2024 International Building Code comparison to 2018 edition

Chapters 9 through 33

Code Sec (new)	Description	Existing Code Language	New Code Language
901.2	Fire Protective Systems	Fire protection systems shall be installed, repaired, operated and maintained...	Fire protection and life safety systems shall be installed, repaired, operated and maintained...
903.2.2.2	Labs involving testing, R&D	(new)	An automatic sprinkler system shall be installed throughout the fire areas utilized for the research and development or testing of lithium-ion or lithium metal batteries.
903.2.4	Group F-1	(new conditions)	4.A Group F-1 occupancy is used to manufacture lithium-ion or lithium metal batteries. 5.A Group F-1 occupancy is used to manufacture vehicles, energy storage systems or equipment containing lithium-ion or lithium metal batteries where the batteries are installed as part of the manufacturing process.
903.2.4.2	Distilled Spirits	(new)	An automatic sprinkler system shall be provided throughout a Group F-1 fire area used for the manufacture of distilled spirits.
903.2.4.3	Group F-1 upholstered furniture or mattresses.	(new)	An automatic sprinkler system shall be provided throughout a Group F-1 fire areathat exceeds 2,500 square feet (232 m2) used for the manufacture of upholstered furniture or mattresses.
903.2.7	Group M.	An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists: 1.A Group M fire area exceeds 12,000 square feet (1115 m2). 2.A Group M fire area is located more than three stories above grade plane. 3.The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m2). 4.A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m2).	An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists: 1.A Group M fire area exceeds 12,000 square feet (1115 m2). 2.A Group M fire area is located more than three stories above grade plane. 3.The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m2).
903.2.7.2	Group M upholstered furniture or mattresses	(new)	An automatic sprinkler systemshall be provided throughout a Group M fire areawhere the area used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m2).
903.2.7.3	Lithium-ion or lithium metal mattery storage	(new)	An automatic sprinkler system shall be provided in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries by Section 320 of the International Fire Code or Chapter 32 of the International Fire Code.
903.2.9	Group S-1	An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists: 1.A Group S-1 fire area exceeds 12,000 square feet (1115 m2). 2.A Group S-1 fire area is located more than three stories above grade plane. 3.The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m2). 4.A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m2). 5.A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m2).	An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists: 1.A Group S-1 fire area exceeds 12,000 square feet (1115 m2). 2.A Group S-1 fire area is located more than three stories above grade plane. 3.The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m2). 4.A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m2). 5.A Group S-1 fire area used for the storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet (46.4 m2).
903.2.9.1	Repair Garages	An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown: 1.Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m2). 2.Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m2). 3.Buildings with repair garages servicing vehicles parked in basements. 4.A Group S-1 fire area used for the repair of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m2).	An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown: 1.Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m2). 2.Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m2). 3.Buildings with repair garages servicing vehicles parked in basements. 4.A Group S-1 fire area used for the repair of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m2). 5.A Group S-1 fire area used for the storage of lithium-ion or lithium metal powered vehicles where the fire area exceeds 500 square feet (46.4 m2).

903.2.10	Sprinklers in Parking Garages	An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown: 1.Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m2). 2.Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m2). 3.Buildings with repair garages servicing vehicles parked in basements. 4.A Group S-1 fire area used for the repair of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m2).	An automatic sprinkler system shall be provided throughout buildings classified as parking garages where any of the following conditions exists: 1.Where the fire area of the enclosed parking garage in accordance with Section 406.6 exceeds 12,000 square feet (1115 m2). 2.Where the enclosed parking garage in accordance with Section 406.6 is located beneath other groups. Exception: Enclosed parking garages located beneath Group R-3 occupancies. 3.Where the fire areaof the open parking garage in accordance with Section 406.5 exceeds 48,000 square feet (4460 m2).
903.2.10.2	Mechanical Access Parking Garages	(new)	An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with Section 406, as shown: 1.Buildings having two or more stories above grade plane, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m2). 2.Buildings not more than one story above grade plane, with a fire area containing a repair garage exceeding 12,000 square feet (1115 m2). 3.Buildings with repair garages servicing vehicles parked in basements. 4.A Group S-1 fire area used for the repair of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m2).
903.2.11.3	Buildings 55 feet or more in height	Exceptions: 1.Open parking structures. 2.Occupancies in Group F-2.	Exception: Occupancies in Group F-2.
903.2.11.6	Additional Required Systems	424.3 Children's play structures	424.3Play structures
903.3.1.1.1	Exempt locations	1.A room where the application of water, or flame and water, constitutes a serious life or fire hazard. 2.A room or space where sprinklers are considered undesirable because of the nature of the contents, where approved by the fire code official. 3.Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours. 4.Rooms or areas that are of noncombustible construction with wholly noncombustible contents. 5.Fire service access elevator machine rooms and machinery spaces. 6.Machine rooms, machinery spaces, control rooms and control spaces associated with occupant evacuation elevators designed in accordance with Section 3008.	1.A room or space where sprinklers constitute a serious life or fire hazard because of the nature of the contents, where approved by the fire code official. 2.Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours. 3.Rooms or areas that are of noncombustible construction with wholly noncombustible contents. 4.Fire service access elevator machine rooms and machinery spaces. 5.Machine rooms, machinery spaces, control rooms and control spaces associated with occupant evacuation elevators designed in accordance with Section 3008.
903.3.1.1.3	Lithium-ion or lithium metal batteries	(new)	Where automatic sprinkler systems are required by this code for areas containing lithium-ion or lithium metal batteries, the design of the system shall be based on a series of fire tests. Such tests shall be conducted or witnessed and reported by an approved testing laboratory involving test scenarios that address the range of variables associated with the intended arrangement of the hazards to be protected.
903.3.1.2	NFPA 13R Sprinkler Protection	Automatic sprinkler systems in Group R occupancies up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R. The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from the horizontal assembly creating separate buildings.	Automatic sprinkler systemsin Group R occupancies shall be permitted to be installed throughout in accordance with NFPA 13R where the Group R occupancy meets all of the following conditions: 1.Four stories or fewer above grade plane. 2.For other than Group R-2 occupancies, the floor level of the highest story is 30 feet (9144 mm) or less above the lowest level of fire department vehicle access. For Group R-2 occupancies, the roof assembly is less than 45 feet (13 716 mm) above the lowest level of fire department vehicle access. The height of the roof assembly shall be determined by measuring the distance from the lowest required fire vehicle access road surface adjacent to the building to the eave of the highest pitched roof, the intersection of the highest roof to the exterior wall, or the top of the highest parapet, whichever yields the greatest distance. 3.The floor level of the lowest story is 30 feet (9144 mm) or less below the lowest level of fire department vehicle access. The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from grade plane.
903.3.1.2.2	Corridor and Balcony Sprinklers	Sprinkler protection shall be provided in open-ended corridors and associated exterior stairways and ramps as specified in Section 1027.6, Exception 3.	Sprinkler protection shall be provided in corridors and for balconies in the means of egress where any of the following conditions apply: 1.Corridors with combustible floor or walls. 2.Corridors with an interior change of direction exceeding 45 degrees (0.79 rad). 3.Corridors that are less than 50 percent open to the outside atmosphere at the ends. 4.Open-ended corridors and associated exterior stairways and ramps as specified in Section 1027.6, Exception 3. 5.Egress balconies not complying with Sections 1021.2 and 1021.3.

903.3.2	Quick-response and residential sprinklers	1.Throughout all spaces within a smoke compartment containing care recipient sleeping units in Group I-2 in accordance with this code. 2.Throughout all spaces within a smoke compartment containing treatment rooms in ambulatory care facilities. 3.Dwelling units and sleeping units in Group I-1 and R occupancies. 4.Light-hazard occupancies as defined in NFPA 13.	1.Throughout all spaces within a smoke compartment containing care recipient sleeping units in Group I-2 in accordance with this code. 2.Throughout all spaces within a smoke compartment containing gas fireplace appliances and decorative gas appliances in Group I-2. 3.Throughout all spaces within a smoke compartment containing treatment rooms in ambulatory care facilities. 4.Dwelling units and sleeping units in Group I-1 and R occupancies. 5.Light-hazard occupancies as defined in NFPA 13.
903.4	Supervision	Valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and waterflow switches on all sprinkler systems shall be electrically supervised by a listed fire alarm control unit.1.Automatic sprinkler systems protecting one- and two-family dwellings. 2.Limited area sprinkler systems in accordance with Section 903.3.8. 3.Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided. 4.Jockey pump control valves that are sealed or locked in the open position. 5.Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position. 6.Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position. 7.Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.	Valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and waterflow switches on all automatic sprinkler systems shall be electrically supervised by a listed fire alarm control unit. Exceptions: 1.Automatic sprinkler systems protecting one- and two-family dwellings. 2.Limited area sprinkler systems in accordance with Section 903.3.8, provided that backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position unless supplying an occupancy required to be equipped with a fire alarm system, in which case the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated. 3.Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided. 4.Jockey pump control valves that are sealed or locked in the open position. 5.Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position. 6.Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position. 7.Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position. 8.Underground key or hub gate valves in roadway boxes.
903.4.1	Monitoring	Exceptions: 1.Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored. 2.Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.	Exception: Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.
904.12	Hybrid fire extinguishing systems	(new)	Hybrid fire extinguishing systems shall be designed, installed, maintained, periodically inspected and tested in accordance with NFPA 770. Records of inspection and testing shall be maintained.
904.14.1	Manual system operation	(new)	A manual actuation device shall be located at or near a means of egress from the cooking area not less than 10 feet (3048 mm) and not more than 20 feet (6096 mm) from the kitchen exhaust system. The manual actuation device shall be installed not more than 48 inches (1200 mm) or less than 42 inches (1067 mm) above the floor and shall clearly identify the hazard protected. The manual actuation shall require a maximum force of 40 pounds (178 N) and a maximum movement of 14 inches (356 mm) to actuate the fire suppression system. Exceptions: 1.Automatic sprinkler systems shall not be required to be equipped with manual actuation means. 2.Where locating the manual actuation device between 10 feet (3048 mm) and 20 feet (6096 mm) from the cooking area is not feasible, the fire code official is permitted to accept a location at or near a means of egress from the cooking area, where the manual actuation device is unobstructed and in view from the means of egress.
905.3	Required installations	Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.8. Standpipe systems are allowed to be combined with automatic sprinkler systems. Exception: Standpipe systems are not required in Group R-3 occupancies.	Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.7. Standpipe systems are allowed to be combined with automatic sprinkler systems. Exceptions: 1.Standpipe systems are not required in Group R-2 townhouses. 2.Standpipe systems are not required in Group R-3 occupancies.

