling units and guest rooms shall be permitted to have a handrail on one~~	See new understood text

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~~side only~~.Handrails shall be required at one side only for the following components: 14. Existing stairs 15. Existing ramps 16. New and existing stairs within dwelling units and within guest rooms 17. New and existing ramps within dwelling units and within guest rooms	
7.2.2.5.4.1 New enclosed stairs serving three or more stories and existing enclosed stairs, other than those addressed in 7.2.2.5.4.1(P), serving five or more stories shall comply with 7.2.2.5.4.1(A) through 7.2.2.5.4.1(O). (H) The signage shall be in a position that is visible from within the stair enclosure when the door is in the open or closed position. (I) The signage shall comply with 7.10.8.1 and 7.10.8.2 of this *Code*. (J) The floor level designation shall also be tactile in accordance with ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*.	See new understood text
7.2.2.5.5.8 Emergency Exit Symbol. An emergency exit symbol with a luminescent background shall be applied on all doors serving the exit enclosure that swing out from the enclosure in the direction of egress travel. The emergency exit symbol shall also meet both of the following requirements: 1. The emergency exit symbol shall meet the requirements of NFPA 170, ~~*Standard for Fire Safety and Emergency Symbols.*~~ 2. The emergency exit symbol applied on the door shall be a minimum of 4 in. (100 mm) in height and shall be applied on the door, centered horizontally, with	See new understood text

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the top of the symbol not higher than 18 in. (455 mm) above the finished floor.	
7.2.2.5.5.10 Materials. ~~Exit stair path markings shall be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminescence. Such materials shall include, but shall not be limited to, self-luminous materials and photoluminescent materials. Materials shall comply with :~~ ~~ASTM E2072, *Standard Specification for Photoluminescent (Phosphorescent) Safety Markings*, with the following exceptions:~~ ~~The charging source shall be 1 ft-candle (10.8 lux) of fluorescent illumination for 60 minutes.~~ ~~The minimum luminance shall be 5 millicandelas/m² after 90 minutes.~~ ~~ANSI/UL 1994, *Standard for Luminous Egress Path Marking Systems*~~	Deleted parts to this section are crossed out
(A) Exit stair path markings shall be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminescence. (B) Such materials shall include, but shall not be limited to, self-luminous materials and photoluminescent materials. (C) Materials shall comply with <u>either of the following:</u> 1.ASTM E2072, *Standard Specification for Photoluminescent (Phosphorescent)*	See new understood text

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Safety Markings, and ASTM E2073, *Standard Test Metod for Photopic Luminance of Photoluminescent (Phosphorescent) Markings* 2.ANSI/UL 1994, *Standard for Luminous Egress Path Marking Systems*	
7.2.3.4 Vestibule. Where a vestibule is provided, the door opening into the vestibule shall be protected with an approved fire door assembly having a minimum 1⁄2-hour fire protection rating, and the fire door assembly from the vestibule to the smokeproof enclosure shall have a minimum 20-minute fire protection rating. Door leaves shall be designed to minimize air leakage and shall be self-closing or shall be automatic-closing by actuation of a smoke detector within 10 ft (3050 mm) of the vestibule door opening. New door assemblies shall be installed in accordance with NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives.*~~	See new understood text
7.2.3.9.1.1 Smokeproof enclosures using pressurization shall be in accordance with NFPA 92.	New Section
7.2.3.9.2* Equipment, control wiring, power wiring, and ductwork for pressurization shall be located in accordance with one of the following specifications: 1. Exterior to the building and directly connected to the enclosure by ductwork enclosed in noncombustible construction 2. Within the enclosure with intake and exhaust air vented directly to the outside or through ductwork enclosed by a 2-hour fire-resistive rating 3. Within the building under the following conditions:	See new understood text

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a. Where the equipment, control wiring, power wiring, and ductwork are separated from the remainder of the building, including other mechanical equipment, by a 2-hour fire-resistive rating b. Where the building, including the enclosure, is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7, and the equipment, control wiring, power wiring, and ductwork are separated from the remainder of the building, including other mechanical equipment, by not less than a 1-hour fire-resistive rating	
7.2.3.9.4 The requirement of 7.2.3.9.2 shall not apply to any of the following: 1.Control wiring and power wiring utilizing a 2-hour-rated cable or cable system 2.Where encased with not less than 2 in. (5 mm) of concrete 3.Control wiring and power wiring protected by a listed electrical circuit protective system with not less than a 2-hour fire resistive rating	
~~7.2.3.9.5~~ ~~Equipment and ductwork for pressurization shall be located in accordance with one of the following specifications:~~ ~~Exterior to the building and directly connected to the enclosure by ductwork~~	Section deleted

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~~enclosed in noncombustible construction~~ ~~Within the enclosure with intake and exhaust air vented directly to the outside or through ductwork enclosed by a 2-hour fire-resistive rating~~ ~~Within the building under the following conditions:~~ ~~Where the equipment and ductwork are separated from the remainder of the building, including other mechanical equipment, by a 2-hour fire-resistive rating~~ ~~Where the building, including the enclosure, is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7, and the equipment and ductwork are separated from the remainder of the building, including other mechanical equipment, by not less than a 1-hour fire-resistive rating~~	
~~7.2.3.9.6~~ ~~In all cases specified by 7.2.3.9.2(1) through (3), openings into the required fire resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by self-closing fire protection-rated devices in accordance with 8.3.4.~~	Section deleted
7.2.3.12 Emergency Power Supply System (EPSS). Power shall be provided as follows: 1. A Type 60, Class 2, Level 2 EPSS for new mechanical ventilation equipment ~~shall~~ <u>and enclosure pressurization</u>	See new understood text

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systems shall be provided in accordance with NFPA 110, ~~*Standard for Emergency and Standby Power Systems*~~. 2. A previously approved existing standby power generator installation with a fuel supply adequate to operate the equipment for 2 hours shall be permitted in lieu of 7.2.3.12. 3. The generator shall be located in a room separated from the remainder of the building by fire barriers having a minimum 1-hour fire resistance rating.	
7.2.4.1.2* Horizontal exits shall be permitted to be substituted for other exits ~~where the total egress capacity and the total number of the other exits (stairs, ramps, door openings leading outside the building) is not less than half that required for the entire area of the building or connected buildings, and provided that none of the other exits is a horizontal exit~~ provided that both of the following are met, unless otherwise permitted by 7.2.4.1.3:	See new understood text
3. A minimum of half of the number of exits from any compartment created by horizontal exits is provided by other than horizontal exits 4. A minimum of half of the egress capacity required for any compartment created by horizontal exits is provided by other than horizontal exits	Added parts to section
7.2.4.3.9 Door leaves in horizontal exits shall be designed and installed to minimize air leakage. New door assemblies in horizontal exits shall be installed in accordance with NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives*.~~	See new understood text
7.2.6.4.1 The width of an exit passageway shall be sized to accommodate the aggregate required	See new understood text

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capacity of all exits that discharge through it, unless one of the following conditions applies: 1. *Where an exit passageway serves occupants of the level of exit discharge as well as other stories, the capacity shall not be required to be aggregated. 2. As provided in Chapters 36 and 37, an exit passageway in a ~~mall building~~ mall structure shall be permitted to accommodate occupant loads independently from the ~~mall~~ mall concourse and the tenant spaces. *(See 36.2.2.7.2 and 37.2.2.7.2.)*	
Table 7.2.8.4(a) Fire Escape Stairs Tread construction → ~~Solid 1/2 in. (13 mm) diameter perforations permitted~~ Flat metal bars on edge or square bars secured against turning, spaced 1 1/4 in. (32 mm) maximum on centers	Look at table. Newly added part to this table
7.2.9.2.1 Fire escape ladders shall comply with ANSI A14.3, ~~*Safety Requirements for Fixed Ladders*~~ *Ladders – Fixed – Safety Requirements*, unless one of the following criteria is met: 1. Approved existing ladders complying with the edition of this *Code* that was in effect when the ladders were installed shall be permitted. 2. Industrial stairs complying with the minimum requirements for fixed stairs of ANSI/ASSE A1264.1, *Safety Requirements for Workplace Walking/Working Surfaces and Their Access; Workplace Floor, Wall and Roof Openings; Stairs and Guardrail Systems*, shall be permitted where fire escape ladders are permitted in accordance with Chapter 40.	See new understood text

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7.2.12.3.5.1 The sign required by 7.2.12.3.5 shall conform to the requirements of ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*, for such signage and shall display the international symbol of accessibility. Signs also shall be located as follows: 1. At each door opening providing access to the area of refuge 2. At all exits not providing an accessible means of egress, as defined in 3.3.178.1 3. Where necessary to indicate clearly the direction to an area of refuge	See new understood text
7.2.12.3.6 Tactile signage complying with ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*, shall be located at each door opening to an area of refuge.	See new understood text
7.3.1.2* Occupant Load Factor. The occupant load in any building or portion thereof shall be not less than the number of persons determined by dividing the floor area assigned to that use by the occupant load factor for that use as specified in Table 7.3.1.2, Figure 7.3.1.2(a), and Figure 7.3.1.2(b). Where both gross and net area figures are given for the same occupancy, calculations shall be made by applying the gross area figure to the gross area of the portion of the building devoted to the use for which the gross area figure is specified and by applying the net area figure to the net area of the portion of the building devoted to the use for which the net area figure is specified. NA: Not applicable. The occupant load is the maximum probable number of occupants present at any time.	See new understood text

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[a]All factors are expressed in gross area unless marked "net." [b]For the purpose of determining occupant load in mercantile occupancies where, due to differences in the finished ground level of streets on different sides, two or more floors directly accessible from streets (not including alleys or similar back streets) exist, each such floor is permitted to be considered a street floor. The occupant load factor is one person for each 40 ft^2 (3.7 m^2) of gross floor area of sales space. [c]For the purpose of determining occupant load in mercantile occupancies with no street floor, as defined in 3.3.271, but with access directly from the street by stairs or escalators, the floor at the point of entrance to the mercantile occupancy is considered the street floor. [d]For any food court or other assembly use areas located in the ~~mall~~ mall concourse that are not included as a portion of the gross leasable area of the ~~mall building~~ mall structure, the occupant load is calculated based on the occupant load factor for that use as specified in Table 7.3.1.2. The remaining ~~mall~~ mall concourse area is not required to be assigned an occupant load. [e]The portions of the ~~mall~~ mall concourse that are considered a pedestrian way and not used as gross leasable area are not required to be assessed an occupant load based on Table 7.3.1.2. However, means of egress from a mall pedestrian way are required to be provided for an occupant load determined by dividing the gross leasable area of the mall building mall structure (not including anchor stores) by the appropriate lowest whole number occupant load factor from Figure 7.3.1.2(a) or Figure 7.3.1.2(b). Each individual tenant space is required to have means of egress to the outside or to the ~~mall~~ mall concourse based on occupant loads calculated by using the appropriate occupant load factor from Table 7.3.1.2.	

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Each individual anchor store is required to have means of egress independent of the ~~mall~~ mall concourse. [f]See A.7.3.1.2.	
Figure 7.3.1.2(a) ~~Mall Building~~ Mall Structure Occupant Load Factors (U.S. Customary Units).	See new understood text
Figure 7.3.1.2(b) ~~Mall Building~~ Mall Structure Occupant Load Factors (SI Units).	See new understood text
7.4.2.1.1 Number of Means of Egress. The minimum number of means of egress for working space about electrical equipment, other than existing electrical equipment, shall be in accordance with Section 110.26(C) of*NFPA 70*, ~~*National Electrical Code*, Section 110.26(C).~~	See new understood text
7.4.2.1.2 Door Unlatching and Direction of Door Swing. The method of door unlatching and direction of door swing for working space about electrical equipment, other than existing electrical equipment, shall be in accordance with Section 110.26(C)(3) of *NFPA 70*.	New section
7.4.2.2.1 Number of Means of Egress. The minimum number of means of egress for working space about electrical equipment, other than existing electrical equipment, shall be in accordance with Section 110.33(A) of *NFPA 70*.	Changed name of section
7.4.2.2.2 Door Unlatching and Direction of Door Swing. The method of door unlatching and direction of door swing for working space about electrical equipment, other than existing electrical equipment, shall be in accordance with Section 110.33(A)(3) of *NFPA 70*.	New section
7.7.2 Exit Discharge Through Interior Building Areas. Exits shall be permitted to discharge through interior building areas, provided that all of the following are met:	See new understood text

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1. Not more than 50 percent of the required number of exit stairs serving normally occupied areas of each floor, and not more than 50 percent of the exit stair capacity required for normally occupied areas of each floor, shall discharge through areas on any level of discharge, except as otherwise permitted by one of the following: a. One hundred percent of the exits shall be permitted to discharge through areas on any level of discharge in detention and correctional occupancies as otherwise provided in Chapters 22 and 23. b. In existing buildings, the 50 percent limit on egress capacity shall not apply if the 50 percent limit on the required number of exits is met. 2. Each level of discharge shall discharge directly outside at the finished ground level or discharge directly outside and provide access to the finished ground level by outside stairs or outside ramps. 3. The interior exit discharge shall lead to a free and unobstructed way to the exterior of the building, and such way shall be readily ~~visible and identifiable~~ apparent or shall be identifiable by exit signage from the point of discharge from the exit.	
7.7.3.3* Stairs and ramps that continue more than one-half story ~~beyond~~ below the level of discharge shall be provided with an approved means to prevent or dissuade occupants from traveling past the level of discharge during emergency building evacuation.	See new understood section

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7.8.1.1* Illumination of means of egress shall be provided in accordance with Section 7.8 for every building and structure where required in Chapters 11 through 43. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, aisles, corridors, ramps, escalators, walkways, and ~~exit~~ passageways leading to a public way.	See new understood section
7.9.1.1* Emergency lighting facilities for means of egress shall be provided in accordance with Section 7.9 for the following: 1. Buildings or structures where required in Chapters 11 through 43 2. Underground and limited access structures as addressed in Section 11.7 3. High-rise buildings as required by other sections of this *Code* 4. Doors equipped with delayed-egress locks 5. Stair shafts and vestibules of smokeproof enclosures, for which the following also apply: a. The stair shaft and vestibule shall be permitted to include a standby generator that is installed for the smokeproof enclosure mechanical ventilation equipment. b. The standby generator shall be permitted to be used for the stair shaft and vestibule emergency lighting power supply. 6. New ~~access-controlled egress doors~~ <u>sensor-release of electrical locking systems</u> in accordance with 7.2.1.6.2	See new understood section

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7.9.2.2 New emergency power systems for emergency lighting shall be at least Type 10, Class 1.5, Level 1, in accordance with NFPA 110, ~~*Standard for Emergency and Standby Power Systems.*~~	See new understood section
7.9.2.4 Emergency generators ~~providing~~ and related transfer switch equipment that provide power to emergency lighting systems shall be installed, inspected, tested, and maintained in accordance with NFPA 110, ~~*Standard for Emergency and Standby Power Systems*~~. Stored electrical energy systems, where required in this *Code*, other than battery systems for emergency luminaires in accordance with 7.9.2.5, shall be installed ~~and tested in~~, inspected, tested, and maintained in accordance with NFPA 111, ~~*Standard on Stored Electrical Energy Emergency and Standby Power Systems.*~~	See new understood section
7.9.2.6 Existing battery-operated emergency lights shall use only reliable types of rechargeable batteries provided with suitable facilities for maintaining them in properly charged condition. Batteries used in such lights or units shall be approved for their intended use and shall comply with *NFPA 70*, ~~*National Electrical Code.*~~	See new understood section
7.9.3.1 Required emergency lighting systems shall be tested in accordance with one of the ~~three~~ four options offered by 7.9.3.1.1, 7.9.3.1.2, 7.9.3.1.3, or 7.9.3.1.4.	See new understood section
7.9.3.1.4 Testing of required emergency lighting systems shall be permitted to be conducted in accordance with 7.9.2.4.	New added section
7.10.1.2.2* Horizontal components of the egress path within an exit enclosure shall be marked by	See new understood section

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approved exit or directional exit signs where the continuation of the egress path is not obvious. 7.10.1.3 Exit Door Tactile Signage. Tactile signage shall be provided to meet all of the following criteria, unless otherwise provided in 7.10.1.4: 1. Tactile signage shall be located at each exit door requiring an exit sign. 2. Tactile signage shall read as follows: EXIT. 3. Tactile signage shall comply with ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*.	
7.10.3.2* Where approved by the authority having jurisdiction, pictograms in compliance with NFPA 170, ~~*Standard for Fire Safety and Emergency Symbols*~~, shall be permitted.	See new understood section
7.10.8.2 Characters. Special signs, where required by other provisions of this *Code*, shall comply with the visual character requirements of ICC/ANSI A117.1, ~~*American National Standard for*~~ *Accessible and Usable Buildings and Facilities*.	See new understood section
7.11.6 Doors serving high-hazard content areas shall swing in the direction of egress travel.	New added section
7.12* Special Provisions for Hazardous Materials.	New added section
7.12.1 Hazardous materials that are used or stored, and that are also classified as high-hazard contents in accordance with 6.2.2, shall comply with Section 7.11.	New added section
7.12.2 Where required by the provisions of Chapter 11 through 43, occupancies with hazardous	New added section

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materials shall comply with both of the following: 1. Means of egress requirements of this *Code* 2. Applicable means of egress requirements of NFPA 30, NFPA 45, NFPA 55, NFPA 58, NFPA 400, and NFPA 495 that are stricter than the means of egress requirements of this *Code*	
7.13.1 Mechanical equipment rooms, boiler rooms, furnace rooms, and similar spaces shall be arranged to limit common path of travel to a distance not exceeding 50 ft (15 m), unless otherwise permitted by the following: 1. A common path of travel not exceeding 100 ft (30 m) shall be permitted in ~~the~~ any of the following locations:	See new understood text
7.14.2.3 The absence of sprinklers in the normally unoccupied building service equipment support area, as permitted by an exemption of NFPA 13~~, *Standard for the Installation of Sprinkler Systems*~~, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.14.2.2.	See new understood section
7.14.3.3 The absence of sprinklers in the normally unoccupied building service equipment support area, as permitted by an exemption of NFPA 13~~, *Standard for the Installation of Sprinkler Systems*~~, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.14.3.2.	See new understood section
7.14.5.3 The absence of sprinklers in the normally unoccupied building service equipment support area, as permitted by an exemption of NFPA 13, ~~*Standard for the Installation of Sprinkler*~~	See new understood section

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~~*Systems*~~, shall not cause a building to be classified as nonsprinklered for purposes of applying the provisions of 7.14.5.2.	
7.15.3.3.1 Conditions necessary for the continued safe operation of the occupant evacuation elevators and the associated elevator lobbies and elevator machine rooms shall be continuously monitored and displayed at the building fire command center by a standard emergency service interface system meeting the requirements of *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, and NEMA SB 30, *Fire Service Annunciator and Interface*.	See new understood section
7.15.4.2* The fire alarm system shall include an emergency voice/alarm communication system in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*,~~ with the ability to provide voice directions on a selective basis to any building floor.	See new understood section
7.15.4.4.1 Design and Installation. The two-way communication system shall include audible and visible signals and shall be designed and installed in accordance with the requirements of ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities.*	See new understood section
7.15.4.4.2.2 Signage for instructions shall comply with the requirements of ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*, for visual characters.	See new understood section
7.15.9.7 Occupant evacuation shaft system elevator lobby doors, other than doors to the hoistway,	See new understood section

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exit stair enclosure, control room, or control space, shall have all of the following features: 1. The doors shall have a fire protection rating of not less than ¾ hour. 2. The doors shall be smoke leakage–rated assemblies in accordance with NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives*~~. 3. The doors shall have an automatic positioning bottom seal to resist the passage of water at floor level from outside the shaft system.	
Chapter 8 Features of Fire Protection 8.2.1.2* NFPA 220~~, *Standard on Types of Building Construction,*~~ shall be used to determine the requirements for the construction classification. 8.2.1.3 Where the building or facility includes additions or connected structures of different construction types, the rating and classification of the structure shall be based on one of the following: 1. Separate buildings, if a 2-hour or greater vertically aligned fire barrier wall in accordance with NFPA 221, ~~*Standard for High Challenge Fire Walls, Fire Walls, and Fire Barrier Walls*~~ exists between the portions of the building 8.2.2.4 Where door assemblies are required elsewhere in this *Code* to be smoke leakage–rated in accordance with 8.2.2.4, door assemblies shall comply with all of the following: 1. They shall be tested in accordance with ANSI/UL 1784, *Standard for Air Leakage Tests for Door Assemblies.*	See new understood section See new understood section See new understood section

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2. The maximum air leakage rate of the door assembly shall be 3.0 $ft^3/min/ft^2$ (0.9 $m^3/min/m^2$) of door opening at 0.10 in. water column (25 N/m^2) for both the ambient and elevated temperature tests. 3. Door assemblies shall be installed and maintained in accordance with NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives.*~~	
8.2.2.5* Wall Marking and Identification. For other than existing assemblies, where there is an accessible concealed floor, floor-ceiling, or attic space, fire barriers, smoke barriers, and smoke partitions shall be permanently identified with signs or stenciling in the concealed space and shall comply with all of the following: 1. Be located in accessible concealed floor, floor-ceiling, or attic spaces 2. Be located within 15 ft (4572 mm) of the end of each wall and at intervals not exceeding 30 ft (9144 mm) measured horizontally along the wall or partition 3. Include lettering not less than 3 in. (76 mm) in height with a minimum 3⁄8 in. (9.5 mm) stroke in a contrasting color 4. Identify the wall type and its fire-resistive rating, as applicable	New added section
8.2.4.2* Where calculations are used to establish the fire resistance rating of structural elements or assemblies, they shall be permitted to be performed in accordance with ~~ASCE/SFPE 29~~ ASCE/SEI/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*.	See new understood section
8.3.1.3 Walls used as fire barriers shall comply with Chapter 7 of NFPA 221, ~~*Standard for High Challenge Fire Walls, Fire Walls, and Fire*~~	See new understood section

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~~*Barrier Walls*~~. The NFPA 221 limitation on percentage width of openings shall not apply.	
8.3.1.4 Smoke Barrier Used as a Fire Barrier. A smoke barrier shall be permitted to be used as a fire barrier, provided that it meets the requirements of Section 8.3.	New added section
8.3.2.3 Interior walls and partitions of nonsymmetrical construction shall be evaluated from both directions and assigned a fire resistance rating based on the shorter duration obtained in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*. When the wall is tested with the least fire-resistive side exposed to the furnace, the wall shall not be required to be subjected to tests from the opposite side.	See new understood section
8.3.3 ~~Fire Doors and Windows.~~ Opening Protectives.	
8.3.3.1 General. Every opening in a fire barrier shall be protected to limit the spread of fire and restrict the movement of smoke from one side of the fire barrier to the other.	New added section
~~8.3.3.1.1~~ ~~Fire resistance-rated glazing tested in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*, shall be permitted in fire door assemblies and fire window assemblies where tested and installed in accordance with their listings.~~	Section deleted
~~8.3.3.1.2~~ ~~New fire resistance-rated glazing shall be marked in accordance with Table 8.3.3.12 and Table 8.3.4.2. Such marking shall be permanently affixed.~~	Section deleted

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Table 8.3.3.2.2 Minimum Fire Ratings for Opening Protectives in Fire Resistance–Rated Assemblies and Fire-Rated Glazing Markings	Newly added Table
For SI units, 1 in.^{2} = 0.00064516 m^2. NP: Not permitted. [a]Fire resistance–rated glazing tested to ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*, shall be permitted in the maximum size tested *(see 8.3.3.7)*.	New added section
[b]Fire-rated glazing in exterior windows shall be marked in accordance with Table 8.3.3.12.	New added section
[c]See ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, for additional information.	New added section
[d]See ASME A17.3, *Safety Code for Existing Elevators and Escalators*, for additional information.	New added section
[e]Maximum area of individual exposed lights shall be 1296 in.^{2} (0.84 m^2), with no dimension exceeding 54 in. (1.37 m) unless otherwise tested. [**80:** Table 4.4.5 Note b and **80:**4.4.5.1].	New added section
[f]Fire doors are not required to have a hose stream test per ANSI/UL 10B, *Standard for Fire Tests of Door Assemblies*, or ANSI/UL 10C, *Standard for Positive Pressure Fire Tests of Door Assemblies*.	New added section
[g]For residential board and care, see 32.2.3.1 and 33.2.3.1.	New added section
8.3.3.3* Fire Doors. ~~Fire protection ratings for products required to comply with 8.3.3 shall be as determined and reported by a nationally recognized testing agency in accordance with NFPA 252, *Standard Methods of Fire Tests of Door*~~	Section deleted

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~~*Assemblies*; ANSI/UL 10B, *Standard for Fire Tests of Door Assemblies*; ANSI/UL 10C, *Standard for Positive Pressure Fire Tests of Door Assemblies*; NFPA 257, *Standard on Fire Test for Window and Glass Block Assemblies*; or ANSI/UL 9, *Standard for Fire Tests of Window Assemblies*.~~	
8.3.3.3.1 ~~Fire protection–rated glazing shall be evaluated under positive pressure in accordance with NFPA 257, *Standard on Fire Test for Window and Glass Block Assemblies*~~ Fire door assemblies shall be installed, inspected, tested, and maintained in accordance with NFPA 80.	See new understood text
8.3.3.3.2 ~~All products required to comply with 8.3.3.2 shall bear an approved label.~~ All fire door assemblies shall bear an approved label.	See new understood text
8.3.3.3.3 Labels on fire door assemblies shall be maintained in a legible condition.	New section
8.3.3.3.5 The maximum size of the fire doors shall not exceed that specified in NFPA 80, except as modified by Chapter 7.	New section
8.3.3.3.6 Unless otherwise specified, fire doors shall be self-closing or automatic-closing ~~in accordance with 7.2.1.8.~~	See new understood text
~~8.3.3.3.5 Labels.~~	Section deleted
8.3.3.4.1 Floor fire door assemblies used to protect openings in fire resistance–rated floors shall be tested in accordance with NFPA 288, ~~*Standard Methods of Fire Tests of Horizontal Fire Door Assemblies Installed in Horizontal Fire Resistance–Rated Assemblies*,~~ and shall achieve a fire resistance rating not less than the assembly being penetrated.	See new understood text

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8.3.3.5 Fire Windows.	New Section
8.3.3.5.1 Fire window assemblies shall be installed, inspected, tested, and maintained in accordance with NFPA 80.	New Section
8.3.3.5.2 All fire window assemblies shall bear an approved label.	New Section
8.3.3.5.3* ~~Fire protection-rated glazing~~ Fire window assemblies shall be permitted in fire barriers having a required fire resistance rating of 1 hour or less and shall be of an approved type with the appropriate fire protection rating for the location in which ~~the barriers~~ they are installed.	See new understood text
8.3.3.6.2 Fire-rated glazing assemblies shall be permitted as follows: 1. Those marked as complying with hose stream requirements (H) shall be permitted in applications that do not require compliance with hose stream requirements. 2. Those marked as complying with temperature rise requirements (T) shall be permitted in applications that do not require compliance with temperature rise requirements. 3. Those marked with ratings that exceed the ratings required by this *Code* (XXX) shall be permitted.	See new understood text
8.3.3.6.3 ~~[a]ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials* and ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials.*~~	Section deleted

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8.3.3.6.4 New fire resistance–rated glazing ~~shall bear the identifier "W-XXX" where "XXX" is the fire resistance rating in minutes. Such identification~~ be marked in accordance with Table 8.3.3.6.3 and Table 8.3.3.2.2, and such marking shall be permanently affixed.	See new understood text
8.3.3.6.7 Fire protection–rated glazing in fire door assemblies, other than in existing fire-rated door assemblies, shall be of a design that has been tested to meet the conditions of acceptance of NFPA 252, ~~*Standard Methods of Fire Tests of Door Assemblies*~~; ANSI/UL 10B, *Standard for Fire Tests of Door Assemblies*;, or ANSI/UL 10C, *Standard for Positive Pressure Fire Tests of Door Assemblies*	See new understood text
8.3.3.6.8 Fire resistance–rated glazing ~~complying with 8.3.2.1.1~~ tested in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*, shall be permitted in fire doors and fire window assemblies in accordance with their listings.	See new understood text
~~8.3.3.10~~ ~~Fire-rated door assemblies shall be inspected and tested in accordance with NFPA 80.~~	Section deleted
8.3.3.7 Sidelights and Transoms. Glazing used in sidelights and transoms adjacent to 20-minute doors in 1-hour corridor fire barriers shall be tested in accordance with 8.3.3.2, including hose stream, and shall attain a minimum 45-minute fire protection rating.	New Section
8.3.4.1.3 Penetrations shall be installed in accordance with a tested system, and installed and maintained in accordance with the manufacturer's instructions.	New Section

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8.3.4.2.2 Testing. The firestop system or device shall be tested in accordance with ASTM E814, *Standard Test Method for Fire Tests of Through Penetration Fire Stops*, or ANSI/UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*, at a minimum positive pressure differential of 0.01 in. water column (2.5 ~~N/m²~~ Pa) between the exposed and the unexposed surface of the test assembly.	See new understood text
8.3.4.2.4.1 Penetrations in fire resistance–rated horizontal assemblies shall ~~be required to~~ have a T rating of ~~at least~~ not less than 1 hour, ~~but~~ and not less than the fire resistance rating of the horizontal assembly.	See new understood text
8.3.4.2.4.2 ~~, and~~ A T rating shall not be required for either of the following: 1. Floor penetrations contained within the cavity of a wall assembly 2. Penetrations through floors or floor assemblies where the penetration is not in direct contact with combustible material	See new understood text
8.3.4.2.5 Alternative Firestop Requirements. 8.3.4.2.5.1 The requirements of 8.3.4.2 shall not apply where otherwise permitted by any one of the following: 1. Where penetrations are tested and installed as part of an assembly tested and rated in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*	New Section

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2. Where penetrations through floors are enclosed in a shaft enclosure designed as a fire barrier 3. Where concrete, grout, or mortar has been used to fill the annular spaces around cast-iron, copper, or steel piping, conduit, or tubing that penetrates one or more concrete or masonry fire resistance–rated assemblies, and ~~both~~ all of the following ~~criteria are also met~~ applies: a. The nominal diameter of each penetrating item ~~shall~~ does not exceed 6 in. (150 mm). b. The opening size ~~shall~~ does not exceed 1 ft^2 (0.09 m^2). c. The thickness of the concrete, grout, or mortar ~~shall be~~ is the full thickness of the assembly. 4. Where ~~fire stopping materials are used with the following penetrating items, the~~ penetration is limited to one floor, and the fire stopping material is capable of preventing the passage of flame and hot gases sufficient to ignite cotton waste when subjected to the time–temperature fire conditions of ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Materials*, NFPA 251 under a minimum positive pressure differential of 0.01 in. water column (2.5 Pa) at the location of the penetration for the time period equivalent to the required fire resistance rating of the assembly penetrated, and the fire stopping materials are used with the following penetrating items: a. Steel, ferrous, or copper cables b. Cable or wire with steel jackets c. Cast-iron, steel, or copper pipes d. Steel conduit or tubing	See new understood text
8.3.4.5 ~~Transmission of Vibrations~~ Vibration Isolation.	See new understood text

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Where designs take transmission of vibrations into consideration, any vibration isolation shall meet one of the following conditions: 1. It shall be provided on either side of the wall or floor. 2. It shall be designed for the specific purpose. 8.3.4.7.2 The firestop system or device shall be tested in accordance with ASTM E814, *Standard Test Method for Fire Tests of Through Penetration Fire Stops*, or ANSI/UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*, at a minimum positive pressure differential of 0.01 in. water column (2.5 N/m^2) between the exposed and the unexposed surface of the test assembly, unless one of the following ~~conditions~~ applies: 1. Membrane penetrations of ceilings that are not an integral part of a fire resistance–rated floor/ceiling or roof/ceiling assembly ~~shall be permitted~~. 2. Membrane penetrations of steel, ferrous, or copper conduits, and pipes, tubes, or combustion vents or exhaust vents, ~~shall be permitted~~ where the annular space is protected with an approved material and the aggregate area of the openings does not exceed 0.7 ft^2 (0.06 m^2) in any 100 ft^2 (9.3 m^2) of ceiling area. 3. Electrical outlet boxes and fittings ~~shall be permitted~~, provided that such devices are listed for use in fire resistance–rated assemblies and are installed in accordance with their listing. 4. The annular space created by the membrane penetration of a fire sprinkler shall be permitted, provided that the space is covered by a metal escutcheon plate.	See new understood text

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8.3.4.7.3 Where walls or partitions are required to have a minimum 1-hour fire resistance rating, recessed fixtures shall be installed in the wall or partition in such a manner that the required fire resistance is not reduced, unless one of the following criteria is met: 1. Any steel electrical box not exceeding 0.1 ft^2 (0.01 m^2) in area shall be permitted where the aggregate area of the openings provided for the boxes does not exceed 0.7 ft^2 (0.06 m^2) in any 100 ft^2 (9.3 m^2) of wall area, and, where outlet boxes are installed on opposite sides of the wall, the boxes shall be separated by one of the following means:	See new understood text
8.3.4.8 ~~Openings for Air-Handling Ductwork.~~ Ducts and Air-Transfer Openings. Openings ~~in fire barriers~~ for air-handling ductwork or air movement shall be protected in accordance with 9.2.1.	See new understood text
8.3.5.3 Joints made between a fire barrier and a non-fire-resistance-rated floor or roof sheathing, slab, or deck above shall be protected by an approved continuity head of wall joint system installed as tested in accordance with ASTM E2837, *Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies*, and the system shall have an F rating and T rating of not less than the required fire resistance rating of the fire barrier.	New added Section
8.3.5.4.1 Voids created between the fire resistance–rated floor assembly and the exterior curtain wall shall be protected with a perimeter joint system that is designed and tested in accordance with ASTM E2307, *Standard Test Method for Determining Fire Resistance of Perimeter Fire*	See new understood text

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Barriers Using Intermediate-Scale, Multi-story Apparatus.	
~~8.3.6 Penetrations.~~ ~~The provisions of 8.3.4 shall govern the materials and methods of construction used to protect through-penetrations and membrane penetrations in fire walls, fire barrier walls, and fire resistance-rated horizontal assemblies. The provisions of 8.3.4 shall not apply to approved existing materials and methods of construction used to protect existing through-penetrations and existing membrane penetrations in fire walls, fire barrier walls, or fire resistance-rated horizontal assemblies, unless otherwise required by Chapters 11 through 43.~~	Section deleted
~~8.3.6.1* Firestop Systems and Devices Required.~~ ~~Penetrations for cables, cable trays, conduits, pipes, tubes, combustion vents and exhaust vents, wires, and similar items to accommodate electrical, mechanical, plumbing, and communications systems that pass through a wall, floor, or floor/ceiling assembly constructed as a fire barrier shall be protected by a firestop system or device. The firestop system or device shall be tested in accordance with ASTM E814, *Standard Test Method for Fire Tests of Through Penetration Fire Stops*, or ANSI/UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*, at a minimum positive pressure differential of 0.01 in. water column (2.5 N/m²) between the exposed and the unexposed surface of the test assembly.~~	Section deleted
~~8.3.6.1.1~~ ~~The requirements of 8.3.4.2 shall not apply where otherwise permitted by any one of the following:~~ ~~Where penetrations are tested and installed as part of an assembly tested and rated in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263,~~	Section deleted

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~~*Standard for Fire Tests of Building Construction and Materials*~~ ~~Where penetrations through floors are enclosed in a shaft enclosure designed as a fire barrier~~ ~~Where concrete, grout, or mortar has been used to fill the annular spaces around cast-iron, copper, or steel piping that penetrates one or more concrete or masonry fire resistance–rated assemblies and both of the following criteria are also met:~~ ~~The nominal diameter of each penetrating item shall not exceed 6 in. (150 mm), and the opening size shall not exceed 1 ft^2 (0.09 m^2).~~ ~~The thickness of the concrete, grout, or mortar shall be the full thickness of the assembly.~~ ~~Where firestopping materials are used with the following penetrating items, the penetration is limited to one floor, and the firestopping material is capable of preventing the passage of flame and hot gases sufficient to ignite cotton waste when subjected to the time–temperature fire conditions of ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Materials*, NFPA 251 under a minimum positive pressure differential of 0.01 in. water column (2.5 Pa) at the location of the penetration for the time period equivalent to the required fire resistance rating of the assembly penetrated:~~ ~~Steel, ferrous, or copper cables~~ ~~Cable or wire with steel jackets~~ ~~Cast-iron, steel, or copper pipes~~	

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~~Steel conduit or tubing~~	
~~8.3.6.1.2~~ ~~The maximum nominal diameter of the penetrating item, as indicated in 8.3.4.2.5.1(4)(a) through (d), shall not be greater than 4 in. (100 mm) and shall not exceed an aggregate 100 in.^{2} (64,520 mm^2) opening in any 100 ft^2 (9.3 m^2) of floor or wall area.~~	Section deleted
~~8.3.6.1.3~~ ~~Firestop systems and devices shall have a minimum 1-hour F rating, but not less than the required fire resistance rating of the fire barrier penetrated.~~	Section deleted
~~8.3.6.1.4 T Ratings.~~ ~~Penetrations in fire resistance-rated horizontal assemblies shall be required to have a T rating of at least 1 hour, but not less than the fire resistance rating of the horizontal assembly, and shall not be required for either of the following:~~ ~~Floor penetrations contained within the cavity of a wall assembly.~~ ~~Penetrations through floors or floor assemblies where the penetration is not in direct contact with combustible material.~~	Section deleted
~~8.3.6.2 Sleeves.~~ ~~Where the penetrating item uses a sleeve to penetrate the wall or floor, the sleeve shall be securely set in the wall or floor, and the space between the item and the sleeve shall be filled with a material that complies with 8.3.4.2~~	Section deleted
~~8.3.6.3 Insulation and Coverings.~~ ~~Insulation and coverings for penetrating items shall not pass through the wall or floor unless the insulation or covering has been tested as part of the firestop system or device.~~	Section deleted

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~~8.3.6.4 Transmission of Vibrations.~~ ~~Where designs take transmission of vibrations into consideration, any vibration isolation shall meet one of the following conditions:~~ ~~It shall be provided on either side of the wall or floor.~~ ~~It shall be designed for the specific purpose.~~	Section deleted
~~8.3.6.5 Transitions.~~	Section deleted
~~8.3.6.5.1~~ ~~Where piping penetrates a fire resistance-rated wall or floor assembly, combustible piping shall not connect to noncombustible piping within 36 in. (915 mm) of the firestop system or device without demonstration that the transition will not reduce the fire resistance rating, except in the case of previously approved installations.~~	Section deleted
~~8.3.6.5.2~~ ~~Unshielded couplings shall not be used to connect noncombustible piping to combustible piping unless it can be demonstrated that the transition complies with the fire-resistive requirements of 8.3.4.2.~~	Section deleted
~~8.3.6.6 Membrane Penetrations.~~	Section deleted
~~8.3.6.6.1~~ ~~Membrane penetrations for cables, cable trays, conduits, pipes, tubes, combustion vents and exhaust vents, wires, and similar items to accommodate electrical, mechanical, plumbing, and communications systems that pass through a membrane of a wall, floor, or floor/ceiling assembly constructed as a fire barrier shall be protected by a firestop system or device and shall comply with 8.3.4.2 through 8.3.4.6.2.~~	Section deleted
~~8.3.6.6.2~~ ~~The firestop system or device shall be tested in accordance with ASTM E814, *Standard Test Method for Fire Tests of Through Penetration*~~	Section deleted

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~~*Fire Stops*, or ANSI/UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*, at a minimum positive pressure differential of 0.01 in. water column (2.5 N/m^2) between the exposed and the unexposed surface of the test assembly, unless one of the following applies:~~ ~~Membrane penetrations of ceilings that are not an integral part of a fire resistance-rated floor/ceiling or roof/ceiling assembly shall be permitted.~~ ~~Membrane penetrations of steel, ferrous, or copper conduits, and pipes, tubes, or combustion vents or exhaust vents, shall be permitted where the annular space is protected with an approved material and the aggregate area of the openings does not exceed 0.7 ft^2 (0.06 m^2) in any 100 ft^2 (9.3 m^2) of ceiling area.~~ ~~Electrical outlet boxes and fittings shall be permitted, provided that such devices are listed for use in fire resistance-rated assemblies and are installed in accordance with their listing.~~ ~~The annular space created by the membrane penetration of a fire sprinkler shall be permitted, provided that the space is covered by a metal escutcheon plate.~~	
~~8.3.6.6.3~~ ~~Where walls or partitions are required to have a minimum 1-hour fire resistance rating, recessed fixtures shall be installed in the wall or partition in such a manner that the required fire resistance is not reduced, unless one of the following is met:~~ ~~Any steel electrical box not exceeding 0.1 ft^2 (0.01 m^2) shall be permitted where the aggregate area of the openings provided for the boxes does not exceed 0.7 ft^2 (0.06 m^2) in any 100~~	Section deleted

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~~ft^2 (9.3 m^2) of wall area, and, where outlet boxes are installed on opposite sides of the wall, the boxes shall be separated by one of the following:~~ ~~Horizontal distance of not less than 24 in. (610 mm)~~ ~~Horizontal distance of not less than the depth of the wall cavity, where the wall cavity is filled with cellulose loose-fill, rock wool, or slag wool insulation~~ ~~*Solid fireblocking~~ ~~Other listed materials and methods~~ ~~Membrane penetrations for any listed electrical outlet box made of any material shall be permitted, provided that such boxes have been tested for use in fire resistance-rated assemblies and are installed in accordance with the instructions included in the listing.~~ ~~The annular space created by the membrane penetration of a fire sprinkler shall be permitted, provided that the space is covered by a metal escutcheon plate.~~ ~~Membrane penetrations by electrical boxes of any size or type, which have been listed as part of a wall opening protective material system for use in fire resistance-rated assemblies and are installed in accordance with the instructions included in the listing, shall be permitted.~~	
~~8.3.6.7 Openings for Air-Handling Ductwork. Openings in fire barriers for air-handling ductwork or air-movement shall be protected in accordance with 9.2.1~~	Section deleted

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8.4.3.4* Door clearances shall be in accordance with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives*~~	See new understood text
~~8.4.3.6~~ ~~Shutters that protect openings shall be automatic-closing upon detection of smoke by smoke detectors installed in accordance with *NFPA 72*.~~	Section deleted
8.4.6.4 Smoke Detectors. Dampers in air-transfer openings shall close upon detection of smoke by approved smoke detectors installed in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~	See new understood text
8.5.5.4.1 Air-conditioning, heating, ventilating ductwork, and related equipment, including smoke dampers and combination fire and smoke dampers, shall be installed in accordance with NFPA 90A, ~~*Standard for the Installation of Air-Conditioning and Ventilating Systems*~~, NFPA 90B~~, *Standard for the Installation of Warm Air Heating and Air-Conditioning Systems*~~, NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives*,or~~ NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives*,~~ as applicable.	See new understood text
8.5.5.4.2 Smoke dampers and combination fire and smoke dampers required by this *Code* shall be inspected, tested, and maintained in accordance with NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives*~~.	See new understood text
8.5.5.7.1 Required smoke dampers in ducts penetrating smoke barriers shall close upon detection of smoke by approved smoke detectors in accordance with *NFPA 72*~~, *National Fire Alarm and Signaling Code*~~, unless one of the following conditions exists:	See new understood text

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1. The ducts penetrate smoke barriers above the smoke barrier doors, and the door release detector actuates the damper. 2. Approved smoke detector installations are located within the ducts in existing installations.	
8.5.5.7.3 Required smoke dampers in air-transfer openings shall close upon detection of smoke by approved smoke detectors in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text
8.5.6.3 Where a smoke barrier is also constructed as a fire barrier, the penetrations shall be protected in accordance with the requirements of 8.3.4 to limit the spread of fire for a time period equal to the fire resistance rating of the assembly and the requirements of8.5.6 to restrict the transfer of smoke, unless the requirements of 8.5.6.4 are met.	See new understood text
8.5.6.5 In new construction, penetrations shall be protected by an approved through-penetration firestop system installed and tested in accordance with the requirements of ANSI/UL 1479, *Standard for Fire Tests of Through-Penetration Firestops*, for air leakage. The *L* rating of the system measured at 0.30 in. (7.47 Pa) of water, in both the ambient temperature and elevated temperature tests, shall comply with one of the following: 1. 5 ft^3/m per ft^2 (0.025 m^3/s per m^2) of penetration opening for each through-penetration firestop system 2. A total cumulative leakage of 50 ft^3/m (0.024 m^3/s) for any 100 ft^2 (9.3 m^2) of wall area or floor area	New Section

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8.5.7.2 Joints made within, between, or at the perimeter of smoke barriers shall be protected with a joint system that is ~~capable of limiting the transfer of smoke~~ tested in accordance with the requirements of ANSI/UL 2079, *Standard for Tests for Fire Resistance of Building Joint Systems*, for air leakage. The L rating of the joint system shall not exceed 5 ft^3/m per ft (0.00775 m^3/s per m) of joint at 0.30 in. (7.47 Pa) of water for both the ambient temperature and elevated temperature tests.	See new understood text
8.5.7.3 Joints made within or between smoke barriers shall be protected with a smoke-tight joint system that is capable of limiting the transfer of smoke.	New Section
8.5.7.3 Smoke barriers that are also constructed as fire barriers shall be protected with a joint system that is designed and tested to resist the spread of fire for a time period equal to the required fire resistance rating of the assembly and restrict the transfer of smoke in accordance with 8.5.7.2.	See new understood text
8.6.9.2 Where permitted by Chapters 11 through 43, unenclosed vertical openings created by convenience stairways shall comply with all of the following: 1. The convenience stair openings shall not serve as required means of egress. 2. The building shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7. 3. *The convenience stair openings shall be protected in accordance with the method detailed for the protection of vertical openings in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~.	See new understood text

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4. In new construction, the area of the floor opening shall not exceed twice the horizontal projected area of the stairway. 5. For new construction, such openings shall not connect more than four contiguous stories, unless otherwise permitted by Chapters 11 through 43. 8.6.9.7 Any escalators and moving walks not constituting an exit shall have their floor openings enclosed or protected as required for other vertical openings, unless otherwise permitted by one of the following: 1. The requirement of 8.6.9.7 shall not apply to escalators in large open areas, such as atriums and enclosed shopping malls. 2. *In existing buildings protected throughout by an approved automatic sprinkler system in accordance with Section 9.7, escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, or in accordance with a method approved by the authority having jurisdiction. 3. In new buildings protected throughout by an approved automatic sprinkler system in accordance with Section 9.7, escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, or in accordance with a method approved by the authority having jurisdiction, and the opening shall not connect more than four contiguous stories unless otherwise permitted by Chapters 11 through 43. 4. In buildings protected throughout by an approved automatic sprinkler system in accordance with Section 9.7, escalator	See new understood text

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and moving walk openings shall be permitted to be protected by rolling steel shutters appropriate for the fire resistance rating of the vertical opening and complying with all of the following: a. The shutters shall close automatically and independently of each other upon smoke detection and sprinkler operation. b. A manual means of operating and testing the operation of the shutters shall be provided. c. The shutters shall be operated not less than once a week to ensure that they remain in proper operating condition. d. The shutters shall operate at a speed not to exceed 30 ft/min (0.15 m/s) and shall be equipped with a sensitive leading edge. e. The leading edge shall arrest the progress of a moving shutter and cause it to retract a distance of approximately 6 in. (150 mm) upon the application of a force not exceeding 20 lbf (90 N) applied to the surface of the leading edge. f. The shutter, following the retraction specified in 8.6.9.7(4)(e), shall continue to close. g. The operating mechanism for the rolling shutter shall be provided with standby power complying with the provisions of *NFPA 70*, ~~*National Electrical Code*~~.	
8.6.10.2.1 The aggregate area of mezzanines located within a room, other than ~~those located in special-purpose industrial occupancies~~ normally unoccupied equipment platforms, shall not exceed one-third the open area of the room in which the mezzanines are located. Enclosed	See new understood text

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space shall not be included in a determination of the size of the room in which the mezzanine is located.	
8.6.11.1 Any concealed combustible space in which exposed building materials having a flame spread index greater than ~~Class A are exposed~~ 25, when tested in accordance with 10.2.3, shall be draft stopped as follows: 1. Every exterior and interior wall and partition shall be firestopped at each floor level, at the top-story ceiling level, and at the level of support for roofs. 2. Every unoccupied attic space shall be subdivided by draftstops into areas not to exceed 3000 ft^2 (280 m^2). 3. Any concealed space between the ceiling and the floor or roof above shall be draftstopped for the full depth of the space along the line of support for the floor or roof structural members and, if necessary, at other locations to form areas not to exceed 1000 ft^2 (93 m^2) for any space between the ceiling and floor, and 3000 ft^2 (280 m^2) for any space between the ceiling and roof.	See new understood text
8.6.11.3* Draftstopping materials shall be not less than 1⁄2 in. (13 mm) ~~thick~~ type X gypsum board, ~~15⁄32 in. (12 mm) thickwood structural panel~~, or other approved materials that are adequately supported	See new understood text
8.7.3 ~~Flammable Liquids and Gases~~ Hazardous Materials.	See new understood text
8.7.3.1 ~~The storage and handling of flammable liquids or gases shall be in accordance with the following applicable standards:~~	Section deleted

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~~NFPA 30, *Flammable and Combustible Liquids Code*~~ ~~NFPA 54, *National Fuel Gas Code*~~ ~~NFPA 58, *Liquefied Petroleum Gas Code*~~	
Where required by the provisions of Chapters 11 through 43, occupancies with storage and handling of hazardous materials shall comply with the following codes unless otherwise modified by other provisions of this *Code*: NFPA 30, NFPA 54, NFPA 55, NFPA 58, NFPA 400, and NFPA 495.	New added part
8.7.3.2* No storage, use, or handling of ~~flammable liquids or gases~~ hazardous materials shall be permitted in any location where such storage, use, or handling would jeopardize egress from the structure, unless otherwise permitted by a document listed in 8.7.3.1.	See new understood text
8.7.3.3* Alcohol-Based Hand-Rub Dispensers. Where permitted by Chapters 11 through 43, alcohol-based hand-rub dispensers shall be permitted provided they meet all of the following criteria: 1. The maximum individual dispenser fluid capacity shall be as follows: a. 0.32 gal (1.2 L) for dispensers in corridors and areas open to corridors b. 0.53 gal (2.0 L) for dispensers in rooms or suites of rooms separated from corridors ~~2.~~ Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B, ~~*Code for the Manufacture and Storage of Aerosol Products.*~~.	See new understood text

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3. Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm). 4. Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg,) shall be in use outside of a storage cabinet in a single smoke compartment or fire compartment or story, whichever is less in area. One dispenser complying with 8.7.3.3(1) per room and located in that room shall not be included in the aggregated quantity. 5. Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment or fire compartment or story, whichever is less in area, shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code*.~~	See new understood text
8.7.4.1 Laboratories that use chemicals shall comply with NFPA 45~~, *Standard on Fire Protection for Laboratories Using Chemicals*~~, unless otherwise modified by other provisions of this *Code*.	See new understood text
8.7.4.2 Laboratories in health care occupancies and medical and dental offices shall comply with NFPA 99, ~~*Health Care Facilities Code*.~~	See new understood text
8.7.5* Hyperbaric Facilities. All occupancies containing hyperbaric facilities shall comply with Chapter 14 of NFPA 99, ~~*Health Care Facilities Code*~~, ~~Chapter 20~~, unless otherwise modified by other provisions of this *Code*.	See new understood text
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9.1.1 Gas. Equipment using gas and related gas piping shall be in accordance with NFPA 54, ~~*National Fuel Gas Code*,~~ or NFPA 58, ~~*Liquefied Petroleum Gas Code*,~~ unless such installations are approved existing installations, which shall be permitted to be continued in service.	See new understood text
9.1.2 Electrical Systems. Electrical wiring and equipment shall be in accordance with *NFPA 70*, ~~*National Electrical Code*~~, unless such installations are approved existing installations, which shall be permitted to be continued in service.	See new understood text
9.1.3.1 Emergency generators and standby power systems shall be installed, tested, and maintained in accordance with NFPA 110, ~~*Standard for Emergency and Standby Power Systems.*~~	See new understood text
9.1.4 Stored Electrical Energy Systems. Stored electrical energy systems shall be installed, tested, and maintained in accordance with NFPA 111~~, *Standard on Stored Electrical Energy Emergency and Standby Power Systems.*~~	See new understood text
9.2.1 Air-Conditioning, Heating, Ventilating Ductwork, and Related Equipment. Air-conditioning, heating, ventilating ductwork, and related equipment shall be in accordance with NFPA 90A, ~~*Standard for the Installation of Air-Conditioning and Ventilating Systems*~~, or NFPA 90B, ~~*Standard for the Installation of Warm Air Heating and Air-Conditioning Systems*,~~ as applicable, unless such installations are approved existing installations, which shall be permitted to be continued in service.	See new understood text
9.2.2 Ventilating or Heat-Producing Equipment. Ventilating or heat-producing equipment shall be in accordance with NFPA 91, ~~*Standard for Exhaust Systems for Air Conveying of Vapors*,~~	See new understood text

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~~*Gases, Mists, and Noncombustible Particulate Solids*~~; NFPA 211", ~~*Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*~~;, NFPA 31, ~~*Standard for the Installation of Oil-Burning Equipment*~~;, NFPA 54, ~~*National Fuel Gas Code*~~; or *NFPA 70*, ~~*National Electrical Code*~~, as applicable, unless such installations are approved existing installations, which shall be permitted to be continued in service.	
9.2.3 Commercial Cooking Operations. Where required by another section of this *Code*, commercial cooking operations shall be protected in accordance with NFPA 96, ~~*Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*~~, unless such installations are approved existing installations, which shall be permitted to be continued in service.	See new understood text
9.2.4 Ventilating Systems in Laboratories Using Chemicals. Ventilating systems in laboratories using chemicals shall be in accordance with NFPA 45, ~~*Standard on Fire Protection for Laboratories Using Chemicals.*~~	See new understood text
9.3.1 Installation. Where required by another section of this *Code*, smoke control systems shall be designed, installed, inspected, tested, and maintained in accordance with NFPA 92, ~~*Standard for Smoke Control Systems*~~; NFPA 204,~~*Standard for Smoke and Heat Venting*~~; or nationally recognized standards, engineering guides, or recommended practices, as approved by the authority having jurisdiction.	See new understood text
9.5.2 Installation and Maintenance. Waste chutes, laundry chutes, and incinerators shall be installed and maintained in accordance with NFPA 82, ~~*Standard on Incinerators and Waste and Linen Handling Systems and Equipment,*~~ unless such installations are	See new understood text

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approved existing installations, which shall be permitted to be continued in service.	
9.6.1.3 Fire alarm systems required by this *Code* shall be installed, tested, and maintained in accordance with the applicable requirements of *NFPA 70*, ~~*National Electrical Code*, and *NFPA 72*, *National Fire Alarm and Signaling Code*,~~ unless it is an approved existing installation, which shall be permitted to be continued in use.	See new understood text
9.6.1.4* To ensure operational integrity, the fire alarm system shall have an approved maintenance and testing program complying with the applicable requirements of *NFPA 70*, ~~*National Electrical Code*~~, and *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text
9.6.1.5 Fire alarm system impairment procedures shall comply with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*.~~.	See new understood text
9.6.2.10.1 Where required by another section of this *Code*, single-station and multiple-station smoke alarms shall be in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, unless otherwise provided in 9.6.2.10.3, 9.6.2.10.4, 9.6.2.10.5, or 9.6.2.10.6.	See new understood text
9.6.2.10.4* ~~Smoke~~ Unless otherwise provided in 9.6.2.10.5, smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance, unless listed for installation in close proximity to cooking appliances. Smoke alarms and smoke detectors installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance shall be equipped with an	See new understood text

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alarm-silencing means or use photoelectric detection. [***72:***29.8.3.4(4)] ~~Exception: Smoke alarms or smoke detectors that use photoelectric detection shall be permitted for installation at a radial distance greater than 6 ft (1.8 m) from any stationary or fixed cooking appliance when the following conditions are met:~~	
~~The kitchen or cooking area and adjacent spaces have no clear interior partitions or headers~~ ~~The 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of *NFPA 72*. [***72:***29.8.3.4(4)]~~	Deleted parts of the section
9.6.2.10.7 System smoke detectors in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*,~~ and arranged to function in the same manner as single-station or multiple-station smoke alarms shall be permitted in lieu of smoke alarms.	See new understood text
9.6.2.10.8 Smoke alarms, other than battery-operated smoke alarms as permitted by other sections of this *Code*, shall be powered in accordance with the requirements of *NFPA 72*, ~~*National Fire Alarm and Signaling Code*.~~	See new understood text
9.6.3.4 Where permitted by Chapters 11 through 43, a positive alarm sequence shall be permitted, provided that it is in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling*~~ *Code*.	See new understood text
9.6.3.5 Unless otherwise provided in 9.6.3.5.1 through 9.6.3.5.8, notification signals for occupants to evacuate shall be by audible and visible signals in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*,~~ and ICC/ANSI	See new understood text

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A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*~~,~~ or other means of notification acceptable to the authority having jurisdiction.	
9.6.3.5.7* Public mode visual notification appliances in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*,~~ shall not be required in designated areas as permitted by Chapters 11 through 43, provided that they are replaced with approved alternative visible means.	See new understood text
9.6.3.6.3 Where occupants are incapable of evacuating themselves because of age, physical or mental disabilities, or physical restraint, all of the following shall apply: 1. The private operating mode, as described in *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, shall be permitted to be used. 2. Only the attendants and other personnel required to evacuate occupants from a zone, area, floor, or building shall be required to be notified. 3. Notification of personnel as specified in 9.6.3.6.3(2) shall include means to readily identify the zone, area, floor, or building in need of evacuation.	See new understood text
9.6.3.7 Audible alarm notification appliances shall be of such character and so distributed as to ~~be effectively heard above the average ambient sound level that exists under normal conditions of occupancy~~ comply with *NFPA 72*.	See new understood text
9.6.3.9.1 Automatically transmitted or live voice evacuation or relocation instructions shall be in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text

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9.6.3.10.2 Emergency voice/alarm communication systems shall be permitted to be used for other purposes in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~.	See new understood text
9.6.4.2 Where emergency forces notification is required by another section of this *Code*, the fire alarm system shall be arranged to transmit the alarm automatically via any of the following means acceptable to the authority having jurisdiction and shall be in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code:*~~	See new understood text
9.6.5 ~~Fire Safety~~ Emergency Control Functions.	See new understood text
9.6.5.1 ~~Fire safety~~ Emergency control functions shall be installed in accordance with the requirements of *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text
9.6.7.5 A system trouble signal shall be annunciated by means of audible and visible indicators in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text
9.6.7.6 A system supervisory signal shall be annunciated by means of audible and visible indicators in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text
9.7.2.1.1 Where supervised automatic sprinkler systems are required by another section of this *Code*, supervisory attachments shall be installed and monitored for integrity in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code,*~~ and a distinctive supervisory signal shall be provided to indicate a condition that would	See new understood text

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impair the satisfactory operation of the sprinkler system.	
9.9* Portable Fire Extinguishers. Where required by another section of this *Code*, portable fire extinguishers shall be selected, installed, inspected, and maintained in accordance with NFPA 10, ~~*Standard for Portable Fire Extinguishers.*~~	See new understood text
9.10.1 Where required by another section of this *Code*, standpipe and hose systems shall be provided in accordance with NFPA 14, ~~*Standard for the Installation of Standpipe and Hose Systems.*~~	See new understood text
9.10.2 Where standpipe and hose systems are installed in combination with automatic sprinkler systems, installation shall be in accordance with the appropriate provisions established by NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, and NFPA 14, ~~*Standard for the Installation of Standpipe and Hose Systems.*~~	See new understood text
9.11 Fire Protection System Operating Features.	
9.11.1 Maintenance and Testing. All automatic sprinkler and standpipe systems required by this *Code* shall be inspected, tested, and maintained in accordance with NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
9.11.3.2 Testing and maintenance records required by NFPA 25~~, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*~~, shall be maintained at an approved, secured location.	See new understood text
<u>9.11.4* Integrated Systems.</u> <u>Where required by Chapters 11 through 43, and where fire protection systems are integrated with other building systems and equipment, the</u>	New Section

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integrated systems shall be tested in accordance with NFPA 4.	
9.12 Carbon Monoxide (CO) Detection and Warning Equipment. Where required by another section of this *Code*, carbon monoxide (CO) detection and warning equipment shall be provided in accordance with NFPA 720, ~~*Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment.*~~	See new understood text
9.14 Risk Analysis for Mass Notification Systems.	New Section
9.14.1 Where Required. Where required by Chapters 11 through 43, a risk analysis for mass notification systems shall be provided in accordance with the requirements of *NFPA 72* and the provisions of 9.14.2 through 9.14.4.	New Section
9.14.2 Considerations. The risk analysis required by 9.14.1 shall additionally address all of the following considerations: 1. Fire and non-fire emergencies 2. Specific nature and anticipated risks of each facility 3. Characteristics of associated buildings, areas, spaces, campuses, equipment, and operations	New Section
9.14.3 Emergency Communications System. An emergency communications system in accordance with *NFPA 72* shall be provided where need for such is identified by the risk analysis required by 9.14.1, commensurate with the likelihood, vulnerability, magnitude, and potential consequences of emergencies.	New Section
9.14.4 Emergency Action Plan. The completed emergency action plan in accordance with Section 4.8 shall be used for	New Section

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the design of the mass notification/emergency communications system.	
Chapter 10 Interior Finish, Contents, and Furnishings ~~10.2.3.3.4~~ ~~Products required to be tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, shall be grouped in the classes described in 10.2.3.3.4.1 through 10.2.3.3.4.3 in accordance with their flame spread index and smoke developed index, except as indicated in 10.2.3.3.1.~~	Section deleted
~~10.2.3.3.4.1 Class A Interior Wall and Ceiling Finish.~~ ~~Class A interior wall and ceiling finishes shall be those finishes with a flame spread index of 0–25 and a smoke developed index of 0–450 and shall include any material classified at 25 or less on the flame spread index test scale and 450 or less on the smoke developed index test scale.~~	Section deleted
~~10.2.3.3.4.2 Class B Interior Wall and Ceiling Finish.~~ ~~Class B interior wall and ceiling finishes shall be those finishes with a flame spread index of 26–75 and a smoke developed index of 0–450 and shall include any material classified at more than 25 but not more than 75 on the flame spread index test scale and 450 or less on the smoke developed index test scale.~~	Section deleted
~~10.2.3.3.4.3 Class C Interior Wall and Ceiling Finish.~~ ~~Class C interior wall and ceiling finishes shall be those finishes with a flame spread index of 76–200 and a smoke developed index of 0–450 and shall include any material classified at more than 75 but not more than 200 on the flame spread index test scale and 450 or less on the smoke developed index test scale.~~	Section deleted

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10.2.3.4 Materials complying with the requirements of 10.2.3.1 shall not be required to be tested in accordance with 10.2.3.3.	New Section
10.2.3.5 Materials described in 10.2.4 shall be tested ~~as indicated~~ as described in the corresponding sections.	See new understood text
~~10.2.3.6~~ ~~If a material having a total thickness of less than 1⁄28 in. (0.9 mm) is applied to a surface that is not noncombustible or not limited-combustible, the provisions of 10.2.1.1 shall apply.~~	Section deleted
~~10.2.3.7~~ ~~Approved existing installations of materials applied directly to the surface of walls and ceilings in a total thickness of less than 1⁄28 in. (0.9 mm) shall be permitted to remain in use, and the provisions of 10.2.2 through 10.2.3.10.2 shall not apply.~~	Section deleted
~~10.2.3.8~~ ~~Interior wall and ceiling finish tested in accordance with NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*, and meeting the conditions of 10.2.3.10.2 shall be permitted to be used where interior wall and ceiling finish is required to be Class A in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*.~~	Section deleted
~~10.2.3.9~~ ~~For fire-retardant coatings, see 10.2.6.~~	Section deleted
~~10.2.3.10~~ ~~Products tested in accordance with NFPA 265 shall comply with the criteria of 10.2.3.10.1.~~	Section deleted

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~~Products tested in accordance with NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*, shall comply with the criteria of 10.2.3.10.2.~~	
~~10.2.3.10.1*~~ ~~The interior finish shall comply with all of the following when tested using method B of the test protocol of NFPA 265, *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls*:~~ ~~During the 40 kW exposure, flames shall not spread to the ceiling.~~ ~~The flame shall not spread to the outer extremities of the samples on the 8 ft × 12 ft (2440 mm × 3660 mm) walls.~~ ~~Flashover, as described in NFPA 265, shall not occur.~~ ~~For new installations, the total smoke released throughout the test shall not exceed 1000 m²~~.	Section deleted
~~10.2.3.10.2~~ ~~The interior finish shall comply with all of the following when tested using the test protocol of NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*:~~ ~~During the 40 kW exposure, flames shall not spread to the ceiling.~~ ~~The flame shall not spread to the outer extremity of the sample on any wall or ceiling.~~ ~~Flashover, as described in NFPA 286, shall not occur.~~	Section deleted

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~~The peak heat release rate throughout the test shall not exceed 800 kW.~~ ~~For new installations, the total smoke released throughout the test shall not exceed 1000 m²~~.	
10.2.4* Interior Wall and Ceiling Finish Materials with Special Requirements. The materials indicated in 10.2.4.1 through 10.2.4.16shall be tested as indicated in the corresponding sections.	See new understood text
10.2.4.1 Thickness Exemption. The provisions of 10.2.3 shall not apply to materials having a total thickness of less than 1⁄28 in. (0.9 mm) that are applied directly to the surface of walls and ceilings where both of the following conditions are met: 1. The wall or ceiling surface is a noncombustible or limited combustible material. 2. The materials applied meet the requirements of Class A interior wall or ceiling finish when tested in accordance with 10.2.3, using fiber cement board as the substrate material.	Parts newly added to section
10.2.4.1.1 If a material having a total thickness of less than 1⁄28 in. (0.9 mm) is applied to a surface that is not noncombustible or not limited-combustible, the provisions of 10.2.3 shall apply.	New Section
10.2.4.1.2 Approved existing installations of materials applied directly to the surface of walls and ceilings in a total thickness of less than 1⁄28 in. (0.9 mm) shall be permitted to remain in use, and the provisions of 10.2.3 shall not apply.	New Section
10.2.4.2* Exposed Portions of Structural Members.	New Section

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In other than new interior exit stairways, new interior exit ramps, and new exit passageways, exposed portions of structural members complying with the requirements for Type IV (2HH) construction in accordance with NFPA 220or with the building code shall be exempt from testing and classification in accordance with 10.2.3.	
10.2.4.3.2 The requirements of 10.2.4.3 ~~through 10.2.4.3.2~~ shall apply both to exposed foamed plastics and to foamed plastics used in conjunction with a textile or vinyl facing or cover.	See new understood text
10.2.4.3.3.1 One of the following fire tests shall be used for assessing the combustibility of cellular or foamed plastic materials as interior finish: 1. NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*, with the acceptance criteria of 10.2.3.10.2 2. ANSI/UL 1715, *Standard for Fire Test of Interior Finish Material* (including smoke measurements, with total smoke release not to exceed 1000 m^2) 3. ANSI/UL 1040, *Standard for Fire Test of Insulated Wall Construction* 4. ANSI/FM Approval 4880, ~~*American National Standard for Evaluating Insulated Wall or Wall and Roof/Ceiling Assemblies, Plastic Interior Finish Materials, Plastic Exterior Building Panels, Wall/Ceiling Coating Systems, Interior or Exterior Finish Systems*~~ *Approval Standard for Class 1 Rating of Insulated Wall or Wall and Roof/Ceiling Panels, Interior Finish Materials or Coatings, and Exterior Wall Systems*	See new understood text
10.2.4.4* Textile Wall Coverings. Where used as interior wall finish materials, textile materials shall be tested in the manner	New Section

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intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of either, 10.2.3.1, 10.2.4.4.1, or 10.2.4.4.3.	
10.2.4.4.1* Products tested in accordance with NFPA 265 shall comply with the criteria of 10.2.4.4.2.	New Section
10.2.4.4.2* The interior finish shall comply with all of the following when tested using method B of the test protocol of NFPA 265: 1. During the 40 kW exposure, flames shall not spread to the ceiling. 2. The flame shall not spread to the outer extremities of the samples on the 8 ft × 12 ft (2440 mm × 3660 mm) walls. 3. Flashover, as described in NFPA 265, shall not occur. 4. For new installations, the total smoke released throughout the test shall not exceed 1000 m^2.	New Section
10.2.4.4.3 Textile materials meeting the requirements of Class A when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard Test Method for Surface Burning Characteristics of Building Materials*, using the specimen preparation and mounting method of ASTM E2404, *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics*, shall be permitted as follows: 1. On the walls of rooms or areas protected by an approved automatic sprinkler system. 2. On partitions that do not exceed three-quarters of the floor-to-ceiling height or	New Section

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do not exceed 8 ft (2440 mm) in height, whichever is less. 3. On the lower 48 in. (1220 mm) above the finished floor on ceiling-height walls and ceiling-height partitions. 4. Previously approved existing installations of textile material meeting the requirements of Class A when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials* or ANSI/UL 723, *Standard Test Method for Surface Burning Characteristics of Building Materials*, shall be permitted to be continued to be used.	
10.2.4.5* Expanded Vinyl Wall Coverings. Where used as interior wall finish materials, expanded vinyl wall coverings shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall comply with the requirements of either 10.2.3.1, 10.2.4.4.1, or 10.2.4.4.3.	New Section
10.2.4.6 Textile Ceiling Coverings. Where used as interior ceiling finish materials, textile materials shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall meet one of the following: 1. Comply with the requirements of 10.2.3.1 2. Meet the requirements of Class A when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials* or ANSI/UL 723, *Standard Test Method for Surface Burning Characteristics of Building Materials* using the specimen preparation and mounting method of ASTM E2404, *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl)*	New Section

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and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics, and used on the ceilings of rooms or areas protected by an approved automatic sprinkler system	
10.2.4.7 Expanded Vinyl Ceiling Coverings. Where used as interior ceiling finish materials, expanded vinyl materials shall be tested in the manner intended for use, using the product mounting system, including adhesive, and shall meet one of the following: 1. Comply with the requirements of 10.2.3.1 2. Meet the requirements of Class A when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials* or ANSI/UL 723, *Standard Test Method for Surface Burning Characteristics of Building Materials*, using the specimen preparation and mounting method of ASTM E2404, *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics*, and used on the ceilings of rooms or areas protected by an approved automatic sprinkler system	New Section
10.2.4.8 Lockers.	New Section
10.2.4.8.1 Combustible Lockers. Where lockers constructed of combustible materials other than wood are used, the lockers shall be considered interior finish and shall comply with 10.2.3, except as permitted by 10.2.4.8.2.	New Section

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10.2.4.8.2 Wood Lockers. Lockers constructed entirely of wood and of noncombustible materials shall be permitted to be used in any location where interior finish materials are required to meet a Class C classification in accordance with 10.2.3.	New Section
10.2.4.11.1 Reflective insulation materials shall be tested in the manner intended for use and shall comply with the requirements of 10.2.3 or 10.2.3.3.	See new understood text
10.2.4.12.1 Listed factory finished metal ceiling and wall panels meeting the requirements of Class A ~~when tested~~ in accordance with 10.2.3~~ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials (see 10.2.3.3.4),~~ shall be permitted to be finished with one additional application of paint.	See new understood text
10.2.4.13 Laminated Products Factory Produced with a Wood Substrate.	New Section
10.2.4.13.1 Laminated products factory produced with a wood substrate shall be tested in the manner intended for use and shall comply with the requirements of 10.2.3.1 or 10.2.3.3.	New Section
10.2.4.13.2 If the materials are tested in accordance with ASTM E84, *Standard Test method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, specimen preparation and mounting shall be in accordance with ASTM E2404, *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics*.	New Section

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10.2.4.14 Facings or Wood Veneers Intended to be Applied on Site over a Wood Substrate.	New Section
10.2.4.14.1 Facings or veneers intended to be applied on site over a wood substrate shall be tested in the manner intended for use and shall comply with the requirements of 10.2.3.1 or 10.2.3.3.	New Section
10.2.4.14.2 If the materials are tested in accordance with NFPA 286 they shall use the product-mounting system, including adhesive, described in Section 5.8.9 of NFPA 286.	New Section
10.2.4.14.3 If the materials are tested in accordance with ASTM E84, *Standard Test method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, specimen preparation and mounting shall be in accordance with ASTM E2404, *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics*.	New Section
10.2.6.1.1 Such treatments shall be tested, or shall be listed and labeled for application to the material to which they are applied, and shall comply with the requirements of NFPA 703~~, *Standard for Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials.*~~	See new understood text
10.2.7.3* Interior floor finishes shall be classified in accordance with 10.2.7.4, based on test results from NFPA 253, ~~*Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*~~, or ASTM E648, *Standard Test Method for*	See new understood text

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Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source..	
10.3.1* Where required by the applicable provisions of this *Code*, draperies, curtains, and other similar loosely hanging furnishings and decorations shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text
10.3.2.1* Upholstered Furniture. Newly introduced upholstered furniture, except as otherwise permitted by Chapters 11 through 43, shall be resistant to a cigarette ignition (i.e., smoldering) in accordance with one of the following:	
1. The components of the upholstered furniture shall meet the requirements for Class I when tested in accordance with NFPA 260, ~~*Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture*~~..	See new understood text
2. Mocked-up composites of the upholstered furniture shall have a char length not exceeding 1⁄2 in. (38 mm) when tested in accordance with NFPA 261, ~~*Standard Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes.*~~.	See new understood text
10.3.4* Where required by the applicable provisions of this *Code*, mattresses <u>shall comply with 10.3.4.1 or 10.3.4.2</u>, unless the mattress is located in a building protected throughout by an approved automatic sprinkler system.	See new understood text

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10.3.4.1 The mattress shall have limited rates of heat release when tested in accordance with ASTM E1590, *Standard Test Method for Fire Testing of Mattresses*, as follows: 1. The peak rate ~~for~~ of heat release for the mattress shall not exceed 100 kW. 2. The total heat released by the mattress during the first 10 minutes of the test shall not exceed 25 MJ.	See new understood text
10.3.4.2 The mattress shall have a mass loss not exceeding 15 percent when tested in accordance with the fire test in Appendix A3 of ASTM F1085, *Standard Specification for Mattress and Box Springs for Use in Berths and Marine Vessels.*	New Section
10.3.7* Where required by the applicable provisions of this *Code*, furnishings and contents made with foamed plastic materials that are unprotected from ignition shall have a heat release rate not exceeding 100 kW when tested in accordance with ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*, or when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source.	See new understood text
10.3.9.1 Where required by Chapters 11 through 43, newly introduced containers for waste or linen, with a capacity of 20 gal (75.7 L) or more, shall meet both of the following: 1. Such containers shall be provided with lids. 2. Such containers and their lids shall be constructed of noncombustible materials or of materials that meet a peak rate of heat release not exceeding 300 kW/m^2 when tested at an incident heat flux of	

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50 kW/m^2 in the horizontal orientation and at a thickness as used in the container but not less than 1⁄4 in. (6.3 mm), in accordance with ASTM E1354, *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*.	See new understood text
10.3.10.1 Textile Wall and Textile Ceiling Materials. The use of textile materials on walls or ceilings shall comply with one of the following conditions: 1. Textile materials meeting the requirements of Class A when tested in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, using the specimen preparation and mounting method of ASTM E2404, ~~*Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate*~~ *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics*, *(see ~~10.2.3.3.4~~ 10.2.3)*, shall be permitted on the walls or ceilings of rooms or areas protected by an approved automatic sprinkler system. 2. Textile materials meeting the requirements of Class A when tested in accordance with ASTM E84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E2404 *(see 10.2.3.3.410.2.3)*,	See new understood text

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shall be permitted on partitions that do not exceed three-quarters of the floor-to-ceiling height or do not exceed 8 ft (2440 mm) in height, whichever is less. 3. Textile materials meeting the requirements of Class A when tested in accordance with ASTM E84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E2404 *(see ~~10.2.3.3.4~~ 10.2.3)*, shall be permitted to extend not more than 48 in. (1220 mm) above the finished floor on ceiling-height walls and ceiling-height partitions. 4. Previously approved existing installations of textile material meeting the requirements of Class A when tested in accordance with ASTM E84 or ANSI/UL 723 *(see ~~10.2.3.3.4~~ 10.2.3)* shall be permitted to be continued to be used. 5. Textile materials shall be permitted on walls and partitions where tested in accordance with NFPA 265, ~~*Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls.*~~ *(See ~~10.2.3.10~~ 10.2.3.1.)* 6. Textile materials shall be permitted on walls, partitions, and ceilings where tested in accordance with NFPA 286, ~~*Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth. (See 10.2.3.10*~~ *10.2.3.1.)* 10.3.10.2 Expanded Vinyl Wall and Expanded Vinyl Ceiling Materials. The use of expanded vinyl wall or expanded vinyl ceiling materials shall comply with one of the following conditions: 1. Materials meeting the requirements of Class A when tested in accordance with ASTM E84, *Standard Test Method for*	See new understood text See new understood text

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Surface Burning Characteristics of Building Materials, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, using the specimen preparation and mounting method of ASTM E2404, ~~*Standard Practice for Specimen Preparation and Mounting of Textile, Paper, or Polymeric (Including Vinyl) Wall or Ceiling Coverings, and of Facings and Wood Veneers Intended to be Applied on Site Over a Wood Substrate*~~ *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics, to Assess Surface Burning Characteristics (see ~~10.2.3.3.4~~ 10.2.3)*, shall be permitted on the walls or ceilings of rooms or areas protected by an approved automatic sprinkler system.	See new understood text
2. Materials meeting the requirements of Class A when tested in accordance with ASTM E84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E2404 *(see ~~10.2.3.3.4~~ 10.2.3)*, shall be permitted on partitions that do not exceed three-quarters of the floor-to-ceiling height or do not exceed 8 ft (2440 mm) in height, whichever is less.	See new understood text
3. Materials meeting the requirements of Class A when tested in accordance with ASTM E84 or ANSI/UL 723, using the specimen preparation and mounting method of ASTM E2404 *(see ~~10.2.3.3.4~~ 10.2.3)*, shall be permitted to extend not more than 48 in. (1220 mm) above the finished floor on ceiling-height walls and ceiling-height partitions.	See new understood text
4. Previously approved existing installations of materials meeting the requirements for the occupancy involved, when tested in accordance	

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with ASTM E84 or ANSI/UL 723 *(see ~~10.2.3.3.4~~ 10.2.3)*, shall be permitted to be continued to be used. 5. Materials shall be permitted on walls and partitions where tested in accordance with NFPA 265~~*Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls.* (See *~~10.2.3.10~~ 10.2.4.4.*)~~ 6. Materials shall be permitted on walls, partitions, and ceilings where tested in accordance with NFPA 286. ~~*Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*~~. *(See ~~10.2.3.10~~ 10.2.3.1.)*	See new understood text
Chapter 11 Special Structures and High-Rise Buildings 11.1.1 Application. The requirements of Sections 11.1 through 11.11 shall apply to occupancies regulated by Chapters 12 through 42 that are in a special structure. The applicable provisions of Chapters 12 through 42 shall apply, except as modified by this chapter. Section 11.8 shall apply to all new high-rise buildings. Section 11.8 shall apply to existing high-rise buildings only where specifically required by Chapters 12 through 42. 11.3.1.3.1 Sprinklered Towers. In towers protected throughout by an automatic sprinkler system in accordance with Section 9.7, the levels located below the observation level shall be permitted to be occupied only for the following uses: 1. Uses that support tower operations such as electrical and mechanical equipment rooms, including emergency power, radar, communications, and electronics rooms	See new understood text

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2. *Incidental accessory uses that support tower operations 3. Other approved existing airport traffic control tower uses	See new understood text New added parts to section
11.3.1.3.3 Nonsprinklered Towers. The levels located within a tower below the observation level and the equipment room for that level in nonsprinklered towers shall not be occupied.	New Section
11.3.2.4.2 Towers with 360-degree line-of-sight requirements shall be permitted to have a single means of egress for a distance of travel to the exit not exceeding 75 ft (23 m), or 100 ft (30 m) if the tower is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.]	See new understood text
11.3.4 Additional Requirements for ~~Air~~ Airport Traffic Control Towers.	See new understood text
11.3.4.1 Definition: — ~~Air~~ Airport Traffic Control Tower. See 3.3.291.1.	See new understood text
11.3.4.2 Use of Accessory Levels. The levels located below the observation level shall be permitted to be occupied only for the following ~~uses that support tower operations~~:	
1. Uses that support tower operations as electrical and mechanical equipment rooms, including emergency and standby power, radar, communications, and electronics rooms	See new understood text
2. *Incidental accessory uses that support tower operations	
3. Other approved existing airport traffic control tower uses	See new understood text
11.3.4.3 Minimum Construction Requirements. New ~~air~~ airport traffic control towers shall be of Type I or Type II construction. *(See 8.2.1.)*	See new understood text

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11.3.4.4.1* Number of Means of Egress. ~~Air~~ Airport traffic control towers shall be permitted to have a single exit, provided that all the following conditions are met in addition to the requirements of 11.3.2.4:	See new understood text
1. Each level of new airairport traffic control towers, served by a single exit, shall be subject to a calculated occupant load of 15 or fewer persons. 2. The requirements of 11.3.4.4.1(1) shall not apply to existing airairport traffic control towers. 3. A fire alarm system shall be provided in accordance with Section 9.6. Smoke detection shall be provided throughout ~~air~~ airport traffic control towers to meet the requirements of partial coverage, as defined in 17.5.3.2 of *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, and shall include coverage of all of the following: a. ~~Occupiable areas~~ Observation level b. ~~Common areas~~ Means of egress c. ~~Work spaces~~ All equipment rooms d. ~~Equipment areas~~ Incidental accessory uses e. ~~Means of egress~~ Accessible utility shafts	See new understood text
~~Accessible utility shafts~~	Part deleted
4. The requirements of 11.3.2.4.1(5) shall not apply. 5. Rooms or spaces used for the storage, processing, or use of combustible supplies shall be permitted in quantities deemed acceptable by the authority having jurisdiction. 6. Smokeproof exit enclosures shall be provided in accordance with 7.2.3.	New part to section

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11.3.4.4.2 Remoteness. Where an airport traffic control tower is equipped throughout with an approved, supervised automatic sprinkler system in accordance with Section 9.7, the minimum separation distance between two exits, or exit accesses, measured in accordance with 7.5.1.3.2 shall be not less than one-fourth of the length of the maximum overall dimension of the building or area to be served.	New Section
11.3.4.4.3 Accessible Means of Egress. Accessible means of egress shall not be required to serve the observation level and the floor immediately below the observation level in airport traffic control towers.	New Section
11.3.4.4.4 Egress for Occupant Load. Means of egress for ~~air~~ airport traffic control towers shall be provided for the occupant load, as determined in accordance with 7.3.1.	See new understood text
11.3.4.4.5 Areas Excluded from Occupant Load. Shafts, stairs, ~~and~~ spaces, and floors not subject to human occupancy shall be excluded from consideration in determining the total calculated occupant load of the tower, as required by 11.3.2.4.1(1) and 11.3.4.4.1(1).	See new understood text
11.3.4.4.6 Single Means of Egress. A single means of egress shall be permitted from the observation level of an ~~air~~ airport traffic control tower to an exit, as permitted by 11.3.2.4.2.	See new understood text
11.3.4.4.7 Smokeproof Enclosures. For other than ~~existing, previously~~ approved existing ~~air~~ airport traffic control towers, smokeproof exit enclosures complying with 7.2.3 shall be provided for all ~~air~~ airport traffic control tower exit ~~stair~~ enclosures.	See new understood text

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11.3.4.4.8.1 ~~Air~~ Airport traffic control towers shall comply with the requirements of 7.7.2, except as permitted by 11.3.4.4.8.2.	
11.3.4.4.8.2 Existing, single-exit ~~air~~ airport traffic control towers shall be permitted to have discharge of the exit comply with one of the following:	See new understood text
1. Discharge of the exit in ~~a previously~~ an approved existing, single-exit ~~air~~ airport traffic control tower is permitted to a vestibule or foyer complying with the requirements of 7.7.2(4)(b). 2. *Discharge of the exit in a single-exit ~~air~~ airport traffic control tower is permitted within the building to a location where two means of egress are available and are arranged to allow travel in independent directions after leaving the exit enclosure, so that both means of egress do not become compromised by the same fire or similar emergency.	See new understood text
11.3.4.5.1 Detection, Alarm, and Communications Systems. For other than ~~existing, previously~~ approved existing, ~~air~~ airport traffic control towers, ~~air~~ airport traffic control towers shall be provided with a fire alarm system in accordance with Section 9.6. Smoke detection shall be provided throughout the ~~air~~ airport traffic control tower to meet the requirements for ~~selective~~ partial coverage, as defined in 17.5.3.2 of *NFPA 72*, ~~*National Fire Alarm and Signaling Code*,~~ and shall include coverage of all of the following:	See new understood text
1. ~~At~~ All equipment ~~areas~~ rooms 2. Observation level 3. Outside each opening into exit enclosures	See new understood text