905.3.1	Standpipes in Parking Garages	Exceptions: 1.Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. 2.Class I standpipes are allowed in Group B and E occupancies. 3.Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access. 4.Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5. 5.Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system. 6.Class I standpipes are allowed in buildings where occupant-use hose lines will not be utilized by trained personnel or the fire department. 7.In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following: 7.1.Recessed loading docks for four vehicles or less. 7.2.Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.	Exceptions: 1.Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. 2.Class I standpipes are allowed in Group B and E occupancies. 3.Class I standpipes are allowed in parking garages. ➡ 4.Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system. 5.Class I standpipes are allowed in buildings where occupant-use hose lines will not be utilized by trained personnel or the fire department. 6.In determining the lowest level of fire department vehicle access, it shall not be required to consider either of the following: 6.1.Recessed loading docks for four vehicles or less. 6.2.Conditions where topography makes access from the fire department vehicle to the building impractical or impossible.
906.1	Portable fire extinguishers - where required	Portable fire extinguishers shall be installed in all of the following locations: 1.In Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies. Exceptions: 1.In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1-A:10-B:C. 2.In Group E occupancies. portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each classroom is provided with a portable fire extinguisher having a minimum rating of 2-A:20-B:C. 2.Within 30 feet (9144 mm) distance of travel from commercial cooking equipment and from domestic cooking equipment in Group I-1; I-2, Condition 1; and R-2 college dormitory occupancies. 3.In areas where flammable or combustible liquids are stored, used or dispensed. 4.On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 3315.1 of the International Fire Code. 5.Where required by the International Fire Code sections indicated in Table 906.1. 6.Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.	Portable fire extinguishers shall be installed in all of the following locations: 1.In Group A, B, E, F, H, I, M, R-1, R-2, R-4 and S occupancies. Exceptions: 1.In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1-A:10-B:C. 2.In Group E occupancies. portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each classroom is provided with a portable fire extinguisher having a minimum rating of 2-A:20-B:C. 3.In storage areas of Group S Occupancies where forklift, powered industrial truck or powered cart operators are the primary occupants, fixed extinguishers, as specified in NFPA 10, shall not be required where in accordance with all of the following: 3.1.Use of vehicle-mounted extinguishers shall be approved by the fire code official. 3.2.Each vehicle shall be equipped with a 10-pound, 40A:80B:C extinguisher affixed to the vehicle using a mounting bracket approved by the extinguisher manufacturer or the fire code official for vehicular use. 3.3.Not less than two spare extinguishers of equal or greater rating shall be available on site to replace a discharged extinguisher. 3.4.Vehicle operators shall be trained in the proper operation, use and inspection of extinguishers. 3.5.Inspections of vehicle-mounted extinguishers shall be performed daily. 2.Within 30 feet (9144 mm) distance of travel from commercial cooking equipment and from domestic cooking equipment in Group I-1; I-2, Condition 1; and R-2 college dormitory occupancies. 3.In areas where flammable or combustible liquids are stored, used or dispensed. 4.On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 3315.1 of the International Fire Code. 5.Where required by the International Fire Code sections indicated in Table 906.1. 6.Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official. Exception:Portable fire extinguishers are not required at normally unmanned Group U occupancy buildings or structures where a portable fire extinguisher suitable to the hazard of the location is provided on the vehicle of visiting personnel.

907.2.1	Group A	Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.	Exceptions: 1.Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow. 2.Manual fire alarm boxes and the associated occupant notification system or emergency voice/alarm communication system are not required for Group A-5 outdoor bleacher-type seating having an occupant load of greater than or equal to 300 and less than 15,000 occupants, provided that all of the following are met: 2.1.A public address system with standby power is provided. 2.2.Enclosed spaces attached to or within 5 feet (1524 mm) of the outdoor bleacher-type seating compose, in the aggregate, a maximum of 10 percent of the overall area of the outdoor bleacher-type seating or 1,000 square feet (92.9 m2), whichever is less. 2.3.Enclosed accessory spaces under or attached to the outdoor bleacher-type seating shall be separated from the bleacher-type seating in accordance with Section 1030.1.1.1. 2.4.All means of egress from the bleacher-type seating are open to the outside. 3.Manual fire alarm boxes and the associated occupant notification system or emergency voice/alarm communication system are not required for temporary Group A-5 outdoor bleacher-type seating, provided that all of the following are met: 3.1.There are no enclosed spaces under or attached to the outdoor bleacher-type seating. 3.2.The bleacher-type seating is erected for a period of less than 180 days. 3.3.Evacuation of the bleacher-type seating is included in an approved fire safety plan.
907.2.2	Group B	A manual fire alarm system shall be installed in Group B occupancies where one of the following conditions exists: 1.The combined Group B occupant load of all floors is 500 or more. 2.The Group B occupant load is more than 100 persons above or below the lowest level of exit discharge. 3.The fire area contains an ambulatory care facility.	A manual fire alarm system, which activates the occupant notification system in accordance with Section 907.5, shall be installed in Group B occupancies where one of the following conditions exists: 1.The combined Group B occupant load of all floors is 500 or more. 2.The Group B occupant load is more than 100 persons above or below the lowest level of exit discharge. 3.The fire area contains an ambulatory care facility.
907.2.2.2	Laboratories involveing research and development or testing	(new)	A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed throughout the entire fire area utilized for the research and development or testing of lithium-ion or lithium metal batteries.
907.2.3	Group E (exceptions)	Exceptions: 1.A manual fire alarm system is not required in Group E occupancies with an occupant load of 50 or less. 2.Emergency voice/alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group E occupancies with occupant loads of 100 or less, provided that activation of the manual fire alarm system initiates an approved occupant notification signal in accordance with Section 907.5. 3.Manual fire alarm boxes are not required in Group E occupancies where all of the following apply: 3.1.Interior corridors are protected by smoke detectors. 3.2.Auditoriums, cafeterias, gymnasiums and similar areas are protected by heat detectors or other approved detection devices. 3.3.Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices. 4.Manual fire alarm boxes shall not be required in Group E occupancies where all of the following apply: 4.1.The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1. 4.2.The emergency voice/alarm communication system will activate on sprinkler waterflow. 4.3.Manual activation is provided from a normally occupied location.	Exceptions: 1.A manual fire alarm system shall not be required in Group E occupancies with an occupant load of 50 or less. 2.Emergency voice/alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group E occupancies with occupant loads of 100 or less, provided that activation of the manual fire alarm system initiates an approved occupant notification signal in accordance with Section 907.5. 3.Manual fire alarm boxes shall not be required in Group E occupancies where all of the following apply: 3.1.Interior corridors are protected by smoke detectors. 3.2.Auditoriums, cafeterias, gymnasiums and similar areas are protected by heat detectors or other approved detection devices. 3.3.Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices. 3.4Manual activation is provided from a normally occupied location. 4.Manual fire alarm boxes shall not be required in Group E occupancies where all of the following apply: 4.1.The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1. 4.2.The emergency voice/alarm communication system will activate on sprinkler waterflow. 4.3.Manual activation is provided from a normally occupied location.
907.2.4.1	Manufacturing involving lithium-ion or lithium metal batteries	(new)	A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed throughout the entire fire area where lithium-ion or lithium metal batteries are manufactured; and where the manufacturer of vehicles, energy storage systems or equipment containing lithium-ion or lithium metal batteries when the batteries are installed as part of the manufacturing process.
907.2.7.2	Storage of lithium-ion or lithium metal batteries	(new)	A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed in a room or space within a Group M occupancy where required for the storage of lithium-ion or lithium metal batteries in accordance with Section 320 of the International Fire Code.
907.2.10	Manual Alarms in Group S Buildings	(new)	A fire alarm system shall be installed in a Group S occupancy as required by Sections 907.2.10.1 and 907.2.10.2.