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11.3.4.5.2 Extinguishing Requirements. New ~~air~~ airport traffic control towers shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.	See new understood text
11.3.4.5.3 Standpipe Requirements. New ~~air~~ airport traffic control towers where the floor of the ~~cab~~ observation level is greater than 30 ft (9.1 m) above the lowest level of fire department vehicle access shall be protected throughout with a Class I standpipe system in accordance with Section 9.7. Class I standpipes shall be manual standpipes as defined in NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, where permitted by the authority having jurisdiction.	See new understood text
11.3.4.6 Contents and Furnishings. Contents and furnishings in ~~air~~ airport traffic control towers shall comply with 10.3.1, 10.3.2, 10.3.6, and 10.3.7.	See new understood text
11.3.4.8 Emergency Command Center.	New Section
11.3.4.8.1 In other than approved existing airport traffic control towers, an emergency command center shall be provided in a location approved by the fire department where the floor of an occupiable story is greater than 75 ft (23 m) above the lowest level of fire department vehicle access. The emergency command center is permitted to be located in the airport traffic control tower or an adjacent contiguous building where building functions are interdependent.	New Section
11.3.4.8.2 The emergency command center shall contain the following: 1. Fire department two-way telephone communication service panels and controls	New Section

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2. Fire detection and fire alarm system control unit and annunciator 3. Elevator floor location and operation annunciators 4. Elevator fire recall switch in accordance with ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators* 5. Controls and annunciators for systems supporting smokeproof enclosures 6. Sprinkler valve and waterflow annunciators 7. Emergency generator status indicators 8. Schematic building plans indicating a typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment, and fire department access as well as the locations of fire walls, fire barriers, fire partitions, smoke barriers- and smoke partitions. 9. Fire pump status indicators 10. Telephone for fire department use with controlled access to the public telephone system 11. An approved building information card that contains, but is not limited to, the following information: a. General building information that includes property name, address, the number of floors in the building (above and below grade), use and occupancy classification (for mixed uses, identify the different types of occupancies on each floor), estimated building population (i.e., day, night, weekend) b. Building emergency contact information that includes a list of the building's emergency contacts (e.g., building manager, building engineer, etc.) and their respective work phone numbers, cell phone numbers, and email addresses	

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c. Building construction information that includes the type of building construction (e.g., floors, walls, columns, and roof assembly) d. Exit stair information that includes number of exit stairs in the building, each exit stair designation and floors served, location where each exit stair discharges, exit stairs that are pressurized, exit stairs provided with emergency lighting, each exit stair that allows reentry, and exit stairs providing roof access e. Elevator information that includes the number of elevator banks, elevator bank designation, elevator car numbers and respective floors that they serve, location of elevator machine rooms, location of sky lobby, and location of freight elevator banks f. Building services and system information that includes the location of mechanical rooms, location of building management system, location and capacity of all fuel oil tanks, location of emergency generator, and location of natural gas service g. Fire protection system information that includes locations of standpipes, location of fire pump room, location of fire department connections, floors protected by automatic sprinklers, location of different types of sprinkler systems installed (e.g., dry, wet, pre-action) h. Hazardous material information that includes location of hazardous material and quantity of hazardous material	

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12. Worktable	New Section
11.3.4.9 Emergency Action Plans and Fire Drills.	New Section
11.3.4.9.1 All airport traffic control towers shall have written copies of an emergency action plan as required by Section 4.8.	New Section
11.3.4.9.2 Fire drills shall be conducted such that all employees participate at least once annually in accordance with Section 4.7.	New Section
11.3.4.9.3 Employees of airport traffic control towers shall be instructed at least annually in the emergency action plan.	New Section
11.3.4.9.4 The emergency action plan shall be updated at least annually.	New Section
11.7 Underground Structures and Limited Access Structures.	See new understood text
11.7.3.1.1 One-Story Structures. One-story structures shall have finished ground level doors or emergency access openings in accordance with 11.7.3.2 on two sides of the ~~building~~ structure, spaced not more than 125 ft (38 m) apart on the exterior walls.	See new understood text
11.7.3.1.2 Multiple-Story Structures. Multiple-story structures shall comply with the following: 1. The story at the finished ground level shall comply with 11.7.3.1.1. 2. Other stories shall be provided with emergency access openings in accordance with 11.7.3.2 and all of the following: a. The openings are provided on two sides of the building.	See new understood text

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b. The openings are spaced not more than 30 ft (9.1 m) apart. c. For other than approved existing installations, the distance between each end of the applicable building exterior walls and an emergency access opening does not exceed 15 ft (4.6 m) or the distance from an access opening on one wall, and the nearest access opening on an adjacent wall does not exceed 30 ft (9.1 m).	New part to section
11.7.4.2 Exits from underground structures with an occupant load of more than 100 persons in the underground portions of the structure and having a floor used for human occupancy located more than 30 ft (9.1 m) below the lowest level ~~of~~ with an exit discharge, or having more than one level located below the lowest level ~~of~~ with an exit discharge, shall be provided with outside smoke-venting facilities or other means to prevent the exits from becoming charged with smoke from any fire in the areas served by the exits.	See new understood text
11.7.4.3 The underground portions of an underground structure, other than an existing underground structure, shall be provided with approved automatic smoke venting in accordance with Section 9.3 where the underground structure has the following features: 1. Occupant load of more than 100 persons in the underground portions of the structure 2. Floor level used for human occupancy located more than 30 ft (9.1 m) below the lowest level ~~of~~ with an exit discharge, or more than one level located below the lowest level ~~of~~ with an exit discharge	See new understood text

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3. Combustible contents, combustible interior finish, or combustible construction	
11.7.4.4 Exit stair enclosures in underground structures having a floor level used for human occupancy located more than 30 ft (9.1 m) below the lowest level ~~of~~ with an exit discharge, or having more than one level located below the lowest level ~~of~~ with an exit discharge, shall be provided with signage in accordance with 7.2.2.5.4 at each floor level landing traversed in traveling to the exit discharge. The signs shall include a chevron-shaped indicator to show direction to the exit discharge.	See new understood text
11.8.2.3 All new vertical exit enclosures serving the high-rise portion of the building shall be smokeproof enclosures in accordance with 7.2.3.	New Section
11.8.4.2.1 Two-way telephone communication service shall be provided for fire department use. This system shall be in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~. The communications system shall operate between the emergency command center and every elevator car, every elevator lobby, and each floor level of exit stairs.	See new understood text
11.8.5.2 Emergency power requirements for electric fire pumps shall be in accordance with NFPA 20.	New Section
11.8.5.3 Emergency power requirements for detection, alarm, and communications systems shall be in accordance with *NFPA 72*.	New Section

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11.8.5.4.1 Type 60, Class 1, Level 1, standby power in accordance with ~~Article 701 of *NFPA 70, National Electrical Code*, and~~ NFPA 110, ~~*Standard for Emergency and Standby Power Systems*~~, shall be provided.	See new understood text
11.8.5.4.2 The standby power system shall have a capacity and rating sufficient to supply all required equipment ~~required to be connected by 11.8.5.4.4.~~	See new understood text
11.8.5.4.3 Selective load pickup and load shedding shall be permitted in accordance with *NFPA 70*, ~~*National Electrical Code.*~~	See new understood text
11.8.5.4.4 The standby power system shall be connected to the following: ~~Electric fire pump~~ 1. Jockey pump, except as otherwise provided in 40.4.2 for special-purpose industrial occupancies 2. Air compressor serving dry-pipe and pre-action systems, except as otherwise provided in 40.4.2 for special-purpose industrial occupancies 3. Emergency command center equipment and lighting 4. Not less than one elevator serving all floors, with standby power transferable to any elevator 5. Mechanical equipment for smokeproof enclosures 6. Mechanical equipment required to conform with the requirements of Section 9.3 7. Stairway video monitoring equipment as required by 11.8.8	Part deleted in section

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~~11.8.5.5~~ ~~Power for detection, alarm, and communications systems shall be in accordance with *NFPA 72, National Fire Alarm and Signaling Code.*~~	Deleted Section
11.8.8.1.2 Where the monitoring system is integrated with a security system, the security system shall be in accordance with NFPA 731~~*, Standard for the Installation of Electronic Premises Security Systems.*~~	See new understood text
11.8.8.1.3 Where the monitoring system includes video cameras also used for video image smoke detection, the portions of the system used for such detection shall be in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text
11.9.1.6.1 All membrane structure fabric shall meet the flame propagation performance criteria contained in Test Method 2 of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text
11.9.5.1.3 Containers for liquefied petroleum gases shall be installed not less than 60 in. (1525 mm) from any temporary membrane structure and shall be in accordance with the provisions of NFPA 58, ~~*Liquefied Petroleum Gas Code.*~~	See new understood text
11.10.1.5.1 All membrane structure fabric shall meet the flame propagation performance criteria contained in Test Method 2 of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text

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11.10.7.1.3 Containers for liquefied petroleum gases shall be installed not less than 60 in. (1525 mm) from any temporary membrane structure and shall be in accordance with the provisions of NFPA 58, ~~*Liquefied Petroleum Gas Code.*~~	See new understood text
11.11.2.1 All tent fabric shall meet the flame propagation performance criteria contained in Test Method 2 of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text
11.11.6.1.3 Containers for liquefied petroleum gases shall be installed not less than 60 in. (1525 mm) from any tent and shall be in accordance with the provisions of NFPA 58, ~~*Liquefied Petroleum Gas Code.*~~	See new understood text
11.12 Animal Housing Facilities.	New Section
11.12.1 The provisions of Section 11.1 shall apply.	New Section
11.12.2 Where occupants are expected to delay their emergency egress to care for animals, the means of egress requirements of NFPA 150, where more stringent than those of this *Code*, shall be followed.	New Section
Chapter 12 New Assembly Occupancies	
12.1.1.4 Construction, Alteration, or Demolition Operations. Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
12.1.3.4 Assembly and Mercantile Occupancies in ~~Mall Buildings~~ Mall Structures.	See new understood text
12.1.6 Minimum Construction Requirements. Assembly occupancies shall be limited to the building construction types specified in Table 12.1.6, based on the number of stories in height	

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as defined in 4.6.3, unless otherwise permitted by the following *(see 8.2.1)*: 1. This requirement shall not apply to outdoor grandstands of Type I or Type II construction. 2. This requirement shall not apply to outdoor grandstands of Type III, Type IV, or Type V construction that meet the requirements of 12.4.9. 3. This requirement shall not apply to grandstands of noncombustible construction supported by the floor in a building meeting the construction requirements of Table 12.1.6. 4. This requirement shall not apply to assembly occupancies within ~~mall building~~ mall structures in accordance with 36.4.4.	See new understood text
12.2.1.2 Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be provided in accordance with the provisions of 7.1.6.5.	New Section
12.2.2.1 Components Permitted. Components of means of egress shall be limited to the types described in 12.2.3.2 through 12.2.3.12.	See new understood text
12.2.2.2.2 Assembly occupancies with occupant loads of 300 or less in ~~malls~~ mall concourses*(see 36.4.4.4.2(4))* shall be permitted to have horizontal or vertical security grilles or doors complying with 7.2.1.4.1(3) on the main entrance/exits.	See new understood text
12.2.2.2.3 Any door in a required means of egress from an area having an occupant load of 100 or more persons shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with	

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7.2.1.7, unless otherwise permitted by one of the following: 1. This requirement shall not apply to delayed-egress ~~locks~~ electrically locking systems as permitted in 12.2.3.2.5. 2. This requirement shall not apply to ~~access-controlled egress doors~~ sensor-release of electrical locking systems as permitted in 12.2.3.2.6.	See new understood text
12.2.2.3.1 General. Stairs complying with 7.2.2 shall be permitted, unless one of the following criteria applies: 1. *Stairs serving seating that is designed to be repositioned shall not be required to comply with 7.2.2.3.1. 2. This requirement shall not apply to stages and platforms as permitted by 12.4.6.1.2. 3. The stairs connecting only a stage or platform and the immediately adjacent assembly seating shall be permitted to have a handrail in the center only or on one side only. 4. The stairs connecting only a stage or platform and the immediately adjacent assembly seating shall be permitted to omit the guards required by 7.1.8 where both of the following criteria are met: a. The guard would restrict audience sight lines to the stage or platform. b. The height between any part of the stair and the adjacent floor is not more than 42 in. (1065 mm). 5. Stairs connecting aisle stairs with cross-aisles, concourses, or other aisle stairs and landings in compliance with 12.2.6.6.8 shall be permitted to comply with 12.2.6.6.6.	Part newly added to section

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12.2.3.4 Lighting and Access Catwalks. The requirements of 12.2.4.2 and 12.2.4.3 shall not apply to lighting and access catwalks as permitted by 12.4.6.9.	See new understood text
12.2.5.4.1 Festival seating, as defined in 3.3.243.1, shall be prohibited within a building, unless otherwise permitted by one of the following: 1. Festival seating shall be permitted in assembly occupancies ~~having occupant loads of~~ where the festival seating occupant load is 250 or less. 2. Festival seating shall be permitted in assembly occupancies where ~~occupant loads exceed~~ the festival seating occupant load exceeds 250, provided that an approved life safety evaluation has been performed. *(See 12.4.1.)*	See new understood text
3. Festival seating shall be permitted in assembly occupancies without dance halls, discotheques, and nightclubs, where the festival seating occupant load is 1000 or less.	Part newly added to section
12.2.5.6.9.3 The gaps or breaks permitted by 12.2.6.6.9.1 shall have a clear width of not less than 22 in. (560 mm) and shall not exceed 36 in. (915 mm), measured horizontally, and the handrail shall have rounded terminations or bends.	See new understood text
12.2.5.6.9.5 Where an aisle transition stair does not have seating at its sides, a handrail shall be provided on both sides of the aisle, and the provision of 12.2.6.6.9.6 shall also apply.	See new understood text
12.2.5.7.4* The minimum required clear width of an aisle accessway, measured in accordance with 12.2.6.4.8 and 12.2.6.7.3, shall be increased beyond the 12 in. (305 mm) requirement of 12.2.6.7.1 by 1⁄2 in. (13 mm) for each additional 12 in. (305 mm) or fraction thereof	See new understood text

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beyond 12 ft (3660 mm) of aisle accessway length, where measured from the center of the seat farthest from an aisle.	
12.2.5.9.1 Where required by the authority having jurisdiction, plans drawn to scale showing the arrangement of furnishings or equipment shall be submitted to the authority by the building owner, manager, or authorized agent to substantiate conformance with the provisions of 12.2.6.	See new understood text
12.2.11.3 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply.	New Section
12.3.2.3 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
12.3.4.3.7 Where the authority having jurisdiction determines that a constantly attended receiving station is impractical, both of the following shall be provided: 1. Automatically transmitted evacuation or relocation instructions shall be provided in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*.~~ 2. The system shall be monitored by a supervising station in accordance with *NFPA 72*.	See new understood text
12.3.4.4 Carbon Monoxide Detection.	New Section
12.3.4.4.1 New assembly occupancies shall be provided with carbon monoxide detection and warning equipment in accordance with Section 9.12 in the locations specified as follows:	New Section

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1. On the ceilings of rooms containing permanently installed fuel-burning appliances 2. Centrally located within occupiable spaces served by the first supply air register from permanently installed, fuel burning HVAC systems 3. Centrally located within occupiable spaces adjacent to a communicating attached garage 4. Centrally located within occupiable spaces adjacent to an attached garage with a separation wall constructed of gypsum wallboard	
12.3.4.4.2 Carbon monoxide detectors as specified in 12.3.4.4.1 shall not be required in the following locations: 1. Garages 2. Occupiable spaces with communicating attached garages that are open parking structures as defined in 3.3.276.7.4 3. Occupiable spaces with communicating attached garages that are mechanically ventilated in accordance with the mechanical code 4. Occupiable spaces having a separation wall constructed of gypsum wallboard with attached garages that are open parking structures as defined in 3.3.276.7.4 5. Occupiable spaces having a separation wall constructed of gypsum wallboard with attached garages that are mechanically ventilated in accordance with the mechanical code	New Section
12.3.4.5 Risk Analysis for Mass Notification Systems. A risk analysis for mass notification systems shall be provided in accordance with Section 9.14 in new assembly occupancies with an occupant load of 500 or more.	New Section

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12.3.5.2 Any building containing one or more assembly occupancies where the aggregate occupant load of the assembly occupancies exceeds 300 shall be protected by an approved, supervised automatic sprinkler system in accordance with Section 9.7 as follows *(see also 12.1.6, 12.2.7, 12.3.2, and 12.3.6)*:	See new understood text
12.4.1.1* General. Where a life safety evaluation is required by other provisions of this *Code*, it shall comply with the following: 1. The life safety evaluation shall be performed by persons acceptable to the AHJ. 2. The life safety evaluation shall include a written assessment of safety measures for conditions listed in 12.4.1.2 and of the building systems and facility management in accordance with 12.4.1.3. 3. The life safety evaluation shall be approved annually ~~by the AHJ~~ and shall be updated for special or unusual conditions in accordance with the provisions of 13.4.1 for existing assembly occupancies.	See new understood text
12.4.1.3.3.2 Prior to issuance of the certificate of occupancy, the ~~persons performing the life safety evaluation~~ owner shall confirm that the facility management and operational plans provide appropriate safety measures.	See new understood text
12.4.1.3.3.3 The ~~AHJ shall approve the acceptable persons performing the~~ life safety evaluation ~~in a timely manner to enable the design team and facility management to resolve concerns to the satisfaction of the persons performing the life safety evaluation prior to their submissions~~	See new understood text

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shall be performed by persons acceptable to the authority having jurisdiction. 12.4.1.4.2 Life Safety Narrative. A life safety narrative shall be provided describing the following, as applicable: 1. Building occupancy, construction type, and intended uses and events 2. Building area and population capacity of the proposed facility 3. Principal fire and life safety features/strategies for the building, including, — as ~~acceptable~~ applicable~~,~~ — the following:	See new understood text
12.4.1.4.3 Life Safety Floor Plans. Life safety floor plans of each level shall be provided —~~,~~ as applicable —~~,~~ with the following: 1. Occupant load, exit location, egress capacity, main entrance/exit, horizontal exits, travel distance, and exit discharge 2. Fire barriers, smoke barriers, and smoke partitions 3. Areas of smoke-protected assembly occupancy 4. Separate smoke-protected areas or zones 5. Areas of other occupancy type and separations 6. Unprotected vertical openings 7. Event plans for each anticipated type of event depicting the following: a. Seating configuration b. Exhibit booth layout c. Stage location d. Occupant load, egress capacity required, exits provided, and travel distance e. Any floor or stage use restrictions f. Plan and/or section drawing indicating ~~areas where the roof construction is more than 50 ft (15 m) above floor level and~~	See new understood text See new understood text

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~~areas~~ where sprinkler protection is omitted	
12.4.1.4.4 Engineering Analysis and Calculations. ~~An~~ Where active or passive smoke control is used, an engineering analysis shall be provided ~~with the following~~ and shall include the following, as applicable:	See new understood text
1. Smoke protection analysis to substitute the use of smoke-protected assembly seating as follows: a. Performance-based design methods approved by the AHJ b. Smoke control requirements per NFPA 92~~, *Standard for Smoke Control Systems*~~	See new understood text
12.4.1.5.2 Facility Management and Operational Plans. Facility management and operational plans shall address the following, as applicable:	See new understood text
1. Best practices adopted or recognized 2. Emergency plans 3. Evacuation plans 4. Shelter-in-place plans, including capacities and protection considerations 5. Crowd management training plan 6. Safety plans, which include the following: a. Training plans b. Safety equipment plans 7. Fire alarm, smoke control system protocol, and testing plans 8. First aid or medical treatment plans, which include the following: a. Defined levels of service b. Standing orders adopted c. Supply and equipment plan 9. Housekeeping plans — biological, medical, hazardous materials cleaning 10. Emergency communication plans, which include the following:	

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a. Chain of authority and incident command system employed b. Contact information for the following: i. Venue personnel ii. Emergency management and response organizations (such as fire, police, medical, utility, transportation, and key stakeholders) c. Communication systems d. Standard announcement for incidents or emergency situations 11. Risk and threat assessment for venue and surrounding area for the following: a. Severe weather b. Hazardous materials c. Terrorism d. Hostile intruder 12. Operating procedures and protocols for risks, such as the following: a. Severe weather preparedness and monitoring plans b. Hazardous materials incidence response plans c. Terrorism response plans d. Hostile intruder response plans 13. First responder response/arrival routes plans 14. Alcohol management plans 15. Food safety plans 16. Rigging and temporary performance structure, which includes the following: a. Design and safety review plans b. Emergency action plans 17. Chemical and hazardous materials information and data 18. Barrier and wall protection plans for motor sports or similar events 12.4.2.1 To be considered smoke protected, an assembly seating facility shall comply with both of the following:	

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1. All enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved, supervised automatic sprinkler system in accordance with Section 9.7, unless otherwise permitted by one of the following: a. The requirement of 12.4.2.1(1) shall not apply to the floor area used for contest, performance, or entertainment, provided that the roof construction is more than 50 ft (15 m) above the floor level and use is restricted to low fire hazard uses. b. Sprinklers shall not be required to be located over the floor area used for contest, performance, or entertainment and over the seating areas where an approved engineering analysis substantiates the ineffectiveness of the sprinkler protection due to building height and combustible loading. 2. All means of egress serving a smoke-protected assembly seating area shall be provided with smoke-actuated ventilation facilities or natural ventilation designed in accordance with both of the following criteria: a. The ventilation system shall be designed to maintain the level of smoke at not less than 6 ft (1830 mm) above the floor of the means or egress. b. The ventilation system shall be in accordance with NFPA 92, ~~*Standard for Smoke Control Systems.*~~	See new understood text
12.4.3.3.3 Each smoke compartment shall have an independent air supply and exhaust system	

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capable of smoke control or smoke exhaust functions. The system shall be in accordance with NFPA 92, ~~*Standard for Smoke Control Systems.*~~	See new understood text
12.4.3.4 Any required smoke control or exhaust system shall be provided with a standby power system complying with Article 701 of *NFPA 70*, ~~*National Electrical Code.*~~	See new understood text
12.4.6 Stages and Platforms. See 3.3.268 and 3.3.213.	See new understood text
12.4.6.5.1.2 Smoke control systems used for compliance with 12.4.6.5.1.1 shall be in accordance with NFPA 92, ~~*Standard for Smoke Control Systems.*~~	See new understood text
12.4.6.5.2.1 ~~Two or more vents shall be located near the center of and above the highest part of the stage area~~ Roof vents used for compliance with 12.4.6.5.1.1 shall be in accordance with NFPA 204.	See new understood text
(A) Vents shall be designed to maintain the smoke level at not less than 6 ft (1830 mm) above the highest level of assembly seating or above the top of the proscenium opening where a proscenium wall and opening protection are provided. (B) Vents for regular stages shall comply with NFPA 204; however, vent shall be permitted to provide a net free vent area of 5 percent of the stage area, in lieu of the engineering analysis required by NFPA 204.	Newly added parts to section
~~12.4.6.5.2.2~~ ~~The vents shall be raised above the roof and shall provide a net free vent area equal to 5 percent of the stage area.~~	Section deleted

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12.4.6.5.2.2 Vents shall be constructed to open automatically by approved heat-activated devices, and supplemental means shall be provided for manual emergency operation and periodic testing of the ventilator from the stage floor.	See new understood text
12.4.6.5.2.3 Vents shall be listed and labeled. (A) Where labeled devices permitting manual operation from the stage floor are not available for a labeled vent, the manual operation device is not required to be listed and labeled.	Part new to section
12.4.6.5.4 Testing. Vents shall be inspected, maintained, and tested in accordance with Chapter 12 of NFPA 204.	New Section
12.4.6.7.1 Where required by 12.4.6.6, the proscenium opening shall be protected by a listed, minimum 20-minute opening protective assembly, a fire curtain complying with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives*~~, or an approved water curtain complying with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~	See new understood text
12.4.6.11.1 Combustible scenery of cloth, film, vegetation (dry), and similar materials shall comply with one of the following: 1. They shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~ 2. They shall exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel*	See new understood text

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~~*Packages*~~, using the 20 kW ignition source.	
12.4.6.11.2 Foamed plastics *(see definition of cellular or foamed plastic in 3.3.42)* shall be permitted to be used if they exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source or by specific approval of the authority having jurisdiction.	See new understood text
12.4.6.11.4 In theaters, motion picture theaters, and television stage settings, with or without horizontal projections, and in simulated caves and caverns of foamed plastic, any single fuel package shall have a heat release rate not to exceed 100 kW where tested in accordance with one of the following: 1. ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*	
2. NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source	See new understood text
~~12.4.6.12 Standpipes.~~	Section deleted
~~12.4.6.12.1~~ ~~Regular stages over 1000 ft^2 (93 m^2) in area and all legitimate stages shall be equipped with 1½ in. (38 mm) hose lines for first aid fire fighting at each side of the stage.~~	Section deleted
~~12.4.6.12.2~~ ~~Hose connections shall be in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, unless Class II or Class III standpipes in accordance with NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, are used.~~	Section deleted

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12.4.7.2 Where cellulose nitrate film is used, the projection room shall comply with NFPA 40, ~~*Standard for the Storage and Handling of Cellulose Nitrate Film.*~~	See new understood text
12.4.11.1 Airport loading walkways shall conform to NFPA 415, ~~*Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways,*~~ and the provisions of 12.4.11.2 and 12.4.11.3.	See new understood text
12.7.2.4 Portable cooking equipment that is not flue-connected shall be permitted only as follows: 1. Equipment fueled by small heat sources that can be readily extinguished by water, such as candles or alcohol-burning equipment, including solid alcohol, shall be permitted to be used, provided that precautions satisfactory to the AHJ are taken to prevent ignition of any combustible materials. 2. Candles shall be permitted to be used on tables used for food service where securely supported on substantial noncombustible bases located to avoid danger of ignition of combustible materials and only where approved by the AHJ. 3. Candle flames shall be protected. 4. "Flaming sword" or other equipment involving open flames and flamed dishes, such as cherries jubilee or crêpes suzette, shall be permitted to be used, provided that precautions subject to the approval of the AHJ are taken. 5. Listed and approved LP-Gas commercial food service appliances shall be permitted to be used where in accordance with NFPA 58, ~~*Liquefied Petroleum Gas Code*~~	See new understood text

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12.7.3 Open Flame Devices and Pyrotechnics. No open flame devices or pyrotechnic devices shall be used in any assembly occupancy, unless otherwise permitted by one of the following: 1. Pyrotechnic special effect devices shall be permitted to be used on stages before proximate audiences for ceremonial or religious purposes, as part of a demonstration in exhibits, or as part of a performance, provided that both of the following criteria are met: a. Precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible material. b. Use of the pyrotechnic device complies with NFPA 1126, ~~*Standard for the Use of Pyrotechnics Before a Proximate Audience.*~~	See new understood text
2. Flame effects before an audience shall be permitted in accordance with NFPA 160, ~~*Standard for the Use of Flame Effects Before an Audience.*~~	See new understood text
12.7.4.3* Exposed foamed plastic materials and unprotected materials containing foamed plastic used for decorative purposes or stage scenery shall have a heat release rate not exceeding 100 kW where tested in accordance with one of the following: 1. ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*	
2. NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages,*~~ using the 20 kW ignition source	See new understood text

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12.7.5.3.4 Exhibit booth construction materials shall be limited to the following: 1. Noncombustible or limited-combustible materials 2. Wood exceeding 1⁄4 in. (6.3 mm) nominal thickness 3. Wood that is pressure-treated, fire-retardant wood meeting the requirements of NFPA 703, ~~*Standard for Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials*~~ 4. Flame-retardant materials complying with one of the following: a. They shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~ b. They shall exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages,*~~ using the 20 kW ignition source. 5. Textile wall coverings, such as carpeting and similar products used as wall or ceiling finishes, complying with the provisions of 10.2.2 and 10.3.10 6. Plastics limited to those that comply with 12.3.3 and Section 10.2 7. Foamed plastics and materials containing foamed plastics having a heat release rate for any single fuel package that does not exceed 100 kW where tested in accordance with one of the following: a. ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*	See new understood text See new understood text See new understood text

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b. NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages,*~~ using the 20 kW ignition source 8. Cardboard, honeycombed paper, and other combustible materials having a heat release rate for any single fuel package that does not exceed 150 kW where tested in accordance with one of the following: a. ANSI/UL 1975, ~~*Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*~~ b. NFPA 289, using the 20 kW ignition source	See new understood text See new understood text
12.7.5.3.6.2 Foamed plastics, and materials containing foamed plastics and used as decorative objects such as, but not limited to, mannequins, murals, and signs, shall have a heat release rate for any single fuel package that does not exceed 150 kW where tested in accordance with one of the following: 1. ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes* 2. NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages,*~~ using the 20 kW ignition source	See new understood text
12.7.5.3.7.1 The requirements of 12.7.5.3.7 shall not apply where otherwise permitted by the following: 1. Ceilings that are constructed of open grate design or listed dropout ceilings in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ shall not be considered ceilings within the context of 12.7.5.3.7.	See new understood text
<u>12.7.14 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.</u>	New Section

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Chapter 13 Existing Assembly Occupancies	
13.1.1.4 Construction, Alteration, or Demolition Operations.	New Section
13.1.1.4.1 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
13.1.3.4 Assembly and Mercantile Occupancies in ~~Mall Buildings~~ Mall Structures.	See new understood text
13.2.2.2.2 Assembly occupancies with occupant loads of 300 or less in ~~malls~~ mall concourses*(see 37.4.4.2(4))* shall be permitted to have horizontal or vertical security grilles or doors complying with 7.2.1.4.1(3) on the main entrance/exits.	See new understood text
13.2.2.2.3 Any door in a required means of egress from an area having an occupant load of 100 or more persons shall be permitted to be provided with a latch or lock only if the latch or lock is panic hardware or fire exit hardware complying with 7.2.1.7, unless otherwise permitted by one of the following: 1. This requirement shall not apply to delayed-egress ~~locks~~ electrically locking systems as permitted in 13.2.2.2.5. 2. This requirement shall not apply to ~~access-controlled egress doors~~ sensor-release of electrical locking systems as permitted in 13.2.2.2.6.	See new understood text
13.2.2.3.1 General. Stairs complying with 7.2.2 shall be permitted, unless one of the following criteria applies:	

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1. *Stairs serving seating that is designed to be repositioned shall not be required to comply with 7.2.2.3.1. 2. This requirement shall not apply to stages and platforms as permitted by 13.4.6. 3. The stairs connecting only a stage or platform and the immediately adjacent assembly seating shall be permitted to have a handrail in the center only or on one side only. 4. The stairs connecting only a stage or platform and the immediately adjacent assembly seating shall be permitted to omit the guards required by 7.1.8 where both of the following criteria are met: a. The guard would restrict audience sight lines to the stage or platform. b. The height between any part of the stair and the adjacent floor is not more than 42 in. (1065 mm). 5. Stairs connecting aisle stairs with cross-aisles, concourses, or other aisle stairs and landings in compliance with 13.2.5.6.8 shall be permitted to comply with 13.2.5.6.6.	Part newly added to section
13.2.5.4.1 Festival seating, as defined in 3.3.248.1, shall be prohibited within a building, unless otherwise permitted by one of the following: 1. Festival seating shall be permitted in assembly occupancies ~~having occupant loads of~~ where the festival seating occupant load is 250 or less. 2. Festival seating shall be permitted in assembly occupancies where ~~occupant loads exceed~~ the festival seating occupant load exceeds 250, provided that an approved life safety evaluation has been performed. *(See 13.4.1.)* 3. Festival seating shall be permitted in assembly occupancies without dance	See new understood text Part newly added to section

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halls, discotheques, and nightclubs, where the festival seating occupant load is 1000 or less.	
13.2.5.6.8 Aisle ~~Landings~~ Transitions. Where the path of travel on a stair or an aisle stair, or ~~aisle ramp~~ continues to another stair or aisle stair, of different rise or tread depth, ~~another aisle stair of different rise or tread depth,~~or where the path of travel on an aisle ramp continues to a stair, aisle stair, or another aisle ramp of different slope, there shall be a ~~landing~~ tread at that transition whose depth is equal to or greater than the width of the stair, aisle stair or ramp, unless otherwise permitted by one of the following:	See new understood text
1. Maximum height between landings in accordance with 7.2.2 shall not be required within aisles.	Part newly added to section
2. No landing shall be required at the termination of an aisle stair.	
3. No landing shall be required within aisle stairs with nonuniform risers as permitted by 13.2.5.6.6(7).	
4. No landing shall be required between aisle ramps of different slopes.	
5. No landing shall be required between an aisle ramp and an aisle accessway or between an aisle stair and an aisle accessway.	
6. A minimum 30 in. (760 mm) deep ~~landing~~ tread at that transition shall be permitted between an aisle stair and a stair with the same tread depths or between an aisle stair and another aisle stair with the same tread depths.	See new understood text
7. A minimum ~~30~~ 22 in. (~~760~~ 560 mm) deep ~~landing~~ tread at that transition shall be permitted between an aisle stair and a stair with greater tread depth in the descending direction and between an aisle stair and another aisle stair with greater tread depth in the descending direction.	See new understood text

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8. A minimum 30 in. (760 mm) deep ~~landing~~ tread at that transition shall be permitted between an aisle stair and a stair with less tread depth in the descending direction and between an aisle stair and another aisle stair with less tread depth in the descending direction.	See new understood text
9. A minimum 22 in. (560 mm) deep ~~landing~~ tread at that transition shall be permitted between an aisle ramp and a stair and between an aisle ramp and an aisle stair.	See new understood text
13.2.11.3 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply.	New Section
13.3.2.3 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
13.3.4.3.7 Where the authority having jurisdiction determines that a constantly attended receiving station is impractical, automatically transmitted evacuation or relocation instructions shall be provided in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code.*~~	See new understood text
13.4.1.1* General. Where a life safety evaluation is required by other provisions of this *Code*, it shall comply with the following:	
1. The life safety evaluation shall be performed by persons acceptable to the AHJ.	
2. The life safety evaluation shall include a written assessment of safety measures for conditions listed in 13.4.1.2 and of the building systems and facility management in accordance with 13.4.1.3.	
3. The life safety evaluation shall be approved annually ~~by the AHJ~~ and shall	See new understood text

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be updated for special or unusual conditions in accordance with the provisions of 13.4.1 for existing assembly occupancies.	
13.4.1.4.3 Life Safety Floor Plans. Life safety floor plans of each level shall be provided — as applicable — with the following: 1. Occupant load, egress location, exit capacity, main entrance/exit, horizontal exits, travel distance, and exit discharge 2. Fire barriers, ~~and~~ smoke barriers, and fire partitions 3. Areas of smoke-protected assembly occupancy 4. Separate smoke-protected areas or zones 5. Areas of other occupancy type and separations 6. Unprotected vertical openings 7. Event plans for each anticipated type of event depicting the following: a. Seating configuration b. Exhibit booth layout c. Stage location d. Occupant load, egress capacity required, exits provided, and travel distance e. Any floor or stage use restrictions f. Plan and/or section drawing indicating ~~areas~~ where ~~the roof construction is more than 50 ft (15 m) above floor level and areas where~~ sprinkler protection is omitted g. Areas of refuge — interior and exterior	See new understood text
13.4.1.4.4 Engineering Analysis and Calculations. ~~An~~ Where active or passive smoke control is used, an engineering analysis shall be provided ~~with the following~~: and shall include the following, as applicable:	See new understood text

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1. Smoke protection analysis to substantiate the use of smoke-protected assembly seating as follows: a. Performance-based design methods approved by the AHJ b. Smoke control requirements per NFPA 92, ~~*Standard for Smoke Control Systems*~~	See new understood text
13.4.1.5.2 Facility Management and Operational Plans. Facility management and operational plans shall address the following, <u>as applicable:</u>	See new understood text
13.4.1.5.4.3 The life safety building systems document in accordance with 13.4.1.4 shall be permitted to be used, and additionally the life safety building systems reference guide shall include the following, <u>as applicable</u>	See new understood text
<u>13.4.6.5.3.2</u> <u>Roof venting in accordance with 12.4.6.5.2 shall be permitted as an alternative to compliance with 13.4.6.5.2</u>	New Section
13.4.6.11.1 Combustible scenery of cloth, film, vegetation (dry), and similar materials shall comply with one of the following: 1. They shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*~~.	See new understood text
2. They shall exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source.	See new understood text

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13.4.6.11.2 Foamed plastics *(see definition of cellular or foamed plastic in 3.3.42)* shall be permitted to be used if they exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source or by specific approval of the authority having jurisdiction.	See new understood text
~~13.4.6.12 Standpipes.~~	Section deleted
~~13.4.6.12.1~~ ~~Stages over 1000 ft^2 (93 m^2) in area shall be equipped with 1 1/2 in. (38 mm) hose lines for first aid fire fighting at each side of the stage.~~	Section Deleted
~~13.4.6.12.2~~ ~~Hose connections shall be in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, unless Class II or Class III standpipes in accordance with NFPA 13, *Standard for the Installation of Standpipe and Hose Systems*, are used.~~	Section Deleted
13.4.7.2 Where cellulose nitrate film is used, the projection room shall comply with NFPA 40, ~~*Standard for the Storage and Handling of Cellulose Nitrate Film*.~~	See new understood text
13.4.11.1 Airport loading walkways shall conform to NFPA 415, ~~*Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways*,~~ and the provisions of 13.4.11.2 and 13.4.11.3.	See new understood text
13.7.2.4 Portable cooking equipment that is not flue-connected shall be permitted only as follows: 1. Equipment fueled by small heat sources that can be readily extinguished by	

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water, such as candles or alcohol-burning equipment, including solid alcohol, shall be permitted to be used, provided that precautions satisfactory to the AHJ are taken to prevent ignition of any combustible materials. 2. Candles shall be permitted to be used on tables used for food service where securely supported on substantial noncombustible bases located to avoid danger of ignition of combustible materials and only where approved by the AHJ. 3. Candle flames shall be protected. 4. "Flaming sword" or other equipment involving open flames and flamed dishes, such as cherries jubilee or crêpes suzette, shall be permitted to be used, provided that precautions subject to the approval of the AHJ are taken. 5. Listed and approved LP-Gas commercial food service appliances shall be permitted to be used where in accordance with NFPA 58, ~~*Liquefied Petroleum Gas Code.*~~	See new understood text
13.7.3 Open Flame Devices and Pyrotechnics. No open flame devices or pyrotechnic devices shall be used in any assembly occupancy, unless otherwise permitted by one of the following: 1. Pyrotechnic special effect devices shall be permitted to be used on stages before proximate audiences for ceremonial or religious purposes, as part of a demonstration in exhibits, or as part of a performance, provided that both of the following criteria are met: a. Precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible material. b. Use of the pyrotechnic device complies with NFPA 1126, *Standard for the Use of*	

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Pyrotechnics Before a Proximate Audience. 2. Flame effects before an audience shall be permitted in accordance with NFPA 160, ~~*Standard for the Use of Flame Effects Before an Audience*.~~	See new understood text
13.7.4.3* Exposed foamed plastic materials and unprotected materials containing foamed plastic used for decorative purposes or stage scenery shall have a heat release rate not exceeding 100 kW where tested in accordance with one of the following: 1. ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes* 2. NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source	See new understood text
13.7.5.3.4 Exhibit booth construction materials shall be limited to the following: 1. Noncombustible or limited-combustible materials 2. Wood exceeding 1⁄4 in. (6.3 mm) nominal thickness 3. Wood that is pressure-treated, fire-retardant wood meeting the requirements of NFPA 703, ~~*Standard for Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials*~~	See new understood text
4. Flame-retardant materials complying with one of the following: a. They shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*.~~	See new understood text

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b. They shall exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages,*~~ using the 20 kW ignition source.	See new understood text
5. Textile wall coverings, such as carpeting and similar products used as wall or ceiling finishes, complying with the provisions of 10.2.2 and 10.3.10	
6. Plastics limited to those that comply with 13.3.3 and Section 10.2	
7. Foamed plastics and materials containing foamed plastics having a heat release rate for any single fuel package that does not exceed 100 kW where tested in accordance with one of the following:	
a. ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*	
b. NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages,*~~ using the 20 kW ignition source	See new understood text
8. Cardboard, honeycombed paper, and other combustible materials having a heat release rate for any single fuel package that does not exceed 150 kW where tested in accordance with one of the following:	
a. ANSI/UL 1975, ~~*Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*~~	See new understood text
b. NFPA 289 using the 20 kW ignition source	
13.7.5.3.6.2 Foamed plastics, and materials containing foamed plastics and used as decorative objects such as, but not limited to, mannequins, murals, and signs shall have a heat release rate for any single fuel package that does not exceed 150 kW where tested in accordance with one of the following:	

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1. ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes* 2. NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source	See new understood text
13.7.5.3.7.1 The requirements of 13.7.5.3.7 shall not apply where otherwise permitted by the following: 1. Ceilings that are constructed of open grate design or listed dropout ceilings in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, shall not be considered ceilings within the context of 13.7.5.3.7.	See new understood text
13.7.14 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section
Chapter 14 14.1.1.5 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
14.2.1.5 Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be provided in accordance with the provisions of 7.1.6.5.	New Section
14.2.2.2.3.1 ~~Delayed-egress locking systems~~ Delayed-egress electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
14.2.2.2.3.2 ~~Access-controlled egress door~~ Sensor-release of electrical locking systems ~~assemblies~~ complying with 7.2.1.6.2 shall be permitted.	See new understood text

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14.2.2.2.4 Classroom Door Locking to Prevent Unwanted Entry. 1. The locking means is approved. 2. The locking means can be engaged without opening the door. 3. The unlocking and unlatching from the classroom side of the door can be accomplished without the use of a key or tool. 4. The unlocking and unlatching requires not more than one releasing operation. 5. The unlocking and unlatching means are mounted at a height not exceeding 48 in. (1220 mm) above the finished floor. 6. Locks, if remotely engaged, can be unlocked from the classroom side. 7. The door is capable of being unlocked and opened from outside the room by staff with the necessary key or other credential. 8. The locking means does not modify the door closer, panic hardware, or fire exit hardware. 9. Modifications to fire door assemblies, including door hardware, shall be in accordance with NFPA 80. 10. The emergency action plan, required by 14.7.1, addresses the use of the locking and unlocking means from within and outside the room. 11. Staff is drilled in the engagement and release of the locking means, from within and outside the room, as part of the emergency egress drills required by 14.7.2.	New Section
14.2.3.2.1 Exit access corridors shall have not less than 6 ft (1830 mm) of clear width except as otherwise permitted in 14.2.3.2.2.	See new understood text
14.2.3.2.2 Exit access corridors with a required capacity of less than 100 persons shall have not less than 44 in. (1120 mm) of clear width.	New Section

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14.2.11.3 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply.	New Section
14.3.1.1 Any vertical opening, other than unprotected vertical openings in accordance with 8.6.9.1 or 8.6.9.2, shall be enclosed or protected in accordance with Section 8.6.	See new understood text
14.3.2.5 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
14.3.4.4 Carbon Monoxide ~~Alarms and Carbon Monoxide~~ Detection Systems.	See new understood text
14.3.4.4.1 Carbon monoxide alarms or carbon monoxide detectors in accordance with Section 9.12 shall be provided in new educational occupancies in the locations specified as follows:	
1. ~~On~~ Carbon monoxide detectors shall be installed on the ceilings of rooms containing permanently installed fuel-burning appliances.	See new understood text
2. ~~Centrally~~ Carbon monoxide detectors shall be installed centrally located within occupiable spaces served by the first supply air register from a permanently installed, fuel-burning HVAC system.	See new understood text
3. ~~Centrally~~ Carbon monoxide detectors shall be installed centrally located within occupiable spaces adjacent to a communicating attached garage.	
4. Carbon monoxide detectors shall be installed centrally located within occupiable spaces adjacent to an attached garage with a separation wall constructed of gypsum wallboard.	Part newly added to section
14.3.4.4.2 Where carbon monoxide detectors are installed in accordance with 14.3.4.4.1(1), the alarm signal shall be automatically transmitted to an	New Section

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approved on-site location or to an off-premises location in accordance with NFPA 720.	
14.3.4.4.3 Carbon monoxide ~~alarms and carbon monoxide~~ detectors as specified in 14.3.4.4.1 shall not be required in the following locations:	See new understood text
1. Garages 2. Occupiable spaces with communicating attached garages that are open parking structures as defined in 3.3.276.7.4 3. Occupiable spaces with communicating attached garages that are mechanically ventilated in accordance with the applicable mechanical code 4. Occupiable spaces that are separated from attached garages by walls constructed of gypsum wallboard where the garage is an open parking structure as defined in 3.3.276.7.4 5. Occupiable spaces that are separated from attached garages by walls constructed of gypsum wallboard where the garage is mechanically ventilated in accordance with the mechanical code	Parts newly added to section
14.3.4.5 Risk Analysis for Mass Notification Systems. A risk analysis for mass notification systems shall be provided in accordance with Section 9.14.	New Section
14.3.5.2 ~~Educational occupancy buildings four or more stories in height shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.~~The requirement of 14.3.5.1 shall not apply to any of the following:	See new understood text
1. Non-relocatable buildings having an area not exceeding 1000 ft^2 (93 m^2) 2. Non-relocatable buildings containing a single classroom	Parts newly added to section

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3. Relocatable buildings complying with all of the following: a. Building area does not exceed 1000 ft^2 (93 m^2) b. Building contains a single classroom c. Building is located not less than 30 ft (9.1 m) from another building 14.4.4 Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following requirements are met: 1. Dispensers shall be installed in rooms or spaces separated from corridors and exits. 2. The maximum individual dispenser fluid capacity shall be as follows: 1. 0.32 gal (1.2 L) for dispensers in rooms 2. 0.53 gal (2.0 L) for dispensers in suites of rooms 3. The dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm). 4. Storage of quantities greater than 5 gal (18.9 L) in a single fire compartment shall meet the requirements of NFPA 30~~, *Flammable and Combustible Liquids Code*.~~	See new understood text
Chapter 15 Existing Educational Occupancies 15.1.1.5 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply. 15.2.2.2.3.1 ~~Delayed-egress locking systems~~ Delayed-egress electrically locking systems complying with 7.2.1.6.1 shall be permitted.	New Section See new understood text

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15.2.2.2.3.2 ~~Access-controlled egress door assemblies~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
15.2.2.2.4 Classroom Door Locking to Prevent Unwanted Entry. 1. The locking means is approved. 2. The locking means can be engaged without opening the door. 3. The unlocking and unlatching from the classroom side of the door can be accomplished without the use of a key or tool. 4. The unlocking and unlatching requires not more than two releasing operations. 5. The unlocking and unlatching means are mounted at a height not exceeding 48 in. (1220 mm) above the finished floor. 6. Locks, if remotely engaged, can be unlocked from the classroom side. 7. The door is capable of being unlocked and opened from outside the room by staff with the necessary key or other credential. 8. The locking means does not modify the door closer, panic hardware, or fire exit hardware. 9. Modifications to fire door assemblies, including door hardware, shall be in accordance with NFPA 80. 10. The emergency action plan, required by 14.7.1, addresses the use of the locking and unlocking means from within and outside the room. 11. Staff is drilled in the engagement and release of the locking means, from within and outside the room, as part of the emergency egress drills required by 14.7.2.	New Section
15.2.3.2.1 Exit access corridors shall have not less than 6 ft (1830 mm) of clear width except as otherwise permitted in 15.2.3.2.2.	See new understood text

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15.2.3.2.2 Exit access corridors with a required capacity of less than 100 persons shall have not less than 44 in. (1120 mm) of clear width.	New Section
15.2.11.3 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply.	New Section
15.3.1.1 Any vertical opening, other than unprotected vertical openings in accordance with 8.6.9.1or 8.6.9.2, shall be enclosed or protected in accordance with Section 8.6.	See new understood text
15.3.2.5 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
15.3.4.2.3.1* Manual fire alarm boxes shall be permitted to be eliminated where all of the following conditions apply: 1. Interior corridors are protected by smoke detectors using an alarm verification system as described in *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~	See new understood text
15.4.4 Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following requirements are met: (4) Storage of quantities greater than 5 gal (18.9 L) in a single fire compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code*~~.	See new understood text
15.5.2.2 Unvented fuel-fired heating equipment, other than gas space heaters in compliance with NFPA 54/~~ANSI Z223.1, *National Fuel Gas Code*,~~ shall be prohibited.	See new understood text

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Chapter 16 New Day-Care Occupancies	
16.1.1.9 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
16.1.6.2 Where day-care occupancies, other than day-care homes, with clients who are ~~24~~ 30 months or ~~less~~ younger in age, or who are incapable of self-preservation, are located one or more stories above the level of exit discharge, or where day-care occupancies are located two or more stories above the level of exit discharge, smoke partitions shall be provided to divide such stories into not less than two compartments. The smoke partitions shall be constructed in accordance with Section 8.4 but shall not be required to have a fire-resistance rating.	See new understood text
16.2.1.1 Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be provided in accordance with the provisions of 7.1.6.5.	New Section
16.2.2.2.3.1 ~~Delayed-egress locking systems~~ Delayed-egress electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
16.2.2.2.3.2 ~~Access-controlled egress door assemblies~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
16.2.11.3 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply. 16.3.1 Protection of Vertical Openings. Any vertical opening, other than unprotected vertical openings in accordance with 8.6.9.1and 8.6.9.2, shall be enclosed or protected in accordance with Section 8.6.	See new understood text

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16.3.2.6 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
16.4.4 Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following requirements are met: (4) Storage of quantities greater than 5 gal (18.9 L) in a single fire compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code*~~.	See new understood text
16.5.2.2 Unvented fuel-fired heating equipment, other than gas space heaters in compliance with NFPA 54/~~ANSI Z223.1, *National Fuel Gas Code*,~~ shall be prohibited.	See new understood text
16.6.2.1.2 Where bathtubs, bathtub-shower combinations, or showers are present for client use, grab bars shall be provided in accordance with the provisions of 7.1.6.5.	New Section
16.6.3.4.2 Where a day-care home is located within a building of another occupancy, such as in an apartment building or office building, any corridors serving the day-care home shall be provided with a smoke detection system in accordance with Section 9.6 except as otherwise provided in 16.6.3.4.3.	See new understood text
16.6.3.4.3 The corridor smoke detection system addressed in 16.6.3.4.2 shall not be required where all of the following conditions are met: 1. The day-care home is in a building of another occupancy that is not required to have a fire alarm system by some other provision of this *Code*. 2. Smoke alarms are installed in accordance with 9.6.2.10 in the corridor serving the day-care home.	New Section

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3. Smoke alarms are installed within the day-care home as required by 16.6.3.4.1 . 4. Additional smoke alarms are installed within the day-care home within 15 ft (4.6 m) of all sleeping rooms. 5. The smoke alarms required by 16.6.3.4.3(2), (3), and (4) are interconnected, as required by NFPA 72, so that each sounds an alarm when any of these smoke alarms detects smoke. 16.6.4 Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following requirements are met: (4) Storage of quantities greater than 5 gal (18.9 L) in a single fire compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code*~~. 16.7.2.2 Emergency egress and relocation drills shall be conducted as follows: (2) The monthly frequency specified by 16.7.2.2(1) shall be permitted to be bimonthly in adult day-care centers.	See new understood text Part newly added in section
Chapter 17 Existing Day-Care Occupancies 17.1.1.9 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply. 17.1.4.1 General. For definitions, see Chapter 3, Definitions. 17.1.4.2 Special Definitions. A list of special terms used in this chapter follows: 1. **Day-Care Home.** See 3.3.144.1. 2. **Flexible Plan and Open Plan Educational or Day-Care Building.** See 3.3.37.6. 3. **Self-Preservation (Day-Care Occupancy).** See 3.3.246.	New Section See new understood text

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4. **Separate Atmosphere.** See 3.3.27.2.	
17.2.2.2.3.1 ~~Delayed-egress locking system~~ Delayed-egress electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
17.2.2.2.3.2 ~~Access-controlled egress door assemblies~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
17.2.11.3 Hazardous Materials. The new provisions of 7.12.2 for egress requirements for hazardous materials are appropriate for application to day-care occupancies.	New Section
17.3.1 Protection of Vertical Openings. Any vertical opening, other than unprotected vertical openings in accordance with 8.6.9.1or 8.6.9.2, shall be enclosed or protected in accordance with Section 8.6.	See new understood text
17.3.2.1 Rooms or spaces for the storage, processing, or use of materials specified in 17.3.2.1(1) through (3) shall be protected in accordance with the following: (3) Where automatic extinguishing is used to meet the requirements of 17.3.2.1(1) and (2), protection as permitted in accordance with 9.7.1.2	See new understood text
17.3.2.6 Hazardous Materials. Where hazardous materials are present, the provisions of 8.7.3.1 shall apply.	New Section
17.4.4 Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following requirements are met: 1. Dispensers shall be installed in rooms or spaces separated from corridors and exits. 2. The maximum individual dispenser fluid capacity shall be as follows:	

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1. 0.32 gal (1.2 L) for dispensers in rooms 2. 0.53 gal (2.0 L) for dispensers in suites of rooms 3. The dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm). 4. Storage of quantities greater than 5 gal (18.9 L) in a single fire compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~	See new understood text
17.5.2.2 Unvented fuel-fired heating equipment, other than gas space heaters in compliance with NFPA 54/ANSI Z 223.1, ~~*National Fuel Gas Code,*~~ shall be prohibited.	See new understood text
17.6.3.4.2 Where a day-care home is located within a building of another occupancy, such as in an apartment building or office building, any corridors serving the day-care home shall be provided with a smoke detection system in accordance with Section 9.6except as otherwise provided in 17.6.3.4.4.	See new understood text
17.6.3.4.3 The corridor smoke detection system addressed in 17.6.3.4.2 shall not be required where all of the following conditions are met: 1. The day-care home is in a building of another occupancy that is not required to have a fire alarm system by another provision of this *Code*. 2. Smoke alarms are installed in accordance with 9.6.2.10 in the corridor serving the day-care home. 3. Smoke alarms are installed within the day-care home as required by 17.6.3.4.1. 4. Additional smoke alarms are installed within the day-care home within 15 ft (4.6 m) of all sleeping rooms.	New Section

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5. The smoke alarms required by 17.6.3.4.3(2), (3), and (4) are interconnected, as required by *NFPA 72*, so that each sounds an alarm when any of these smoke alarms detects smoke.
6. The exemption of 17.6.3.4.5 for existing battery-powered smoke alarms does not apply.
 	
17.6.3.4.4
Single-station or multiple-station smoke alarms or smoke detectors shall be provided in all rooms used for sleeping in accordance with 9.6.2.10, other than as permitted by 17.6.3.4.5.
 	
17.6.3.4.5
Approved existing battery-powered smoke alarms, rather than house electrical service–powered smoke alarms required by 17.6.3.4.4, shall be permitted where the facility has testing, maintenance, and battery replacement programs that ensure reliability of power to the smoke alarms.
 	
17.6.4 Alcohol-Based Hand-Rub Dispensers.
Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following requirements are met:
 	
1. Dispensers shall be installed in rooms or spaces separated from corridors, stairways, and exterior doors.
2. The maximum individual dispenser fluid capacity shall be as follows:
  1. 0.32 gal (1.2 L) for dispensers in rooms
  2. 0.53 gal (2.0 L) for dispensers in suites of rooms
3. The dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).
4. Storage of quantities greater than 5 gal (18.9 L) in a single fire compartment shall meet the requirements of NFPA
	See new understood text
	
	See new understood text

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30, *Flammable and Combustible Liquids Code.* 17.7.2.2 Emergency egress and relocation drills shall be conducted as follows: 1. Not less than one emergency egress and relocation drill shall be conducted every month the facility is in session, unless both of the following criteria are met: a. In climates where the weather is severe, the monthly emergency egress and relocation drills shall be permitted to be deferred. b. The required number of emergency egress and relocation drills shall be conducted, and not less than four shall be conducted before the drills are deferred. 2. The monthly frequency specified by 17.7.2.2(1) shall be permitted to be bimonthly in adult day-care centers	See new understood text Part newly added to section
Chapter 18 New Health Care Occupancies ~~18.1.1.1.9~~ ~~Facilities that do not provide housing on a 24-hour basis for their occupants shall be classified as other occupancies and shall be covered by other chapters of this *Code*.~~ 18.1.1.1.9* The requirements of this chapter shall apply based on the assumption that staff is available in all patient-occupied areas to perform certain ~~fire safety~~ emergency control functions as required in other paragraphs of this chapter. 18.1.4.2 Special Definitions. The following is a list of special terms used in this chapter: 1. **Ambulatory Health Care Occupancy.** *(See 3.3.196.1.)*	Section deleted See new understood text

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2. **Deep-~~fat~~ Fat Frying.** *(See 3.3.57.)* 3. **Hospital.** *(See 3.3.150.)* 4. **Limited Care Facility.** *(See 3.3.93.2.)* 5. **Nursing Home.** *(See 3.3.148.2.)* 6. Self-Preservation Capability (Health Care and Ambulatory Health Care Occupancies). *(See 3.3.251)*	Part newly added section
18.1.6.3 Any building of Type I(442), Type I(332), Type II(222), or Type II(111) construction shall be permitted to include roofing systems involving combustible supports, decking, or roofing, provided that all of the following criteria are met: 1. The roof covering shall meet Class A requirements in accordance with ASTM E108, *Standard Test Methods for Fire Tests of Roof Coverings*, or ANSI/UL 790, *Test Methods for Fire Tests of Roof Coverings.* 2. The roof/ceiling assembly shall be constructed with fire-retardant-treated wood meeting the requirements of NFPA 220, ~~*Standard on Types of Building Construction.*~~	See new understood text
18.2.2.2.4 Doors within a required means of egress shall not be equipped with a latch or lock that requires the use of a tool or key from the egress side, unless otherwise permitted by one of the following: 1. Locks complying with 18.2.2.2.5 shall be permitted. 2. *Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted. 3. *~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text

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4. Elevator lobby exit access door locking in accordance with 7.2.1.6.3 shall be permitted.
 	
18.2.2.2.5.2*
Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following criteria are met:
 	
1. Staff can readily unlock doors at all times in accordance with 18.2.2.2.6.
2. A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space.
3. *The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 18.3.5.1.
4. The locks are electrical locks that fail safely so as to release upon loss of power to the device.
5. The locks release by independent activation of each of the following:
  1. Activation of the smoke detection system required by 18.2.2.2.5.2(2)
  2. Waterflow in the automatic sprinkler system required by 18.2.2.2.5.2(3)
6. <u>Hardware for new electric lock installations is listed in accordance with ANSI/UL 294, *Standard for Access Control System Units.*</u>
	Part newly added to section

18.2.2.2.10 ~~High-rise health care occupancies~~ <u>Stairs that serve an occupiable story that is more than 75 ft (23 m) above the level of fire department vehicle access</u> shall comply with the re-entry provisions of 7.2.1.5.8.	See new understood text

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18.2.2.2.11 ~~Horizontal sliding~~ Sliding doors shall be permitted in accordance with 18.2.2.2.11.1 or 18.2.2.2.11.2.	See new understood text
18.2.2.2.11.1 ~~Horizontal sliding doors~~ Special-purpose horizontally sliding accordion or folding door assemblies in accordance with 7.2.1.14, that are not automatic-closing shall be limited to a single leaf and shall have a latch or other mechanism that ensures that the doors will not rebound into a partially open position if forcefully closed.	See new understood text
18.2.2.2.11.2 Horizontal-sliding doors serving an occupant load of fewer than 10 shall be permitted, provided that all of the following criteria are met: 1. The area served by the door has no high hazard contents. 2. The door is readily operable from either side without special knowledge or effort. 3. The force required to operate the door in the direction of door travel is not more than 30 lbf (133 N) to set the door in motion and is not more than 15 lbf (67 N) to close the door or open it to the minimum required width. 4. The door assembly complies with any required fire protection rating and, where rated, is self-closing or automatic-closing by means of smoke detection in accordance with 7.2.1.8 and is installed in accordance with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives.*~~ 5. Where corridor doors are required to latch, the doors are equipped with a latch or other mechanism that ensures that the doors will not rebound into a	See new understood text

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partially open position if forcefully closed. 18.2.3.4* Aisles, corridors, and ramps required for exit access in a hospital or nursing home shall be not less than 8 ft (2440 mm) in clear and unobstructed width, unless otherwise permitted by one of the following: 1. *Aisles, corridors, and ramps in adjunct areas not intended for the housing, treatment, or use of inpatients shall be not less than 44 in. (1120 mm) in clear and unobstructed width. 2. *Projections from the corridor wall shall be permitted by one of the following:	See new understood text
a. Noncontinuous projections not more than 6 4 in. (~~150~~ 100 mm) from the corridor wall, positioned not less than 38 in. (965 mm) above the floor, shall be permitted. b. Noncontinuous projections of more than 4 in. (100 mm) but not more than 6 in. (150 mm) from the corridor wall shall be permitted provided that both of the following are met:	Parts newly added to section
i. The projecting item is positioned not less than 38 in. (965 mm) above the floor. ii. A vertical extension is provided below the projection such that the extension has a leading edge that is within 4 in. (100 mm) of the leading edge of the projection at a point that is 27 in. (685 mm) maximum above the floor. (9) Where the corridor width is at least 8 ft (2440 mm), projections into the required width	Parts newly added to section

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shall be permitted for emergency stair travel devices, provided that all of the following conditions are met: a. These devices do not reduce the clear unobstructed corridor width to less than 72 in. (1830 mm). b. These devices are secured to the wall. c. Where furniture is placed in the corridor in accordance with 18.2.3.4(4), the emergency stair travel devices are placed on the same side of the corridor as the furniture. d. These devices are located so as to not obstruct access to building service and fire protection equipment. e. These devices are grouped such that each grouping does not exceed a projected floor area of 12 ft^2 (3.7 m^2). f. The groupings addressed in 18.2.3.4(6)(e) are separated from each other by a distance of at least 10 ft (3050 mm).	
18.2.3.5 Aisles, corridors, and ramps required for exit access in a limited care facility or hospital for psychiatric care shall be not less than 6 ft (1830 mm) in clear and unobstructed width, unless otherwise permitted by one of the following: 1. *Aisles, corridors, and ramps in adjunct areas not intended for the housing, treatment, or use of inpatients shall be not less than 44 in. (1120 mm) in clear and unobstructed width. 2. *Projections from the corridor wall shall be permitted by one of the following: a. Noncontinuous projections not more than 4 in. (100 mm) from the corridor wall, positioned not less than 38 in. (965 mm) above the floor, shall be permitted. b. Noncontinuous projections of more than 4 in. (100 mm) but not more than 6 in. (150 mm)	New Section

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from the corridor wall shall be permitted provided that both of the following are met:

i. The projecting item is positioned not less than 38 in. (965 mm) above the floor.
ii. A vertical extension is provided below the projection such that the extension has a leading edge that is within 4 in. (100 mm) of the leading edge of the projection at a point that is 27 in. (685 mm) maximum above the floor.

(7) Where the corridor width is at least 8 ft (2440 mm), projections into the required width shall be permitted for emergency stair travel devices, provided that all of the following conditions are met:

a. These devices do not reduce the clear unobstructed corridor width to less than 72 in. (1830 mm).
b. These devices are secured to the wall.
c. Where furniture is placed in the corridor in accordance with 18.2.3.4(5), the emergency stair travel devices are placed on the same side of the corridor as the furniture.
d. These devices are located so as to not obstruct access to building service and fire protection equipment.
e. These devices are grouped such that each grouping does not exceed a projected floor area of 12 ft^2 (3.7 m^2).
f. The groupings addressed in 18.2.3.5(7)(e) are separated from each other by a distance of at least 10 ft (3050 mm).

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18.2.4.4.2 A door in a smoke barrier shall not serve as the only exit access from any space in a smoke compartment.	New Section
18.2.9.2 Buildings equipped with, or in which patients require the use of, life-support systems *(see 18.5.1.3)* shall have emergency lighting equipment supplied by the life safety branch of the electrical system as described in NFPA 99, ~~*Health Care Facilities Code*~~	See new understood text
18.2.10.5 Illumination of required exit and directional signs in buildings equipped with, or in which patients use, life-support systems *(see 18.5.1.3)* shall be provided as follows: ~~1.~~ Illumination shall be supplied by the life safety branch of the electrical system as described in NFPA 99~~, *Health Care Facilities Code.*~~ 2. Self-luminous exit signs complying with 7.10.4 shall be permitted.	See new understood text
18.3.2.2 Laboratories. Laboratories in which chemicals are handled or stored shall comply with NFPA 45, ~~*Standard on Fire Protection for Laboratories Using Chemicals.*~~	See new understood text
18.3.2.4 Medical Gas. Areas where medical gas is stored or administered, and the operation, testing, and maintenance of medical gases shall be in accordance with NFPA 99, ~~*Health Care Facilities Code.*~~	See new understood text
18.3.2.5.3* Within a smoke compartment, where residential or commercial cooking equipment is used to prepare meals for 30 or fewer persons, one cooking facility shall be permitted to be open to the corridor, provided that all of the following conditions are met:	

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1. The portion of the health care facility served by the cooking facility is limited to 30 beds and is separated from other portions of the health care facility by a smoke barrier constructed in accordance with 18.3.7.3, 18.3.7.6, and 18.3.7.8. 2. The cooktop or range is equipped with a range hood of a width at least equal to the width of the cooking surface, with grease baffles or other grease-collecting and clean-out capability. 3. *The hood systems have a minimum airflow of 500 cfm (14,000 L/min). 4. The hood systems that are not ducted to the exterior additionally have a charcoal filter to remove smoke and odor. 5. The cooktop or range complies with all of the following: a. The cooktop or range is protected with a fire suppression system listed in accordance with ANSI/UL 300, *Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment*, or is tested and meets all requirements of UL 300A, *Extinguishing System Units for Residential Range Top Cooking Surfaces*, in accordance with the applicable testing document's scope. ~~b.~~ A manual release of the extinguishing system is provided in accordance with Section 10.5 of NFPA 96~~, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.*~~	See new understood text
18.3.2.6 Heliports. Buildings that house health care occupancies, as indicated in 18.1.1.1.4, and have rooftop heliports shall be protected in accordance with NFPA 418, ~~*Standard for Heliports.*~~	See new understood text

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18.3.4.4 ~~Fire Safety~~ Emergency Control Functions. Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically any control functions to be performed by that device. *(See 9.6.5.)*	See new understood text
18.3.5.10* Sprinklers shall not be required in clothes closets of patient sleeping rooms in hospitals where the area of the closet does not exceed 6 ft^2 (0.55 m^2), provided that the distance from the sprinkler in the patient sleeping room to the back wall of the closet does not exceed the maximum distance permitted by NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~	See new understood text
18.3.5.11* Sprinklers in areas where cubicle curtains are installed shall be in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~	See new understood text
18.3.6.3.1* Doors, including doors or panels to nurse servers and pass-through openings, protecting corridor openings shall be constructed to resist the passage of smoke, and the following also shall apply: 1. Compliance with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives*~~, shall not be required.	See new understood text
18.3.6.3.13 Dutch doors shall be permitted where they conform to 18.3.6.3 and meet all of the following criteria: 1. Both the upper leaf and lower leaf are equipped with a latching device. 2. The meeting edges of the upper and lower leaves are quipped with an astragal, a rabbet, or a bevel.	

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3. Where protecting openings in enclosures around hazardous areas, the doors comply with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives.*~~	See new understood text
18.3.7.1 Buildings containing health care facilities shall be subdivided by smoke barriers *(see 18.2.4.3)*, unless otherwise permitted by 18.3.7.2, as follows: 1. To divide every story used by inpatients for sleeping or treatment into not less than two smoke compartments 2. To divide every story having an occupant load of 50 or more persons, regardless of use, into not less than two smoke compartments 3. To limit the size of each smoke compartment required by 18.3.7.1(1) and 18.3.7.1(2) to an area not exceeding one of the following: a. 22,500 ft^2 (2100 m^2), unless the area is an atrium separated in accordance with 8.6.7, in which case no limitation in size is required in hospital smoke compartments where any patient sleeping room is configured for two or more patients b. 40,000 ft^2 (3720 m^2) in hospital smoke compartments where all patient sleeping rooms are configured for only one patient, in which case suites in accordance with 18.2.5.7 shall be permitted where every occupiable sleeping room within the suite is configured for only one patient c. 40,000 ft^2 (3720 m^2) in hospital smoke compartments that contain no patient sleeping rooms	New parts added to Section

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d. 22,500 ft^2 (2100 m^2) in nursing homes and limited care faciliites 4. To separate atriums in accordance with 8.6.7, in which case no limitation in size is required 5. To limit the travel distance from any point to reach a door in the required smoke barrier to a distance not exceeding 200 ft (61 m) 18.4.3* Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following conditions are met: 1. Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 ft (1830 mm). 2. The maximum individual dispenser fluid capacity shall be as follows: 1. 0.32 gal (1.2 L) for dispensers in rooms, corridors, and areas open to corridors 2. 0.53 gal (2.0 L) for dispensers in suites of rooms 3. Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B, ~~*Code for the Manufacture and Storage of Aerosol Products.*~~	See new understood text
7. Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~ 18.4.4.5.2 Laboratories in which chemicals are handled or stored shall comply with NFPA 45, ~~*Standard on Fire Protection for Laboratories Using Chemicals.*~~	See new understood text

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18.5.1.3 Any health care occupancy, as indicated in 18.1.1.1.4, that normally uses life-support devices shall have electrical systems designed and installed in accordance with NFPA 99, ~~*Health Care Facilities Code*~~, unless the facility uses life-support equipment for emergency purposes only.	See new understood text
18.5.1.4 Maintenance and testing of essential electrical systems shall be in accordance with NFPA 99.	New Section

18.5.2.3
The requirements of 18.5.2.2 shall not apply where otherwise permitted by the following:
 	
1. Approved, suspended unit heaters shall be permitted in locations other than means of egress and patient sleeping areas, provided that both of the following criteria are met:
  1. Such heaters are located high enough to be out of the reach of persons using the area.
  2. Such heaters are equipped with the safety features required by 18.5.2.2(2).
2. Direct-vent gas fireplaces, as defined in NFPA 54, ~~*National Fuel Gas Code*~~, shall be permitted inside of smoke compartments containing patient sleeping areas, provided that all of the following criteria are met:
	See new understood text

18.7.5.6 Combustible decorations shall be prohibited in any health care occupancy, unless one of the following criteria is met: 1. They are flame-retardant or are treated with approved fire-retardant coating that is listed and labeled for application to the material to which it is applied. 2. *The decorations meet the flame propagation performance criteria	

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contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text
3. The decorations exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source.	See new understood text
18.7.5.7.1 Soiled linen or trash collection receptacles shall not exceed 32 gal (121 L) in capacity and shall meet all of the following requirements:	
1. The average density of container capacity in a room or space shall not exceed 0.5 gal/ft^2 (20.4 L/m^2).	
~~A capacity of 32 gal (121 L) shall not be exceeded within any 64 ft^2 (6 m^2) area.~~	Deleted part from section
2. *Mobile soiled linen or trash collection receptacles with capacities greater than 32 gal (121 L) shall be located in a room protected as a hazardous area when not attended. 3. Container size and density shall not be limited in hazardous areas.	
18.7.5.7.2* Containers used solely for recycling clean waste or for patient records awaiting destruction shall be permitted to be excluded from the requirements of 18.7.5.7.1 where all the following conditions are met:	
1. Each container shall be limited to a maximum capacity of 96 gal (363 L), except as permitted by 18.7.5.7.2(2) or (3). 2. *Containers with capacities greater than 96 gal (363 L) shall be located in a room	

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protected as a hazardous area when not attended. 3. Container size shall not be limited in hazardous areas. 4. Containers for combustibles shall be labeled and listed as meeting the requirements of FM Approval ~~Standar~~d 6921,~~*Containers for Combustible*~~ *Waste* *<u>Approval Standard for Containers for Combustible Waste</u>*; however, such testing, listing, and labeling shall not be limited to FM Approvals.	See new understood text
18.7.7.1 New engineered smoke control systems shall be designed, installed, tested, and maintained in accordance with NFPA 92, ~~*Standard for Smoke Control Systems.*~~	See new understood text
18.7.9.2 The means of egress in any area undergoing construction, repair, or improvements shall be inspected daily for compliance with 7.1.10.1 and shall also comply with NFPA 241, ~~*Standard for Safeguarding Construction, Alteration, and Demolition Operations.*~~	See new understood text
Chapter 19 Existing health Care Occupancies ~~19.1.1.1.9~~ ~~Facilities that do not provide housing on a 24-hour basis for their occupants shall be classified as other occupancies and shall be covered by other chapters of this *Code*.~~	Deleted Section
19.1.1.1.9* The requirements of this chapter shall apply based on the assumption that staff is available in all patient-occupied areas to perform certain ~~fire safety~~ <u>emergency control</u> functions as required in other paragraphs of this chapter. 19.1.4.2 Special Definitions. The following is a list of special terms used in this chapter:	See new understood text

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1. **Ambulatory Health Care Occupancy.** *(See 3.3.192.1.)* 2. **Deep-~~fat~~ Fat Frying.** *(See 3.3.57.)* 3. **Hospital.** *(See 3.3.146.)* 4. **Limited Care Facility.** *(See 3.3.92.2.)* 5. **Nursing Home.** *(See 3.3.144.2.)* 6. Self-Preservation Capability (Health Care and Ambulatory Health Care Occupancies). *(See 3.3.251.)*	Added part to Section
19.1.6.2* Any building of Type I(442), Type I(332), Type II(222), or Type II(111) construction shall be permitted to include roofing systems involving combustible or non-fire-rated steel supports, decking, or roofing, provided that all of the following criteria are met:	See new understood text
19.1.6.3 Any building of Type I(442), Type I(332), Type II(222), or Type II(111) construction shall be permitted to include roofing systems involving combustible supports, decking, or roofing, provided that all of the following criteria are met: 1. The roof covering shall meet Class A requirements in accordance with ASTM E108, *Standard Test Methods for Fire Tests of Roof Coverings*, or ANSI/UL 790, *Test Methods for Fire Tests of Roof Coverings*. 2. The roof/ceiling assembly shall be constructed with fire-retardant-treated wood meeting the requirements of NFPA 220, ~~*Standard on Types of Building Construction.*~~ 3. The roof/ceiling assembly shall have the required fire resistance rating for the type of construction.	See new understood text
19.2.2.2.4 Doors within a required means of egress shall not be equipped with a latch or lock that requires the use of a tool or key from the egress	

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side, unless otherwise permitted by one of the following: 1. Locks complying with 19.2.2.2.5 shall be permitted. 2. *Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted. 3. *~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted. 4. Elevator lobby exit access door locking in accordance with 7.2.1.6.3 shall be permitted. 5. Approved existing door-locking installations shall be permitted. 19.2.2.2.5.2* Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following are met: 1. Staff can readily unlock doors at all times in accordance with 19.2.2.2.6. 2. A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space. 3. *The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.7. 4. The locks are electrical locks that fail safely so as to release upon loss of power to the device. 5. The locks release by independent activation of each of the following: 1. Activation of the smoke detection system required by 19.2.2.2.5.2(2)	See new understood text

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2. Waterflow in the automatic sprinkler system required by 19.2.2.2.5.2(3) 6. Hardware for new electric lock installations is listed in accordance with ANSI/UL 294, *Standard for Access Control System Units.*	Part newly added to section
19.2.2.2.11 ~~Horizontal-sliding~~ Sliding doors shall be permitted in accordance with 19.2.2.2.11.1 or 19.2.2.2.11.1 ~~Horizontal-sliding doors that are not automatic-closing~~ Special-purpose horizontally sliding accordion or folding door assemblies in accordance with 7.2.1.14 that are not automatic-closing shall be limited to a single leaf and shall have a latch or other mechanism that ensures that the doors will not rebound into a partially open position if forcefully closed. 19.2.2.2.11.2 Horizontal-sliding doors serving an occupant load of fewer than 10 shall be permitted, provided that all of the following criteria are met: 1. The area served by the door has no high hazard contents. 2. The door is readily operable from either side without special knowledge or effort. 3. The force required to operate the door in the direction of door travel is not more than 30 lbf (133 N) to set the door in motion and is not more than 15 lbf (67 N) to close the door or open it to the minimum required width. 4. The door assembly complies with any required fire protection rating and, where rated, is self-closing or automatic-closing by means of smoke detection in accordance with 7.2.1.8 and is installed in accordance with NFPA	See new understood text

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80, ~~*Standard for Fire Doors and Other Opening Protectives.*~~	See new understood text
19.2.3.4* Any required aisle, corridor, or ramp shall be not less than 48 in. (1220 mm) in clear width where serving as means of egress from patient sleeping rooms, unless otherwise permitted by one of the following: 1. Aisles, corridors, and ramps in adjunct areas not intended for the housing, treatment, or use of inpatients shall be not less than 44 in. (1120 mm) in clear and unobstructed width. 2. *Where corridor width is at least 6 ft (1830 mm), ~~noncontinuous projections not more than 6 in. (150 mm)~~ projections from the corridor wall, ~~above the handrail height~~, shall be permitted by one of the following: a. Noncontinuous projections not more than 4 in. (100 mm) from the corridor wall, positioned above handrail height, are permitted. b. Noncontinuous projections of more than 4 in. (100 mm) but not more than 6 in. (150 mm) from the corridor wall are permitted provided that both of the following are met: i. The projecting item is positioned above handrail height ii. A vertical extension is provided below the projection such that the extension has a leading edge that is within 4 in. (100 mm) of the leading edge of the projection at a point that is 27 in. (685 mm) maximum above the floor	See new understood text Newly added part to section

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3. Exit access within a room or suite of rooms complying with the requirements of 19.2.5 shall be permitted.
4. Projections into the required width shall be permitted for wheeled equipment, provided that all of the following conditions are met:
    a. The wheeled equipment does not reduce the clear unobstructed corridor width to less than 60 in. (1525 mm).
    b. The health care occupancy fire safety plan and training program address the relocation of the wheeled equipment during a fire or similar emergency.
    c. *The wheeled equipment is limited to the following:
        i. Equipment in use and carts in use
        ii. Medical emergency equipment not in use
        iii. Patient lift and transport equipment
5. *Where the corridor width is at least 8 ft (2440 mm), projections into the required width shall be permitted for fixed furniture, provided that all of the following conditions are met:
    a. The fixed furniture is securely attached to the floor or to the wall.
    b. The fixed furniture does not reduce the clear unobstructed corridor width to less than 6 ft (1830 mm), except as permitted by 19.2.3.4(2).
    c. The fixed furniture is located only on one side of the corridor.
    d. The fixed furniture is grouped such that each grouping does not exceed an area of 50 ft^2 (4.6 m^2).
    e. The fixed furniture groupings addressed in 19.2.3.4(5)(d) are

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separated from each other by a distance of at least 10 ft (3050 mm). f. *The fixed furniture is located so as to not obstruct access to building service and fire protection equipment. g. Corridors throughout the smoke compartment are protected by an electrically supervised automatic smoke detection system in accordance with 19.3.4, or the fixed furniture spaces are arranged and located to allow direct supervision by the facility staff from a nurses' station or similar space. h. The smoke compartment is protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.8. 6. Where the corridor width is at least 8 ft (2440 mm), projections into the required width shall be permitted for emergency stair travel devices, provided that all of the following conditions are met: a. These devices do not reduce the clear unobstructed corridor width to less than 72 in. (1830 mm). b. These devices are secured to the wall. c. Where furniture is placed in the corridor in accordance with 19.2.3.4(5), the emergency stair travel devices are placed on the same side of the corridor as the furniture. d. These devices are located so as to not obstruct access to building service and fire protection equipment. i. These devices are grouped such that each grouping does not exceed	Newly added part to section

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a projected floor area of 12 ft^2 (3.7 m^2). ii. The groupings addressed in 19.2.3.4(6)(e) are separated from each other by a distance of at least 10 ft (3050 mm). iii. The smoke compartment is protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.8.	
19.3.2.2.1 Laboratories in which chemicals are handled or stored shall comply with the operational requirements of NFPA 45, ~~*Standard on Fire Protection for Laboratories Using Chemicals*~~.	See new understood text
19.3.2.4 Medical Gas. Medical gas storage shall be in accordance with Section 8.7 and the provisions of NFPA ~~99, *Health Care Facilities Code*,~~ applicable to operation, maintenance, and testing	See new understood text
19.3.2.5.3* Within a smoke compartment, where residential or commercial cooking equipment is used to prepare meals for 30 or fewer persons, one cooking facility shall be permitted to be open to the corridor, provided that all of the following conditions are met: 1. The portion of the health care facility served by the cooking facility is limited to 30 beds and is separated from other portions of the health care facility by a smoke barrier constructed in accordance with 19.3.7.3, 19.3.7.6, and 19.3.7.8. 2. The cooktop or range is equipped with a range hood of a width at least equal to the width of the cooking surface, with grease baffles or other grease-collecting and clean-out capability. 3. *The hood systems have a minimum airflow of 500 cfm (14,000 L/min).	

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4. The hood systems that are not ducted to the exterior additionally have a charcoal filter to remove smoke and odor. 5. The cooktop or range complies with all of the following: a. The cooktop or range is protected with a fire suppression system listed in accordance with ANSI/UL 300, *Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment*, or is tested and meets all requirements of UL 300A, *Extinguishing System Units for Residential Range Top Cooking Surfaces*, in accordance with the applicable testing document's scope. b. A manual release of the extinguishing system is provided in accordance with Section 10.5 of NFPA 96~~, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*~~.	See new understood text
19.3.4.4 ~~Fire Safety~~ Emergency Control Functions. Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically any control functions to be performed by that device. *(See 9.6.5.)*	Changed the title name
19.3.5.10* Sprinklers shall not be required in clothes closets of patient sleeping rooms in hospitals where the area of the closet does not exceed 6 ft^2 (0.55 m^2), provided that the distance from the sprinkler in the patient sleeping room to the back wall of the closet does not exceed the maximum distance permitted by NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~	See new understood text

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19.3.5.11* Newly introduced cubicle curtains in sprinklered areas shall be installed in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~	See new understood text
19.3.6.3.3 Compliance with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives*~~, shall not be required.	See new understood text
19.3.6.3.13 Dutch doors shall be permitted where they conform to 19.3.6.3 and meet all of the following criteria: 1. Both the upper leaf and lower leaf are equipped with a latching device. 2. The meeting edges of the upper and lower leaves are equipped with an astragal, a rabbet, or a bevel. 3. Where protecting openings in enclosures around hazardous areas, the doors comply with NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives.*~~	See new understood text
19.3.7.1 Smoke barriers shall be provided to divide every story used for sleeping rooms for more than 30 patients into not less than two smoke compartments *(see 19.2.4.4)*, and the following also shall apply: 1. The size of any such smoke compartment shall <u>comply with one of the following:</u> a. <u>Smoke compartments shall</u> not exceed 22,500 ft^2 (2100 m^2). b. <u>Where compliant with the provisions of 18.3.7.1(4) and where the building is sprinklered in accordance with 19.3.5.8, hospital smoke compartments where all sleeping rooms are	Parts newly added to section

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configured for only one patient shall not exceed 40,000 ft^2 (3720 m^2). c. Where compliant with the provisions of 18.3.7.1(5) and where the building is sprinklered in accordance with 19.3.5.8, hospital smoke compartments without patient sleeping rooms shall not exceed 40,000 ft^2 (3720 m^2). 19.4.2.1 All high-rise buildings containing health care occupancies shall be protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7 within 12 years of the adoption of this *Code*, except as otherwise provided in 19.4.2.3 ~~or~~,19.4.2.4, or 19.4.2.4.	See new understood text
19.4.2.2* Where a jurisdiction adopts this edition of the *Code* and previously adopted the 2015 edition, the sprinklering required by 19.4.2.1 shall be installed within 9 years of the adoption of this *Code*.	New Section
19.4.3* Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following conditions are met: 1. Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 ft (1830 mm). 2. The maximum individual dispenser fluid capacity shall be as follows: 1. 0.32 gal (1.2 L) for dispensers in rooms, corridors, and areas open to corridors 2. 0.53 gal (2.0 L) for dispensers in suites of rooms 3. Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and	

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shall be limited to Level 1 aerosols as defined in NFPA 30B, ~~*Code for the Manufacture and Storage of Aerosol Products.*~~	See new understood text
4. Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).	
5. Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg), shall be in use outside of a storage cabinet in a single smoke compartment, except as otherwise provided in 19.4.3(6).	
6. One dispenser complying with 18.4.3(2) or (3) per room and located in that room shall not be included in the aggregated quantity addressed in 19.4.3(5).	
7. Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~	See new understood text
19.5.1.3 Maintenance and testing of essential electrical systems shall be in accordance with NFPA 99.	New Section

19.5.2.3
The requirements of 19.5.2.2 shall not apply where otherwise permitted by the following:
 	
1. Approved, suspended unit heaters shall be permitted in locations other than means of egress and patient sleeping areas, provided that both of the following criteria are met:
  1. Such heaters are located high enough to be out of the reach of persons using the area.
  2. Such heaters are equipped with the safety features required by 19.5.2.2(2).	