907.2.10.1	Public- and self-storage occupancies	(new)	A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group S public-and self-storage occupancies three stories or greater in height for interior corridors and interior common areas. Visible notification appliances are not required within storage units. Exception:Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler systeminstalled in accordance with Section 903.3.1.1, and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.
907.2.10.2	Storage of lithium-ion or lithium metal batteries	(new)	A fire alarm system activated by an air-sampling-type smoke detection system or a radiant-energy-sensing detection system shall be installed throughout the entire fire area where required for the storage of lithium-ion batteries or lithium metal batteries in accordance with Section 320 of the International Fire Code.
907.2.11.3	Installation near cooking appliances	Smoke alarms shall not be installed in the following locations unless this would prevent placement of a smoke alarm in a location required by Section 907.2.10.1 or 907.2.10.2: 1.Ionization smoke alarms shall not be installed less than 20 feet (6096 mm) horizontally from a permanently installed cooking appliance. 2.Ionization smoke alarms with an alarm-silencing switch shall not be installed less than 10 feet (3048 mm) horizontally from a permanently installed cooking appliance. 3.Photoelectric smoke alarms shall not be installed less than 6 feet (1829 mm) horizontally from a permanently installed cooking appliance.	Smoke alarms shall be installed not less than 10 feet (3048 mm) horizontally from a permanently installed cooking appliance. Exception:Smoke alarms shall be permitted to be installed not less than 6 feet (1829 mm) horizontally from a permanently installed cooking appliance where necessary to comply with Section 907.2.11.1 or 907.2.11.2.
907.2.12	Special amusement areas	(relocated)	Fire detection and alarm systems shall be provided in special amusement areasin accordance with Section 411.3.
907.2.23	Energy storage systems	(new)	An automatic smoke detection system or radiant-energy detection system shall be installed in rooms, areas and walk-in units containing energy storage systems as required in Section 1207.5.4 of the International Fire Code.
907.4	Initiating devices	Where manual or automatic alarm initiation is required as part of a fire alarm system, the initiating devices shall be installed in accordance with Sections 907.4.1 through 907.4.3.1.	Where a fire alarm system is required by another section of this code, occupant notification in accordance with Section 907.5 shall be initiated by one or more of the following. Initiating devices shall be installed in accordance with Sections 907.4.1 through 907.4.3.1. 1.Manual fire alarm boxes. 2.Automatic fire detectors. 3.Automatic sprinkler systemwaterflow devices. 4.Automatic fire-extinguishing systems.
907.5	Occupant notification	A fire alarm system shall annunciate at the fire alarm control unit and shall initiate occupant notification upon activation, in accordance with Sections 907.5.1 through 907.5.2.3.3. Where a fire alarm system is required by another section of this code, it shall be activated by: 1.Automatic fire detectors. 2.Automatic sprinkler system waterflow devices. 3.Manual fire alarm boxes. 4.Automatic fire-extinguishing systems. Exception: Where notification systems are allowed elsewhere in Section 907 to annunciate at a constantly attended location.	Occupant notification by fire alarms shall be in accordance with Sections 907.5.1 through 907.5.2.3.3. Occupant notification by smoke alarms in Group R-1 and R-2 occupancies shall comply with Section 907.5.2.1.3.2.
907.5.1	Alarm activation and annuciation	(reorganized)	Upon activation, fire alarm systems shall initiate occupant notification and shall annunciate at the fire alarm control unit, or where allowed elsewhere by Section 907, at a constantly attended location.
907.5.1.1	Presignal feature	(new)	A presignal feature shall be provided only where approved. The presignal shall be annunciated at an approved, constantly attended location, having the capability to activate the occupant notification system in the event of fire or other emergency.
907.5.2.1.2	Maximum sound pressure	The maximum sound pressure level for audible alarm notification appliances shall be 110 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than 95 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.	The total sound pressure level produced by combining the ambient sound pressure level with all audible notification appliances operating shall not exceed 110 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than 105 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.
907.5.2.1.3	Audible alarm signal frequency	(new)	Audible alarm signal frequency in Group R-1, R-2 and I-1 occupancies shall be in accordance with Sections 907.5.2.1.3.1 and 907.5.2.1.3.2.
907.5.2.1.3.1	Fire alarm system audible signal	(new)	In sleeping rooms of Group R-1, R-2 and I-1 occupancies, the audible alarm signalactivated by a fire alarm system shall be a 520-Hz low-frequency signal complying with NFPA 72.
907.5.2.1.3.2	Smoke alarm signal in sleeping rooms	(new)	In sleeping rooms of Group R-1, R-2 and I-1 occupancies that are required by Section 907.2.8 or 907.2.9 to have a fire alarm system, the audible alarm signal activated by single- or multiple-station smoke alarms in the dwelling unitor sleeping unitshall be a 520-Hz signal complying with NFPA 72. Where a sleeping room smoke alarm is unable to produce a 520-Hz signal, the 520-Hz alarm signal shall be provided by alisted notification appliance or a smoke detector with an integral 520-Hz sounder.

907.5.2.3	Visible alarms	Visible alarm notification appliances shall be provided in accordance with Sections 907.5.2.3.1 through 907.5.2.3.3. Exceptions: 1.Visible alarm notification appliances are not required in alterations, except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed. 2.Visible alarm notification appliances shall not be required in exits as defined in Chapter 2. 3.Visible alarm notification appliances shall not be required in elevator cars. 4.Visual alarm notification appliances are not required in critical care areas of Group I-2, Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.	Visible alarm notification appliances shall be provided in accordance with Sections 907.5.2.3.1 through 907.5.2.3.3. Exceptions: 1.Visible alarm notification appliances are not required in alterations, except where an existing fire alarm system is upgraded or replaced, or a new fire alarm system is installed. 2.Visible alarm notification appliances shall not be required in exits as defined in Chapter 2. 3.Visible alarm notification appliances shall not be required in elevator cars. 4.Visual alarm notification appliances are not required in critical care areas of Group I-2, Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2. 5.A visible alarm notification appliance installed in a nurses' control station or other continuously attended staff location in a Group I-2, Condition 2 suite shall be an acceptable alternative to the installation of visible alarm notification appliances throughout the suite or unit in Group I-2, Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.
907.5.2.3.3	Group R-2	In Group R-2 occupancies required by Section 907 to have a fire alarm system, each story that contains dwelling units and sleeping units shall be provided with the capability to support visible alarm notification appliances in accordance with Chapter 10 of ICC A117.1. Such capability shall accommodate wired or wireless equipment. The future capability shall include one of the following: 1.The interconnection of the building fire alarm system with the unit smoke alarms. 2.The replacement of audible appliances with combination audible/visible appliances. 3.The future extension of the existing wiring from the unit smoke alarm locations to required locations for visible appliances.	In Group R-2 occupancies required by Section 907 to have a fire alarm system, each story that contains dwelling units and sleeping units shall be provided with the capability to support future visible alarm notification appliances in accordance with Chapter 11 of ICC A117.1. Such capability shall accommodate wired or wireless equipment.
907.5.2.3.3.1	Wired equipment	(new)	Where wired equipment is used to comply with the future capability required by Section 907.5.2.3.3, the system shall include one of the following capabilities: 1.The replacement of audible appliances with combination audible/visible appliances or additional visible notification appliances. 2.The future extension of the existing wiring from the unit smoke alarm locations to required locations for visible appliances. 3.For wired equipment, the fire alarm power supply and circuits shall have not less than 5-percent excess capacity to accommodate the future addition of visible alarm notification appliances, and a single access point to such circuits shall be available on every story. Such circuits shall not be required to be extended beyond a single access point on a story. The fire alarm system shop drawings required by Section 907.1.2 shall include the power supply and circuit documentation to accommodate the future addition of visible notification appliances.
907.6.6.1	Transmission of alarm signals	(new)	Transmission of alarm signals to a supervising station shall be in accordance with NFPA 72.
907.6.6.2	Automatic telephone-dialing devices MIY Monitoring	Automatic telephone-dialing devices used to transmit an emergency alarm shall not be connected to any fire department telephone number unless approved by the fire chief.	Direct transmission of alarms associated with monitor it yourself (MIY) transmitters to a public safety answering point (PSAP) shall not be permitted unless approved by the fire code official.
908.3	Fire alarm sisytem interface	(new)	Where an emergency alarm system is interfaced with a building's fire alarm system, the signal produced at the fire alarm control unit shall be a supervisory signal.
909.17	System response time	Smoke-control system activation shall be initiated immediately after receipt of an appropriate automatic or manual activation command. Smoke control systems shall activate individual components (such as dampers and fans) in the sequence necessary to prevent physical damage to the fans, dampers, ducts and other equipment. For purposes of smoke control, the fire fighter's control panel response time shall be the same for automatic or manual smoke control action initiated from any other building control point. The total response time, including that necessary for detection, shutdown of operating equipment and smoke control system startup, shall allow for full operational mode to be achieved before the conditions in the space exceed the design smoke condition. The system response time for each component and their sequential relationships shall be detailed in the required rational analysis and verification of their installed condition reported in the required final report.	Smoke-control system activation shall be initiated immediately after receipt of an appropriate automatic or manual activation command. Smoke control systems shall activate individual components (such as dampers and fans) in the sequence necessary to prevent physical damage to the fans, dampers, ducts and other equipment. For purposes of smoke control, the fire fighter's control panel response time shall be the same for automatic or manual smoke control action initiated from any other building control point. The total response time, including that necessary for detection, shutdown of operating equipment and smoke control system startup, shall allow for full operational mode to be achieved before the conditions in the space exceed the design smoke condition. Upon receipt of an alarm condition at the fire alarm control panel, fans, dampers and automatic doors shall have achieved their proper operating state and the final status shall be indicated at the smoke control panel within 90 seconds. The system response time for each component and their sequential relationships shall be detailed in the required rational analysis and verification of their installed condition reported in the required final report.
909.20.	Smokeproof Enclosures	Where required by Section 1023.11, a smokeproof enclosure shall be constructed in accordance with this section. A smokeproof enclosure shall consist of an interior exit stairway or ramp that is enclosed in accordance with the applicable provisions of Section 1023 and an open exterior balcony or ventilated vestibule meeting the requirements of this section. Where access to the roof is required by the International Fire Code, such access shall be from the smokeproof enclosure where a smokeproof enclosure is required.	Where required by Section 1023.12, a smokeproof enclosure shall be constructed in accordance with this section. A smokeproof enclosure shall consist of an interior exit stairway or ramp that is enclosed in accordance with the applicable provisions of Section 1023 and an open exterior balcony, ventilated vestibule or pressurized stair and pressurized entrance vestibule meeting the requirements of this section. Where access to the roof is required by the International Fire Code, such access shall be from the smokeproof enclosure where a smokeproof enclosure is required.
909.20.6	Pressurized stair and vestibule alternative	(new)	The provisions of Sections 909.20.6.1 through 909.20.6.3 shall apply to smokeproof enclosures using a pressurized stair and pressurized entrance vestibule.

909.20.6.1	Vestibule doors	(new)	The door assembly from the building into the vestibule shall be a fire door assembly complying with Section 716.2.2.1. The door assembly from the vestibule to the stairway shall have not less than a 20-minute fire protection rating and meet the requirements for a smoke door assembly in accordance with Section 716.2.2.1. The door shall be installed in accordance with NFPA 105.
909.20.6.2	Pressure difference	(new)	The stair enclosure shall be pressurized to not less than 0.05 inch of water gage (12.44 Pa) positive pressure relative to the vestibule with all stairway doors closed under the maximum anticipated stack pressures. The vestibule, with doors closed, shall have not less than 0.05 inch of water gage (12.44 Pa) positive pressure relative to the fire floor. The pressure difference across doors shall not exceed 30 pounds (133-N) maximum force to begin opening the door.
909.20.6.3	Dampered relief opening	(new)	A controlled relief vent having the capacity to discharge not less than 2,500 cubic feet per minute (1180 L/s) of air at the design pressure difference shall be located in the upper portion of the pressurized exit enclosure.
909.20.5.4	Smoke detection	(new)	The fan system shall be equipped with a smoke detector that will automatically shut down the fan system when smoke is detected within the system.
909.21	Elevator hoistway pressurization alternative	Where elevator hoistway pressurization is provided in lieu of required enclosed elevator lobbies, the pressurization system shall comply with Sections 909.21.1 through 909.21.11.	Where elevator hoistway pressurization is provided in lieu of required enclosed elevator lobbies, the pressurization system shall comply with Sections 909.21.1 through 909.21.11. The design shall consider the interaction effects of the operation of multiple smoke control systems for all design scenarios in accordance with Section 909.4.7. All components or systems associated with the means of mitigating adverse interaction shall comply with the applicable subsections of Section 909.
910.3.4	Vent operation	(new)	Smoke and heat vents shall be capable of being operated by approved automatic and manual means.
910.3.5	Fusible link temperature rating	(new)	Where vents are installed in areas provided with automatic fire sprinklers and the vents operate by fusible link, the fusible link shall have a temperature rating of 360°F (182°C).
911.1	Fire Command Centers - General	Where required by other sections of this code and in buildings classified as high-rise buildings by this code, a fire command center for fire department operations shall be provided and shall comply with Sections 911.1.1 through 911.1.6.	Where required by other sections of this code, in buildings classified as high-rise buildings by this code and in all F-1 and S-1 occupancies with a building footprint of over 500,000 square feet (46 452 m2), a fire command center for fire department operations shall be provided and shall comply with Sections 911.1.1 through 911.1.7.
911.1.1	Size	The fire command center shall be not less than 0.015 percent of the total building area of the facility served or 200 square feet (19 m2) in area, whichever is greater, with a minimum dimension of 0.7 times the square root of the room area or 10 feet (3048 mm), whichever is greater.	The fire command center shall be not less than 0.015 percent of the total building area of the facility served or 200 square feet (19 m2) in area, whichever is greater, with a minimum dimension of 0.7 times the square root of the room area or 10 feet (3048 mm), whichever is greater. Where a fire command is required for Group F-1 and S-1 occupancies with a building footprint greater than 500,000 square feet (46 452 m2) in area, the fire command center shall have a minimum size of 96 square feet (9 m2) with a minimum dimension of 8 feet (2348 mm) where approved by the fire code official.
911.1.7	Fire command center identification	(new)	The fire command center shall be identified by a permanent easily visible sign reading "FIRE COMMAND CENTER" located on the door to the fire command center.
912.5.1	Lettering	(new)	Each fire department connection (FDC) shall be designated by a sign with raised letters not less than 1 inch (25.4 mm) in height. For manual standpipe systems, the sign shall also indicate that the system is manual and that it is either wet or dry.
912.5.2	Serving multiple buildings	(new)	Where a fire department connection (FDC) services multiple buildings, structures or locations, a sign shall be provided indicating the building, structures or locations served. Where the FDC does not serve the entire building, a sign shall be provided indicating the portions of the building served.
912.5.3	Multiple or combined systems	(new)	Where combination or multiple system types are supplied by the fire department connection, the sign or combination of signs shall indicate both designated services.
912.5.4	Indication of pressure	(new)	The sign also shall indicate the pressure required at the outlets to deliver the standpipe system demand. Exception:Where the pressure required is 150 pounds per square inch (1034 kPa) or less.
913.2.2	Circuits supplying fire pumps	Cables used for survivability of circuits supplying fire pumps shall be protected using one of the following methods: 1.Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 1 hour. 2.Electrical circuit protective systems shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements. 3.Construction having a fire-resistance rating of not less than 1 hour.	Cables used for survivability of circuits supplying fire pumps shall be protected using one of the following methods: 1.Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196 and shall have a fire-resistance rating of not less than 1 hour. 2.Electrical circuit protective systems shall have a fire-resistance rating of not less than 1 hour. Electrical circuit protective systems shall be installed in accordance with their listing requirements. 3.Construction having a fire-resistance rating of not less than 1 hour. 4.The cable or raceway is encased in a minimum of 2 inches (51 mm) of concrete. Exception:This section shall not apply to cables, or portions of cables, located within a fire pump room or generator room which is separated from the remainder of the occupancy with fire-resistance-rated construction.
915.1	CO Detection - General	Carbon monoxide detection shall be installed in new buildings in accordance with Sections 915.1.1 through 915.6. Carbon monoxide detection shall be installed in existing buildings in accordance with Chapter 11 of the International Fire Code.	Carbon monoxide (CO) detection shall be installed in new buildings in accordance with Section 915.1.1. Carbon monoxide detection shall be installed in existing buildings in accordance with Chapter 11 of the International Fire Code. Exception:Carbon monoxide detection is not required in Group S, Group F and Group U occupancies that are not normally occupied.

915.1.1	Where required	Carbon monoxide detection shall be provided in Group I-1, I-2, I-4 and R occupancies and in classrooms in Group E occupancies in the locations specified in Section 915.2 where any of the conditions in Sections 915.1.2 through 915.1.6 exist.	Carbon monoxide detection shall be installed in the locations specified in Section 915.2 where any of the following conditions exist. 1.In buildings that contain a CO source. 2.In buildings that contain or are supplied by a CO-producing forced-air furnace. 3.In buildings with attached private garages. 4.In buildings that have a CO-producing vehicle that is used within the building.
915.2.4	CO_Producing forced-air furnace	Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms served by a fuel-burning, forced-air furnace. Exception: Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms if a carbon monoxide detector is provided in the first room or area served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location.	Carbon monoxide detection complying with Item 2 of Section 915.1.1 shall be installed in all enclosed rooms and spaces served by a fuel-burning, forced-air furnace. Exceptions: 1.Where a carbon monoxide detector is provided in the first room or space served by each main duct leaving the furnace, and the carbon monoxide alarm signals are automatically transmitted to an approved location. 2.Dwelling units that comply with Section 915.2.1.
915.2.5	Private garages	Carbon monoxide detection shall be provided in dwelling units, sleeping units and classrooms in buildings with attached private garages. Exceptions: 1.Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms without communicating openings between the private garage and the dwelling unit, sleeping unit or classroom. 2.Carbon monoxide detection shall not be required in dwelling units, sleeping units and classrooms located more than one story above or below a private garage. 3.Carbon monoxide detection shall not be required where the private garage connects to the building through an open-ended corridor. 4.Where a carbon monoxide detector is provided in an approved location between openings to a private garage and dwelling units, sleeping units or classrooms.	Carbon monoxide detection complying with Item 3 of Section 915.1.1 shall be installed within enclosed occupiable rooms or spaces that are contiguous to the attached private garage. Exceptions: 1.In buildings without communicating openings between the private garage and the building. 2.In rooms or spaces located more than one story above or below a private garage. 3.Where the private garage connects to the building through an open-ended corridor. 4.An open parking garage complying with Section 406.5 or an enclosed parking garage complying with Section 406.6shall not be considered a private garage. 5.Dwelling units that comply with Section 915.2.1.
915.2.6	All other occupancies	(new)	For locations other than those specified in Section 915.2.1 through 915.2.5, carbon monoxide detectors shall be installed on the ceiling of enclosed rooms or spaces containing CO producing devices or served by a CO source forced-air furnace. Exception:Where environmental conditions prohibit the installation of carbon monoxide detector in an enclosed room or space, carbon monoxide detectors shall be installed in an approved enclosed location contiguous with the room or space that contains a CO source.
915.3.1	Alarm limitations	(new)	Carbon monoxide alarms shall only be installed in dwelling units and in sleeping units. They shall not be installed in locations where the code requires carbon monoxide detectors to be used.
915.3.2	Fire alarm system required	(new)	New buildings that are required by Section 907.2 to have a fire alarm system and by Section 915.2 to have carbon monoxide detectors shall be connected to the fire alarm system in accordance with NFPA 72.
915.3.3	Fire alarm systems not required	(new)	In new buildings that are not required by Section 907.2 to have a fire alarm system, carbon monoxide detection shall be provided by one of the following: 1.Carbon monoxide detectors connected to an approved carbon monoxide detection system in accordance with NFPA 72. 2.Carbon monoxide detectors connected to an approved combination system in accordance with NFPA 72. 3.Carbon monoxide detectors connected to an approved fire alarm system in accordance with NFPA 72. 4.Where approved by the fire code official, carbon monoxide alarms maintained in accordance with the manufacturer's instructions.
915.3.4	Installation	(new)	Carbon monoxide detection shall be installed in accordance with NFPA 72 and the manufacturer's instructions.
915.4.4	Interconnection	(new)	Where more than one carbon monoxide alarm is required to be installed, carbon monoxide alarms shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms. Physical interconnection of carbon monoxide alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.
915.5.4	Occupant notification	(new)	Activation of a carbon monoxide detector shall annunciate at the control unit and shall initiate audible and visible alarm notification throughout the building. Exception:Occupant notification is permitted to be limited to the area where the carbon monoxide alarm signal originated and other signaling zones in accordance with the fire safety plan, provided that the alarm signal from an activated carbon monoxide detector is automatically transmitted to an approved on-site location or off-premises location.
915.5.5	Duct detection	(new)	Carbon monoxide detectors placed in environmental air ducts or plenums shall not be used as a substitute for the required protection in Section 915.
917.2	Group E occupancies	(new)	Prior to construction of a new building containing a Group E occupancy requiring a fire alarm system and having an occupant load of 500 or more, a mass notification risk analysis shall be conducted in accordance with NFPA 72. Where the risk analysis determines a need for mass notification, an approved mass notification system shall be provided in accordance with the findings of the risk analysis.
1003.3.1	Headroom exceptions	Exception: Door closers and stops shall not reduce headroom to less than 78 inches (1981 mm).	Exception: Door closers, overhead doorstops, frame stops, power door operators and electromagnetic door locks shall be permitted to project into the door opening height not lower than 78 inches (1980 mm) above the floor.