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2. Direct-vent gas fireplaces, as defined in NFPA 54, ~~*National Fuel Gas Code*,~~ shall be permitted inside of smoke compartments containing patient sleeping areas, provided that all of the following criteria are met:	See new understood text
19.7.5.6 Combustible decorations shall be prohibited in any health care occupancy, unless one of the following criteria is met: 1. They are flame-retardant or are treated with approved fire-retardant coating that is listed and labeled for application to the material to which it is applied. 2. *The decorations meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*~~.	
3. The decorations exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source.	See new understood text
19.7.5.7.1 Soiled linen or trash collection receptacles shall not exceed 32 gal (121 L) in capacity and shall meet all of the following requirements: 1. The average density of container capacity in a room or space shall not exceed 0.5 gal/ft^2 (20.4 L/m^2).	
~~A capacity of 32 gal (121 L) shall not be exceeded within any 64 ft^2 (6 m^2) area.~~	See new understood text
19.7.5.7.2* Containers used solely for recycling clean waste or for patient records awaiting destruction shall be permitted to be excluded	

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from the requirements of 19.7.5.7.1 where all the following conditions are met: 1. Each container shall be limited to a maximum capacity of 96 gal (363 L), except as permitted by 19.7.5.7.2(2) or (3). 2. *Containers with capacities greater than 96 gal (363 L) shall be located in a room protected as a hazardous area when not attended. 3. Container size shall not be limited in hazardous areas. 4. Containers for combustibles shall be labeled and listed as meeting the requirements of FM Approval ~~Standard~~ 6921, *Approval Standard for Containers for Combustible Waste*; however, such testing, listing, and labeling shall not be limited to FM Approvals.	See new understood text
19.7.9.2 The means of egress in any area undergoing construction, repair, or improvements shall be inspected daily for compliance with 7.1.10.1 and shall also comply with NFPA 241, ~~*Standard for Safeguarding Construction, Alteration, and Demolition Operations.*~~	See new understood text
Chapter 20 New Ambulatory Health Care Occupancies 20.1.1.1.6* The requirements of this chapter shall apply based on the assumption that staff is available in all patient-occupied areas to perform certain ~~fire safety~~ emergency control functions as required in other paragraphs of this chapter. 20.1.4.2 ~~Definition~~ Special Definitions. The following is a list of special definitions used in this chapter: 1. Ambulatory Health Care Occupancy. *(See 3.3.196.1.)*	New Section

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2. Self-Preservation Capability (Health Care and Ambulatory Health Care Occupancies). *(See 3.3.251.)*	
20.2.2.2.6 Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following criteria are met: 1. Staff can readily unlock doors at all times in accordance with 20.2.2.2.7. 2. A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space. 3. The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7. 4. The locks are electrical locks that fail safely so as to release upon loss of power to the device. 5. The locks release by independent activation of each of the following: a. Activation of the smoke detection system required by 20.2.2.2.6(2) b. Waterflow in the automatic sprinkler system required by 20.2.2.2.6(3)	New Section
20.2.2.2.7 Doors that are located in the means of egress and are permitted to be locked under other provisions of 20.2.2.2.6 shall comply with both of the following: 1. Provisions shall be made for the rapid removal of occupants by means of one of the following:	New Section

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a. Remote control of locks from within the locked smoke compartment b. Keying of all locks to keys carried by staff at all times c. Other such reliable means available to the staff at all times 2. Only one locking device shall be permitted on each door.	
20.2.2.2.8 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
20.2.2.2.9 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
20.2.4.2 Not less than two exits ~~of the types described in 20.2.2 that are remotely located from each other shall be provided for each floor or fire section of the building~~.shall be provided on every story.	See new understood text
20.2.4.3 Not less than two separate exits shall be accessible from every part of every story.	New section
20.2.9.2 Where general anesthesia or life-support equipment is used, each ambulatory health care facility shall be provided with an essential electrical system in accordance with NFPA 99, ~~*Health Care Facilities Code*,~~ unless otherwise permitted by any of the following:	See new understood text
20.3.2.4 Laboratories. Laboratories in which chemicals are handled or stored shall comply with NFPA 45, ~~*Standard on Fire Protection for Laboratories Using Chemicals*.~~	See new understood text

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20.3.2.5 Medical Gas. Areas where medical gas is stored or administered, and the operation, management, and maintenance of medical gases shall be in accordance with NFPA 99, ~~*Health Care Facilities Code.*~~	See new understood text
20.3.4.4 ~~Fire Safety~~ Emergency Control Functions. Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically, without delay, any control functions required to be performed by that device. *(See 9.6.5.)*	New title for section
20.3.7.2 Every story of an ambulatory health care occupancy shall be divided into not less than two smoke compartments, unless otherwise permitted by one of the following: 1. This requirement shall not apply where the area of the ambulatory health care occupancy is less than 5000 ft^2 (465 m^2) per story and that area is protected by an approved automatic smoke detection system. 2. This requirement shall not apply where the area of the ambulatory health care occupancy is less than 10,000 ft^2 (929 m^2) per story and the building is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7. 3. An area in an adjoining occupancy shall be permitted to serve as a smoke compartment for an ambulatory health care occupancy if all of the following criteria are met: a. The separating wall and both compartments meet the requirements of 20.3.7. b. The ambulatory health care occupancy does not exceed one of the following:	See new understood text

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i. 22,500 ft^2 (2100 m^2) ii. 40,000 ft^2 (3720 m^2) in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7	Newly added part to section
20.3.7.3 Smoke compartments shall not exceed , ~~and the travel distance from any point to reach a door in a smoke barrier shall not exceed 200 ft (61 m).~~one of the following: 1. An area of 22,500 ft^2 (2100 m^2) 2. An area of 40,000 ft^2 (3720 m^2) in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7	See new understood text Newly added parts to section
20.3.7.4 The travel distance from any point to reach a door in a smoke barrier shall not exceed 200 ft (61 m).	New Section

20.4.3* Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following conditions are met:
 	
1. Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 ft (1830 mm).
2. The maximum individual dispenser fluid capacity shall be as follows:
  1. 0.32 gal (1.2 L) for dispensers in rooms, corridors, and areas open to corridors
  2. 0.53 gal (2.0 L) for dispensers in suites of rooms
~~3.~~ Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as	

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defined in NFPA 30B, ~~*Code for the Manufacture and Storage of Aerosol Products.*~~	See new understood text
4. Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm).	
5. Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg), shall be in use outside of a storage cabinet in a single smoke compartment, except as otherwise provided in 20.4.3(6).	
6. One dispenser per room complying with 20.4.3(2) or (3), and located in the room, shall not be required to be included in the aggregated quantity specified in 20.4.3(5).	
7. Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~	See new understood text
20.7.5.4 Combustible decorations shall be prohibited, unless one of the following criteria is met:	
1. They are flame-retardant.	
2. The decorations meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text
3. The decorations exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages,*~~ using the 20 kW ignition source.	See new understood text

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20.7.5.5.1 Soiled linen or trash collection receptacles shall not exceed 32 gal (121 L) in capacity, and all of the following also shall apply: 1. The average density of container capacity in a room or space shall not exceed 0.5 gal/ft^2 (20.4 L/m^2). ~~A capacity of 32 gal (121 L) shall not be exceeded within any 64 ft^2 (6 m^2) area~~.	Part deleted from section
20.7.5.5.2* Containers used solely for recycling clean waste or for patient records awaiting destruction shall be permitted to be excluded from the requirements of 20.7.5.5.1 where all the following conditions are met: 1. Each container shall be limited to a maximum capacity of 96 gal (363 L), except as permitted by 20.7.5.5.2(2) or (3). 2. *Containers with capacities greater than 96 gal (363 L) shall be located in a room protected as a hazardous area when not attended. 3. Container size shall not be limited in hazardous areas. 4. Containers for combustibles shall be labeled and listed as meeting the requirements of FM Approval ~~Standard~~ 6921,*Approval Standard for Containers for Combustible Waste*; however, such testing, listing, and labeling shall not be limited to FM Approvals.	See new understood text
20.7.9.2 The means of egress in any area undergoing construction, repair, or improvements shall be inspected daily for compliance with 7.1.10.1 and shall also comply with NFPA 241, ~~*Standard for Safeguarding Construction, Alteration, and Demolition Operations*~~.	See new understood text
Chapter 21 Existing Ambulatory Health Care Occupancies	

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21.1.1.1.6* The requirements of this chapter shall apply based on the assumption that staff is available in all patient-occupied areas to perform certain ~~fire safety~~ emergency control functions as required in other paragraphs of this chapter.	See new understood text
21.1.4.2 ~~Definition~~ Special Definitions. The following is a list of special definitions used in this chapter: 1. Ambulatory Health Care Occupancy. *(See 3.3.192.1.)* 2. Self-Preservation Capability (Health Care and Ambulatory Health Care Occupancies). *(See 3.3.251.)*	New Section
21.2.2.2.6 Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following are met: 1. Staff can readily unlock doors at all times in accordance with 21.2.2.2.7. 2. A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space. 3. The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7. 4. The locks are electrical locks that fail safely so as to release upon loss of power to the device. 5. The locks release by independent activation of each of the following: a. Activation of the smoke detection system required by 21.2.2.2.6(2)	New Section

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b. Waterflow in the automatic sprinkler system required by 21.2.2.2.6(3)	
21.2.2.2.7 Doors that are located in the means of egress and are permitted to be locked in accordance with 21.2.2.2.6 shall comply with all of the following: 1. Provisions shall be made for the rapid removal of occupants by means of one of the following: a. Remote control of locks b. Keying of all locks to keys carried by staff at all times c. Other such reliable means available to the staff at all times 2. Only one locking device shall be permitted on each door. 3. More than one lock shall be permitted on each door, subject to approval of the authority having jurisdiction.	New Section
21.2.2.2.8 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
21.2.2.2.9 ~~Access-controlled egress~~ doors Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
21.2.4.2 Not less than two exits ~~of the types described in 21.2.2 that are remotely located from each other shall be provided for each floor or fire section of the building~~ shall be provided on every story.	See new understood text
21.2.4.3 Not less that two separate exits shall be accessible from every part of every story.	New Section

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21.2.9.2 Where general anesthesia or life-support equipment is used, each ambulatory health care facility shall be provided with an essential electrical system in accordance with NFPA 99, ~~*Health Care Facilities Code*~~, unless otherwise permitted by one of the following:	See new understood text
21.3.2.4 Medical Gas. Medical gas storage shall be in accordance with Section 8.7 and the provisions of NFPA 99, ~~*Health Care Facilities Code*~~, applicable to operation, maintenance, and testing.	See new understood text
21.3.2.5.1 Laboratories in which chemicals are handled or stored shall comply with the operational requirements of NFPA 45, ~~*Standard on Fire Protection for Laboratories Using Chemicals*~~.	See new understood text
21.3.4.4 ~~Fire Safety~~ Emergency Control Functions. Operation of any activating device in the required fire alarm system shall be arranged to accomplish automatically, without delay, any control functions required to be performed by that device. *(See 9.6.5.)*	Changed the title of the section
21.3.7.2 Every story of an ambulatory health care occupancy shall be divided into not less than two smoke compartments, unless otherwise permitted by one of the following: 1. This requirement shall not apply where the area of the ambulatory health care occupancy is less than 5000 ft^2 (465 m^2) per story and that area is protected by an approved automatic smoke detection system. 2. This requirement shall not apply where the area of the ambulatory health care occupancy is less than 10,000 ft^2 (929 m^2) per story and the building is protected throughout by an approved, supervised automatic sprinkler system installed in accordance with Section 9.7.	

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3. An area in an adjoining occupancy shall be permitted to serve as a smoke compartment for an ambulatory health care occupancy if all of the following criteria are met: a. The separating wall and both compartments meet the requirements of 21.3.7. b. The ambulatory health care occupancy ~~is less than~~ does not exceed one of the following: i. 22,500 ft^2 (2100 m^2) ii. 40,000 ft^2 (3720 m^2) in buildings protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7 c. Access from the ambulatory health care occupancy to the other occupancy is unrestricted.	Newly added parts to section
21.4.3* Alcohol-Based Hand-Rub Dispensers. Alcohol-based hand-rub dispensers shall be protected in accordance with 8.7.3.1, unless all of the following conditions are met: 1. Where dispensers are installed in a corridor, the corridor shall have a minimum width of 6 ft (1830 mm). 2. The maximum individual dispenser fluid capacity shall be as follows: 1. 0.32 gal (1.2 L) for dispensers in rooms, corridors, and areas open to corridors 2. 0.53 gal (2.0 L) for dispensers in suites of rooms 3. Where aerosol containers are used, the maximum capacity of the aerosol dispenser shall be 18 oz (0.51 kg) and shall be limited to Level 1 aerosols as defined in NFPA 30B, ~~*Code for the Manufacture and Storage of Aerosol Products.*~~	See new understood text

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4. Dispensers shall be separated from each other by horizontal spacing of not less than 48 in. (1220 mm). 5. Not more than an aggregate 10 gal (37.8 L) of alcohol-based hand-rub solution or 1135 oz (32.2 kg) of Level 1 aerosols, or a combination of liquids and Level 1 aerosols not to exceed, in total, the equivalent of 10 gal (37.8 L) or 1135 oz (32.2 kg), shall be in use outside of a storage cabinet in a single smoke compartment, except as otherwise provided in 21.4.3(6). 6. One dispenser per room complying with 21.4.3(2) or (3), and located in the room, shall not be required to be included in the aggregated quantity specified in 21.4.3(5). 7. Storage of quantities greater than 5 gal (18.9 L) in a single smoke compartment shall meet the requirements of NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~	See new understood text
21.7.5.4 Combustible decorations shall be prohibited, unless one of the following criteria is met:	
1. They are flame-retardant. 2. The decorations meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text
3. The decorations exhibit a heat release rate not exceeding 100 kW when tested in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, using the 20 kW ignition source.	See new understood text

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21.7.5.5.1 Soiled linen or trash collection receptacles shall not exceed 32 gal (121 L) in capacity, and all of the following also shall apply: 1. The average density of container capacity in a room or space shall not exceed 0.5 gal/ft^2 (20.4 L/m^2). ~~A capacity of 32 gal (121 L) shall not be exceeded within any 64 ft^2 (6 m^2) area~~.	Part deleted from section
21.7.5.5.2* Containers used solely for recycling clean waste or for patient records awaiting destruction shall be permitted to be excluded from the requirements of 21.7.5.5.1 where all the following conditions are met: 1. Each container shall be limited to a maximum capacity of 96 gal (363 L), except as permitted by 21.7.5.5.2(2) or 21.7.5.5.2(3). 2. *Containers with capacities greater than 96 gal (363 L) shall be located in a room protected as a hazardous area when not attended. 3. Container size shall not be limited in hazardous areas. 4. Containers for combustibles shall be labeled and listed as meeting the requirements of FM Approval ~~Standard~~ 6921, *Approval Standard for Containers for Combustible Waste*; however, such testing, listing, and labeling shall not be limited to FM Approvals.	See new understood text
21.7.9.2 The means of egress in any area undergoing construction, repair, or improvements shall be inspected daily for compliance with 7.1.10.1 and shall also comply with NFPA 241, ~~*Standard for Safeguarding Construction, Alteration, and Demolition Operations*~~.	See new understood text

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Chapter 22 New Detention and Correctional Occupancies	
22.1.1.4.3 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
22.2.11.2 Reserved.	New Section
22.2.11.3 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply.	New Section
22.3.7.12 Arrangements and positioning of smoke detectors required by 22.3.7.11 shall be permitted to prevent damage or tampering, or for other purposes, provided that both of the following criteria are met: 1. Such arrangements shall be capable of detecting any fire. 2. The placement of detectors shall be such that the speed of detection is equivalent to that provided by the spacing and arrangement required by *NFPA 72*, ~~*National Fire Alarm and Signaling Code,*~~ as referenced in 8.5.5.7.1.	See new understood text
22.7.4.4 Combustible decorations shall be prohibited in any detention or correctional occupancy unless they are flame retardant and approved.	See new understood text
22.7.7 Door Inspection. Doors and door hardware in means of egress shall be inspected ~~monthly~~ annually by an appropriately trained person. The inspection shall be documented.	See new understood text
22.7.8 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section

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Chapter 23 Existing Detention and Correctional Occupancies	
23.1.1.4.3 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
23.2.11.1.11 Reserved.	New Section
23.2.11.1.12 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply.	New Section
23.3.7.12 Arrangements and positioning of smoke detectors required by 23.3.7.11 shall be permitted to prevent damage or tampering, or for other purposes, provided that both of the following criteria are met: 1. Such arrangements shall be capable of detecting any fire. 2. The placement of detectors shall be such that the speed of detection is equivalent to that provided by the spacing and arrangement required by *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, as referenced in 8.5.5.7.1.	See new understood text
23.5.1.2 Alarms, emergency communications systems, and the illumination of generator set installations shall be provided with emergency power in accordance with *NFPA 70*, ~~*National Electrical Code*~~, unless otherwise permitted by 23.5.1.3.	See new understood text
23.5.1.3 Systems complying with earlier editions of *NFPA 70*, ~~*National Electrical Code*~~, and not presenting a life safety hazard shall be permitted to continue to be used.	See new understood text

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23.7.4.4 Combustible decorations shall be prohibited in any detention or correctional occupancy unless they are flame retardant and approved.	See new understood text
23.7.6 Door Inspection. Doors and door hardware in means of egress shall be inspected ~~monthly~~ annually by an appropriately trained person. The inspection shall be documented.	See new understood text
23.7.7 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section
Chapter 24 Furnishings, Mattresses, and Decorations 24.3.2 Protection from Hazards. (~~Reserved~~)—Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
24.3.5.2 Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section 9.7; in buildings of four or fewer stories in height, and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, and with NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*~~, shall also be permitted	See new understood text
Chapter 25 Reserved	
Chapter 26 Lodging or Rooming Houses 26.1.1.5 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
26.3.2.1 Alcohol-Based Hand-Rub Dispensers.	Changed the title of the section

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Alcohol-based hand-rub dispensers in accordance with 8.7.3.3 shall be permitted. 26.3.2.2 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply. 26.3.6.2.2 In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, shall be permitted.~~ 26.3.6.2.3* Systems in accordance with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*~~, shall be permitted where all of the following requirements are met: 26.5.2.2 Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, ~~*National Fuel Gas Code*~~, shall not be used.	New Section See new understood text See new understood text See new understood text
Chapter 27 Reserved	
Chapter 28 New Hotels and Dormitories 28.1.1.6 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply. 28.1.5.2 For the design of automatic sprinkler systems, the classification of contents in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, shall apply. 28.2.1.4 Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be	New Section See new understood text New Section

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provided in accordance with the provisions of 7.1.6.5.	
28.2.2.2.2.2 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
28.3.2.3 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
28.3.5.3 Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section 9.7, as modified by 28.3.5.4. In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*,~~ shall be permitted.	See new understood text
28.3.5.4 The provisions for draft stops and closely spaced sprinklers in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, shall not be required for openings complying with 8.6.9.1 where the opening is within the guest room or guest suite.	See new understood text
28.3.5.7 Open parking structures that comply with NFPA 88A, ~~*Standard for Parking Structures*~~, and are contiguous with hotels or dormitories shall be exempt from the sprinkler requirements of 28.3.5.1.	See new understood text
28.5.2.2 Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, ~~*National Fuel Gas Code*~~, shall not be used.	See new understood text
28.7.6.1 New draperies, curtains, and other similar loosely hanging furnishings and decorations	

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shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, ofNFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text
Chapter 29 Existing Hotels and Dormitories 29.1.1.6 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
29.1.5.2 For the design of automatic sprinkler systems, the classification of contents in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, shall apply.	See new understood text
29.2.2.2.2.2 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
29.2.2.2.2.3 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
29.3.2.2.4 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
29.3.5.3* Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with Section 9.7, as modified by 29.3.5.4 and 29.3.5.5. In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies,*~~ shall be permitted.	See new understood text
29.3.5.4 The provisions for draft stops and closely spaced sprinklers in NFPA 13, ~~*Standard for the*~~	See new understood text

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~~*Installation of Sprinkler Systems,*~~ shall not be required for openings complying with 8.6.9.1 where the opening is within the guest room or guest suite. 29.5.2.2 Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, ~~*National Fuel Gas Code*~~, shall not be used. 29.7.6.1 New draperies, curtains, and other similar loosely hanging furnishings and decorations shall meet the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films.*~~	See new understood text See new understood text
Chapter 30 New Apartment Buildings 30.1.1.5 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply. 30.2.1.3 Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be provided in accordance with the provisions of 7.1.6.5. 30.2.2.2.2.2 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted. 30.2.2.2.2.3 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted. 30.3.2.2 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply. 30.3.5.2 Where an automatic sprinkler system is installed, either for total or partial building	New Section New Section See new understood text See new understood text New Section

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coverage, the system shall be installed in accordance with Section 9.7, as modified by 30.3.5.3 and 30.3.5.4. In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies,*~~ shall be permitted.	See new understood text
30.3.5.3* In buildings sprinklered in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ closets less than 12 ft^2 (1.1 m^2) in area in individual dwelling units shall not be required to be sprinklered. Closets that contain equipment such as washers, dryers, furnaces, or water heaters shall be sprinklered, regardless of size.	See new understood text
30.3.5.4* In buildings sprinklered in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, bathrooms not greater than 55 ft^2 (5.1 m^2) in individual dwelling units shall not be required to be sprinklered.	See new understood text
30.3.5.5 The draft stop and closely spaced sprinkler requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, shall not be required for convenience openings complying with 8.6.9.1 where the convenience opening is within the dwelling unit.	See new understood text
30.3.5.7 Open parking structures complying with NFPA 88A, ~~*Standard for Parking Structures*~~, that are contiguous with apartment buildings shall be exempt from the sprinkler requirements of 30.3.5.1.	See new understood text
30.3.5.7 Open parking structures complying with NFPA 88A, ~~*Standard for Parking Structures*~~, that are contiguous with apartment buildings shall be	See new understood text

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exempt from the sprinkler requirements of 30.3.5.1. 30.5.2.2 Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, ~~*National Fuel Gas Code*~~, shall not be used.	See new understood text
Chapter 31 Existing Apartment Buildings 31.1.1.5 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
31.2.2.2.2.2 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
31.2.2.2.2.3 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
31.3.2.2 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
31.3.5.2* Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be installed in accordance with Section 9.7, as modified by 31.3.5.3 and 31.3.5.4. In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies,*~~ shall be permitted.	See new understood text
31.3.5.4* In buildings sprinklered in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ bathrooms not greater than 55 ft^2 (5.1 m^2) in individual dwelling units shall not be required to be sprinklered.	See new understood text

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31.3.5.5 The draft stop and closely spaced sprinkler requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ shall not be required for convenience openings complying with 8.6.9.1 where the convenience opening is within the dwelling unit.	See new understood text
31.3.5.9.4 Where Option 3 is being used to permit the use of 13⁄4 in. (44 mm) thick, solid-bonded wood-core doors in accordance with 31.2.2.1.3, sprinklers shall be provided within the exit enclosures in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~	See new understood text
31.5.2.2 Unvented fuel-fired heaters, other than gas space heaters in compliance with NFPA 54, ~~*National Fuel Gas Code*~~, shall not be used.	See new understood text
Chapter 32 New Residential Board and care Occupancies 32.1.1.7 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
32.1.3.4 No board and care occupancy shall be located above a ~~nonresidential or non-health care~~ any other occupancy, unless the board and care occupancy ~~and exits therefrom are~~ is separated from the ~~nonresidential or non-health care occupancy by construction having a minimum 2-hour fire resistance rating~~ other occupancy in accordance with Table 6.1.14.4.1(a) and Table 6.1.14.4.1(b).	See new understood text
32.1.9 Hazardous Materials. Where hazardous materials are present the provisions of 7.12.2 shall apply.	New Section

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32.2.2.5.5.1 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted on exterior doors only.	See new understood text
32.2.2.5.5.2 ~~Access-controlled egress door assemblies~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
32.2.2.7 Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be provided in accordance with the provisions of 7.1.6.5.	New Section
32.2.3.2.6 Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
32.2.3.4.1 General. A ~~manual~~ fire alarm system shall be provided in accordance with Section 9.6.	See new understood text
32.2.3.4.2 Initiation. Initiation of the required fire alarm system shall be by one of the following means: 1. Manual means in accordance with 9.6.2.1(1) 2. Automatic sprinkler system that complies with 9.6.2.1(3) and provides protection throughout the building	New Section
32.2.3.4.4 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.	New Section
32.2.3.4.4.1 Carbon monoxide alarms or carbon monoxide detectors in accordance with Section 9.12 and 32.2.3.4.4 shall be provided in new, small board and care facilities where either of the following conditions exists:	New Section

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1. Where small board and care facilities have communicating attached garages, unless otherwise exempted by 32.2.3.4.4.3 2. Where small board and care facilities contain fuel-burning appliances or fuel-burning fireplaces	
32.2.3.4.4.2 Where required by 32.2.3.4.4.1, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations: 1. Outside each separate sleeping area in the immediate vicinity of the sleeping rooms 2. Within sleeping rooms containing fuel-burning-appliances or fuel-burning fireplaces 3. On every occupiable level, including basements and excluding attics and crawl spaces 4. Centrally located within occupiable spaces adjacent to a communicating attached garage, unless otherwise exempted by 32.2.3.4.4.3	New Section
32.2.3.4.4.3 Carbon monoxide alarms and carbon monoxide detectors as specified in 32.2.3.4.4.1(1) shall not be required in the following locations: 1. In garages 2. Within small board and care facilities with communicating attached garages that are open parking structures as defined by the building code 3. Within small board and care facilities with communicating attached garages that are mechanically ventilated in accordance with the mechanical code	New Section
32.2.3.5.3 Where an automatic sprinkler system is installed, for either total or partial building	

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coverage, all of the following requirements shall be met: 1. The system shall be in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ and shall initiate the fire alarm system in accordance with 32.2.3.4.1. 2. The adequacy of the water supply shall be documented to the authority having jurisdiction.	See new understood text
32.2.3.5.3.1 In buildings four or fewer stories in height and not exceeding 60 ft (18.3 m) in height above grade plane, systems in accordance with NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies,*~~ shall be permitted. All habitable areas, closets, roofed porches, roofed decks, and roofed balconies shall be sprinklered.	See new understood text
32.2.3.5.3.2* An automatic sprinkler system with a 30-minute water supply, and complying with all of the following requirements and with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,*~~ shall be permitted	See new understood text
32.2.3.5.4 Automatic sprinkler systems installed in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ and NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies,*~~ shall be provided with electrical supervision in accordance with 9.7.2.	See new understood text
32.2.3.5.5 Automatic sprinkler systems installed in accordance with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured*~~	See new understood text

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~~*Homes,*~~ shall be provided with valve supervision by one of the following methods: 32.2.3.5.7.2 Where an automatic sprinkler system is required by 32.2.3.5, attics not used for living purposes, storage, or fuel-fired equipment shall meet one of the following criteria: 1. Attics shall be protected throughout by a heat detection system arranged to activate the building fire alarm system in accordance with Section 9.6. 2. Attics shall be protected with automatic sprinklers that are part of the required, approved automatic sprinkler system in accordance with 9.7.1.1. 3. Attics shall be of noncombustible or limited-combustible construction. 4. Attics shall be constructed of fire-retardant-treated wood in accordance with NFPA 703, ~~*Standard for Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials.*~~	See new understood text
32.2.3.5.8 Systems installed in accordance with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,*~~ shall be inspected, tested, and maintained in accordance with 32.2.3.5.8.1 through 32.2.3.5.8.15, which reference specific sections of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~ The frequency of the inspection, test, or maintenance shall be in accordance with this *Code*, whereas the purpose and procedure shall be from NFPA 25.	See new understood text
32.2.3.5.8.1 Control valves shall be inspected monthly in accordance with 13.3.2 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text

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32.2.3.5.8.2 Gages shall be inspected monthly in accordance with 13.2.7.1 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*~~.	See new understood text
32.2.3.5.8.3 Alarm devices shall be inspected quarterly in accordance with 5.2.6 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
32.2.3.5.8.4 Alarm devices shall be tested semiannually in accordance with 5.3.3 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
32.2.3.5.8.5 Valve supervisory switches shall be tested semiannually in accordance with 13.3.3.5 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
32.2.3.5.8.6 Visible sprinklers shall be inspected annually in accordance with 5.2.1 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
32.2.3.5.8.7 Visible pipe shall be inspected annually in accordance with 5.2.2 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
32.2.3.5.8.8 Visible pipe hangers shall be inspected annually in accordance with 5.2.3 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text

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32.2.3.5.8.9 Buildings shall be inspected annually prior to the onset of freezing weather to ensure that there is adequate heat wherever water-filled piping is run in accordance with 5.2.5 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
32.2.3.5.8.10 A representative sample of fast-response sprinklers shall be tested once the sprinklers in the system are 20 years old in accordance with 5.3.1.1.1.2 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*~~. If the sample fails the test, all of the sprinklers represented by that sample shall be replaced. If the sprinklers pass the test, the test shall be repeated every 10 years thereafter.	See new understood text
32.2.3.5.8.11 A representative sample of dry-pendent sprinklers shall be tested once the sprinklers in the system are 10 years old in accordance with 5.3.1.1.1.5 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~ If the sample fails the test, all of the sprinklers represented by that sample shall be replaced. If the sprinklers pass the test, the test shall be repeated every 10 years thereafter.	See new understood text
32.2.3.5.8.12 Antifreeze solutions shall be tested annually in accordance with 5.3.4 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text
32.2.3.5.8.13 Control valves shall be operated through their full range and returned to normal annually in accordance with 13.3.3.1 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text

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32.2.3.5.8.14 Operating stems of OS&Y valves shall be lubricated annually in accordance with 13.3.4 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~ 32.2.3.5.8.15 Dry-pipe systems that extend into the unheated portions of the building shall be inspected, tested, and maintained in accordance with 13.4.4 of NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~	See new understood text See new understood text
Chapter 33 Existing Residential Board and Care Occupancies Table 32.3.1.3 Construction Type Limitations (2) The roof/ceiling assembly is constructed with fire-retardant-treated wood meeting the requirements of NFPA 220, ~~*Standard on Types of Building Construction.*~~ 32.3.2.1.3 Where bathtubs, bathtub-shower combinations, or showers are present, grab bars shall be provided in accordance with the provisions of 7.1.6.5. 32.3.2.2.2 Doors. Doors in means of egress shall meet all of the following criteria: 1. Doors complying with 7.2.1 shall be permitted. 2. Doors within individual rooms and suites of rooms shall be permitted to be swinging or sliding. 3. No door, other than those meeting the requirement of 32.3.2.2.2(4),32.3.2.2.2(5),or 32.3.2.2.2(6), shall be equipped with a lock or latch that requires the use of a tool or key from the egress side.	See new understood text New Section

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4. Delayed-egress ~~locks~~ electrically locking systems in accordance with 7.2.1.6.1 shall be permitted. 5. ~~Access-controlled egress door assemblies~~ Sensor-release of electrical locking systems in accordance with 7.2.1.6.2 shall be permitted.	See new understood text
32.3.3.2.3 Doors to hazardous areas shall be self-closing or automatic-closing.	New Section
32.3.3.2.4 Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
32.3.3.4.8.1 Corridors and spaces open to the corridors, other than those meeting the requirement of 32.3.3.4.8.3, shall be provided with smoke detectors that comply with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*,~~ and are arranged to initiate an alarm that is audible in all sleeping areas.	See new understood text
32.3.3.4.9 Carbon Monoxide Alarms and Carbon Monoxide Detection Systems.	New Section
32.3.3.4.9.1 Carbon monoxide alarms or carbon monoxide detectors in accordance with Section 9.12 and 32.3.3.4.9 shall be provided in new large board and care facilities where either of the following conditions exists: 1. Where large board and care facilities have communicating attached garages, unless otherwise exempted by 32.3.3.4.9.3 2. Where sleeping rooms or sleeping room suites contain fuel-burning appliances or fuel-burning fireplaces	New Section

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32.3.3.4.9.2 Where required by 32.3.3.4.9.1, carbon monoxide alarms or carbon monoxide detectors shall be installed in the following locations: 1. Outside each separate sleeping room area in the immediate vicinity of the sleeping rooms 2. Within sleeping rooms containing fuel-burning appliances or fuel-burning fireplaces 3. On every occupiable level of a sleeping room and sleeping room suite 4. Centrally located within occupiable spaces adjacent to a communicating attached garage, unless otherwise exempted by 32.3.3.4.9.3	New Section
32.3.3.4.9.3 Carbon monoxide alarms and carbon monoxide detectors as specified in 32.3.3.4.9.1(1) shall not be required in the following locations: 1. In garages 2. Within facilities with communicating attached garages that are open parking structures as defined by the building code 3. Within facilities with communicating attached garages that are mechanically ventilated in accordance with the mechanical code	New Section
32.3.3.4.9.4 Where fuel-burning appliances or fuel-burning fireplaces are installed outside sleeping rooms, carbon monoxide alarms or carbon monoxide detectors shall be installed in the locations specified as follows: 1. Within rooms containing fuel-burning appliances or fuel-burning fireplaces 2. Centrally located within occupiable spaces served by the first supply air	New Section

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register from a fuel-burning HVAC system	
32.3.3.6.2 Sleeping rooms shall be separated from ~~corridors~~, ~~living areas, and kitchens~~ all spaces, other than adjacent sleeping rooms, adjacent bathrooms, or lounge areas, by walls complying with 32.3.3.6.3 through 32.3.3.6.6.	See new understood text
32.3.3.7.1 Every story shall be divided into not less than two smoke compartments, unless it meets the requirement of 32.3.3.7.4, 32.3.3.7.5, 32.3.3.7.6, ~~or~~ 32.3.3.7.7, or 32.3.3.7.8.	See new understood text
32.3.3.7.8 Smoke barriers shall not be required in single-story buildings that are less than 10,000 ft^2 (929 m^2) in area and where all sleeping rooms have direct egress to the exterior.	New Section
32.3.3.8.2* Where residential cooking equipment is used for food warming or limited cooking, the equipment shall not be required to be protected in accordance with 9.2.3, and the presence of the equipment shall not require the area to be protected as a hazardous area where the heating elements or burners have been tested and listed to not allow cooking pan temperatures to exceed 662°F (350°C).	See new understood text
32.3.3.8.3* Compliance with 9.2.3 shall not be required where all of the following conditions are met: 1. Residential or commercial cooking equipment in a single kitchen per smoke compartment is used to prepare meals for 30 or fewer persons. 2. The portion of the board and care facility served by the cooking facility is limited to 30 beds and is separated from	

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other portions of the board and care facility by a smoke barrier constructed in accordance with 32.3.3.7.9 and with 32.3.3.7.14 through 32.3.3.7.22. 3. The cooktop or range is equipped with a range hood of a width at least equal to the width of the cooking surface, with grease baffles or other grease-collecting and clean-out capability. 4. *The hood systems have a minimum airflow of 500 cfm (14,000 L/min). 5. The hood systems that are not ducted to the exterior additionally have a charcoal filter to remove smoke and odor. 6. The cooktop or range complies with all of the following: a. The cooktop or range is protected with a fire suppression system listed in accordance with ANSI/UL 300, *Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment*, or is tested and meets all requirements of UL 300A, *Extinguishing System Units for Residential Range Top Cooking Surfaces*, in accordance with the applicable testing document's scope. b. A manual release of the extinguishing system is provided in accordance with Section 10.5 of NFPA 96, ~~*Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*~~	See new understood text
Chapter 34 Reserved	
Chapter 35 Reserved	
Chapter 36 New Mercantile Occupancies 36.1.1.4 The provisions of this chapter shall apply to life safety requirements for all new mercantile	

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buildings. Specific requirements shall apply to suboccupancy groups, such as Class A, Class B, and Class C mercantile occupancies; ~~mall building~~ mall structures; and bulk merchandising retail buildings, and are contained in paragraphs pertaining thereto.	
36.1.1.7 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
36.1.2.2.4 Where a number of tenant spaces under different management are located in the same building, the aggregate gross area for subclassification shall be one of the following: 1. Where tenant spaces are not separated, the aggregate gross floor area of all such tenant spaces shall be used in determining classification per 36.1.2.2.1. 2. Where individual tenant spaces are separated by fire barriers with a 2-hour fire resistance rating, each tenant space shall be individually classified. 3. Where tenant spaces are separated by fire barriers with a 1-hour fire resistance rating, and the building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), each tenant space shall be individually classified. 4. The tenant spaces in a ~~mall building~~ mall structure in accordance with 36.4.4 shall be classified individually.	See new understood text
36.1.4.2 Special Definitions. A list of special terms used in this chapter follows: 1. **Anchor Building.** See 3.3.37.2. 2. **Bulk Merchandising Retail Building.** See 3.3.37.4.	

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3. **Gross Leasable Area.** See 3.3.22.3. 4. **Major Tenant.** See 3.3.170. 5. ~~**Mall**~~ **Mall Concourse.** See 3.3.171. 6. ~~**Mall Building**~~ **Mall Structure.** See 3.3.37.9. 7. **Open-Air Mercantile Operation.** See 3.3.201.	See new understood text
36.2.2.2.5 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
36.2.2.2.6 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted in buildings protected throughout by an approved, supervised fire detection system in accordance with Section 9.6 or an approved automatic sprinkler system in accordance with 9.7.1.1(1)	See new understood text
36.2.2.7.2* Exit passageways in a ~~mall building~~ mall structure shall be permitted to accommodate the following occupant loads independently: 1. Portion of the occupant load assigned to the exit passageway from only the mall/pedestrian way 2. Largest occupant load assigned to the exit passageway from a single tenant space	See new understood text
36.2.4.4 A single means of egress shall be permitted in a Class C mercantile occupancy, provided that the travel distance to the exit or to a ~~mall~~ mall concourse does not exceed 100 ft (30 m), and the story on which the occupancy is located, and all communicating levels that are traversed to reach the exit or ~~mall~~ mall concourse, are protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).	See new understood text

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36.2.4.5 A single means of egress to an exit or to a ~~mall~~ mall concourse shall be permitted from a mezzanine within any Class A, Class B, or Class C mercantile occupancy, provided that the common path of travel does not exceed 75 ft (23 m), or does not exceed 100 ft (30 m) if protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).	See new understood text
36.2.11.3* Hazardous Materials. Where hazardous materials are present the provisions of 7.12.2 shall apply.	New Section
36.3.1 Protection of Vertical Openings. Any vertical opening shall be protected in accordance with Section 8.6, except under any of the following conditions: 1. In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), unprotected vertical openings shall be permitted at one of the following locations: a. Between any two floors b. Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above 2. In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine. 3. The draft stop and closely spaced sprinkler requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ shall not be required for unenclosed vertical openings permitted in 36.3.1(1) and 36.3.1(2).	See new understood text
36.3.2.3* Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section

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36.4.4* ~~Mall Buildings~~ Mall Structures.	Changed the title of section
36.4.4.1 The provisions of 36.4.4 shall apply to ~~mall building~~ mall structures three or fewer stories in height and any number of anchor buildings.	See new understood text
36.4.4.2 Special Definitions. The following is a list of special terms used in this chapter:	
1. **Anchor Building.** A building housing any occupancy having low-or ordinary-hazard contents and having direct access to a ~~mall building~~ mall structure, but having all required means of egress independent of the ~~mall~~ mall concourse. *(See 3.3.37.2.)*	See new understood text
2. **Food Court.** A public seating area located in a ~~mall~~ mall concourse that serves adjacent food preparation tenant spaces. *(See 3.3.51.2.)*	See new understood text
3. **Gross Leasable Area.** Fifty percent of major tenant areas, and 100 percent of all other floor areas designated for tenant occupancy and exclusive use, including storage areas. The area of tenant occupancy is measured from the centerlines of joint partitions to the outside of the tenant walls. *(See 3.3.22.3.)*	
4. ~~**Mall**~~ **Mall concourse.** A roofed or covered common pedestrian area within a ~~mall building~~ mall structure that serves as access for two or more tenants and does not exceed three levels that are open to each other. *(See 3.3.171.)*	See new understood text
5. *~~**Mall Building**~~ **Mall Structures.** A single building enclosing a number of tenants and occupancies wherein two or more tenants have a main entrance into one or more ~~malls~~ mall concourses. For the purpose of this chapter, anchor buildings shall not be considered as a	See new understood text

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part of the ~~mall building~~ mall structure. *(See 3.3.37.9.)*	See new understood text
6. **Major Tenant.** A tenant space, in a ~~mall building~~ mall structure, with one or more main entrances from the exterior that also serve as exits and are independent of the ~~mall~~ mall concourse. *(See 3.3.170.)*	See new understood text
36.4.4.3 General. The ~~mall building~~ mall structure shall be treated as a single building for the purpose of calculation of means of egress and shall be subject to the requirements for appropriate occupancies, except as modified by the provisions of 36.4.4; and the ~~mall~~ mall concourse shall be of a clear width not less than that needed to accommodate egress requirements as set forth in other sections of this *Code*.	See new understood text
36.4.4.4* Pedestrian Way. The ~~mall~~ mall concourse shall be permitted to be considered a pedestrian way, provided that the criteria of 36.4.4.4.1 and 36.4.4.4.2 are met.	See new understood text
36.4.4.4.1 The travel distance within a tenant space to an exit or to the ~~mall~~ mall concourse shall not exceed the maximum travel distance permitted by the occupancy chapter.	See new understood text
36.4.4.4.2 An additional 200 ft (61 m) shall be permitted for travel through the ~~mall~~ mall concourse space, provided that all the following requirements are met: 1. The ~~mall~~ ~~mall concourse~~ shall be of a clear width not less than that needed to accommodate egress requirements, as set forth in other sections of this chapter, but shall be not less than 20 ft (6100 mm) wide in its narrowest dimension.	See new understood text

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2. On each side of the mall floor area, the ~~mall~~ mall concourse shall be provided with an unobstructed exit access of not less than 10 ft (3050 mm) in clear width parallel to, and adjacent to, the mall tenant front.	See new understood text
3. *The exit access specified in 36.4.4.4.2(2) shall lead to an exit having a width of not less than 66 in. (1675 mm).	
4. The ~~mall~~ mall concourse, and all buildings connected thereto, except open parking structures, shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), which shall be installed in such a manner that any portion of the system serving tenant spaces can be taken out of service without affecting the operation of the portion of the system serving the ~~mall~~ mall concourse.	See new understood text See new understood text
5. *Walls dividing tenant spaces from each other shall have a fire resistance rating of not less than 1 hour, and all of the following also shall apply: a. The partition shall extend to the underside of the ceiling or to the roof or floor above. b. No separation shall be required between a tenant space and the ~~mall~~ mall concourse.	See new understood text
6. *~~Malls~~ Mall concourses with a floor opening connecting more than two levels shall be provided with a smoke control system.	
36.4.4.5 Mixed Occupancies. Assembly occupancies, other than stadiums and arenas, and business and mercantile occupancies located in ~~mall building~~ mall structures shall not be required to comply with the provisions of 6.1.14.4.	See new understood text