1003.5	Elevation change (exceptions)	Exceptions: 1.A single step with a maximum riser height of 7 inches (178 mm) is permitted for buildings with occupancies in Groups F, H, R-2, R-3, S and U at exterior doors not required to be accessible by Chapter 11. 2.A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by Chapter 11 where the risers and treads comply with Section 1011.5, the minimum depth of the tread is 13 inches (330 mm) and not less than one handrail complying with Section 1014 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair. 3.A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1029.14 and the aisle is provided with a handrail complying with Section 1029.16.	Exceptions: 1.Steps at exterior doors complying with Section 1010.1.4. 2.A stair with a single riser or with two risers and a tread is permitted at locations not required to be accessible by Chapter 11 where the risers and treads comply with Section 1011.5, the minimum depth of the tread is 13 inches (330 mm) and not less than one handrail complying with Section 1014 is provided within 30 inches (762 mm) of the centerline of the normal path of egress travel on the stair. 3.A step is permitted in aisles serving seating that has a difference in elevation less than 12 inches (305 mm) at locations not required to be accessible by Chapter 11, provided that the risers and treads comply with Section 1030.14 and the aisle is provided with a handrail complying with Section 1030.16.
Table 1004.5	Maximum floor area allowances per occupant	(new)	Information technology equipment facilities = 300 gross
1006.2.1	Egress based on occupant load and common path of egress travel distance	Exceptions: 1.The number of exits from foyers, lobbies, vestibules or similar spaces need not be based on cumulative occupant loads for areas discharging through such spaces, but the capacity of the exits from such spaces shall be based on applicable cumulative occupant loads. 2.Care suites in Group I-2 occupancies complying with Section 407.4.	Exceptions: 1.The number of exits from foyers, lobbies, vestibules or similar spaces need not be based on cumulative occupant loadsfor areas discharging through such spaces, but the capacity of the exits from such spaces shall be based on applicable cumulative occupant loads. 2.Care suitesin Group I-2 occupancies complying with Section 407.4. 3.Unoccupied mechanical rooms and penthouses are not required to comply with the common path of egress travel distance measurement.
1006.2.2.2	Refrigeration machinery rooms	Machinery rooms larger than 1,000 square feet (93 m2) shall have not less than two exits or exit access doorways. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room. All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in exit access travel distance is permitted in accordance with Section 1017.1. Exit and exit access doorways shall swing in the direction of egress travel, regardless of the occupant load served. Exit and exit access doorways shall be tight fitting and self-closing.	Machinery rooms larger than 1,000 square feet (93 m2) shall have not less than two exits or exit access doorways. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room. Exit access travel distance shall be determined as specified in Section 1017.1, but all portions of a refrigeration machinery room shall be within 150 feet (45 720 mm) of an exit or exit access doorway where such rooms are not protected by an approved automatic sprinkler system. Egress is allowed through adjoining refrigeration machinery rooms or adjoining refrigerated rooms or spaces. Exit and exit access doorways shall swing in the direction of egress travel and shall be equipped with panic hardware, regardless of the occupant load served. Exit and exit access doorways shall be tight fitting and self-closing.
1006.2.2.4	Electrical rooms	(new)	The location and number of exit or exit access doorways shall be provided for electrical rooms in accordance with Section 110.26 of NFPA 70 for electrical equipment rated 1,000 volts or less, and Section 110.33 of NFPA 70 for electrical equipment rated over 1,000 volts. Panic hardware shall be provided where required in accordance with Section 1010.2.9.2.
1006.3	Egress from stories or occupiable roofs	The means of egress system serving any story or occupied roof shall be provided with the number of separate and distinct exits or access to exits based on the aggregate occupant load served in accordance with this section. Where stairways serve more than one story, only the occupant load of each story considered individually shall be used in calculating the required number of exits or access to exits serving that story.	All spaces located on a story or occupiable roof shall have access to the required number of separate and distinct exits or access to exits based on the aggregate occupant load served in accordance with this section.
1006.3.2	Path of egress travel	The path of egress travel to an exit shall not pass through more than one adjacent story. Exception: The path of egress travel to an exit shall be permitted to pass through more than one adjacent story in any of the following: 1.In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit, sleeping unit or live/work unit. 2.Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility. 3.Exit access stairways and ramps in open parking garages that serve only the parking garage. 4.Exit access stairways and ramps serving open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7. 5.Exit access stairways and ramps between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.	The path of egress travel to an exit shall not pass through more than one adjacent story. Exception: The path of egress travel to an exit shall be permitted to pass through more than one adjacent story in any of the following: 1.In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit, sleeping unit or live/work unit. 2.Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility. 3.Exit access stairways and ramps within an atrium complying with Section 404. 4.Exit access stairways and ramps in open parking garages that serve only the parking garage. 5.Exit access stairways and ramps serving smoke-protected assembly seating and open-air assembly seating complying with the exit access travel distance requirements of Section 1030.7. 6.Exit access stairways and ramps between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities. 7.Exterior exit access stairways and ramps between occupiable roofs.
Tables 1006.3.4(1) and	Single Exit Stories	(new allowance)	Includes occupiable roofs (see table and footnotes)
1008.2.1	Stairway Illumination	The means of egress illumination level shall be not less than 1 footcandle (11 lux) at the walking surface.	The means of egress illumination level shall be not less than 1 footcandle (11 lux) at the walking surface. Along exit access stairways, exit stairways and at their required landings, the illumination level shall not be less than 10 footcandles (108 lux) at the walking surface when the stairway is in use.

1009.2.1	Accessible Elevators to Occupied Roofs	In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, not less than one required accessible means of egress shall be an elevator complying with Section 1009.4. Exceptions: 1.In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the levels of exit discharge. 2.In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1012.	In buildings where a required accessible floor is four or more stories above or below a level of exit discharge or where an accessible occupiable roof is above a story that is three or more stories above the level of exit discharge, not less than one required accessible means of egress shall include an elevator complying with Section 1009.4. Exceptions: 1.In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of the accessible means of egress on floors provided with a horizontal exit and located at or above the levels of exit discharge. 2.In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required as part of the accessible means of egress on floors or occupiable roofs provided with a ramp conforming to the provisions of Section 1012.
1009.2.2	Doors	(new)	Where doors are part of an accessible route to provide access to an exit, area of refuge or exterior area of assisted rescue, maneuvering clearances shall be provided at such doors as required by ICC A117.1 in the direction of egress. Where doors lead to an area of refuge or exterior area for assisted rescue and reentry to the floor is possible, door maneuvering clearances shall be provided on both sides of the door. Exception:Maneuvering clearances are not required at doors to exit stairways for levels above and below the level of exit discharge where the exit enclosure does not include an area of refuge.
1009.6.2	Areas of Refuge	Every required area of refuge shall have direct access to a stairway complying with Sections 1009.3 and 1023 or an elevator complying with Section 1009.4.	Every required area of refuge shall have direct access to a stairway complying with Sections 1009.3 and 1023 or an elevator complying with Section 1009.4. Exception: An interior area of refuge at the level of exit discharge that provides direct access to an exterior exit door.
1009.6.3	Area of Refuge Floor Space	Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 48 inches (762 mm by 1219 mm) for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge. Such wheelchair spaces shall not reduce the means of egress minimum width or required capacity. Access to any of the required wheelchair spaces in an area of refuge shall not be obstructed by more than one adjoining wheelchair space.	Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 52 inches (762 mm by 1320 mm) for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge. Such wheelchair spaces shall not reduce the means of egress minimum width or required capacity. Access to any of the required wheelchair spaces in an area of refuge shall not be obstructed by more than one adjoining wheelchair space.
1010.1.1	Door Widths	The required capacity of each door opening shall be sufficient for the occupant load thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 411/2 inches (1054 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. The minimum clear opening height of doors shall be not less than 80 inches (2032 mm). Exceptions: 1.In Group R-2 and R-3 dwelling and sleeping units that are not required to be an Accessible unit, Type A unit or Type B unit, the minimum and maximum width shall not apply to door openings that are not part of the required means of egress. 2.In Group I-3, door openings to resident sleeping units that are not required to be an Accessible unit shall have a minimum clear opening width of 28 inches (711 mm). 3.Door openings to storage closets less than 10 square feet (0.93 m2) in area shall not be limited by the minimum clear opening width. 4.The width of door leaves in revolving doors that comply with Section 1010.1.4.1 shall not be limited. 5.The maximum width of door leaves in power-operated doors that comply with Section 1010.1.4.2 shall not be limited. 6.Door openings within a dwelling unit or sleeping unit shall have a minimum clear opening height of 78 inches (1981 mm). 7.In dwelling and sleeping units that are not required to be Accessible, Type A or Type B units, exterior door openings other than the required exit door shall have a minimum clear opening height of 76 inches (1930 mm). 8.In Groups I-1, R-2, R-3 and R-4, in dwelling and sleeping units that are not required to be Accessible, Type A or Type B units, the minimum clear opening widths shall not apply to interior egress doors. 9.Door openings required to be accessible within Type B units intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm). 10.Doors to walk-in freezers and coolers less than 1,000 square feet (93 m2) in area shall have a maximum width of 60 inches (1524 mm) nominal. 11.The minimum clear opening width shall not apply to doors for nonaccessible shower or sauna compartments. 12 The minimum clear opening width shall not apply to the doors for nonaccessible toilet stalls.	The required capacity of each door opening shall be sufficient for the occupant load thereof and shall provide a minimum clear opening width of 32 inches (813 mm). The clear opening width of doorways with swinging doors shall be measured between the face of the door and the frame stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear opening width of 32 inches (813 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a minimum clear opening width of 32 inches (813 mm). In Group I-2, doors serving as means of egress doors where used for the movement of beds shall provide a minimum clear opening width of 411/2 inches (1054 mm). The minimum clear opening height of doors shall be not less than 80 inches (2032 mm). Exceptions: 1.In Group R-2 and R-3 dwelling and sleeping units that are not required to be an Accessible unit, Type A unit or Type B unit, the minimum width shall not apply to door openings that are not part of the required means of egress. 2.In Group I-3, door openings to resident sleeping units that are not required to be an Accessible unit shall have a minimum clear opening width of 28 inches (711 mm). 3.Door openings to storage closets less than 10 square feet (0.93 m2) in area shall not be limited by the minimum clear opening width. → 4.Door openings within a dwelling unit or sleeping unit shall have a minimum clear opening height of 78 inches (1981 mm). 5.In dwelling and sleeping units that are not required to be Accessible, Type A or Type B units, exterior door openings other than the required exit door shall have a minimum clear opening height of 76 inches (1930 mm). 6.In Groups I-1, R-2, R-3 and R-4, in dwelling and sleeping units that are not required to be Accessible, Type A or Type B units, the minimum clear opening widths shall not apply to interior egress doors. 7.Door openings required to be accessible within Type B units intended for user passage shall have a minimum clear opening width of 31.75 inches (806 mm). → 8.Doors serving sauna compartments, toilet compartments or dressing, fitting or changing compartments that are not required to be accessible shall have a minimum clear opening width of 20 inches (508 mm). 9.Doors serving shower compartments shall comply with Section 421.4.2 of the International Plumbing Code.

1010.1.1.1	Projections into Door Openings	There shall not be projections into the required clear opening width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm). Exception: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the floor.	There shall not be projections into the required clear opening width lower than 34 inches (864 mm) above the floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the floor or ground shall not exceed 4 inches (102 mm). Exception: Door closers, overhead doorstops, frame stops, power door operators, and electromagnetic door locks shall project into the door opening height not lower than 78 inches (1980 mm) above the floor.
1010.1.2	Egress door types	Egress doors shall be of the pivoted or side-hinged swinging type.	Egress doors shall be of the side-hinged swinging door, pivoted door, or balanced door types.
1010.1.3	Door Opening Forces	The force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5 pounds (22 N). These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position. For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force.	The forces to unlatch doors shall comply with the following: 1.Where door hardware operates by push or pull, the operational force to unlatch the door shall not exceed 15 pounds (67 N). 2.Where door hardware operates by rotation, the operational force to unlatch the door shall not exceed 28 inch-pounds (315 N-cm). The force to open doors shall comply with the following: 1.For interior swinging egress doors that are manually operated, other than doors required to be fire rated, the force for pushing or pulling open the door shall not exceed 5 pounds (22 N). 2.For other swinging doors, sliding doors or folding doors, and doors required to be fire rated, the door shall require not more than a 30-pound (133 N) force to be set in motion and shall move to a full-open position when subjected to not more than a 15-pound (67 N) force.
1010.1.3.2	Manual horizontal sliding doors	(new)	Where a manual horizontal sliding door is required to latch, the latch or other mechanism shall prevent the door from rebounding into a partially open position when the door is closed.
1010.1.5	Floor elevation (exceptions)	Exceptions: 1.Doors serving individual dwelling units in Groups R-2 and R-3 where the following apply: 1.1.A door is permitted to open at the top step of an interior flight of stairs, provided that the door does not swing over the top step. 1.2.Screen doors and storm doors are permitted to swing over stairs or landings. 2.Exterior doors as provided for in Section 1003.5, Exception 1, and Section 1022.2, which are not on an accessible route. 3.In Group R-3 occupancies not required to be Accessible units, Type A units or Type B units, the landing at an exterior doorway shall be not more than 73/4 inches (197 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the landing. 4.Variations in elevation due to differences in finish materials, but not more than 1/2 inch (12.7 mm). 5.Exterior decks, patios or balconies that are part of Type B dwelling units, have impervious surfaces and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit. 6.Doors serving equipment spaces not required to be accessible in accordance with Section 1103.2.9 and serving an occupant load of five or less shall be permitted to have a landing on one side to be not more than 7 inches (178 mm) above or below the landing on the egress side of the door.	Exceptions: 1.At doors serving individual dwelling units or sleeping units in Groups R-2 and R-3 : a door is permitted to open at the top step of an interior flight of stairs, provided that the door does not swing over the top step. 2.At exterior doors serving Groups F, H, R-2 and S and where such doors are not part of an accessible route, the landing at an exterior door shall not be more than 7 inches (178 mm) below the landing on the egress side of the door, provided that the door, other than an exterior storm or screen door, does not swing over the landing. 3.At exterior doors serving Group U and individual dwelling units and sleeping units in Groups R-2 and R-3, and where such units are not required to be Accessible units, Type A units or Type B units, the landing at an exterior doorway shall be not more than 73/4 inches (197 mm) below the landing on the egress side of the door. Such doors, including storm or screen doors, shall be permitted to swing over either landing. 4.Variations in elevation due to differences in finish materials, but not more than 1/2 inch (12.7 mm). 5.Exterior decks, patios or balconies that are part of Type B dwelling units or sleeping units, that have impervious surfaces and that are not more than 4 inches (102 mm) below the finished floor level of the adjacent interior space of the dwelling unit or sleeping unit. 6.Doors serving equipment spaces not required to be accessible in accordance with Section 1103.2.9 and serving an occupant load of five or less shall be permitted to have a landing on one side to be not more than 7 inches (178 mm) above or below the landing on the egress side of the door.
1010.2.1	Unlatching	The unlatching of any door or leaf shall not require more than one operation. Exceptions: 1.Places of detention or restraint. 2.Where manually operated bolt locks are permitted by Section 1010.1.9.5. 3.Doors with automatic flush bolts as permitted by Section 1010.1.9.4, Item 3. 4.Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1010.1.9.4, Item 4.	The unlatching of any door or leaf for egress shall require not more than one motion in a single linear or rotational direction to release all latching and all locking devices. locking devices. Manual bolts are not permitted. Exceptions: 1.Places of detention or restraint. ➡ 2.Doors with manual bolts, automatic flush bolts and constant latching bolts as permitted by Section 1010.2.4, Item 4. 3.Doors from individual dwelling units and sleeping units of Group R occupancies as permitted by Section 1010.2.4, Item 5.

1010.2.4	Locks and Latches	Locks and latches shall be permitted to prevent operation of doors where any of the following exist: 1.Places of detention or restraint. 2.In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided: 2.1.The locking device is readily distinguishable as locked. 2.2.A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background. 2.3.The use of the key-operated locking device is revocable by the building official for due cause. 3.Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware. 4.Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool. 5.Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures. 6.Doors serving roofs not intended to be occupied shall be permitted to be locked preventing entry to the building from the roof.	Locks and latches shall be permitted to prevent operation of doors where any of the following exist: 1.Places of detention or restraint. 2.In Group I-1, Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times. 3.In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in places of religious worship, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided that: 3.1.The doors are the main exterior doors to the building, or the doors are the main doors to the tenant space. 3.2.The locking device is readily distinguishable as locked. 3.3.A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background. 3.4.The use of the key-operated locking device is revocable by the building official for due cause. 4.Manual bolts, automatic flush bolts and constant latching bolts on the inactive leaf of a pair of doors in accordance with Table 1010.2.4, provided that the inactive leaf does not have a doorknob, panic hardware, or similar operating hardware. 5.Single exit doors complying with Section 1006.2.1 or 1006.3.4 from individual dwelling or sleeping units of Group R occupancies and equipped with a night latch, dead bolt or security chain that requires a second releasing motion, provided that such devices are openable from the inside without the use of a key or tool. 6.Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures. 7.Doors serving roofs not intended to be occupied shall be permitted to be locked preventing entry to the building from the roof.
1010.2.4	Locks and Latches (cont)		8.Other than egress courts, where occupants must egress from an exterior space through the building for means of egress, exit access doors shall be permitted to be equipped with an approved locking device where installed and operated in accordance with all of the following: 8.1.The maximum occupant load shall be posted where required by Section 1004.9. Such signage shall be permanently affixed inside the building and shall be posted in a conspicuous space near all the exit access doorways. 8.2.A weatherproof telephone or two-way communication system installed in accordance with Sections 1009.8.1 and 1009.8.2 shall be located adjacent to not less than one required exit access door on the exterior side. 8.3.The egress door locking device is readily distinguishable as locked and shall be a key-operated locking device. 8.4.A clear window or glazed door opening, not less than 5 square feet (0.46 m2) in area, shall be provided at each exit access door to determine if there are occupants using the outdoor area. 8.5.A readily visible, durable sign shall be posted on the interior side on or adjacent to each locked required exit access door serving the exterior area stating, "THIS DOOR TO REMAIN UNLOCKED WHEN THE OUTDOOR AREA IS OCCUPIED." The letters on the sign shall be not less than 1 inch (25.4 mm) high on a contrasting background. 8.6.The occupant load of the occupied exterior area shall not exceed 300 occupants in accordance with Section 1004. 9.Locking devices are permitted on doors to balconies, decks or other exterior spaces serving individual dwelling or sleeping units. 10.Locking devices are permitted on doors to balconies, decks or other exterior spaces of 250 square feet (23.23 m2) or less serving a private office space.
Table 1010.2.4	Manual bolts, etc	(reorganized into a table)	(see table)