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36.4.4.6.2 Every story of a ~~mall building~~ mall structure shall be provided with the number of means of egress specified by Section 7.4 and as modified by 36.4.4.6.2.1 or 36.4.4.6.2.2.	See new understood text
36.4.4.6.2.2 A single means of egress shall be permitted in a Class C mercantile occupancy or a business occupancy, provided that the travel distance to the exit or to a ~~mall~~ mall concourse (see 36.4.4.2) does not exceed 100 ft (30 m).	See new understood text
36.4.4.6.3 Every floor of a ~~mall~~ mall concourse shall be provided with the number of means of egress specified by Section 7.4, with not less than two means of egress remotely located from each other.	See new understood text
36.4.4.6.4 Class A and Class B mercantile occupancies connected to a ~~mall~~ mall concourse shall be provided with the number of means of egress required by Section 7.4, with not less than two means of egress remotely located from one another.	See new understood text
36.4.4.6.5* Each individual anchor building shall have means of egress independent of the ~~mall~~ mall concourse.	See new understood text
36.4.4.6.6 Each individual major tenant of a mall building mall structure shall have a minimum of one-half of its required means of egress independent of the ~~mall~~ mall concourse.	See new understood text
36.4.4.6.7 Each assembly occupancy with an occupant load of 500 or more shall have not less than one-half of its required means of egress independent of the ~~mall~~ mall concourse.	See new understood text

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36.4.4.7.3.1 Occupant Notification. During all times that the ~~mall~~ mall concourse is occupied, the required fire alarm system, once initiated, shall perform one of the following functions: 1. It shall activate a general alarm in accordance with 9.6.3 throughout the ~~mall~~ mall concourse, and positive alarm sequence in accordance with 9.6.3.4 shall be permitted. 2. Occupant notification shall be made via a voice communication or public address system in accordance with 9.6.3.9.2	See new understood text See new understood text
36.4.4.7.3.2* Visible signals shall not be required in ~~malls~~ mall concourses. *(See 9.6.3.5.7 and 9.6.3.5.8.)*	See new understood text
36.4.4.8 Tenant Spaces. Each individual tenant space shall have means of egress to the outside or to the ~~mall~~ mall concourse, based on occupant load calculated by using Table 7.3.1.2.	See new understood text
36.4.4.9.1 Exit passageways in a ~~mall building~~ mall structure shall be permitted to accommodate the following occupant loads independently: 1. Portion of the occupant load assigned to the exit passageway from only the ~~mall~~ mall concourse	See new understood text
36.4.4.9.2* Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met: 1. The required fire resistance rating between such rooms or areas and the	

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exit passageway shall be maintained in accordance with 7.1.3.2. 2. Such rooms or areas shall be protected by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), but the exceptions in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ allowing the omission of sprinklers from such rooms shall not be permitted.	See new understood text
36.4.4.10 Plastic Signs. Within every store or level, and from sidewall to sidewall of each tenant space facing the ~~mall~~ mall concourse, plastic signs shall comply with all of the following: 1. Plastic signs shall not exceed 20 percent of the wall area facing the ~~mall~~ mall concourse. 2. Plastic signs shall not exceed a height of 36 in. (915 mm), except if the sign is vertical, in which case the height shall not exceed 8 ft (2440 mm) and the width shall not exceed 36 in. (915 mm). 3. Plastic signs shall be located a minimum distance of 18 in. (455 mm) from adjacent tenants. 4. Plastics, other than foamed plastics, shall meet one of the following criteria: a. They shall be light-transmitting plastics. b. They shall have a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929, *Standard Test Method for Determining Ignition Temperatures of Plastic*, and a flame spread index not greater than 75 and a smoke developed index not greater than 450 when tested in the manner intended for use in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics*	See new understood text

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of Building Materials, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*. 5. The edges and backs of plastic signs in the ~~mall~~ mall concourse shall be fully encased in metal. 6. Foamed plastics shall have a maximum heat release rate of 150 kW when tested in accordance with ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*, or in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*,~~ using the 20 kW ignition source. 36.4.4.11 Kiosks. Kiosks and similar structures (temporary or permanent) shall not be considered tenant spaces and shall meet all of the following requirements: 1. Combustible kiosks and similar structures shall be constructed of any of the following materials: a. Fire-retardant-treated wood complying with the requirements for fire-retardant-impregnated wood in NFPA 703, *Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials* b. Light-transmitting plastics complying with the building code c. Foamed plastics having a maximum heat release rate not greater than 100 kW when tested in accordance with ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*, or in accordance with NFPA 289, *Standard Method of Fire Test for*	See new understood text

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Individual Fuel Packages, using the 20 kW ignition source d. Metal composite material (MCM) having a flame spread index not greater than 25 and a smoke developed index not greater than 450 in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, when tested as an assembly in the maximum thickness intended for use. e. Textiles and films meeting the flame propagation performance criteria contained in NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films* 2. Kiosks or similar structures located within the ~~mall~~ mall concourse shall be protected with approved fire suppression and detection devices. 3. The minimum horizontal separation between kiosks, or groups of kiosks, and other structures within the ~~mall~~ mall concourse shall be 20 ft (6100 mm).	See new understood text
36.4.4.12* Smoke Control. Smoke control in accordance with Section 9.3 and complying with 8.6.7(5) shall be provided in a ~~mall~~ mall concourse with floor openings connecting more than two levels.	See new understood text
36.4.4.13.1 The ~~mall building~~ mall structure and all anchor buildings shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1) and 36.4.4.13.2.	See new understood text

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36.4.4.13.2 The system shall be installed in such a manner that any portion of the system serving tenant spaces can be taken out of service without affecting the operation of the portion of the system serving the ~~mall~~ mall concourse. 36.7.8 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	See new understood text New Section
Chapter 37 Existing Mercantile Occupancies 37.1.1.4 The provisions of this chapter shall apply to life safety requirements for all existing mercantile buildings. Specific requirements shall apply to suboccupancy groups, such as Class A, Class B, and Class C mercantile occupancies; ~~mall building~~ mall structures; and bulk merchandising retail buildings, and are contained in paragraphs pertaining thereto. 37.1.1.7 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply. 37.1.2.2.4 Where a number of tenant spaces under different management are located in the same building, the aggregate gross area for subclassification shall be one of the following: 1. Where tenant spaces are not separated, the aggregate gross floor area of all such tenant spaces shall be used in determining classification per 37.1.2.2.1. 2. Where individual tenant spaces are separated by fire barriers with a 1-hour fire resistance rating, each tenant space shall be individually classified. 3. The tenant spaces in a ~~mall building~~ mall structure in accordance with 37.4.4 shall be classified individually.	See new understood text New Section See new understood text

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37.1.4.2 Special Definitions. A list of special terms used in this chapter follows: 1. **Anchor Building.** See 3.3.37.2. 2. **Bulk Merchandising Retail Building.** See 3.3.37.4. 3. **Gross Leasable Area.** See 3.3.22.3. 4. **Major Tenant.** See 3.3.170. 5. **~~Mall~~ Mall Concourse.** See 3.3.171. 6. **~~Mall Building~~ Mall Structure.** See 3.3.37.9. 7. **Open-Air Mercantile Operation.** See 3.3.201.	See new understood text
37.2.2.2.5 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
37.2.2.2.6 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted in buildings protected throughout by an approved, supervised fire detection system in accordance with Section 9.6 or an approved automatic sprinkler system in accordance with 9.7.1.1(1).	See new understood text
37.2.2.7.2* Exit passageways in a ~~mall building~~ mall structure shall be permitted to accommodate the following occupant loads independently:	See new understood text
37.2.4.4 A single means of egress shall be permitted in a Class C mercantile occupancy, provided that the travel distance to the exit or to a ~~mall~~ mall concourse does not exceed 100 ft (30 m), and the story on which the occupancy is located, and all communicating levels that are traversed to reach the exit or ~~mall~~ mall concourse, are protected throughout by an approved,	See new understood text

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supervised automatic sprinkler system in accordance with 9.7.1.1(1).	
37.2.4.5 A single means of egress to an exit or to a ~~mall~~ mall concourse shall be permitted from a mezzanine within any Class A, Class B, or Class C mercantile occupancy, provided that the common path of travel does not exceed 75 ft (23 m), or does not exceed 100 ft (30 m) if protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).	See new understood text
37.2.9 Emergency Lighting. Class A and Class B mercantile occupancies and ~~mall building~~ mall structures shall have emergency lighting facilities in accordance with Section 7.9.	See new understood text
37.2.11.3* Hazardous Materials. Where hazardous materials are present the provisions of 7.12.2 shall apply.	New Section
37.3.1 Protection of Vertical Openings. Any vertical opening shall be protected in accordance with Section 8.6, except under any of the following conditions: 1. In Class A or Class B mercantile occupancies protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1), unprotected vertical openings shall be permitted at one of the following locations: a. Between any two floors b. Among the street floor, the first adjacent floor below, and the adjacent floor (or mezzanine) above 2. In Class C mercantile occupancies, unprotected openings shall be permitted between the street floor and the mezzanine.	

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3. The draft stop and closely spaced sprinkler requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ shall not be required for unenclosed vertical openings permitted in 36.3.1(1) and (2).	See new understood text
37.3.2.3* Hazardous Materials. Where hazardous materials are present the provisions of 8.7.3.1 shall apply.	New Section
37.4.4* ~~Mall Buildings~~ Mall Structures.	Changed the title of section
37.4.4.1 The provisions of 37.4.4 shall apply to ~~mall building~~ mall structures and any number of anchor buildings.	See new understood text
37.4.4.2 Special Definitions. The following is a list of special terms used in this chapter:	
1. **Anchor Building.** A building housing any occupancy having low-or ordinary-hazard contents and having direct access to a ~~mall building~~ mall structure, but having all required means of egress independent of the ~~mall~~ mall concourse. *(See 3.3.37.2)*	See new understood text
2. **Food Court.** A public seating area located in a ~~mall~~ mall concourse that serves adjacent food preparation tenant spaces. *(See 3.3.51.2)*	See new understood text
3. **Gross Leasable Area.** Fifty percent of major tenant areas, and 100 percent of all other floor areas designated for tenant occupancy and exclusive use, including storage areas. The area of tenant occupancy is measured from the centerlines of joint partitions to the outside of the tenant walls. *(See 3.3.22.3)*	
4. ~~**Mall**~~ **Mall Concourse.** A roofed or covered common pedestrian area within a ~~mall building~~ mall structure that serves as access for two or more tenants	See new understood text

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and does not exceed three levels that are open to each other. *(See 3.3.171.)*	
5. *__Mall~~ Building~~__ __Structure__**.** A single building enclosing a number of tenants and occupancies wherein two or more tenants have a main entrance into one or more ~~malls~~ mall concourses. For the purpose of this chapter, anchor buildings shall not be considered as a part of the ~~mall building~~ mall structure. *(See 3.3.37.9.)*	See new understood text
6. **Major Tenant.** A tenant space, in a ~~mall building~~ mall structure, with one or more main entrances from the exterior that also serve as exits and are independent of the ~~mall~~ mall concourse. *(See 3.3.170.)*	See new understood text
37.4.4.3 General. The ~~mall building~~ mall structure shall be treated as a single building for the purpose of calculation of means of egress and shall be subject to the requirements for appropriate occupancies, except as modified by the provisions of 37.4.4; and the ~~mall~~ mall concourse shall be of a clear width not less than that needed to accommodate egress requirements as set forth in other sections of this *Code*.	See new understood text
37.4.4.4* Pedestrian Way. The ~~mall~~ mall concourse shall be permitted to be considered a pedestrian way, provided that the criteria of 37.4.4.4.1 and 37.4.4.4.2 are met.	See new understood text
37.4.4.4.1 The travel distance within a tenant space to an exit or to the mall ~~mall concourse~~ shall not exceed the maximum travel distance permitted by the occupancy chapter.	See new understood text
37.4.4.4.2 An additional 200 ft (61 m) shall be permitted for travel through the mall space, provided that all the following requirements are met:	

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1. The ~~mall~~ mall concourse shall be of a clear width not less than that needed to accommodate egress requirements, as set forth in other sections of this chapter, but shall be not less than 20 ft (6100 mm) wide in its narrowest dimension.	See new understood text
2. On each side of the mall floor area, the ~~mall~~ mall concourse shall be provided with an unobstructed exit access of not less than 10 ft (3050 mm) in clear width parallel to, and adjacent to, the mall tenant front.	See new understood text
3. *The exit access specified in 37.4.4.4.2(2) shall lead to an exit having a width of not less than 66 in. (1675 mm).	
4. The ~~mall~~ mall concourse, and all buildings connected thereto, except open parking structures, shall be protected throughout by an approved, supervised automatic sprinkler system in accordance with 9.7.1.1(1).	See new understood text
5. Walls dividing tenant spaces from each other shall extend from the floor to the underside of the roof deck, to the floor deck above, or to the ceiling where the ceiling is constructed to limit the transfer of smoke, and all of the following also shall apply: a. Where the tenant areas are provided with an engineered smoke control system, walls shall not be required to divide tenant spaces from each other. b. No separation shall be required between a tenant space and the ~~mall~~ mall concourse.	See new understood text
37.4.4.5 Mixed Occupancies. Assembly occupancies, other than stadiums and arenas, and business and mercantile occupancies located in ~~mall building~~ mall structures shall not be required to comply with the provisions of 6.1.14.4.	See new understood text

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37.4.4.6.1 Dead ends not exceeding a length equal to twice the width of the ~~mall~~ mall concourse, measured at the narrowest location within the dead-end portion of the ~~mall~~ mall concourse, shall be permitted.	See new understood text
37.4.4.6.2 Every story of a covered ~~mall building~~ mall structure shall be provided with the number of means of egress specified by Section 7.4 and as modified by 37.4.4.6.2.1 or 37.4.4.6.2.2.	See new understood text
37.4.4.6.2.2 A single means of egress shall be permitted in a Class C mercantile occupancy or a business occupancy, provided that the travel distance to the exit or to a ~~mall~~ mall concourse (see 37.4.4.2) does not exceed 100 ft (30 m).	See new understood text
37.4.4.6.3 Every floor of a ~~mall~~ mall concourse shall be provided with the number of means of egress specified by Section 7.4, with not less than two means of egress remotely located from each other.	See new understood text
37.4.4.6.4 Class A and Class B mercantile occupancies connected to a ~~mall~~ mall concourse shall be provided with the number of means of egress required by Section 7.4, with not less than two means of egress remotely located from one another.	See new understood text
37.4.4.6.5* Each individual anchor building shall have means of egress independent of the ~~mall~~ mall concourse.	See new understood text
37.4.4.6.6 Each individual major tenant of a ~~mall building~~ mall structure shall have a minimum of one-half of its required means of egress independent of the mall concourse.	See new understood text

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37.4.4.7.3.1 Occupant Notification. During all times that the ~~mall~~ mall concourse is occupied, the required fire alarm system, once initiated, shall perform one of the following functions:	See new understood text
1. It shall activate an alarm in accordance with 9.6.3 throughout the ~~mall~~ mall concourse, and positive alarm sequence in accordance with 9.6.3.4 shall be permitted.	See new understood text
37.4.4.8 Tenant Spaces. Each individual tenant space shall have means of egress to the outside or to the ~~mall~~ mall concourse based on occupant load calculated by using Table 7.3.1.2.	See new understood text
37.4.4.9.1 Exit passageways in a ~~mall building~~ mall structure shall be permitted to accommodate the following occupant loads independently:	See new understood text
1. Portion of the occupant load assigned to the exit passageway from only the ~~mall~~ mall concourse	
37.4.4.9.2* Rooms housing building service equipment, janitor closets, and service elevators shall be permitted to open directly onto exit passageways, provided that all of the following criteria are met:	
1. The required fire resistance rating between such rooms or areas and the exit passageway shall be maintained in accordance with 7.1.3.2. 2. Such rooms or areas shall be protected by an approved automatic sprinkler system in accordance with 9.7.1.1(1), but the exceptions in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ allowing the	See new understood text

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omission of sprinklers from such rooms shall not be permitted. 37.4.4.10 Plastic Signs. Within every store or level, and from sidewall to sidewall of each tenant space facing the ~~mall~~ mall concourse, plastic signs shall comply with all of the following: 1. Plastic signs shall not exceed 20 percent of the wall area facing the ~~mall~~ mall concourse. 2. Plastic signs shall not exceed a height of 36 in. (915 mm), except if the sign is vertical, in which case the height shall not exceed 8 ft (2440 mm) and the width shall not exceed 36 in. (915 mm). 3. Plastic signs shall be located a minimum distance of 18 in. (455 mm) from adjacent tenants. 4. Plastics, other than foamed plastics, shall meet one of the following criteria: a. They shall be light-transmitting plastics. b. They shall have a self-ignition temperature of 650°F (343°C) or greater when tested in accordance with ASTM D1929, *Standard Test Method for Determining Ignition Temperatures of Plastic*, and a flame spread index not greater than 75 and a smoke developed index not greater than 450 when tested in the manner intended for use in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*. 5. The edges and backs of plastic signs in the ~~mall~~ mall concourse shall be fully encased in metal.	See new understood text See new understood text

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6. Foamed plastics shall have a maximum heat release rate of 150 kW when tested in accordance with ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*, or in accordance with NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*,~~ using the 20 kW ignition source. 37.4.4.11 Kiosks. Kiosks and similar structures (temporary or permanent) shall not be considered as tenant spaces and shall meet all of the following requirements: 1. Combustible kiosks and similar structures shall be constructed of any of the following materials: a. Fire-retardant-treated wood complying with the requirements for fire-retardant-impregnated wood in NFPA 703, *Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials* b. Light-transmitting plastics complying with the building code c. Foamed plastics having a maximum heat release rate not greater than 100 kW when tested in accordance with ANSI/UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*, or in accordance with NFPA 289, *Standard Method of Fire Test for Individual Fuel Packages*, using the 20 kW ignition source d. Metal composite material (MCM) having a flame spread index not greater than 25 and a smoke developed index not greater than 450 in accordance with ASTM E84, *Standard Test*	See new understood text

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Method for Surface Burning Characteristics of Building Materials, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, when tested as an assembly in the maximum thickness intended for use e. Textiles and films meeting the flame propagation performance criteria contained in Test Method 1 or Test Method 2, as appropriate, of NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films* 2. Kiosks or similar structures located within the ~~mall~~ mall concourse shall be protected with approved fire suppression and detection devices. 3. The minimum horizontal separation between kiosks, or groups of kiosks, and other structures within the ~~mall~~ mall concourse shall be 20 ft (6100 mm).	See new understood text
37.7.8 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section
Chapter 38 New Business Occupancies	
38.1.1.6 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
38.2.2.2.5 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
38.2.2.2.6 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text

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38.2.11.3* Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 7.12.2 shall apply.	New Section
38.3.2.3* Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
38.3.2.4 Medical Gas. Medical gas storage areas and the operation, management, and maintenance of medical gases shall be in accordance with NFPA 99.	New Section
38.4.3 ~~Air~~ Airport Traffic Control Towers.	See new understood text
38.4.3.1 ~~Air~~ Airport traffic control towers shall comply with the requirements of this chapter and Section 11.3.	See new understood text
38.4.3.2 The requirements of Section 11.8 shall not apply to ~~air~~ airport traffic control towers.	See new understood text
38.7.8 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section
Chapter 39 Existing Business Occupancies	
39.1.1.6 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
39.2.2.2.5 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
39.2.2.2.6 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
39.2.11.3* Hazardous Materials. Where hazardous materials are present the provisions of 7.12.2 shall apply.	New Section

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39.3.2.3* Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
39.4.3 ~~Air~~ Airport Traffic Control Towers.	See new understood text
39.4.3.1 ~~Air~~ Airport traffic control towers shall comply with the requirements of this chapter and Section 11.3.	See new understood text
39.4.3.2 The requirements of Section 11.8 shall not apply to ~~air~~ airport traffic control towers.	See new understood text
39.7.8 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section
Chapter 40 Industrial Occupancies 40.1.1.6 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
40.1.2.1.3* High-Hazard Industrial Occupancy. High-hazard industrial occupancies shall include all of the following: 1. Industrial occupancies that conduct industrial operations that use ~~high-hazard materials or processes or house~~, process, store, or handle high-hazard contents or hazardous materials in excess of the maximum allowable quantities (MAQ) as permitted by the fire code.	See new understood text
40.2.2.2.2 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text

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40.2.2.2.3 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
40.2.11.3 Hazardous Materials. Where hazardous materials are stored or handled, the provisions of 7.12.2 shall apply.	New Section
40.3.2.5 Commercial cooking equipment shall be protected in accordance with NFPA 96, ~~*Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.*~~ *(See Section 9.2.3.)*	See new understood text
40.3.2.6 Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply.	New Section
40.7.4 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section
Chapter 41 Reserved	
Chapter 42 Storage Occupancies	
42.1.1.4 Where construction, alteration, or demolition operations are conducted, the provisions of 4.6.10.2 shall apply.	New Section
42.2.2.2.2 Delayed-egress ~~locks~~ electrically locking systems complying with 7.2.1.6.1 shall be permitted.	See new understood text
42.2.2.2.3 ~~Access-controlled egress doors~~ Sensor-release of electrical locking systems complying with 7.2.1.6.2 shall be permitted.	See new understood text
42.2.11.3 Hazardous Materials. Where hazardous materials are present, the provisions of 7.12.2 shall apply.	New Section

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42.3.2 Protection from Hazards. Where hazardous materials are stored or handled, the provisions of 8.7.3.1 shall apply. *(See also Section 8.7.)*	New Section
~~42.3.2.1~~ ~~See also Section 8.7.~~	Deleted section
Table 42.7.5.2 ~~Maximum~~ Travel Distance to ~~Means of Escape or~~ Exits	See new understood text
42.8.3.1.1.4 Ramps in enclosed parking structures shall not be required to be enclosed in accordance with 42.8.3.1.1.1 or 42.8.3.1.1.2 where the parking structure is protected throughout by an approved, supervised, automatic fire detection system and a mechanical ventilation system in accordance with 6.3.1 of NFPA 88A, ~~*Standard for Parking Structures.*~~ [**88A:**5.4.6]	See new understood text
42.9.4 Integrated Fire Protection Systems. Integrated fire protection systems shall be tested in accordance with 9.11.4.	New Section
Chapter 43 Building Rehabilitation	
Annex A Explanatory Material	
A.1.1.5 Incidents involving hazardous materials are capable of posing significant life safety challenges in buildings. The *Code* recognizes this potential and includes technical requirements to address concerns related to hazardous material inventories and associated emergencies.	Newly added section
A.2.1(1) For example, NFPA 10, ~~*Standard for Portable Fire Extinguishers,*~~ is referenced in Chapter 2. This does not mean that all buildings must have portable fire extinguishers. Portable fire extinguishers are mandatory only to the extent called for elsewhere in the *Code*.	See new understood text

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A.3.3.19 Animal Housing Facility Animal housing facilities, as used in this *Code*, are subject to local, state, or federal licensing or permitting requirements, and include, but are not limited to, the following: 1. Barns and stables 2. Kennels 3. Racetrack stable/kennel areas including, those stable/kennel areas, barns, and associated buildings at state, county, and local fairgrounds 4. Animal shelters 5. Animal hospitals and veterinary facilities 6. Zoos and special amusement parks 7. Laboratories 8. Agricultural facilities 9. Mercantile or business occupancies with animals	New Section
A.3.3.23 Area of Refuge An area of refuge has a temporary use during egress. It generally serves as a staging area that provides relative safety to its occupants while potential emergencies are assessed, decisions are made, and mitigating activities are begun. Taking refuge within such an area is, thus, a stage of the total egress process, a stage between egress from the immediately threatened area and egress to a public way. An area of refuge might be another building connected by a bridge or balcony, a compartment of a subdivided story, an elevator lobby, or an enlarged story-level exit stair landing. An area of refuge is accessible by means of horizontal travel or, as a minimum, via an accessible route meeting the requirements of ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities.*	See new understood text

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A.3.3.2.8 As defined in NFPA 92, ~~*Standard for Smoke Control Systems,*~~ a large-volume space is an uncompartmented space, generally two or more stories high, within which smoke from a fire either in the space or in a communicating space can move and accumulate without restriction. Atria and covered ~~malls~~ mall concourses are examples of large-volume spaces.	See new understood text
A.3.3.3.8 Where no building code has been adopted, *NFPA 5000*, ~~*Building Construction and Safety Code,*~~ should be used where the building code is referenced in this *Code*.	See new understood text
A.3.3.52 Critical radiant flux is the property determined by the test procedure of NFPA 253, ~~*Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*~~ or by ASTM E648, *Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*. The unit of measurement of critical radiant flux is watts per square centimeter (W/cm^2).	See new understood text
A.3.3.8.1 The evacuation capability of the residents and staff is a function of both the ability of the residents to evacuate and the assistance provided by the staff. It is intended that the evacuation capability be determined by the procedure acceptable to the authority having jurisdiction. It is also intended that the timing of drills, the rating of residents, and similar actions related to determining the evacuation capability be performed by persons approved by or acceptable to the authority having jurisdiction. The evacuation capability can be determined by the use of the definitions in 3.3.81, the application of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety*~~, Chapter 6, or a program of drills (timed).	See new understood text
A.3.3.95.4 Interior Wall Finish Such partitions are intended to include washroom water closet partitions.	New Section

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A.3.3.196.1 Ambulatory Health Care Occupancy It is not the intent that occupants be considered to be incapable of self-preservation just because they are in a wheelchair or use assistive walking devices, such as a cane, a walker, or crutches. Rather, it is the intent to address ~~emergency care~~ treatment centers that receive patients who have been rendered incapable of self-~~preservation due to the emergency~~, such as being rendered unconscious as a result of an accident or being unable to move due to sudden illness.	See new understood text
A.3.3.196.3 Business occupancies include the following: 1. ~~Air~~ Airport traffic control towers (ATCTs)	See new understood text
A.3.3.222.1 Low-Energy Power Operated Door A pedestrian action might include pressing a push plate or waving a hand in front of a sensor.	New Section
A.3.3.222.2 Power Operated Door A provision used to prevent entrapment might include sensors.	New Section
A.3.3.231.1 Fire Protection Rating The acceptance criteria for determining fire protection ratings for fire door assemblies are described in NFPA 252, ~~*Standard Methods of Fire Tests of Door Assemblies*~~, and those for fire window assemblies are described in NFPA 257, ~~*Standard on Fire Test for Window and Glass Block Assemblies.*~~	See new understood text
A.3.3.248.1 Festival Seating Festival seating describes situations in assembly occupancies where live entertainment events are held that are expected to result in overcrowding and high audience density that can compromise public safety. It is not the intent to apply the term *festival seating* to exhibitions; sports events; ~~dances~~; conventions; and bona fide political, religious, and educational events. Assembly occupancies with 15 ft^2 (1.4 m^2) or more per person should not be considered festival seating.	

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A.3.3.252 Self-Preservation (Day-Care Occupancy). Examples of clients who are incapable of self-preservation include infants, clients who are unable to use stairs because of confinement to a wheelchair or other physical disability, and clients who cannot follow directions or a group to the outside of a facility due to mental or behavioral disorders. It is the intent of this *Code* to classify children under the age of ~~24~~ 30 months as incapable of self-preservation. Examples of direct intervention by staff members include carrying a client, pushing a client outside in a wheelchair, and guiding a client by direct hand-holding or continued bodily contact. If clients cannot exit the building by themselves with minimal intervention from staff members, such as verbal orders, classification as incapable of self-preservation should be considered	
A.3.3.282.4 ~~Mall Building~~ Mall Structure. A ~~mall building~~ mall structure might enclose one or more uses, such as retail and wholesale stores, drinking and dining establishments, entertainment and amusement facilities, transportation facilities, offices, and other similar uses.	See new understood text
A.3.3.282.12 Underground Structure. In determining openings in exterior walls, doors or access panels are permitted to be included. Windows are also permitted to be included, provided that they are openable or provide a breakable glazed area.	See new understood text
Floor levels that are located not more than 30 ft (9.1 m) below the lowest level with an exit discharge can be considered a basement. See 3.3.33.	New Section
A.4.1.3 See Annex C for referenced documents on hazardous materials.	New Section

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A.4.2.3 See 4.1.4 and Annex C for documents on hazardous materials.	New Section
A.4.6.10.3 See also NFPA 241, ~~*Standard for Safeguarding Construction, Alteration, and Demolition Operations.*~~	See new understood text
A.4.6.14 Materials subject to increase in combustibility or flame spread index beyond the limits herein established through the effects of age, moisture, or other atmospheric condition are considered combustible. (See NFPA 259, ~~*Standard Test Method for Potential Heat of Building*~~ *Materials*, and NFPA 220, ~~*Standard on Types of Building Construction.*)~~	See new understood text
A.4.8.2.1 Items to be considered in preparing an emergency action plan should include the following: 1. Purpose of plan 2. Building description, including certificate of occupancy 3. Appointment, organization, and contact details of designated building staff to carry out the emergency duties 4. Identification of events (man-made and natural) considered life safety hazards impacting the building 5. Responsibilities matrix (role-driven assignments) 6. Policies and procedures for those left behind to operate critical equipment 7. Specific procedures to be used for each type of emergency 8. Requirements and responsibilities for assisting people with disabilities 9. Procedures for accounting for employees	

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10. Training of building staff, building emergency response teams, and other occupants in their responsibilities 11. Documents, including diagrams, showing the type, location, and operation of the building emergency features, components, and systems 12. Practices for controlling life safety hazards in the building 13. Inspection and maintenance of building facilities that provide for the safety of occupants 14. Conducting fire and evacuation drills 15. Interface between key building management and emergency responders 16. Names or job titles of persons who can be contacted for further information or explanation of duties 17. Post-event (including drill) critique/evaluation, as addressed in 5.14 of *NFPA 1600*, ~~*Standard on Disaster/Emergency Management and Business Continuity Programs*~~	See new understood text
Table A.4.8.2.1(3) Occupant Evacuation Strategies The different methods of evacuation are also used in several contexts throughout the *Code*. Though most of the methods of evacuation are not specifically defined or do not have established criteria, various sections of the *Code* promulgate them as alternatives to total evacuation. The following sections discuss these alternatives in more detail: 1. Section 4.7 — Provides requirements for fire and relocation drills 2. 7.2.12 — Provides requirements for area of refuge 3. 7.2.4 — Provides requirements for horizontal exits 4. 9.6.3.6 — Provides the alarm signal requirements for different methods of evacuation	

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5. 9.6.3.9 — Permits automatically transmitted or live voice evacuation or relocation instructions to occupants and requires them in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~	See new understood text
(6) One of the most important fire safety systems is the fire alarm and communication system, particularly the notification system. The fire alarm system should be in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling*~~ *Code*, and should take into account the following:	See new understood text
(11) An investigation period, a delay in the notification of occupants after the first activation of the fire alarm, could help to reduce the number of false alarms and unnecessary evacuations. However, a limit to such a delay should be established before a general alarm is sounded, such as positive alarm sequence, as defined in *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~.	See new understood text
A.5.1.6 For guidance on reviewing performance-based designs, see the *SFPE Code Official's Guide to Performance-Based Design Review.* Additional guidance on reviewing designs in which fire risk assessment is used can be found in NFPA 551, ~~*Guide for the Evaluation of Fire Risk Assessments.*~~	See new understood text
A.5.2.2 One of the methods that follows can be used to avoid exposing occupants to untenable conditions. **Method 1**. The design team can set detailed performance criteria that ensure that occupants are not incapacitated by fire effects. The *SFPE Engineering Guide to Performance-Based Fire Protection* describes a process of establishing tenability limits. The guide references D. A. Purser, "Assessment of Hazards to Occupants from Smoke, Toxic Gasses, and Heat ," Chapter 2/6, *SFPE Handbook of Fire Protection Engineering*, which describes a fractional effective dose	

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(FED) calculation approach, which is also contained in NFPA 269, ~~*Standard Test Method for Developing Toxic Potency Data for Use in Fire Hazard Modeling.*~~ FED addresses the effects of carbon monoxide, hydrogen cyanide, carbon dioxide, hydrogen chloride, hydrogen bromide, and anoxia. It is possible to use the test data, combined with laboratory experience, to estimate the FED value that leads to the survival of virtually all people. This value is about 0.8.	See new understood text
A.6.1.11.1 Business Occupancy. Business occupancies include the following: 1. ~~Air~~ Airport traffic control towers (ATCTs)	See new understood text
A.6.2.2.1 These classifications do not apply to the application of sprinkler protection classifications. See NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~ Depending on the use of the space, the area might require special hazard protection in accordance with Section 8.7.	See new understood text
Also, these classifications do not apply to the application of hazardous materials classifications within NFPA 400. NFPA *101* primarily classifies hazards based on fire severity. NFPA 400 regulates contents through a different classification system, which takes into consideration physical hazards, health hazards, quantities, storage conditions, and use conditions.	Newly added part to section
See 4.1.3 and Annex C for referenced documents on hazardous materials.	Newly added part to section
A.7.1.3.2.1(1) In existing buildings, existing walls in good repair and consisting of lath and plaster, gypsum wallboard, or masonry units can usually provide satisfactory protection for the purposes of this requirement where a 1-hour fire resistance rating is required. Further	

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evaluation might be needed where a 2-hour fire resistance rating is required. Additional guidelines can be found in Annex O of NFPA 914, ~~*Code for Fire Protection of Historic Structures,*~~ and in the *SFPE Handbook of Fire Protection Engineering*.	See new understood text
A.7.1.3.2.1(3) In existing buildings, existing walls in good repair and consisting of lath and plaster, gypsum wallboard, or masonry units can usually provide satisfactory protection for the purposes of this requirement where a 1-hour fire resistance rating is required. Further evaluation might be needed where a 2-hour fire resistance rating is required. Additional guidelines can be found in Annex O of NFPA 914, ~~*Code for Fire Protection of Historic Structures*~~, and in the *SFPE Handbook of Fire Protection Engineering*.	See new understood text
A.7.1.3.2.1(10)(b) The intent of this provision is to prevent the exit enclosure from being used as a vertical chase for building services. Penetrations for electrical wiring are permitted where the wiring serves equipment permitted by the authority having jurisdiction to be located within the exit enclosure, ~~such as security systems, public address systems, and fire department emergency communications devices.~~	See new understood text
A.7.1.3.2.1(10)(d) This provision will allow security cameras, public address systems, emergency communication systems, telephone repeaters and similar life safety devices in the exit enclosure, and wiring and similar pathways for such devices, to penetrate the fire barrier serving the exit enclosure. It is the intent of this provision to prevent the exit enclosure from being used as a vertical chase for building services.	New Section

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A.7.1.6.5 The grab bars required by 7.1.6.5 are designed to improve safety of showering and bathing by ambulatory users, typically entering and exiting a bath, bathtub-shower combination, or shower facility for showering while standing, or for other forms of bathing that can entail transition to/from a crouching or sitting position. For grab bar requirements appropriate for other uses and users, especially users with disabilities, refer to the requirements in ICC/ANSI A117.1, *Accessible and Usable Buildings and Facilities*. Generally, the grab bars specified for this *Code* will not interfere with other grab bars installed in accordance with the requirements of ICC/ANSI A117.1 and they can contribute to meeting the requirements of ICC/ANSI A117.1 and vice versa. For example, combination vertical and horizontal grab bars (e.g., in an L configuration), as addressed by ICC/ANSI A117.1, can meet the requirements of this *Code* for a vertical grab bar. Similarly, requirements for a horizontal grab bar on the back wall are compatible. Dimensions for the height of grab bars are based on typical, mass-produced bathtubs with a wall height above the finished floor of about 15 in. (380 mm) and the bottom of the bathtub within 1 to 2 in. (2.5 to 5 mm) of the finished floor elevation. Adjustments to stipulated grab bar height limits and ranges, referenced to the bath tub rim, should be considered for bath tubs having higher walls and, thus, rim heights, above the bottom of the tub and, possibly, also the wall height above the finished floor. ICC/ANSI A117.1 references grab bar height dimensions to the bathtub rim and, for consistency with this widely used ANSI standard, that convention is maintained in this *Code*.	New Section
A.7.1.6.5.1.2 The provision of 7.1.6.5.1.2 is intended to ensure that grab bars, if provided voluntarily (i.e., as nonrequired) for dedicated showers, meet the requirements of the section, so that	New Section

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something appearing to be a grab bar can effectively perform as one. However, such grab bars would only be considered nonrequired in the case of dedicated showers not involving misstep and fall dangers addressed by 7.1.6.2 and 7.1.6.4. This means that walking surfaces must be at least as safe, in terms of underfoot conditions, as any other portion of the means of egress (where, for example, handrails are not required) for users not having mobility disabilities. This would require exceptionally careful choice and maintenance of underfoot materials as well as very effective control of water within and adjacent to the dedicated shower facility.	
A.7.1.6.5.2.1 Grab bars located where they interfere with sealing or with a shower curtain against escape of water — especially to the floor surface outside the shower facility — might introduce safety problems in the form of greatly reduced slip resistance of the walking surface, which could violate this *Code*. This can be avoided with a 6 in. (150 mm) horizontal separation between the shower curtain rod and the grab bar. It is assumed that other forms of water control, such as an installed enclosure, will not interfere with the use of grab bars.	New Section
A.7.1.6.5.2.2 A free-standing pole, satisfying requirements for a grab bar can offer flexibility in placement, for example, within the close quarters of a small bathroom where there is a water closet adjacent to the bathing facility and a single grab bar can serve both facilities. Where the bathing facility is free standing, without walls, especially with large soaking tubs, including those on pedestals, the vertical pole–type grab bar is especially useful. The pole also can solve attachment problems where walls are nonexistent or difficult to use for installing conventional, wall-mounted grab bars.	New Section

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A.7.1.6.5.3.1 Using the midpoints of the distance ranges and the minimum distance from the control end wall results in a 45-degree angle for the diagonal grab bar. Such a diagonal grab bar (or alternatively, a horizontal grab bar fairly similar to the option provided by 7.1.6.5.3.1, which meets requirements of ICC/ANSI A117.1, *Standard for Accessible and Usable Buildings and Facilities*) was found suitable in tests performed of several grab bar options with 103 independent-living seniors with an average age of 70. ("Evaluation of Optimal Bath Grab Bar Placement for Seniors," by H. Sveistrup, D. Lockett, N. Edwards, and F. Aminzadeh, University of Ottawa with funding by Canada Mortgage and Housing Corporation, 2003.)	New Section
A.7.1.6.5.4 The best-performing grab bars are in the middle third of the permitted range for circular diameter. For some grab bar designs, with undulations and other surface geometry features to improve slip resistance for users' hands, these dimensions will be nominal with small variations depending on where measurements are taken. Children and others with smaller hands will be able to use the diameters within the lower part of the permitted range. When using a free-standing pole for a grab bar, structural considerations, especially for stiffness, might dictate using diameters in the upper part of the permitted range. Note that a minimum clearance between the grab bar and an adjacent surface is specified. With grab bars, especially horizontal ones, on which large, downward loads are imposed by the arms of users, there is some concern about people's hands slipping into the clear space; however, this can occur even with an absolute 1.5 in. (38 mm) clearance, as some standards specify and most grab bar designs provide. Thus the main difference in the end result is where, along its length, the arm gets wedged behind the grab bar, not the complete prevention of this happening at all.	New Section

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A.7.2.1.6 None of the special locking arrangements addressed in 7.2.1.6 are intended to allow *credentialed egress, request to exit,* or similar provisions, where an occupant cannot leave the building without swiping a card through a reader. Where such an arrangement is desired to keep track of occupants, the swiping of cards needs to be procedural but not necessary for releasing the door lock or latch. Free egress needs to be available at all times. Another option to free egress is the use of a ~~delayed-egress locking system~~ delayed-egress electrically locking system.	See new understood text
A.7.2.1.6.2 It is not the intent to require doors that restrict access but that comply with 7.2.1.5.10 to comply with the access-controlled egress door provisions of 7.2.1.6.2. The term *access-controlled* was chosen when the requirements of 7.2.1.6.2 were first added to the *Code* to describe the function in which a door is electronically locked from the inside in a manner that restricts egress. It is not the *Code's* intent to prohibit methods of securing the door in a locked position from the outside with access control products, provided that the egress requirements of 7.2.1.6.2 are met.	New Section
A.7.2.1.6.3(14) It is not the intent to prohibit elevator lobby doors from being equipped with card access systems for gaining access, for example, to tenant spaces. It is the ~~access-controlled egress door system~~ sensor-release of electrical locking systems described in 7.2.1.6.2 that is prohibited from being installed on the same door as the lock addressed by 7.2.1.6.3.	See new understood text
A.7.2.1.7 See 7.4.2.1.2 and 7.4.2.2.2 for door unlatching requirements for working space about electrical equipment.	New Section

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A.7.2.1.9 Special-purpose horizontally sliding accordion or folding door assemblies installed in accordance with 7.2.1.14 should not be considered powered doors subject to the provisions of 7.2.1.9. Powered doors are divided into two categories — power assisted and power operated. Power-assisted doors that conform to ANSI/BHMA A156.19, ~~*American National Standard for Power Assist and Low Energy Power Operated Doors*~~ *Power Assist and Low Energy Power Operated Doors*, use limited power to operate the door. They require fewer safeguards as compared to full power–operated doors. These door operators are for swinging doors only.	See new understood text
Power-operated doors that conform to ANSI/BHMA A156.10, ~~*American National Standard for Power Operated Pedestrian Doors*~~ *Power Operated Pedestrian Doors*, require more power to operate the door and require additional safeguards to provide protection against personal injury. Power-operated doors can be swinging, sliding, or folding doors.	See new understood text
A.7.2.1.15.1 Additionally, door assemblies that are ~~electrically controlled egress doors~~ door hardware-release of electrically locked egress door assemblies in accordance with 7.2.1.5.5 and door assemblies that are equipped with special locking arrangements in accordance with 7.2.1.6 are outfitted with electrified hardware and access control devices that are susceptible to wear and abuse. Consequently, these door assemblies need to be inspected and tested on an annual basis, regardless of the occupant load being served.	See new understood text
A.7.2.1.15.2 See NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives*~~, Annex J, for information pertaining to performance-based inspection, testing, and maintenance of door assemblies.	See new understood text

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A.7.2.2.3.3.2 The tripping hazard referred to in 7.2.2.3.3.2 occurs especially during descent, where the tread walking surface has projections such as strips of high-friction materials or lips from metal pan stairs that are not completely filled with concrete or other material. In addition, the installation of a retrofit, surface-mounted stair nosing or a strip of high-friction material onto an existing stair tread might produce a projection that creates a tripping hazard. For example, the slight elevation difference between the new stair tread nosing and the stair tread might create enough of an elevation change to trip the stair user. Tread nosings that project over adjacent treads can also be a tripping hazard. ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*, illustrates projecting nosing configurations that minimize the hazard.	See new understood text
A.7.2.3.9.1 The design pressure differences required by 7.2.3.9.1 are based on specific gas temperatures and ceiling heights. The system is required to be approved, because anticipated conditions might be different from those on which the design pressure differences were calculated and, thus, different design pressure differences might be needed. For additional information on necessary minimum design pressure differences, including calculational techniques, or maximum pressure differences across doors to ensure reasonable operating forces, see NFPA 92, ~~*Standard for Smoke Control Systems*~~.	See new understood text
A.7.2.3.9.2 Control wiring for pressurization systems requiring separation includes wiring from the VFD to the fan unit. Where this wiring is not located in the same fire resistance–rated room, protection of this wiring is needed to ensure proper fan operation.	New Section