1010.2.6	Stairway doors	Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort. Exceptions: 1.Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side. 2.This section shall not apply to doors arranged in accordance with Section 403.5.3. 3.Stairway exit doors are permitted to be locked from the side opposite the egress side, provided that they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building. 4.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single exit stairway where permitted in Section 1006.3.3. 5.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the dwelling unit is from a single exit stairway where permitted in Section 1006.3.3.	Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort. Exceptions: 1.Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side. 2.This section shall not apply to doors arranged in accordance with Section 403.5.3. 3.Stairway exit doors shall not be locked from the side opposite the egress side, unless they are openable from the egress side and capable of being unlocked simultaneously without unlatching by any of the following methods: 3.1.Shall be capable of being unlocked individually or simultaneously upon a signal from the fire command center, where present, or a signal by emergency personnel from a single location inside the main entrance to the building. 3.2.Shall unlock simultaneously upon activation of a fire alarm signal when a fire alarm system is present in an area served by the stairway. 3.3.Shall unlock upon failure of the power supply to the electric lock or the locking system. 4.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single exit stairway where permitted in Section 1006.3.4. 5.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the dwelling unit is from a single exit stairway where permitted in Section 1006.3.4.
1010.2.6	Stairway doors	Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort. Exceptions: 1.Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side. 2.This section shall not apply to doors arranged in accordance with Section 403.5.3. 3.Stairway exit doors are permitted to be locked from the side opposite the egress side, provided that they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the fire command center, if present, or a signal by emergency personnel from a single location inside the main entrance to the building. 4.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single exit stairway where permitted in Section 1006.3.3. 5.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the dwelling unit is from a single exit stairway where permitted in Section 1006.3.3.	Interior stairway means of egress doors shall be openable from both sides without the use of a key or special knowledge or effort. Exceptions: 1.Stairway discharge doors shall be openable from the egress side and shall only be locked from the opposite side. 2.This section shall not apply to doors arranged in accordance with Section 403.5.3. 3.Stairway exit doors shall not be locked from the side opposite the egress side, unless they are openable from the egress side and capable of being unlocked simultaneously without unlatching by any of the following methods: 3.1.Shall be capable of being unlocked individually or simultaneously upon a signal from the fire command center, where present, or a signal by emergency personnel from a single location inside the main entrance to the building. 3.2.Shall unlock simultaneously upon activation of a fire alarm signal when a fire alarm system is present in an area served by the stairway. 3.3.Shall unlock upon failure of the power supply to the electric lock or the locking system. 4.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single exit stairway where permitted in Section 1006.3.4. 5.Stairway exit doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the dwelling unit is from a single exit stairway where permitted in Section 1006.3.4.
1010.2.8	Locking Arrangements in educational occupancies	In Group E and Group B educational occupancies, egress doors from classrooms, offices and other occupied rooms shall be permitted to be provided with locking arrangements designed to keep intruders from entering the room where all of the following conditions are met: 1.The door shall be capable of being unlocked from outside the room with a key or other approved means. 2.The door shall be openable from within the room in accordance with Section 1010.1.9. 3.Modifications shall not be made to listed panic hardware, fire door hardware or door closers.	In Group E occupancies, Group B educational occupancies and Group I-4 occupancies, egress doors from classrooms, offices and other occupied rooms with locking arrangements designed to keep intruders from entering the room shall comply with all of the following conditions: 1.The door shall be capable of being unlocked from outside the room with a key or other approved means. 2.The door shall be openable from within the room in accordance with Section 1010.2. 3.Modifications shall not be made to listed panic hardware, fire door hardware or door closers. 4.Modifications to fire door assemblies shall be in accordance with NFPA 80. Remote locking or unlocking of doors from an approved location shall be permitted in addition to the unlocking operation in Item 1.
1010.2.9	Panic and fire exit hardware	Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware. Exceptions: 1.A main exit of a Group A occupancy shall be permitted to have locking devices in accordance with Section 1010.1.9.4, Item 2. 2.Doors provided with panic hardware or fire exit hardware and serving a Group A or E occupancy shall be permitted to be electrically locked in accordance with Section 1010.1.9.9 or 1010.1.9.10. Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with exit or exit access doors, shall be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.	Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware. Exceptions: 1.A main exit of a Group A occupancy shall be permitted to have locking devices in accordance with Section 1010.2.4, Item 3. 2.Doors provided with panic hardware or fire exit hardware and serving a Group A or E occupancy shall be permitted to be electrically locked in accordance with Section 1010.2.11 or 1010.2.12. 3.Exit access doors serving occupied exterior areas shall be permitted to be locked in accordance with Section 1010.2.4, Item 8. 4.Courtrooms shall be permitted to be locked in accordance with Section 1010.2.13, Item 3. ➡

1010.2.9.1	Refrigeration machinery rooms	(new)	Refrigeration machinery rooms larger than 1,000 square feet (93 m2) shall have not less than two exit or exit access doorways that swing in the direction of egress travel and shall be equipped with panic hardware or fire exit hardware.
1010.2.9.2	Rooms with electrical equipment	(new see 1010.1.10) Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with exit or exit access doors, shall be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.	Exit or exit access doors serving transformer vaults, rooms designated for batteries or energy storage systems, or modular data centers shall be equipped with panic hardware or fire exit hardware. Rooms containing electrical equipment rated 800 amperes or more that contain overcurrent devices, switching devices or control devices and where the exit or exit access door is less than 25 feet (7620 mm) from the equipment working space as required by NFPA 70, such doors shall not be provided with a latch or lock other than panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.
1010.2.12	Sensor release of electrically locked egress door criteria	(new)	7.Emergency lighting shall be provided on the egress side of the door.
1010.3.1	Revolving doors	Revolving doors shall comply with the following: 1.Revolving doors shall comply with BHMA A156.27 and shall be installed in accordance with the manufacturer's instructions. 2.Each revolving door shall be capable of breakout in accordance with BHMA A156.27 and shall provide an aggregate width of not less than 36 inches (914 mm). 3.A revolving door shall not be located within 10 feet (3048 mm) of the foot or top of stairways or escalators. A dispersal area shall be provided between the stairways or escalators and the revolving doors. 4.The revolutions per minute (rpm) for a revolving door shall not exceed the maximum rpm as specified in BHMA A156.27. Manual revolving doors shall comply with Table 1010.1.4.1(1). Automatic or power-operated revolving doors shall comply with Table 1010.1.4.1(2). 5.An emergency stop switch shall be provided near each entry point of power or automatic operated revolving doors within 48 inches (1220 mm) of the door and between 24 inches (610 mm) and 48 inches (1220 mm) above the floor. The activation area of the emergency stop switch button shall be not less than 1 inch (25 mm) in diameter and shall be red. 6.Each revolving door shall have a side-hinged swinging door that complies with Section 1010.1 in the same wall and within 10 feet (3048 mm) of the revolving door. 7.Revolving doors shall not be part of an accessible route required by Section 1009 and Chapter 11.	Revolving doors shall comply with the following: 1.Revolving doors shall comply with BHMA A156.27 and shall be installed in accordance with the manufacturer's instructions. 2.Each revolving door shall be capable of breakout in accordance with BHMA A156.27 and shall provide an aggregate width of not less than 36 inches (914 mm). 3.A revolving door shall not be located within 10 feet (3048 mm) of the foot or top of stairways or escalators. A dispersal area shall be provided between the stairways or escalators and the revolving doors. 4.The revolutions per minute (rpm) for a revolving door shall not exceed the maximum rpm as specified in BHMA A156.27. Manual revolving doors shall comply with Table 1010.3.1(1). Automatic or power-operated revolving doors shall comply with Table 1010.3.1(2). 5.An emergency stop switch shall be provided near each entry point of power or automatic operated revolving doors within 48 inches (1219 mm) of the door and between 34 inches (864 mm) and 48 inches (1219 mm) above the floor. The activation area of the emergency stop switch button shall be not less than 1 inch (25 mm) in diameter and shall be red. 6.Each revolving door shall have a side-hinged swinging door that complies with Section 1010.1 in the same wall and within 10 feet (3048 mm) of the revolving door. 7.Revolving doors shall not be part of an accessible route required by Section 1009 and Chapter 11.
1011.5.2	Riser height and ttread depth	Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the nosings of adjacent treads. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's nosing. Winder treads shall have a minimum tread depth of 11 inches (279 mm) between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair. Exceptions: 1.Spiral stairways in accordance with Section 1011.10. 2.Stairways connecting stepped aisles to cross aisles or concourses shall be permitted to use the riser/tread dimension in Section 1029.14.2. 3.In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 73/4 inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum winder tread depth at the walkline shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing projection not less than 3/4 inch (19.1 mm) but not more than 11/4 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm). 4.See Section 503.1 of the International Existing Building Code for the replacement of existing stairways. 5.In Group I-3 facilities, stairways providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m2) in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).	Stair riser heights shall be 7 inches (178 mm) maximum and 4 inches (102 mm) minimum. The riser height shall be measured vertically between the nosings of adjacent treads or between the stairway landing and the adjacent tread. Rectangular tread depths shall be 11 inches (279 mm) minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's nosing. Winder treads shall have a minimum tread depth of 11 inches (279 mm) between the vertical planes of the foremost projection of adjacent treads at the intersections with the walkline and a minimum tread depth of 10 inches (254 mm) within the clear width of the stair. Exceptions: 1.Spiral stairways in accordance with Section 1011.10. 2.Stairways connecting stepped aisles to cross aisles or concourses shall be permitted to use the riser/tread dimension in Section 1030.14.2. 3.In Group R-3 occupancies; within dwelling units in Group R-2 occupancies not required by Chapter 11 to be Accessible or Type A dwelling or sleeping units; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 73/4 inches (197 mm); the minimum tread depth shall be 10 inches (254 mm); the minimum winder tread depth at the walkline shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing projection not less than 3/4 inch (19.1 mm) but not more than 11/4 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm). 4.See Section 503.1 of the International Existing Building Code for the replacement of existing stairways. 5.In Group I-3 facilities, stairways providing access to guard towers, observation stations and control rooms, not more than 250 square feet (23 m2) in area, shall be permitted to have a maximum riser height of 8 inches (203 mm) and a minimum tread depth of 9 inches (229 mm).
1011.5.5.1	Nosing projection size	The leading edge (nosings) of treads shall project not more than 11/4 inches (32 mm) beyond the tread below.	The nosings shall project not more than 1 1/4 inches (32 mm) beyond the tread below Exception:When solid risers are not required, the nosing projection is permitted to exceed the maximum projection.