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It is not the intent of 7.2.4.1.2 to limit the number of doors in the fire barrier forming the horizontal exit. Where doors other than those serving as horizontal exits are provided, such doors are ~~permitted~~ to be considered as ~~part of the exit access and not as exits~~ convenience openings that are not credited with satisfying any means of egress requirements.	See new understood text
A.7.2.6 An exit passageway serves as a horizontal means of exit travel that is protected from fire in a manner similar to an enclosed interior exit stair. Where it is desired to offset exit stairs in a multistory building, an exit passageway can be used to preserve the continuity of the protected exit by connecting the bottom of one stair to the top of the stair that continues to the street floor. Probably the most important use of an exit passageway is to satisfy the requirement that at least 50 percent of the exit stairs discharge directly outside from multistory buildings *(see 7.7.2)*. Thus, if it is impractical to locate the stair on an exterior wall, an exit passageway can be connected to the bottom of the stair to convey the occupants safely to an outside exit door. In buildings of extremely large area, such as shopping ~~malls~~ mall concourses and some factories, the exit passageway can be used to advantage where the travel distance to reach an exit would otherwise be excessive.	See new understood text
A.7.2.8.6.2 Structural evaluations of fire escape stairs, platforms, landings, and ladders should include a careful examination for the integrity of all fastened or welded joints as well as the manner of attachment to the building. Evaluations can be performed by a registered design professional with training and experience in structural analysis or by performing a load test to document the stairs' ability to support 100 lb/ft^2 (4.8 kN/m^2) typically required by the building code.	New Section

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A.7.2.12.3.2 The method of meeting the tenability performance criteria required of an area of refuge of less than 1000 ft^2 (93 m^2) can involve controlling the exposing fire (e.g., via automatic sprinkler protection), installing smoke-resisting doors in the smoke-resisting barriers *(see*NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives),*~~ providing smoke control to prevent or limit smoke migration through cracks or other leakage paths *(see*NFPA 92, ~~*Standard for Smoke Control Systems),*~~ or providing other means or a combination of these means	See new understood text
A.7.2.12.3.4 Requirements for fire resistance ratings in excess of 1 hour, fire protection ratings in excess of 20 minutes, and prohibitions on duct penetrations appear in other *Code* sections. For example, if the barrier creating the area of refuge is also part of an exit stair enclosure that connects two or more stories, or is a horizontal exit, a minimum 2-hour fire resistance rating for the barrier and a minimum 1⁄2-hour fire protection rating for opening protectives, such as doors, would be required for most occupancies. For further information on door openings in smoke-resisting barriers, see NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives*.~~	See new understood text
A.7.3.1.2 This phenomenon is explained when one considers that, above a certain shopping center gross leasable area [approximately 600,000 ft^2 (56,000 m^2)], there exists a multiplicity of the same types of stores. The purpose of duplicate types of stores is to increase the choices available to a customer for any given type of merchandise. Therefore, when shopping center size increases, the occupant load increases as well, but at a declining rate. In using Figure 7.3.1.2(a) or Figure 7.3.1.2(b), the occupant load factor is applied only to the gross leasable area that uses the ~~mall~~ mall concourse as a means of egress.	See new understood text

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A.7.3.3.2 The effective capacity of stairways has been shown by research to be proportional to the effective width of the stairway, which is the nominal width minus 12 in. (305 mm). This phenomenon, and the supporting research, were described in the chapter, "Movement of People," in the first, second, and third editions of the *SFPE Handbook of Fire Protection Engineering* and was also addressed in Appendix D of the 1985 edition of NFPA *101*, among several other publications. In 1988, this appendix was moved to form Chapter 2 of the 1988 edition of NFPA 101M, ~~*Alternative Approaches to Life Safety.*~~ (This document was later designated as NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety,*~~ and this chapter remained in the document through the 1998 edition.) In essence, the effective width phenomenon recognizes that there is an edge or boundary effect at the sides of a circulation path. It has been best examined in relation to stairway width, where the edge effect was estimated to be 6 in. (150 mm) on each side, but a similar phenomenon occurs with other paths, such as corridors and doors, although quantitative estimates of their edge effect are not as well established as they have been for stairways, at least those stairways studied in Canada during the late 1960s through the 1970s in office building evacuation drills and in crowd movement in a variety of buildings with assembly occupancy.	See new understood text
A.7.5.4.1 An accessible means of egress should comply with the accessible route requirements of ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities.*	See new understood text
A.7.12 See 4.1.3 and Annex C for referenced documents on hazardous materials.	New Section

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A.7.15.5.3 NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ permits sprinklers to be omitted from the top of the elevator hoistway where the hoistway for passenger elevators is noncombustible and the car enclosure materials meet the requirements of ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*. The provision of 7.15.5.3 restricts occupant evacuation elevators to passenger elevators that are in noncombustible hoistways and for which the car enclosure materials meet the requirements of ASME A17.1/CSA B 44.	See new understood text
A.8.2.1.2 Table A.8.2.1.2 is from *NFPA 5000*, ~~*Building Construction and Safety Code,*~~ and is reproduced in this annex for the convenience of users of this *Code*.	See new understood text
A.8.2.2.5 Acceptable wording can read as follows: 2-HOUR FIRE BARRIER, SMOKE BARRIER — PROTECT ALL OPENINGS	New Section
A.8.2.4.2 The intent of this provision is to allow the provisions of either ~~ASCE/SFPE 29~~ ASCE/SEI/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*, or ACI 216.1/TMS 0216.1 *Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies*, for the calculation for fire resistance of concrete or masonry elements or assemblies.	See new understood text
A.8.3.1.1(4) Walls in good condition with lath and plaster, or gypsum board of not less than 1⁄2 in. (13 mm) on each side, can be considered as providing a minimum 1⁄2-hour fire resistance rating. Additional information on archaic material assemblies can be found in Annex O of NFPA 914, ~~*Code for Fire Protection of Historic Structures.*~~	See new understood text

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A.8.3.3.2.1 Some door assemblies have been tested to meet the conditions of acceptance of ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*. Where such assemblies are used, the provisions of 8.3.2 should be applied instead of those of 8.3.3.2.1.	New Section
A.8.3.3.2.2 Longer ratings might be required where opening protectives are provided for property protection as well as life safety. NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives,*~~ should be consulted for standard practice in the selection and installation of fire door assemblies and fire window assemblies.	See new understood text
~~**Table 8.3.4.2.**~~ A vision panel in a fire door is not a fire window, and, thus, it is not the intent of the "NP" notations in the "Fire Window Assemblies" column of Table 8.3.3.2.2 to prohibit vision panels in fire doors.	See new understood text
A.8.3.3.5.3 Some ~~window~~ doors and glazing assemblies have been tested to meet the conditions of acceptance of ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*. Where such assemblies are used, the provisions of 8.3.2 should be applied instead of those of 8.3.3.6.6.	See new understood text
A.8.3.3.6.6 Some window assemblies have been tested to meet the conditions of acceptance of ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or ANSI/UL 263, *Standard for Fire Tests of Building Construction and Materials*. Where such assemblies are used, the provisions of	New Section

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8.3.2 should be applied instead of those of 8.3.3.6.6.	
A.8.3.4.7.3(1)(c) Criteria associated with fireblocking can be found in 8.14.2 of *NFPA 5000*, ~~*Building Construction and Safety Code.*~~	See new understood text
A.8.4.3.4 Gasketing of doors should not be necessary, as the clearances in NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives*~~, effectively achieve resistance to the passage of smoke if the door is relatively tight-fitting.	See new understood text
A.8.4.6.2 An air-transfer opening, as defined in NFPA 90A, ~~*Standard for the Installation of Air-Conditioning and Ventilating Systems*~~, is an opening designed to allow the movement of environmental air between two contiguous spaces.	See new understood text
A.8.5.4.1 For additional information on the installation of smoke control door assemblies, see NFPA 105, ~~*Standard for Smoke Door Assemblies and Other Opening Protectives*~~	See new understood text
A.8.6.7(5) See NFPA 92, ~~*Standard for Smoke Control Systems.*~~ The engineering analysis should include the following elements:	See new understood text
A.8.6.9.1(3) The intent of this requirement is to provide the same separation as required for corridor walls of the applicable occupancy chapter. For example, a convenience opening on one floor in a health care occupancy would be required to be separated from the corridor and areas open to the corridor on the adjacent floor by a barrier that limits the transfer of smoke in accordance with 18.3.6.2.3, not a 1-hour rated wall with opening protectives.	New Section

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A.8.6.9.2(3) Draftstops protecting vertical openings that are defined in the requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ are curtain style descending from the ceiling surface or plane.	See new understood text
A.8.6.11.2(2) See NFPA 90A, ~~*Standard for the Installation of Air-Conditioning and Ventilating Systems.*~~	See new understood text
A.8.7.2 For details, see NFPA 68, ~~*Standard on Explosion Protection by Deflagration Venting.*~~	See new understood text
A.8.7.3.2 NFPA 58, ~~*Liquefied Petroleum Gas Code*~~, permits the use of portable butane-fueled appliances in restaurants and in attended commercial food catering operations where fueled by ~~not in excess~~ a maximum of two 10 oz (0.28 kg) LP-Gas capacity, nonrefillable butane containers ~~having~~ with a water capacity not in excess of 1.08 lb (0.4 kg) per container. Containers are required to be directly connected to the appliance, and manifolding of containers is not permitted. Storage of cylinders is also limited to 24 containers, with an additional 24 permitted where protected by a 2-hour fire resistance–rated barrier. *(See 4.1.3 and Annex C for referenced documents on hazardous materials.)*	See new understood text See new understood text
A.8.7.3.3 The total quantities of flammable liquids in any area should comply with the provisions of other recognized codes, including NFPA 1, ~~*Fire Code*~~, and NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~ In addition, special consideration should be given to the following:	See new understood text
A.8.7.5 While the scope of NFPA 99, ~~*Health Care Facilities Code*~~, is limited to health care occupancies, it is the intent that this requirement be applied to hyperbaric facilities used in all occupancies.	See new understood text

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A.9.6.1 The provisions of Section 9.6 cover the basic functions of a complete fire alarm system, including fire detection, alarm, and communications. These systems are primarily intended to provide the indication and warning of abnormal conditions, the summoning of appropriate aid, and the control of occupancy facilities to enhance protection of life. Some of the provisions of Section 9.6 originated with *NFPA 72*, ~~*National Fire Alarm and Signaling Code*.~~ For purposes of this *Code*, some provisions of Section 9.6 are more stringent than those of *NFPA 72*, which should be consulted for additional details.	See new understood text
~~A.9.6.1.5~~ ~~A fire watch should at least involve some special action beyond normal staffing, such as assigning an additional security guard(s) to walk the areas affected. Such individuals should be specially trained in fire prevention and in occupant and fire department notification techniques, and they should understand the particular fire safety situation for public education purposes. *(Also see* NFPA 601.*), Standard for Security Services in Fire Loss Prevention.)*~~ ~~The term *out of service* in 9.6.1.5 is intended to imply that a significant portion of the fire alarm system is not in operation, such as an entire initiating device, signaling line, or notification appliance circuit. It is not the intent of the *Code* to require notification of the authority having jurisdiction, or evacuation of the portion of the building affected, for a single nonoperating device or appliance.~~	Deleted section
A.9.6.2.10.3 *NFPA 72*, ~~*National Fire Alarm and Signaling Code*,~~ mandates smoke alarms in all sleeping rooms, and interconnection of smoke alarms is required for both new and existing installations. Per 9.6.2.10.1, the residential occupancy chapters determine whether smoke alarms are needed within sleeping rooms. Paragraph	See new understood text

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9.6.2.10.3 limits the requirement for interconnection of smoke alarms to those in new construction. This *Code* does not intend to require compliant, existing smoke alarm installations to be interconnected. This *Code* is periodically revised to add retrospective requirements only where the need is clearly substantiated.	
A.9.6.3.5.7 Visual notification appliances installed in large-volume spaces, such as arenas, stadiums, ~~malls~~ mall concourses, and atriums, can be alternative devices that are not listed as visible notification appliances for fire alarm systems, provided that the notification objective of the visual signal is reasonably achieved. Examples of alternative devices include, but are not limited to, scoreboards, message boards, and other electronic devices that meet the performance objectives of visible fire alarm appliances in large-volume spaces.	See new understood text
A.9.6.3.9.2 The provisions of 9.6.3.9.2 offer an alternative to the emergency voice alarm and communications system provisions (live voice or recorded voice announcements) of *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~. Occupancies such as large-venue assembly occupancies and mercantile ~~mall building~~ mall structures are occupancies in which the physical configuration (e.g., large-volume spaces), function, and human behavior (including elevated levels of occupant-generated noise) present challenges with respect to effective occupant notification by standard means in accordance with *NFPA 72*. Because the routine operation of these occupancies demands highly reliant, acoustically capable, and sufficiently audible public address systems, properly trained staff can be relied on to use these public address systems to effect occupant evacuation, relocation, or both.	See new understood text

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A.9.7.1.1 For a discussion of the effectiveness of automatic sprinklers, as well as a general discussion of automatic sprinklers, see the NFPA *Fire Protection Handbook*. Where partial sprinkler protection is permitted by another section of this *Code*, the limited area systems provisions of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ should apply.	See new understood text
A.9.7.2.1 *NFPA 72*, ~~*National Fire Alarm and Signaling Code,*~~ provides details of standard practice in sprinkler supervision. Subject to the approval of the authority having jurisdiction, sprinkler supervision is also permitted to be provided by direct connection to municipal fire departments or, in the case of very large establishments, to a private headquarters providing similar functions. *NFPA 72* covers such matters. System components and parameters that are required to be monitored should include, but should not be limited to, control valves, water tank levels and temperatures, tank pressure, and air pressure on dry-pipe valves.	See new understood text
Where municipal fire alarm systems are involved, reference should also be made to NFPA 1221, ~~*Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems.*~~	See new understood text
A.9.9 For a description of standard types of extinguishers and their installation, maintenance, and use, see NFPA 10, ~~*Standard for Portable Fire Extinguishers*~~. The labels of recognized testing laboratories on extinguishers provide evidence of tests indicating the reliability and suitability of the extinguisher for its intended use. Many unlabeled extinguishers are offered for sale that are substandard by reason of insufficient extinguishing capacity, questionable reliability, or ineffective extinguishing agents for fires in ordinary	See new understood text

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combustible materials or because they pose a personal hazard to the user.	
A.9.11.4 It is also recommended that fire protection and life safety systems be commissioned in accordance with NFPA 3.	New Section
The requirements are based on fire testing to NFPA 286 (with the criteria of 10.2.3.2), which apply to all interior finish materials. Many interior finish materials are permitted to be tested based on other fire tests, such as ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, or NFPA 265 as provided in the relevant subsection of Section 10.2.	New Section
~~Table A.10.2 shows the fire test methods and classification criteria that apply to different interior finish materials.~~	Deleted section
~~Table A.10.2 Fire Testing of Interior Finish Materials~~	Deleted section
A.10.2.1.5 Such partitions are intended to include washroom water closet partitions.	New Section
A.10.3.3 Some interior wall and ceiling finish materials, such as fabrics not applied to a solid backing, do not lend themselves to a test made in accordance with ASTM E84. In such cases, the large-scale test outlined in NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*~~, is permitted to be used. In 1989 the NFPA Technical Committee on Fire Tests eliminated the so-called "small-scale test" from NFPA 701	See new understood text
A.10.2.4 Surface nonmetallic raceway products, as permitted by *NFPA 70*, ~~*National Electrical Code*~~, are not interior finishes and are not subject to the provisions of Chapter 10.	See new understood text

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A.10.2.4.2 Paragraph 10.2.4.2 does not require Type IV (2HH), heavy timber, other than that used in interior exit stairs, interior exit ramps, and exit passageways be tested by either ASTM E84 or ANSI/UL 723 to determine a flame spread rating. Taller wood buildings and new technology, primarily new "mass timber," make taller buildings of Type IV possible. To that end, the requirements for Type IV have been changed to require the testing for components in the egress system such that they too need to be tested and meet the appropriate classification required in this section. This means that Type IV is "presumed" to comply with the finish requirements in this section for the purpose of meeting the requirements of this section for any wall or ceiling finish of elements other than interior exit stairways, interior exit ramps, and exit passageways.	New Section
A.10.2.4.3.3.2 Both NFPA 286, ~~*Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*~~, and ANSI/UL 1715, *Standard for Fire Test of Interior Finish Material*, contain smoke obscuration criteria. ANSI/UL 1040, *Standard for Fire Test of Insulated Wall Construction*, and FM 4880, *Approval Standard for Class I Insulated Wall or Wall and Roof/Ceiling Panels; Plastic Interior Finish Materials; Plastic Exterior Building Panels; Wall/Ceiling Coating Systems; Interior or Exterior Finish Systems*, do not. Smoke obscuration is an important component of the fire performance of cellular or foamed plastic materials.	See new understood text
A.10.2.4.4 Previous editions of the *Code* have regulated textile materials on walls and ceilings using ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*. Full-scale room/corner fire test research has	

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shown that flame spread indices produced by ASTM E84 or ANSI/UL 723 might not reliably predict all aspects of the fire behavior of textile wall and ceiling coverings. NFPA 265, ~~*Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls*~~, and NFPA 286, ~~*Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*~~, both known as room/corner tests, were developed for assessing the fire and smoke obscuration performance of textile wall coverings and interior wall and ceiling finish materials, respectively. As long as an interior wall or ceiling finish material is tested by NFPA 265 or NFPA 286, as appropriate, using a mounting system, substrate, and adhesive	See new understood text
A.10.2.4.4.1 The methodology specified in NFPA 265, ~~*Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls*~~, includes provisions for measuring smoke obscuration. ~~Such measurement is considered desirable, but the basis for specific recommended values is not currently available. *(See A.10.3.10.1.)*~~	See new understood text
A.10.2.4.15 Light-transmitting plastics are regulated by model building codes such as *NFPA 5000*, ~~*Building Construction and Safety Code.*~~ Model building codes provide adequate regulation for most applications of light-transmitting plastics. Where an authority having jurisdiction determines that a use is contemplated that differs from uses regulated by model building codes, light-transmitting plastics in such applications can be substantiated by fire tests that demonstrate the combustibility characteristics of the light-transmitting plastics for the use intended under actual fire conditions.	See new understood text

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A.10.2.6.1 It is the intent of the *Code* to mandate interior wall and ceiling finish materials that obtain their fire performance and smoke developed characteristics in their original form. However, in renovations, particularly those involving historic buildings, and in changes of occupancy, the required fire performance or smoke developed characteristics of existing surfaces of walls, partitions, columns, and ceilings might have to be secured by applying approved fire-retardant coatings to surfaces having higher flame spread ratings than permitted. Such treatments should comply with the requirements of NFPA 703, ~~*Standard for Fire Retardant-Treated Wood and Fire-Retardant Coatings for Building Materials*~~. When fire-retardant coatings are used, they need to be applied to surfaces properly prepared for the material, and application needs to be consistent with the product listing. Deterioration of coatings applied to interior finishes can occur due to repeated cleaning of the surface or painting over applied coatings, but permanency must be assured in some appropriate fashion. Fire-retardant coatings must possess the desired degree of permanency and be maintained so as to retain the effectiveness of the treatment under the service conditions encountered in actual use.	See new understood text
A.10.2.7 The flooring radiant panel provides a measure of a floor covering's tendency to spread flames ~~where~~ when located in a corridor and exposed to the flame and hot gases from a room fire. The flooring radiant panel test method is to be used as a basis for estimating the fire performance of a floor covering installed in the building corridor.	See new understood text
A.10.2.7.3 ASTM E648, *Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, and NFPA 253, ~~*Standard Method of Test for Critical Radiant*~~	See new understood text

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~~*Flux of Floor Covering Systems Using a Radiant Heat Energy Source*,~~ are considered nationally recognized consensus standard test methods for determining the critical radiant flux from floor covering systems and are likely to yield equivalent test results.	
A.10.3.1 Testing per NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*~~, applies to textiles and films used in a hanging configuration. If the textiles are to be applied to surfaces of buildings or backing materials as interior finishes for use in buildings, they should be treated as interior wall and ceiling finishes in accordance with Section 10.2 of this *Code*, and they should then be tested for flame spread index and smoke developed index values in accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*, or ANSI/UL 723, *Standard for Test for Surface Burning Characteristics of Building Materials*, or for flame spread and flashover in accordance with NFPA 265, ~~*Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls.*~~ Films and other materials used as interior finish applied to surfaces of buildings should be tested for flame spread index and smoke developed index values in accordance with ASTM E84 or ANSI/UL 723 or for heat and smoke release and flashover in accordance with NFPA 286, ~~*Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.*~~	See new understood text See new understood text
A.10.3.2.1 The Class I requirement associated with testing in accordance with NFPA 260, ~~*Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture*,~~ and the char length of not more than 1 1⁄2 in. (38 mm) required with testing in accordance with NFPA 261, ~~*Standard*~~	See new understood text

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~~*Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes,*~~ are indicators that the furniture item or mattress is resistant to a cigarette ignition. A fire that smolders for an excessive period of time without flaming can reduce the tenability within the room or area of fire origin without developing the temperatures necessary to operate automatic sprinklers.	See new understood text
A.10.3.7 Neither UL 1975, *Standard for Fire Tests for Foamed Plastics Used for Decorative Purposes*, nor NFPA 289, ~~*Standard Method of Fire Test for Individual Fuel Packages*~~, is intended for evaluating interior wall and ceiling finish materials. Actual test results for heat, smoke, and combustion product release from UL 1975 or from NFPA 289 might be suitable for use as input into fire models intended for performance-based design.	See new understood text
A.11.3.4.4.1 Smoke detection in airport traffic control towers is intended to include the following: 1. Tower cab area 2. Along all means of egress from the tower including exit access paths, lobbies and other egress components 3. All rooms containing equipment serving the ATCT 4. Mall office spaces or lounge areas and similar spaces used by tower employees 5. Utility shafts that provide access for maintenance	New section
A.11.3.4.4.8.2(2) Occupants of ~~air~~ airport traffic control towers might be required by administrative controls to remain in the facility when a fire occurs so they can perform orderly transfer of operations. Methods to limit compromising the means of egress might include a fire resistance–rated	See new understood text

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separation between discharge paths or smoke control in large spaces.	
A.11.5 For further information on pier fire protection, see NFPA 307, ~~*Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves.*~~	See new understood text
A.11.6 Fire safety information for manufactured home parks is found in NFPA 501A, ~~*Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities.*~~	See new understood text
A.11.9.3.3.1 The requirements of this paragraph can be considered as a Class 4, Type 60, system per NFPA 110, ~~*Standard for Emergency and Standby Power Systems.*~~	See new understood text
A.12.2.5.8.2 It is important to make facilities accessible to people using wheelchairs. See ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*, which provides guidance on appropriate aisle widths.	See new understood text
~~A.12.4.6.12~~ ~~Prior editions of the *Code* required stages to be protected by a Class III standpipe system in accordance with NFPA 14, *Standard for the Installation of Standpipe and Hose Systems.* NFPA 14 requires that Class II and Class III standpipes be automatic — not manual — because they are intended to be used by building occupants. Automatic standpipe systems are required to provide not less than 500 gpm (1890 L/min) at 100 psi (689 kN/m²). This requirement often can be met only if a fire pump is installed. Installation of a fire pump presents an unreasonable burden for the system supplying the two hose outlets at the side of the stage. The revised wording of 12.4.6.12 offers~~	Deleted section

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~~some relief by permitting the hose outlets to be in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*.~~ A.13.2.5.8.2 It is important to make facilities accessible to people using wheelchairs. See ICC/ANSI A117.1, ~~*American National Standard for Accessible and Usable Buildings and Facilities*~~ *Accessible and Usable Buildings and Facilities*, which provides guidance on appropriate aisle widths.	See new understood text
A.13.2.11.1(8) The written plan should identify the unguarded areas and should include precautions and provisions to mitigate the fall hazard. Such precautions and provisions might include the following: 1. Training 2. Choreography 3. Blocking 4. Rehearsal 5. Restricted access to the stage 6. Restricted access to unguarded edges 7. Warning lights 8. Audible warnings 9. Tactile edges 10. Warning barriers 11. Signage 12. Temporary barriers 13. Personal fall protection 14. Fall restraint 15. Spotters	New section
~~A.13.4.6.12~~ ~~Prior editions of the *Code* required stages to be protected by a Class III standpipe system in accordance with NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*. NFPA 14 requires that Class II and Class III standpipes be automatic—not manual—because they are intended to be used by building occupants. Automatic standpipe systems are required to provide not less than~~	Deleted section

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~~500 gpm (1890 L/min) at 100 psi (689 kN/m²). This requirement often can be met only if a fire pump is installed. Installation of a fire pump presents an unreasonable burden for the system supplying the two hose outlets at the side of the stage. The revised wording of 13.4.6.12 offers some relief by permitting the hose outlets to be in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems.*~~	
A.14.3.2.1(2)(a) It is not the intent to classify a room with a domestic-type clothes washer and a domestic-type clothes dryer as a laundry.	New section
~~A.14.3.5.1~~ ~~It is the intent to permit use of the criteria of 8.2.1.3(1) to create separate buildings for purposes of limiting educational occupancy building area to not more than 12,000 ft² (1120 m²).~~	Deleted section
A.15.3.2.1(2)(a) It is not the intent to classify a room with a domestic-type clothes washer and a domestic-type clothes dryer as a laundry.	New Section
A.15.3.4.3.1.1 The audible occupant notification signal for evacuation of an educational occupancy building should be the distinctive three-pulse temporal pattern fire alarm evacuation signal that is required of new systems by *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~. The temporal pattern will help educate students to recognize the need to evacuate when they are in other occupancies. Existing fire alarm systems should be modified, as feasible, to sound the three-pulse temporal pattern.	See new understood text
A.16.7.1 For additional guidance on emergency action plans, see *NFPA 1600*, ~~*Standard on Disaster/Emergency Management and Business Continuity Programs.*~~ This standard establishes a common set of criteria for disaster management, emergency management, and business continuity programs.	See new understood text

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A.17.7.1 For additional guidance on emergency action plans, see *NFPA 1600*, ~~*Standard on Disaster/Emergency Management and Business Continuity Programs.*~~ This standard establishes a common set of criteria for disaster management, emergency management, and business continuity programs.	See new understood text
A.18.1.1.1.1 In determining equivalency for conversions, modernizations, renovations, or unusual design concepts of hospitals or nursing homes, the authority having jurisdiction is permitted to accept evaluations based on the health care occupancies for safety evaluation system (FSES) of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety*,~~ utilizing the parameters for new construction.	See new understood text
A.18.1.3.4 Doctors' offices and treatment and diagnostic facilities that are intended solely for outpatient care and are physically separated from facilities for the treatment or care of inpatients, but that are otherwise associated with the management of an institution, might be classified as business occupancies rather than health care occupancies. ~~Facilities that do not provide housing for patients on a 24-hour basis are required to be classified as other than health care occupancies per 18.1.1.1.9, except where services are provided routinely to four or more inpatients who are incapable of self-preservation.~~	See new understood text
A.18.1.6.6 This provision is not intended to limit the use of fire-retardant-treated wood to fixtures and equipment as defined in 3.3.111. Other types of fixtures and equipment for which fire-retardant-treated wood could be used as support include grab bars, shelving, and toilet accessories.	New Section

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A.18.2.2.2.4(2) Where ~~delayed-egress~~ ~~locks~~ delayed-egress electrically locking systems complying with 7.2.1.6.1 are used, the provisions of 18.2.2.2.5 are not required.	See new understood text
A.18.2.2.2.4(3) Where ~~access-controlled egress~~ sensor-release of electrical locking systems ~~doors~~ complying with 7.2.1.6.2 are used, the provisions of 18.2.2.2.5 are not required.	See new understood text
A.18.2.3.4(2) ~~Building codes and accessibility codes might require cane detection below projections that exceed 4 in. (102 mm).~~The purpose of the provision of 18.2.3.4(2)(b)ii, requiring a projection below the main projection, is to accommodate requirements from ADA that projections be not more than 4 in. (100 mm) so as to prevent persons with visual impairments from impacting projections that they are unable to detect. The lower projection within 27 in. (685 mm) of the floor is needed for cane detection.	See new understood text
A.18.2.3.5(2) ~~Building codes and accessibility codes might require cane detection below projections that exceed 4 in. (102 mm).~~The purpose of the provision of 18.2.3.4(2)(b)ii, requiring a projection below the main projection, is to accommodate requirements from ADA that projections be not more than 4 in. (100 mm) so as to prevent persons with visual impairments from impacting projections that they are unable to detect. The lower projection within 27 in. (685 mm) of the floor is needed for cane detection.	See new understood text
A.18.3.5.1 In areas where the replenishment of water supplies is not immediately available from on-site sources, alternate provisions for the water-fill rate requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*,~~ and NFPA 22, ~~*Standard for Water Tanks for Private Fire Protection*,~~ that are acceptable to the authority	See new understood text

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having jurisdiction should be provided. Appropriate means for the replenishment of these supplies from other sources, such as fire department tankers, public safety organizations, or other independent contractors should be incorporated into the overall fire safety plan of the facility.	
A.18.3.5.6 The requirements for use of quick-response sprinklers intend that quick-response sprinklers be the predominant type of sprinkler installed in the smoke compartment. It is recognized, however, that quick-response sprinklers might not be approved for installation in all areas, such as those where NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ requires sprinklers of the intermediate- or high-temperature classification. It is not the intent of the 18.3.5.6 requirements to prohibit the use of standard sprinklers in limited areas of a smoke compartment where intermediate- or high-temperature sprinklers are required.	See new understood text
A.18.3.5.10 This exception is limited to hospitals, as nursing homes and many limited care facilities might have more combustibles within the closets. The limited amount of clothing found in the small clothes closets in hospital patient rooms is typically far less than the amount of combustibles in casework cabinets that do not require sprinkler protection, such as nurse servers. In many hospitals, especially new hospitals, it is difficult to make a distinction between clothes closets and cabinet work. The exception is far more restrictive than similar exceptions for hotels and apartment buildings. NFPA 13~~, *Standard for the Installation of Sprinkler Systems*~~, already permits the omission of sprinklers in wardrobes [see 8.1.1(7) of NFPA 13]. It is not the intent of 18.3.5.10 to affect the wardrobe provisions of NFPA 13. It is the intent that the sprinkler protection in the room covers the closet as if there were no door on the closet. *(See 8.5.3.2.3 of NFPA 13.)*	See new understood text

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A.18.3.5.11 For the proper operation of sprinkler systems, cubicle curtains and sprinkler locations need to be coordinated. Improperly designed systems might obstruct the sprinkler spray from reaching the fire or might shield the heat from the sprinkler. Many options are available to the designer including, but not limited to, hanging the cubicle curtains 18 in. (455 mm) below the sprinkler deflector; using a 1⁄2 in. (13 mm) diagonal mesh or a 70 percent open weave top panel that extends 18 in. (455 mm) below the sprinkler deflector; or designing the system to have a horizontal and minimum vertical distance that meets the requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~ The test data that form the basis of the NFPA 13 requirements are from fire tests with sprinkler discharge that penetrated a single privacy curtain	See new understood text
A.18.3.6.1(1) The intent is also to permit a space that is compliant with the provisions of 18.3.6.1(1)18.3.6.1(1) to be considered open to the corridor even though it is physically separated from the corridor by walls and doors. The walls and doors would not need to comply with 18.3.6.2 through 18.3.6.5. For example, doors would be permitted without a latch or with a louvre.	New Section
A.18.3.6.2.1 The provision for terminating the corridor wall at the ceiling is not intended to prevent the wall from extending above the ceiling.	New Section
A.18.3.7.6 It is not the intent of 18.3.7.6 to prohibit the application of push plates, hardware, or other attachments on some barrier doors in health care occupancies. The provision of 18.3.7.6 requires the door leaves to be of substantial construction that is sufficient to resist fire for 20 minutes. Non-labeled 1 3⁄4 in. (44 mm) solid, bonded wood-core doors that are used in	

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place of labeled 20-minute fire doors are not subject to the requirements of NFPA 80, ~~*Standard for Fire Doors and Other Opening Protectives,*~~ therefore, nonrated factory or field-applied protective plates unlimited in height are permitted.	See new understood text
A.18.4.3 Extensive research, including fire modeling, has indicated that alcohol-based hand-rub solutions can be safely installed in corridors of health care facilities, provided that certain other precautions are taken. The total quantities of flammable liquids in any area should comply with the provisions of other recognized codes, including NFPA 1, ~~*Fire Code*~~, and NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~ In addition, special consideration should be given to the following:	See new understood text
A.18.5.2.2 For both new and existing buildings, it is the intent to permit the installation and use of fireplace stoves and room heaters utilizing solid fuel as defined in NFPA 211, ~~*Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*~~, provided that all such devices are installed, maintained, and used in accordance with the appropriate provisions of that standard and all manufacturers' specifications. These requirements are not intended to permit freestanding solid fuel–burning appliances such as freestanding wood-burning stoves	See new understood text
A.18.7.5.1 In addition to the provisions of 10.3.1, which deal with ignition resistance, additional requirements with respect to the location of cubicle curtains relative to sprinkler placement are included in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~.	See new understood text

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A.18.7.5.6(2) The user should verify that the products meet the referenced test methods of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textile and Films*~~, and not the small-scale test procedure that was previously eliminated from NFPA 701.	See new understood text
A.18.7.5.7.2 It is the intent that this provision permits recycling of bottles, cans, paper and similar clean items that do not contain grease, oil, flammable liquids, or significant plastic materials using larger containers or several adjacent containers and not require locating such containers in a room protected as a hazardous area. Containers for medical records awaiting shredding are often larger than 32 gal (121 L). These containers are not to be included in the calculations and limitations of 18.7.5.7.1. There is no limit on the number of these containers, as FM Approval ~~Standard~~ 6921, *Approval Standard for Containers for Combustible Waste*, ensures that the fire will not spread outside of the container. FM approval standards are written for use with FM Approvals. The tests can be conducted by any approved laboratory. The portions of the standard referring to FM Approvals are not included in this reference.	See new understood text
A.19.1.1.1.1 In determining equivalency for existing hospitals or nursing homes, the authority having jurisdiction is permitted to accept evaluations based on the health care occupancies fire safety evaluation system (FSES) of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety*~~, utilizing the parameters for existing buildings.	See new understood text
A.19.1.3.4 Doctors' offices and treatment and diagnostic facilities that are intended solely for outpatient care and are physically separated from facilities for the treatment or care of inpatients, but that are otherwise associated with the management	

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of an institution, might be classified as business occupancies rather than health care occupancies. ~~Facilities that do not provide housing for patients on a 24-hour basis are required to be classified as other than health care occupancies per 19.1.1.1.9, except where services are provided routinely to four or more inpatients who are incapable of self-preservation.~~	See new understood text
A.19.1.6.6 This provision is not intended to limit the use of fire-retardant-treated wood to fixtures and equipment as defined in 3.3.111. Other types of fixtures and equipment for which fire-retardant-treated wood could be used as support include grab bars, shelving, and toilet accessories.	New section
A.19.2.2.2.4(2) ~~Where delayed-egress locks~~ delayed-egress electrically locking systems complying with 7.2.1.6.1 are used, the provisions of 19.2.2.2.5 are not required.	See new understood text
A.19.2.2.2.4(3) Where ~~access-controlled egress doors~~ sensor-release of electrical locking systems complying with 7.2.1.6.2 are used, the provisions of 19.2.2.2.5 are not required.	See new understood text
A.19.2.3.4(2) ~~Building codes and accessibility codes might require cane detection below projections that exceed 4 in. (102 mm).~~The purpose of the provision of 19.2.3.4(3)(b)ii, requiring a projection below the main projection, is to accommodate ADA requirements that projections be not more than 4 in. (100 mm) so as to prevent persons with visual impairments from impacting projections that they are unable to detect. The lower projection within 27 in. (685 mm) of the floor is needed for cane detection.	See new understood text
A.19.3.5.8 The provisions of 19.3.5.8(6) (6) and (7) are not intended to supplant NFPA 13, ~~*Standard for the*~~	See new understood text

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~~*Installation of Sprinkler Systems,*~~ which requires that residential sprinklers with more than a 10°F (5.6°C) difference in temperature rating not be mixed within a room. Currently there are no additional prohibitions in NFPA 13 on the mixing of sprinklers having different thermal response characteristics. Conversely, there are no design parameters to make practical the mixing of residential and other types of sprinklers. A.19.3.5.10 This exception is limited to hospitals, as nursing homes and many limited care facilities might have more combustibles within the closets. The limited amount of clothing found in the small clothes closets in hospital patient rooms is typically far less than the amount of combustibles in casework cabinets that do not require sprinkler protection, such as nurse servers. In many hospitals, especially new hospitals, it is difficult to make a distinction between clothes closets and cabinet work. The exception is far more restrictive than similar exceptions for hotels and apartment buildings NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, already permits the omission of sprinklers in wardrobes [see 8.1.1(7) of NFPA 13]. It is not the intent of 19.3.5.10 to affect the wardrobe provisions of NFPA 13. It is the intent that the sprinkler protection in the room covers the closet as if there were no door on the closet. *(See 8.5.3.2.3 of NFPA 13.)* A.19.3.5.11 For the proper operation of sprinkler systems, cubicle curtains and sprinkler locations need to be coordinated. Improperly designed systems might obstruct the sprinkler spray from reaching the fire or might shield the heat from the sprinkler. Many options are available to the designer including, but not limited to, hanging the cubicle curtains 18 in. (455 mm) below the sprinkler deflector; using 1⁄2 in. (13 mm) diagonal mesh or a 70 percent open weave top panel that extends 18 in. (455 mm) below the	See new understood text

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sprinkler deflector; or designing the system to have a horizontal and minimum vertical distance that meets the requirements of NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~. The test data that forms the basis of the NFPA 13 requirements is from fire tests with sprinkler discharge that penetrated a single privacy curtain.	See new understood text
A.19.3.6.1(1) The intent is also to permit a space that is compliant with the provisions of 19.3.6.1(1) to be considered open to the corridor even though it is physically separated from the corridor by walls and doors. The walls and doors would not need to comply with 19.3.6.2 through 19.3.6.5. For example, doors would be permitted without a latch or with a louvre.	New section
A.19.3.6.2.4 The provision for terminating the corridor wall at the ceiling is not intended to prevent the wall from extending above the ceiling.	New section
A.19.3.6.3 The provision of 19.3.6.3 requires the door leaves to be of substantial construction that is sufficient to resist fire for 20 minutes. These doors, described as 13⁄4 in. (44 mm) thick, solid-bonded wood-core doors, are nonrated doors and are not subject to the requirements of NFPA 80, *Standard for Fire Doors and Other Opening Protectives*	See new understood text
A.19.4.2.2 The provision of 19.4.2.2 is intended to prevent the phase-in period for the installation of sprinklers from being reset to 12 years upon adoption of the 2018 edition of the *Code* in jurisdictions where the 12-year period had already begun via the adoption of the 2015 edition.	New section

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A.19.4.3 Extensive research, including fire modeling, has indicated that alcohol-based hand-rub solutions can be safely installed in corridors of health care facilities, provided that certain other precautions are taken. The total quantities of flammable liquids in any area should comply with the provisions of other recognized codes, including NFPA 1, ~~*Fire Code*~~, and NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~ In addition, special consideration should be given to the following:	See new understood text
A.19.5.2.2 For both new and existing buildings, it is the intent to permit the installation and use of fireplace stoves and room heaters using solid fuel as defined in NFPA 211, ~~*Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances,*~~ provided that all such devices are installed, maintained, and used in accordance with the appropriate provisions of that standard and all manufacturers' specifications. These requirements are not intended to permit freestanding solid fuel–burning appliances such as freestanding wood-burning stoves.	See new understood text
A.19.7.5.1 In addition to the provisions of 10.3.1, which deal with ignition resistance, additional requirements with respect to the location of cubicle curtains relative to sprinkler placement are included in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~	See new understood text
A.19.7.5.6(2) The user should verify that the products meet the referenced test methods of NFPA 701, ~~*Standard Methods of Fire Tests for Flame Propagation of Textiles and Films,*~~ and not the small-scale test procedure that was previously eliminated from NFPA 701.	See new understood text

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A.19.7.5.7.2 It is the intent that this provision permits recycling of bottles, cans, paper, and similar clean items that do not contain grease, oil, flammable liquids, or significant plastic materials, using larger containers or several adjacent containers, and not require locating such containers in a room protected as a hazardous area. Containers for medical records awaiting shredding are often larger than 32 gal (121 L). These containers are not to be included in the calculations and limitations of 19.7.5.7.1. There is no limit on the number of these containers, as FM Approval ~~Standard~~ 6921, *Approval Standard for Containers for Combustible Waste*, ensures that the fire will not spread outside of the container. FM approval standards are written for use with FM Approvals. The tests can be conducted by any approved laboratory. The portions of the standard referring to FM Approvals are not included in this reference.	See new understood text
A.19.7.7 A document that provides recognized engineering principles for the testing of smoke control systems is NFPA 92, ~~*Standard for Smoke Control Systems.*~~	See new understood text
A.20.4.3 Extensive research, including fire modeling, has indicated that alcohol-based hand-rub solutions can be safely installed in corridors of health care facilities, provided that certain other precautions are taken. The total quantities of flammable liquids in any area should comply with the provisions of other recognized codes, including NFPA 1, ~~*Fire Code*~~, and NFPA 30, ~~*Flammable and Combustible Liquids Code.*~~ In addition, special consideration should be given to the following: A.20.7.5.1 In addition to the provisions of 10.3.1, which deal with ignition resistance, additional requirements with respect to the location of	See new understood text

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cubicle curtains relative to sprinkler placement are included in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems.*~~	See new understood text
A.20.7.5.5.2 It is the intent that this provision permits recycling of bottles, cans, paper, and similar clean items that do not contain grease, oil, flammable liquids, or significant plastic materials using larger containers or several adjacent containers and not require locating such containers in a room protected as a hazardous area. Containers for medical records awaiting shredding are often larger than 32 gal (121 L). These containers are not to be included in the calculations and limitations of 20.7.5.5.1. There is no limit on the number of these containers, as FM Approval ~~Standard~~ 6921, *Approval Standard for Containers for Combustible Waste*, ensures that the fire will not spread outside of the container. FM approval standards are written for use with FM Approvals. The tests can be conducted by any approved laboratory. The portions of the standard referring to FM Approvals are not included in this reference.	See new understood text
A.20.7.7 A document that provides recognized engineering principles for the testing of smoke control systems is NFPA 92, ~~*Standard for Smoke Control Systems.*~~	See new understood text
A.21.4.3 Extensive research, including fire modeling, has indicated that alcohol-based hand-rub solutions can be safely installed in corridors of health care facilities, provided that certain other precautions are taken. The total quantities of flammable liquids in any area should comply with the provisions of other recognized codes, including NFPA 1, ~~*Fire Code*~~, and NFPA 30, ~~*Flammable and Combustible Liquids Code*~~. In addition, special consideration should be given to the following:	See new understood text

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A.21.7.5.1 In addition to the provisions of 10.3.1, which deal with ignition resistance, additional requirements with respect to the location of cubicle curtains relative to sprinkler placement are included in NFPA 13, *S~~tandard for the Installation of Sprinkler Systems~~*.	See new understood text
A.21.7.5.5.2 It is the intent that this provision permits recycling of bottles, cans, paper, and similar clean items that do not contain grease, oil, flammable liquids, or significant plastic materials using larger containers or several adjacent containers and not require locating such containers in a room protected as a hazardous area. Containers for medical records awaiting shredding are often larger than 32 gal (121 L). These containers are not to be included in the calculations and limitations of 21.7.5.5.1. There is no limit on the number of these containers, as FM Approval ~~Standard~~ 6921, *Approval Standard for Containers for Combustible Waste*, ensures that the fire will not spread outside of the container. FM approval standards are written for use with FM Approvals. The tests can be conducted by any approved laboratory. The portions of the standard referring to FM Approvals are not included in this reference.	See new understood text
A.21.7.7 A document that provides recognized engineering principles for the testing of smoke control systems is NFPA 92, ~~*Standard for Smoke Control Systems.*~~	See new understood text
A.22.1.1.1.4(2) In determining equivalency for conversions, modernizations, renovations, or unusual design concepts of detention and correctional facilities, the authority having jurisdiction is permitted to accept evaluations based on the detention and correctional occupancies fire safety evaluation system (FSES) of NFPA 101A, ~~*Guide on*~~	See new understood text

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~~*Alternative Approaches to Life Safety*~~, utilizing the parameters for new construction.	
A.22.3.5.4(2) It is recognized that locating portable fire extinguishers only at staff locations might result in travel distances to extinguishers being in excess of those permitted by NFPA 10, ~~*Standard for Portable Fire Extinguishers.*~~	See new understood text
A.22.4.4.12.2(2) The automatic smoke venting should be in accordance with NFPA 204, ~~*Standard for Smoke and Heat Venting*,~~ for light hazard occupancies.	See new understood text
A.22.4.4.13.2 Mattresses used in detention and correctional facilities should be evaluated with regard to the fire hazards of the environment. The potential for vandalism and excessive wear and tear also should be taken into account when evaluating the fire performance of the mattress. ASTM F1870, *Standard Guide for Selection of Fire Test Methods for the Assessment of Upholstered Furnishings in Detention and Correctional Facilities*, provides guidance for this purpose. ASTM F1870 also includes guidance on alternate fire test methods that can be used to assess whether a mattress meets the requirements of 10.3.4 by simply melting and flowing away from the flame.	See new understood text
A.22.7.4.3 See A.22.4.4.13.2.	New sections
A.23.1.1.1.4(2) In determining equivalency for existing detention and correctional facilities, the authority having jurisdiction is permitted to accept evaluations based on the detention and correctional occupancies fire safety evaluation system (FSES) of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety*~~, utilizing the parameters for existing buildings.	See new understood text

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A.23.3.5.4(2) It is recognized that locating portable fire extinguishers only at staff locations might result in travel distances to extinguishers being in excess of those permitted by NFPA 10, ~~*Standard for Portable Fire Extinguishers*~~.	See new understood text
A.23.4.1.2(2) The automatic smoke venting should be in accordance with NFPA 204, ~~*Standard for Smoke and Heat Venting*~~, for light hazard occupancies.	See new understood text
A.23.7.4.3 Mattresses used in detention and correctional facilities should be evaluated with regard to the fire hazards of the environment. The potential for vandalism and excessive wear and tear also should be taken into account when evaluating the fire performance of the mattress. ASTM F1870, *Standard Guide for Selection of Fire Test Methods for the Assessment of Upholstered Furnishings in Detention and Correctional Facilities*, provides guidance for this purpose. ASTM F1870 also includes guidance on alternate fire test methods that can be used to assess whether a mattress meets the requirements of 10.3.4 by simply melting and flowing away from the flame.	See new understood text
A.24.3.4.1.1 Paragraph 11.5.1.3 of *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, contains related requirements. They specify that, where the interior floor area for a given level of a dwelling unit, excluding garage areas, is greater than 1000 ft^2 (93 m^2), smoke alarms are to be installed as follows:	See new understood text
A.24.3.4.1.1(2) Paragraphs 11.5.1.1(2) and 11.5.1.2 of *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, contain related requirements. The requirement of 11.5.1.1(2) specifies that an alarm is to be installed outside of each separate dwelling unit sleeping area, within 21 ft (6.4 m) of any door	See new understood text

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to a sleeping room, with the distance measured along a path of travel. The requirement in 11.5.1.2 specifies that, where the area addressed in 11.5.1.1(2) is separated from the adjacent living areas by a door, a smoke alarm is to be installed in the area between the door and the sleeping rooms, and additional alarms are to be installed on the living area side of the door.	
A.24.3.4.2.2 The placement requirements of NFPA 720, ~~*Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*~~, are modified specifically for one- and two-family dwellings as required by this *Code* and do not affect other regulations within a jurisdiction.	See new understood text
A.26.3.4.6.2 The placement requirements of NFPA 720, ~~*Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*~~, are modified to accommodate lodging or rooming house occupancies that are part of multiple occupancy buildings (e.g., an on-call physicians' sleeping room in a hospital). The placement requirements of NFPA 720 are modified specifically for lodging or rooming houses as required by this *Code* and do not affect other regulations within a jurisdiction.	See new understood text
A.26.3.6.2.3 The decision to permit the use of the criteria from NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,*~~ in these occupancies is based on the following	See new understood text
A.28.5.3.2 A protected power supply might consist of, and should provide, not less than the level of reliability associated with an electrical distribution system with service equipment located and installed in accordance with 230.72(B) and 230.82(5) of *NFPA 70*, ~~*National Electrical Code*~~. The distribution system is not to have any other connection to the building electrical distribution system. A protected	

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power supply is not required to incorporate two sources of energy or automatic transfer capability from a normal to an emergency source; for example, an alternate set of service conductors.	
A.30.3.5.3 The 12 ft^2 (1.1 m^2) closet sprinkler exemption differs from requirements in NFPA 13, ~~*Standard for the Installation of Sprinkler Systems*~~, because fire loss data supports the long-standing position of the *Code*, since the 1976 edition, to omit sprinklers from such closets. The provision is further supported by the lack of losses in buildings protected in accordance with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,*~~ and NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*~~, which permit the omission of sprinklers from closets not exceeding 24 ft^2 (2.2 m^2).	See new understood text See new understood text
A.30.3.5.4 The provision of 30.3.5.4 differs from NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ because fire data shows that in apartment fires where sprinklers were present, bathrooms were the area of origin in 1percent of the total fires, and resulted in no civilian deaths, civilian injuries, or property loss.	See new understood text
A.31.3.4.5.1 NFPA *101* provides adequate, balanced fire protection and takes into consideration the passive and active systems required in a given occupancy. The level of protection prescribed by *NFPA 72*, ~~*National Fire Alarm and Signaling Code*~~, which includes smoke alarms in all sleeping rooms, without exception, does not necessarily take into consideration the complete protection package mandated by NFPA *101*.	See new understood text
A.31.3.5.4 The provision of 31.3.5.4 differs from NFPA 13, ~~*Standard for the Installation of Sprinkler*~~	See new understood text

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~~*Systems,*~~ because fire data shows that in apartment fires where sprinklers were present, bathrooms were the area of origin in 1 percent of the total fires, and resulted in no civilian deaths, civilian injuries, or property loss.	
A.32.2.3.5 All sprinkler systems installed in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ and NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies,*~~ are required to be inspected, tested, and maintained in accordance with NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~ However, systems installed in accordance with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,*~~ are historically exempt from applying NFPA 25. While there is a great deal of information in NFPA 25 that is not appropriate for NFPA 13D sprinkler systems, there are some basic concepts of inspection, testing, and maintenance that are critical to system performance and must be performed when an NFPA 13D sprinkler system is installed in a board and care occupancy. The frequencies mandated by this *Code* are slightly different from those required by NFPA 25. It is the intent of this *Code* to utilize the frequencies stated in Chapter 32, but to reference the purpose and the procedures for the inspections, tests, and maintenance from NFPA 25.	See new understood text See new understood text
A.32.2.3.5.3.2 The decision to permit the use of the criteria from NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*~~, in these occupancies is based on the following: Chapter 32 permits the use of NFPA 13D, and NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*~~, outside of their scopes. This permission is based on a review of the occupancy and a recognition that	See new understood text See new understood text

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the fires in board and care facilities are similar to those of other residential occupancies and that the level of protection is appropriate. The requirements of NFPA 13D and NFPA 13R have been supplemented with requirements for additional water supplies to compensate for the special needs of the board and care occupancy	
A.32.3.5.3.2 A protected power supply might consist of, and should provide, not less than the level of reliability associated with an electrical distribution system with service equipment located and installed in accordance with 230.72(B) and 230.82(5) of *NFPA 70*, ~~*National Electrical Code*~~. The distribution system is not to have any other connection to the building electrical distribution system. A protected power supply is not required to incorporate two sources of energy or automatic transfer capability from a normal to an emergency source; for example, an alternate set of service conductors.	See new understood text
A.32.4.1.3 In determining equivalency for conversions, modernizations, renovations, or unusual design concepts, the authority having jurisdiction might permit evaluations based on the residential board and care occupancies fire safety evaluation system (FSES) of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety.*~~	See new understood text
A.33.2.1.2.1.1 In determining equivalency for existing buildings, conversions, modernizations, renovations, or unusual design concepts, the authority having jurisdiction might permit evaluations based on the residential board and care occupancies fire safety evaluation system (FSES) of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety.*~~	See new understood text
A.33.2.3.4.4 NFPA *101* provides adequate, balanced fire protection and takes into consideration the	

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passive and active systems required in a given occupancy. The level of protection prescribed by *NFPA 72*, ~~*National Fire Alarm and Signaling Code,*~~ which includes smoke alarms in all sleeping rooms, without exception, does not necessarily take into consideration the complete protection package prescribed by NFPA *101* .	See new understood text
A.33.2.3.5 All sprinkler systems installed in accordance with NFPA 13, ~~*Standard for the Installation of Sprinkler Systems,*~~ and NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*~~, are required to be inspected, tested, and maintained in accordance with NFPA 25, ~~*Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*~~ However, systems installed in accordance with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,*~~ are historically exempt from applying NFPA 25. While there is a great deal of information in NFPA 25 that is not appropriate for NFPA 13D sprinkler systems, there are some basic concepts of inspection, testing, and maintenance that are critical to system performance and must be performed when an NFPA 13D sprinkler system is installed in a board and care occupancy. The frequencies mandated by this *Code* are slightly different from those required by NFPA 25. It is the intent of this *Code* to utilize the frequencies stated in Chapter 32, but to reference the purpose and the procedures for the inspections, tests, and maintenance from NFPA 25.	See new understood text See new understood text
A.33.2.3.5.3.1 The decision to permit the use of the criteria from NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,*~~ in these occupancies is based on the following:	See new understood text

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A.33.2.3.5.3.4 Some previously approved NFPA 13R sprinkler systems might have been installed in four-story buildings greater than 60 ft (18.3 m) above grade plane prior to the requirement in Chapter 32 that limits the height of the building to 60 ft (18.3 m) above grade plane.	New Sections
A.33.2.3.5.3.5 Some previously approved NFPA 13R sprinkler systems might have been installed in four-story buildings greater than 60 ft (18.3 m) above grade plane prior to the requirement in Chapter 32 that limits the height of the building to 60 ft (18.3 m) above grade plane.	New sections
A.33.3.1.2.1.1 In determining equivalency for existing buildings, conversions, modernizations, renovations, or unusual design concepts, the authority having jurisdiction might permit evaluations based on the residential board and care occupancies fire safety evaluation system (FSES) of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety*.~~	See new understood text
A.33.3.3.5.1 It is intended that this requirement apply to existing small facilities that are converted to large facilities. Chapter 33 permits the use of NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*,~~ and NFPA 13R, ~~*Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*~~, outside of their scopes. This permission is based on a review of the occupancy and a recognition that the fires in board and care facilities are similar to those of other residential occupancies and that the level of protection is appropriate. In some circumstances, such as those for impractical evacuation capabilities, the requirements of NFPA 13D and NFPA 13R have been supplemented with requirements for	See new understood text

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additional water supplies to compensate for the special needs of the board and care occupancy. A.33.3.3.5.1.1 Some previously approved NFPA 13R sprinkler systems might have been installed in four-story buildings greater than 60 ft (18.3 m) above grade plane prior to the requirement in Chapter 32 that limits the height of the building to 60 ft (18.3 m) above grade plane.	New section
A.33.4.1.3.1 In determining equivalency for existing buildings, conversions, modernizations, renovations, or unusual design concepts, the authority having jurisdiction might permit evaluations based on the residential board and care occupancies fire safety evaluation system (FSES) of NFPA 101A, ~~*Guide on Alternative Approaches to Life Safety*.~~ A.36.2.2.7.2 Egress from a mall building mall structure should be designed as follows: 1. The mall/pedestrian way has been assigned no occupant load, but it is required to be provided with means of egress sized to accommodate the total occupant load of the ~~mall building~~ mall structure based on the gross leasable area. 2. The exits for the mall/pedestrian way are permitted to be provided by a combination of exterior exit doors and exit passageways. 3. After completion of A.36.2.2.7.2(1), each tenant space is to be judged individually for occupant load and egress capacity, and the following also apply: a. The step specified in A.36.2.2.7.2(3) normally sends a portion or all (per 36.4.4.2) of the tenant space's occupant load into the ~~mall~~ mall concourse.	See new understood text

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b. Any remaining occupants are sent through the back of the tenant space into an exit passageway that might serve multiple tenant spaces and the ~~mall~~ mall concourse. 4. The width of the exit passageway is required to be sized for the most restrictive of the following: a. Width of not less than 66 in. (1675 mm) per 36.4.4.4.2(3) b. Portion of the egress capacity from the largest single tenant space being served by the exit passageway c. Portion of the egress capacity from the ~~mall~~ mall concourse being provided by the exit passageway d.	
A.36.2.11.3 It is the intent of this paragraph to apply to areas where hazardous materials are present in excess of the maximum allowable quantities. See also Annex C for additional information.	New section
A.36.3.2.3 It is the intent of this paragraph to apply to areas where hazardous materials are present in excess of the maximum allowable quantities. See also Annex C for additional information.	New section
A.36.4.4 This section provides an optional, not mandatory, arrangement for the design and construction of mall concourse structures. At the discretion of the designer, these structures can be designed as a single building as long as they comply with the applicable requirements of the intended occupancy and with the requirements of 6.1.14 for buildings housing more than one occupancy.	New section

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A.36.4.4.2(5) ~~Mall Building~~ Mall Structure. A ~~mall building~~ mall structure might enclose one or more uses, such as retail and wholesale stores, drinking and dining establishments, entertainment and amusement facilities, transportation facilities, offices, and other similar uses.	See new understood text
A.36.4.4.4 Where a pedestrian way meets the requirements for a public way, the means of egress from each tenant space or building is permitted to terminate at the pedestrian way. For those arrangements, the pedestrian way would not be considered to be a portion of the means of egress.	New Section
A.36.4.4.4.2(3) The minimum requirement for terminating ~~mall~~ mall concourse exit access in not less than 66 in. (1675 mm) of egress width relates to the minimum requirement for not less than one aisle in Class A mercantile occupancies with 30,000 ft^2 (2800 m^2) or greater sales area to be 60 in. (1525 mm) in width.	See new understood text
A.36.4.4.4.2(6) Fire experience in mall shopping centers indicates that the most likely place of fire origin is in the tenant space, where the combustible fire load is far greater than in the ~~mall~~ mall concourse. Furthermore, any fires resulting from the comparatively low fire load in the ~~mall~~ mall concourse are more likely to be detected and extinguished in their incipient stages. Early detection is likely due to the nature of the ~~mall~~ mall concourse as a high-traffic pedestrian way.	See new understood text
Such fires produce less smoke development in a greater volume of space than fires in the more confined adjacent tenant space. Smoke control systems that address fire experience in ~~mall~~ mall concourses are necessary to ensure the integrity of the ~~mall~~ mall concourse as a pedestrian way by maintaining it reasonably free of the products of combustion for a duration not less than that required to evacuate	See new understood text

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the area of the building that is affected by the fire. Secondary considerations should include the following: 1. Confinement of the products of combustion to the area of origin 2. Removal of the products of combustion, with a minimum of migration of such products of combustion from one tenant space to another 3. Achievement of evacuation without the need for smoke control in one- and two-level ~~mall building~~ mall structures protected by automatic sprinklers	
Systems, or combinations of systems, that can be engineered to address fires in ~~mall~~ mall concourses of three or more levels include the following:	See new understood text
A.36.4.4.7.3.2 It is the intent to permit the omission of visible alarm notification appliances from the ~~mall~~ mall concourse or pedestrian way in ~~mall building~~ mall structures. It is anticipated that occupants with hearing impairments will receive cues from other building occupants and respond accordingly. Visible signals should be provided in public restrooms and other adjunct spaces in the ~~mall~~ mall concourse subject to occupancy solely by persons with hearing impairments.	See new understood text See new understood text
A.36.4.4.12 Fire experience in ~~mall~~ mall concourse shopping centers indicates that the most likely place of fire origin is in the tenant space where the combustible fire load is far greater than in the ~~mall~~ mall concourse. Furthermore, any fires resulting from the comparatively low fire load in the ~~mall~~ mall concourse are more likely to be detected and extinguished in their incipient stages. Early detection is likely due to the nature of the ~~mall~~	See new understood text See new understood text

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mall concourse as a high-traffic pedestrian way. Such fires produce less smoke development in a greater volume of space than fires in the more confined adjacent tenant space. Smoke control systems that address fire experience in ~~mall~~ mall concourses are necessary in order to achieve the following: 1. Ensure the integrity of the ~~mall~~ mall concourse as a pedestrian way by maintaining it reasonably free of the products of combustion for a duration not less than that required to evacuate the building 2. Confine the products of combustion to the area of origin 3. Remove the products of combustion with a minimum of migration of such products of combustion from one tenant to another Systems, or combinations of systems, that can be engineered to address fires in ~~malls~~ mall concourses include the following:	See new understood text
A.37.2.2.7.2 Egress from a ~~mall building~~ mall structure should be designed as follows: 1. The mall/pedestrian way has been assigned no occupant load, but it is required to be provided with means of egress sized to accommodate the total occupant load of the mall structure based on the gross leasable area. 2. The exits for the mall/pedestrian way are permitted to be provided by a combination of exterior exit doors and exit passageways. 3. After completion of A.37.2.2.7.2(1), each tenant space is to be judged individually for occupant load and egress capacity, and the following also apply: a. The step specified in 37.4.4.4.2 normally sends a portion or all	See new understood text

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(per 37.4.4.4.2) of the tenant space's occupant load into the ~~mall~~ mall concourse. b. Any remaining occupants are sent through the back of the tenant space into an exit passageway that might serve multiple tenant spaces and the ~~mall~~ mall concourse. 4. The width of the exit passageway is required to be sized for the most restrictive of the following: a. Width of not less than 66 in. (1675 mm) per 37.4.4.4.2(3) b. Portion of the egress capacity from the largest single tenant space being served by the exit passageway c. Portion of the egress capacity from the ~~mall~~ mall concourse being provided by the exit passageway	See new understood text See new understood text
The concepts used in A.37.2.2.7.2(4)(a) through (c) include the following: 1. After proper egress capacity is provided for the mall/pedestrian way, each tenant space is then required to independently provide egress capacity for its occupants. 2. The ~~mall~~ mall concourse required exit passageway width and the tenant space required exit passageway width are not required to be added together.	See new understood text
A.37.2.11.3 It is the intent of this paragraph to apply to areas where hazardous materials are present in excess of the maximum allowable quantities. See also Annex C for additional information.	New Section
A.37.3.2.3 It is the intent of this paragraph to apply to areas where hazardous materials are present in	New Section

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excess of the maximum allowable quantities. See also Annex C for additional information.	
A.37.4.4 This section provides an optional, not mandatory, arrangement for the design and construction of mall structures. At the discretion of the designer, these structures can be designed as a single building as long as they comply with the applicable requirements of the intended occupancy and with the requirements of 6.1.14 for buildings housing more than one occupancy.	New Section
A.37.4.4.2(5) ~~Mall Building~~ Mall Structure. A ~~mall building~~ mall structure might enclose one or more uses, such as retail and wholesale stores, drinking and dining establishments, entertainment and amusement facilities, transportation facilities, offices, and other similar uses.	See new understood text
A.37.4.4.4 Where a pedestrian way meets the requirements for a public way, the means of egress from each tenant space or building is permitted to terminate at the pedestrian way. For those arrangements, the pedestrian way would not be considered to be a portion of the means of egress.	New Section
A.37.4.4.4.2(3) The minimum requirement for terminating ~~mall~~ mall concourse exit access in not less than 66 in. (1675 mm) of egress width relates to the minimum requirement for not less than one aisle in Class A mercantile occupancies with 30,000 ft^2 (2800 m^2) or greater sales area to be 60 in. (1525 mm) in width.	See new understood text
A.37.4.4.4.2(6) Fire experience in ~~mall~~ mall concourse shopping centers indicates that the most likely place of fire origin is in the tenant space, where the combustible fire load is far greater than in the ~~mall~~ mall concourse. Furthermore, any fires	See new understood text

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resulting from the comparatively low fire load in the ~~mall~~ mall concourse are more likely to be detected and extinguished in their incipient stages. Early detection is likely due to the nature of the ~~mall~~ mall concourse as a high-traffic pedestrian way. Such fires produce less smoke development in a greater volume of space than fires in the more confined adjacent tenant space. Smoke control systems that address fire experience in ~~mall~~ mall concourses are necessary to ensure the integrity of the ~~mall~~ mall concourse as a pedestrian way by maintaining it reasonably free of the products of combustion for a duration not less than that required to evacuate the area of the building that is affected by the fire. Secondary considerations should include the following:	See new understood text
1. Confinement of the products of combustion to the area of origin 2. Removal of the products of combustion, with a minimum of migration of such products of combustion from one tenant space to another 3. Achievement of evacuation without the need for smoke control in one- and two-level ~~mall~~ mall concourse buildings protected by automatic sprinklers	See new understood text
Systems, or combinations of systems, that can be engineered to address fires in ~~mall~~ mall concourses of three or more levels include the following	See new understood text
A.37.4.4.6.5 It is not the intent of 37.4.4.6.5 to require that large tenant spaces be considered anchor stores. A tenant space not considered in determining the occupant load of the ~~mall~~ mall concourse is required to be arranged so that all of its means of egress will be independent of the ~~mall~~ mall concourse.	See new understood text
A.38.2.11.3 It is the intent of this paragraph to apply to areas where hazardous materials in excess of	New Section

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the maximum allowable quantities are present. See also Annex C for additional information.	
A.38.3.2.3 It is the intent of this paragraph to apply to areas where hazardous materials are present in excess of the maximum allowable quantities. See also Annex C for additional information.	New Section
A.39.2.11.3 It is the intent of this paragraph to apply to areas where hazardous materials are present in excess of the maximum allowable quantities. See also Annex C for additional information.	New Section
A.39.3.2.3 It is the intent of this paragraph to apply to areas where hazardous materials are present in excess of the maximum allowable quantities. See also Annex C for additional information.	New Section
A.40.2.6.2 See NFPA 850, ~~*Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations,*~~ for protection recommendations.	See new understood text
A.40.6 For further information on aircraft hangars, see NFPA 409, ~~*Standard on Aircraft Hangars*~~.	See new understood text
A.42.6 For further information on aircraft hangars, see NFPA 409, ~~*Standard on Aircraft Hangars*~~.	See new understood text
A.42.7 For further information, see NFPA 61, ~~*Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*~~. The egress requirements for storage elevators are based on the possibility of fire and are not based on the possibility of grain dust explosions.	See new understood text

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A.42.8.1.1 For further information on garages, including a definition of the term *open garage*, see NFPA 88A, ~~*Standard for Parking Structures*~~.	See new understood text
Annex B Supplemental Evacuation Equipment	
Annex C NFPA Documents on Hazardous Materials *This annex is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.*	New section
C.1 General.	New section
C.1.1 NFPA 30, NFPA 45, NFPA 54, NFPA 55, NFPA 58, NFPA 400, and NFPA 495 represent a comprehensive set of requirements for protection against hazardous material emergencies appropriate to the level of safety afforded by the *Life Safety Code*.	New section
C.1.2 Where a conflict exists between applicable requirements, an analysis should be made and the proper applicable requirement should be implemented or conformed to subject to the approval of the AHJ. [**400:**A.4.4]	New Section
C.1.3 The safe handling, collection, and disposal of hazardous waste can be accomplished only if the physical, chemical, and hazardous properties of its components are known and that information is properly applied. [**400:**A.4.5]	New Section
C.1.4 NFPA 30, NFPA 45, NFPA 55, and NFPA 400 include maximum allowable quantities (MAQs) and the control area concept and limit the MAQs within each control area. An established set of requirements apply to control areas with less than the MAQs. Control areas with hazardous materials quantities above the MAQs	New section

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require additional controls or commensurate safeguards and features. NFPA 45 uses the term *laboratory unit*, which correlates to and is similar to control areas. From A.5.1 of NFPA 400, "The purpose is to permit limited amounts of hazardous contents in occupancies having minimum controls without triggering the more restrictive Protection Level 1 through Protection Level 4 building requirements."	
C.2 Scope and Exclusions of Other Documents Addressing Hazardous Areas. The following scope and exclusions are provided from NFPA 30, NFPA 45, NFPA 54, NFPA 55, NFPA 58, NFPA 400, and NFPA 495 to clarify the applicability of each code. Refer to individual documents for additional definitions and requirements.	New Section
C.2.1 NFPA 30.	New Section
C.2.1.1 Subsection 1.1.1 of NFPA 30 states: "This code shall apply to the storage, handling, and use of flammable and combustible liquids, including waste liquids."	New Section
C.2.1.2 Subsection 1.1.2 of NFPA 30 states: "This code shall not apply to the following: 1. Any liquid that has a melting point of 100°F (37.8°C) or greater 2. Any liquid that does not meet the criteria for fluidity given in the definition of liquid in [NFPA 30] Chapter 3 and in the provisions of [NFPA 30] Chapter 4 3. Any cryogenic fluid or liquefied gas, as defined in Chapter 3 4. Any liquid that does not have a flash point, but which is capable of burning under certain conditions 5. Any aerosol product 6. Any mist, spray, or foam	New section

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7. Transportation of flammable and combustible liquids as governed by the U.S. Department of Transportation 8. Storage, handling, and use of fuel oil tanks and containers connected with oil-burning equipment 9. Use and installation of alcohol-based hand rub (ABHR) dispensers”	
C.2.2 NFPA 45.	New Section
C.2.2.1 Subsection 1.1.1 of NFPA 45 states: “This code shall apply to laboratory buildings, laboratory units, and laboratory work areas whether located above or below grade in which chemicals, as defined, are handled or stored.”	New Section
C.2.2.2 Subsection 1.1.2 of NFPA 45 states: “This code shall not apply to the following: 1. Laboratories for which the following conditions apply: a. Laboratory units that contain less than or equal to 4 L (1 gal) of flammable or combustible liquid b. Laboratory units that contain less than 2.2 standard m^3 (75 scf) of flammable gas, not including piped-in low-pressure utility gas installed in accordance with NFPA 54 2. Laboratories that are pilot plants 3. Laboratories that handle only chemicals with a hazard rating of 0 or 1, as defined by NFPA 704, for all of the following: health, flammability, and instability 4. Laboratories that are primarily manufacturing plants 5. Incidental testing facilities 6. Physical, electronic, instrument, laser, or similar laboratories that use chemicals only for incidental purposes, such as cleaning	New Section

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7. Hazards associated with radioactive materials, as covered by NFPA 801 8. Laboratories that work only with explosive material, as covered by NFPA 495” C.2.3 NFPA 54. Paragraph 1.1.1.1 of NFPA 54 states: “This code is a safety code that shall apply to the installation of fuel gas piping systems, appliances, equipment, and related accessories as shown in [NFPA 54] 1.1.1.1(A) through 1.1.1.1(D).	New Section
(A) Coverage of piping systems shall extend from the point of delivery to the appliance connections. For other than undiluted liquefied petroleum gas (LP-Gas) systems, the point of delivery shall be the outlet of the service meter assembly or the outlet of the service regulator or service shutoff valve where no meter is provided. For undiluted LP-Gas systems, the point of delivery shall be considered to be the outlet of the final pressure regulator, exclusive of line gas regulators where no meter is installed. Where a meter is installed, the point of delivery shall be the outlet of the meter.	
(B) The maximum operating pressure shall be 125 psi (862 kPa). Exception No. 1: Piping systems for gas–air mixtures within the flammable range are limited to a maximum pressure of 10 psi (69 kPa). Exception No. 2: LP-Gas piping systems are limited to 20 psi (140 kPa), except as provided in 5.5.1(6).	New section
(C) Requirements for piping systems shall include design, materials, components, fabrication, assembly, installation, testing, inspection, operation, and maintenance.	New section

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(D) Requirements for appliances, equipment, and related accessories shall include installation, combustion, and ventilation air and venting." C.2.4 NFPA 55. Subsection 1.1.2 of NFPA 55 states: "This code shall not apply to the following items (reference standards for some of which appear in Annex L): 1. Portable LP-Gas appliances and equipment of all types that are not connected to a fixed fuel piping system 2. Installation of appliances such as brooders, dehydrators, dryers, and irrigation equipment used for agricultural purposes 3. Raw material (feedstock) applications except for piping to special atmosphere generators 4. Oxygen–fuel gas cutting and welding systems 5. Industrial gas applications using such gases as acetylene and acetylenic compounds, hydrogen, ammonia, carbon monoxide, oxygen, and nitrogen 6. Petroleum refineries, pipeline compressor or pumping stations, loading terminals, compounding plants, refinery tank farms, and natural gas processing plants 7. Large integrated chemical plants or portions of such plants where flammable or combustible liquids or gases are produced by chemical reactions or used in chemical reactions 8. LP-Gas installations at utility gas plants 9. Liquefied natural gas (LNG) installations 10. Fuel gas piping in electric utility power plants 11. Proprietary items of equipment, apparatus, or instruments such as gas	New section New Section

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generating sets, compressors, and calorimeters 12. LP-Gas equipment for vaporization, gas mixing, and gas manufacturing 13. LP-Gas piping for buildings under construction or renovations that is not to become part of the permanent building piping system — that is, temporary fixed piping for building heat 14. Installation of LP-Gas systems for railroad switch heating 15. Installation of LP-Gas and compressed natural gas (CNG) systems on vehicles 16. Gas piping, meters, gas pressure regulators, and other appurtenances used by the serving gas supplier in distribution of gas, other than undiluted LP-Gas 17. Building design and construction, except as specified herein 18. Fuel gas systems on recreational vehicles manufactured in accordance with NFPA 1192 19. Fuel gas systems using hydrogen as a fuel 20. Construction of appliances”	
C.2.5 NFPA 58.	New Section
C.2.5.1 Section 1.1 of NFPA 58 states: “This code shall apply to the storage, handling, transportation, and use of liquefied petroleum gas (LP-Gas).”	New Section
C.2.5.2 Subsection 1.3.2 of NFPA 58 states: “This code shall not apply to the following: 1. Frozen ground containers and underground storage in caverns, including associated piping and appurtenances used for the storage of LP-Gas 2. Natural gas processing plants, refineries, and petrochemical plants	New Section

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3. LP-Gas at utility gas plants (including refrigerated storage) *(see NFPA 59)* 4. Chemical plants where specific approval of construction and installation plans is obtained from the authority having jurisdiction 5. LP-Gas used with oxygen 6. The portions of LP-Gas systems covered by NFPA 54 (ANSI Z223.1), where NFPA 54 (ANSI Z223.1) is adopted, used, or enforced 7. Transportation by air (including use in hot air balloons), rail, or water under the jurisdiction of the DOT 8. Marine fire protection 9. Refrigeration cycle equipment and LP-Gas used as a refrigerant in a closed cycle 10. The manufacturing requirements for recreational vehicle LP-Gas systems that are addressed by NFPA 1192 11. Propane vehicle fuel dispensers located at multiple fuel refueling stations *(see NFPA 30A)"*	
C.2.6 NFPA 400.	New Section
C.2.6.1 Subsection 1.1.2 of NFPA 400 states: "This code shall apply to the storage, use, and handling of the following hazardous materials in all occupancies and facilities: 1. Ammonium nitrate solids and liquids 2. Corrosive solids and liquids 3. Flammable solids 4. Organic peroxide formulations 5. Oxidizer — solids and liquids 6. Pyrophoric solids and liquids 7. Toxic and highly toxic solids and liquids 8. Unstable (reactive) solids and liquids 9. Water-reactive solids and liquids	New section

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10. Compressed gases and cryogenic fluids as included within the context of NFPA 55” C.2.6.2 Paragraph 1.1.2.1 of NFPA 400 states: “The quantity and arrangement limits in this code shall not apply to facilities that use ammonium perchlorate in the commercial manufacture of large-scale rocket motors.” C.2.6.3 Paragraph 1.1.2.2 of NFPA 400 states: “This code shall not apply to the following: 1. Storage or use of hazardous materials for individual use on the premises of one- and two-family dwellings 2. Explosives or blasting agents, which are regulated by NFPA 495, and display fireworks, 1.3 G, which are regulated by NFPA 1124 3. Refrigerants and refrigerant oil contained within closed cycle refrigeration systems complying with the fire code and the mechanical code adopted by the jurisdiction 4. High hazard contents stored or used in farm buildings or similar occupancies and in remote locations for on-premises agricultural use 5. Corrosive materials in stationary batteries utilized for facility emergency power or uninterrupted power supply, or similar purposes, in accordance with NFPA 1 6. Aerosols complying with NFPA 30B 7. Consumer fireworks, 1.4G, complying with NFPA 1124 8. Corrosive materials displayed in original packaging in mercantile occupancies and intended for personal or household use or as building materials	New Section New Section

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9. Flammable and combustible liquids having no other physical or health hazard properties covered by this code 10. Organic peroxide formulations that are capable of detonation as manufactured or when unpackaged or in authorized shipping containers under conditions of fire exposure, when stored, manufactured, or used in accordance with NFPA 495 11. Combustible metals, as defined in NFPA 484 12. LP-Gas complying with NFPA 58 or NFPA 59 13. When approved, materials that have been satisfactorily demonstrated not to present a potential danger to public health, safety, or welfare, based upon the quantity or condition of storage 14. The off-site transportation of hazardous materials when in accordance with Department of Transportation (DOT) regulations"	
C.2.7 NFPA 495.	New Section
C.2.7.1 Section 1.1 of NFPA 495 states: "This code shall apply to the manufacture, transportation, storage, sale, and use of explosive materials."	New Section
C.2.7.2 Subsections 1.3.1 through 1.3.6 of NFPA 495 provide the following exemptions:	New Section
1.3.1: This code shall not apply to the transportation of explosive materials where under the jurisdiction of the U.S. Department of Transportation (DOT). It shall apply, however, to state and municipal supervision of compliance with U.S. DOT 49 CFR 100–199.	New Section
1.3.2: This code shall not apply to the transportation and use of military explosives by federal or state military agencies, nor shall it apply to the transportation and use of explosive	New Section

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materials by federal, state, or municipal agencies while engaged in normal or emergency performance of duties.	
1.3.3: This code shall not apply to the manufacture of explosive materials under the jurisdiction of the U.S. Department of Defense (DOD). This code also shall not apply to the distribution or storage of explosive materials by military agencies of the United States, nor shall it apply to arsenals, navy yards, depots, or other establishments owned or operated by, or on behalf of, the United States.	New Section
1.3.4: This code shall not apply to pyrotechnics such as flares, fuses, and railway torpedoes. It also shall not apply to fireworks and pyrotechnic special effects as defined in NFPA 1123, NFPA 1124, and NFPA 1126.	New Section
1.3.5: This code shall not apply to model and high-power rocketry as defined in NFPA 1122, NFPA 1125, and NFPA 1127.	New Section
1.3.6: This code shall not apply to the use of explosive materials in medicines and medicinal agents in the forms prescribed by the United States Pharmacopeia or the National Formulary.	New Section
Annex D Informational References D.1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471. NFPA 1, *Fire Code*, ~~2015~~ 2018 edition. NFPA 3, *Recommended Practice for Commissioning of Fire Protection and Life Safety Systems*, 2018 edition. NFPA 10, *Standard for Portable Fire Extinguishers*, ~~2013~~ 2017 edition. NFPA 13, *Standard for the Installation of Sprinkler Systems*, ~~2013~~ 2016 edition. NFPA 13D, *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*, 20132016 edition.	See new understood text

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NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*, ~~2013~~ 2016 edition. NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, ~~2013~~ 2016 edition. NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 2013 edition. NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, ~~2014~~ 2017 edition. NFPA 30, *Flammable and Combustible Liquids Code*, 20152018 edition. NFPA 30A, *Code for Motor Fuel Dispensing Facilities and Repair Garages*, ~~2015~~ 2018 edition. NFPA 58, *Liquefied Petroleum Gas Code*, ~~2014~~ 2017 edition. NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*, ~~2013~~ 2017 edition. NFPA 68, *Standard on Explosion Protection by Deflagration Venting*, 2013 edition. *NFPA 70®*, *National Electrical Code®*, ~~2014~~ 2017 edition. *NFPA 72®*, *National Fire Alarm and Signaling Code*, ~~2013~~ 2016 edition. NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, ~~2013~~ 2016 edition. NFPA 88A, *Standard for Parking Structures*, 2015 edition. NFPA 90A, *Standard for the Installation of Air-Conditioning and Ventilating Systems*, ~~2015~~ 2018 edition. NFPA 92, *Standard for Smoke Control Systems*, ~~2012~~ 2015 edition. NFPA 99, *Health Care Facilities Code*, ~~2015~~ 2018 edition. NFPA 101A, *Guide on Alternative Approaches to Life Safety*, ~~2013~~ 2016 edition. NFPA 105, *Standard for Smoke Door Assemblies and Other Opening Protectives*, ~~2013~~ 2016 edition. NFPA 110, *Standard for Emergency and Standby Power Systems*, ~~2013~~ 2016 edition.	

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NFPA 170, *Standard for Fire Safety and Emergency Symbols*, ~~2012~~ 2015 edition. NFPA 204, *Standard for Smoke and Heat Venting*, ~~2012~~ 2015 edition. NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel–Burning Appliances*, ~~2013~~ 2016 edition. NFPA 220, *Standard on Types of Building Construction*, ~~2015~~ 2018 edition. NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 2013 edition. NFPA 252, *Standard Methods of Fire Tests of Door Assemblies*, ~~2012~~ 2017 edition. NFPA 253, *Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source*, 20112015 edition. NFPA 257, *Standard on Fire Test for Window and Glass Block Assemblies*, ~~2012~~ 2017 edition. NFPA 259, *Standard Test Method for Potential Heat of Building Materials*, 2013 edition. NFPA 260, *Standard Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture*, 2013 edition. NFPA 261, *Standard Method of Test for Determining Resistance of Mock-Up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes*, 2013 edition. NFPA 265, *Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls*, ~~2011~~ 2015 edition. NFPA 269, *Standard Test Method for Developing Toxic Potency Data for Use in Fire Hazard Modeling*, ~~2012~~ 2017 edition. NFPA 275, *Standard Method of Fire Tests for the Evaluation of Thermal Barriers*, ~~2013~~ 2017 edition. NFPA 286, *Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth*, ~~2011~~ 2015 edition.	

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NFPA 289, *Standard Method of Fire Test for Individual Fuel Packages*, 2013 edition. NFPA 307, *Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves*, ~~2011~~ 2016 edition. NFPA 409, *Standard on Aircraft Hangars*, 20112016 edition. NFPA 501A, *Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities*, ~~2013~~ 2017 edition. NFPA 551, *Guide for the Evaluation of Fire Risk Assessments*, ~~2013~~ 2016 edition. NFPA 601, *Standard for Security Services in Fire Loss Prevention*, 2015 edition. NFPA 701, *Standard Methods of Fire Tests for Flame Propagation of Textiles and Films*, ~~2010~~ 2015 edition. NFPA 703, *Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials*, ~~2015~~ 2018 edition. NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, ~~2015~~ 2018 edition. NFPA 850, *Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations*, ~~2010~~ 2015 edition. NFPA 914, *Code for Fire Protection of Historic Structures*, ~~2010~~ 2015 edition. NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems*, ~~2013~~ 2016 edition. *NFPA 1600®, Standard on Disaster/Emergency Management and Business Continuity Programs*, ~~2013~~ 2016 edition. *NFPA 5000®, Building Construction and Safety Code®*, ~~2015~~ 2018 edition. *Fire Protection Handbook*, 19th edition, 2003. *Fire Protection Handbook*, 20th edition, 2008. *SFPE Handbook of Fire Protection Engineering*, 4th edition, 2008. Waksman, D., and J. B. Ferguson. August 2008. Fire Tests of Building Interior Covering Systems. In *Fire Technology*, 10:211 – 220. D.1.2.1 ACI Publication.	

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American Concrete Institute, ~~P.O. Box 9094~~ 38800 Country Club Drive, Farmington Hills, MI ~~48333~~ 48331-3434. www.concrete.org	See new understood text
ACI 216.1/TMS 0216.1, *Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies*, ~~2008~~ 2014.	See new understood text
D.1.2.2 ANSI Publications. American National Standards Institute, Inc., 25 West 43rd Street, 4th Floor, New York, NY 10036. www.ansi.org	See new understood text
ANSI/BHMA A156.10, ~~*American National Standard for*~~ *Power Operated Pedestrian Doors*, ~~1999~~ 2011.	See new understood text
ANSI/BHMA A156.19, ~~*American National Standard for*~~ *Power Assist and Low Energy Power Operated Doors*, ~~2002~~ 2013.	See new understood text
ICC/ANSI A117.1, ~~*American National Standard for*~~ *Accessible and Usable Buildings and Facilities*, 2009.	See new understood text
D.1.2.3 ASCE Publications. American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 20191-4400. www.asce.org	
~~ASCE/SFPE~~ ASCE/SEI/SFPE 29, *Standard Calculation Methods for Structural Fire Protection*, 2005.	
D.1.2.4 ASHRAE Publications. ASHRAE, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. www.ashrae.org	
ASHRAE *Handbook* ~~*and Product Directory*~~ — *Fundamentals*, ~~2001~~ 2013.	See new understood text
Klote, J.H., and Milke, J.A., *Principles of Smoke Management*, 2002.	

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