1011.6	Stairway landings	There shall be a floor or landing at the top and bottom of each stairway. The width of landings, measured perpendicularly to the direction of travel, shall be not less than the width of stairways served. Every landing shall have a minimum depth, measured parallel to the direction of travel, equal to the width of the stairway or 48 inches (1219 mm), whichever is less. Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches (178 mm) into a landing. Where wheelchair spaces are required on the stairway landing in accordance with Section 1009.6.3, the wheelchair space shall not be located in the required width of the landing and doors shall not swing over the wheelchair spaces. Exception: Where stairways connect stepped aisles to cross aisles or concourses, stairway landings are not required at the transition between stairways and stepped aisles constructed in accordance with Section 1029.	There shall be a floor or landing at the top and bottom of each stairway. The width of landings, measured perpendicularly to the direction of travel, shall be not less than the width of stairways served. Every landing shall have a minimum depth, measured parallel to the direction of travel, equal to the width of the stairway or 48 inches (1219 mm), whichever is less. Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches (178 mm) into the required width of a landing. Where wheelchair spaces are required on the stairway landing in accordance with Section 1009.6.3, the wheelchair space shall not be located in the required width of the landing and doors shall not swing over the wheelchair spaces. Exceptions: 1.Where stairways connect stepped aisles to cross aisles or concourses, stairway landings are not required at the transition between stairways and stepped aisles constructed in accordance with Section 1030. 2.Where curved stairways of constant radius have intermediate landings, the landing depth shall be measured horizontally between the intersection of the walkline of the lower flight at the landing nosing and the intersection of the walkline of the upper flight at the nosing of the lowest tread of the upper flight. 3.Where a landing turns 90 degrees (1.57 rad) or more, the minimum landing depth in accordance with this section shall not be required where the landing provided is not less than that described by an arc with a radius equal to the width of the flight served.
1011.7	Stairway construction	Stairways shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood handrails shall be permitted for all types of construction.	Stairways shall be built of materials consistent with the types permitted for the type of construction of the building. Exceptions: 1.Wood handrails shall be permitted in all types of construction. 2.Interior exit stairways in accordance with Section 510.2.
1011.11	Handrails	Flights of stairways shall have handrails on each side and shall comply with Section 1014. Where glass is used to provide the handrail, the handrail shall comply with Section 2407. Exceptions: 1.Flights of stairways within dwelling units and flights of spiral stairways are permitted to have a handrail on one side only. 2.Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails. 3.In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails. 4.Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Group R-2 and R-3 do not require handrails.	Flights of stairways shall have handrails on each side and shall comply with Section 1014. Where glass is used to provide the handrail, the handrail shall comply with Section 2407. Exceptions: 1.Flights of stairways within dwelling units and flights of spiral stairways are permitted to have a handrail on one side only. 2.Decks, patios and walkways that have a single change in elevation where the landing depth on each side of the change of elevation is greater than what is required for a landing do not require handrails. 3.In Group R-3 occupancies, a change in elevation consisting of a single riser at an entrance or egress door does not require handrails. 4.Changes in room elevations of three or fewer risers within dwelling units and sleeping units in Groups R-2 and R-3 do not require handrails. 5.Where a platform lift is in a stationary position and the floor of the platform lift serves as the upper landing of a stairway, handrails shall not be required on the stairway, provided that all of the following criteria are met: 5.1.The stairway contains not more than two risers. 5.2.A handhold, positioned horizontally or vertically, is located on one side of the stairway adjacent to the top landing. 5.3.The handhold is located not less than 34 inches (864 mm) and not more than 42 inches (1067 mm) above the bottom landing of the stairway. 5.4.The handhold gripping surface complies with Section 1014.3, and is not less than 4.5 inches (114 mm) in length.
1013.2	Low-level exit signs in Group R-1	Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5. The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 18 inches (455 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side.	Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5. The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 18 inches (455 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side. Exception:Low-level exit signs are not required in Group R-1 occupancies when the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
1013.5.1	Photoluminescent exit signs	(isolated see section 1013.5) Electrically powered, self-luminous and photoluminescent exit signs shall be listed and labeled in accordance with UL 924 and shall be installed in accordance with the manufacturer's instructions and Chapter 27. Exit signs shall be illuminated at all times.	Photoluminescent exit signs shall be provided with an illumination source to charge the exit sign in accordance with the manufacturer's instructions.
1014.3	Lateral location	(new)	Handrails located outward from the edge of the walking surface of flights of stairways, ramps, stepped aisles and ramped aisles shall be located 6 inches (152.4 mm) or less measured horizontally from the edge of the walking surface. Handrails projecting into the width of the walking surface shall comply with Section 1014.9.

1014.8	Clearance	Clear space between a handrail and a wall or other surface shall be not less than 11/2 inches (38 mm). A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements.	Clear space between a handrail and a wall or other surface shall be not less than 11/2 inches (38 mm). A handrail and a wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements. Exceptions: 1.A decrease in the clearance due to the curvature or angle of handrail returns shall be allowed. 2.Mounting flanges not more than 1/2-inch (12.7 mm) in thickness at the returned ends of handrails shall be allowed.
1015.2	Where required	Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, aisles, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Guards shall be adequate in strength and attachment in accordance with Section 1607.8. Exception: Guards are not required for the following locations: 1.On the loading side of loading docks or piers. 2.On the audience side of stages and raised platforms, including stairs leading up to the stage and raised platforms. 3.On raised stage and platform floor areas, such as runways, ramps and side stages used for entertainment or presentations. 4.At vertical openings in the performance area of stages and platforms. 5.At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment. 6.Along vehicle service pits not accessible to the public. 7.In assembly seating areas at cross aisles in accordance with Section 1029.17.2.	Guards shall be located along open-sided walking surfaces, such as mezzanines, equipment platforms, aisles, stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side and at the perimeter of occupiable roofs. Guards shall be adequate in strength and attachment in accordance with Section 1607.9. Exceptions: Guards are not required for the following locations: 1.On the loading side of loading docks or piers. 2.On the audience side of stages and raised platforms, including stairs leading up to the stage and raised platforms. 3.On raised stage and platform floor areas, such as runways, ramps and side stages used for entertainment or presentations. 4.At vertical openings in the performance area of stages and platforms. 5.At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment. 6.Along vehicle service pits not accessible to the public. 7.In assembly seating areas at cross aisles in accordance with Section 1030.17.2. 8.On the loading side of station platforms on fixed guideway transit or passenger rail systems. 9.Portions of an occupiable roof located less than 30 inches (762 mm) measured vertically to adjacent unoccupiable roof areas where approvedguards are present at the perimeter of the roof. 10.At portions of an occupiable roof where an approved barrier is provided.
1015.3	Height	(new exception)	2.For occupancies in Groups R-2 and R-3, within the interior conditioned space of individual dwelling units, where the open-sided walking surface is located not more than 25 feet (7.62 meters) measured vertically to the floor or walking surface below, required guards shall not be less than 36 inches (914 mm) in height measured vertically above the adjacent walking surface.
1015.7	Roof access	Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.	Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of the hatch parallel to the roof edge. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.
1015.8	Window openings	Windows in Group R-2 and R-3 buildings including dwelling units, where the top of the sill of an operable window opening is located less than 36 inches above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, shall comply with one of the following: 1.Operable windows where the top of the sill of the opening is located more than 75 feet (22 860 mm) above the finished grade or other surface below and that are provided with window fall prevention devices that comply with ASTM F2006. 2.Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position. 3.Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090. 4.Operable windows that are provided with window opening control devices that comply with Section 1015.8.1.	Windows in Group R-2 and R-3 buildings including dwelling units, where the bottom of the clear opening of an operable window is located less than 36 inches (914 mm) above the finished floor and more than 72 inches (1829 mm) above the finished grade or other surface below on the exterior of the building, shall comply with one of the following: 1.Where the bottom of the clear opening of the window is located more than 72 inches (1829 mm) and less than 75 feet (22 860 mm) above the finished grade or other surface below on the exterior of the building, the window shall comply with one of the following: 1.1.Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position, provided that the opening is not required for emergency escape or rescue. 1.2.Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090. 1.3.Operable windows where the openings are provided with window opening control devices that comply with ASTM F2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1031.3.1 for emergency escape and rescue openings. 2.Where the bottom of the clear opening of the window is located 75 feet (22,860 mm) or more above the finished grade or other surface below on the exterior of the building, the window shall comply with one of the following: 2.1.Operable windows where the openings are provided with window fall prevention devices that comply with ASTM F2090. 2.2.Operable windows where the openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position. 2.3.Window fall prevention devices that comply with ASTM F2006.

1016.2	Egress Through Intervening Spaces	Egress through intervening spaces shall comply with this section. 1.Exit access through an enclosed elevator lobby is permitted. Access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the exit unless direct access to an exit is required by other sections of this code. 2.Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an exit. Exception: Means of egress are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group. 3.An exit access shall not pass through a room that can be locked to prevent egress. 4.Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms. 5.Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.	Egress through intervening spaces shall comply with this section. 1.Exit access through an enclosed elevator lobby is permitted. Where access to two or more exits or exit access doorways is required in Section 1006.2.1, access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the exit unless direct access to an exit is required by other sections of this code. 2.In other than Group H occupancies, egress from a room or space is allowed to pass through adjoining or intervening rooms or areas provided that such adjoining rooms or areas and the area served are accessory to one or the other and provide a discernible path of egress travel to an exit. 3.In Group H occupancies, egress from a room or space is allowed to pass through adjoining or intervening rooms or areas provided that such adjoining rooms or areas are the same or lesser hazard occupancy group and provide a discernible path of egress travel to an exit. 4.An exit access shall not pass through a room that can be locked to prevent egress. Exception:An electrically locked exit access door providing egress from an elevator lobby shall be permitted in accordance with Section 1010.2.14. 5.Means of egress from dwelling units or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms. 6.Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.
1017.2.3	Group H-5 increase	(new)	The maximum exit access travel distance shall be 300 feet (91 m) in the fabrication areas of Group H-5 occupancies where all of the following conditions are met: 1.The width of the fabrication area is 300 feet (91 m) or greater. 2.The area of the fabrication area is 220,000 square feet (18 600 m2) or greater. 3.The height of the fabrication area, measured between the raised metal floor and the clean filter ceiling, is 16 feet (48 768 mm) or greater. 4.The supply ventilation rate is 20 cubic feet per minute per square foot (0.556 m3/min/m2) or greater and shall remain operational.
1017.3	Measurement	Exit access travel distance shall be measured from the most remote point of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit. Exception: In open parking garages, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp.	Exit access travel distance shall be measured from the most remote point of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit. Where more than one exit is required, exit access travel distance shall be measured to the nearest exit. Exceptions: 1.In open parking garages, exit access travel distance is permitted to be measured to the closest riser of an exit access stairway or the closest slope of an exit access ramp. 2.In smoke protected seating and open air assembly seating, exit access travel distance shall be measured in accordance with Section 1030.7.
1017.3.2.3	Exit access travel distance at other than the level of exit discharge	(new)	Where the path of egress travel is not at the level of exit discharge from the atrium, that portion of the total permitted exit access travel distance that occurs within the atrium shall be not greater than 200 feet (60 960 mm).
1019.3	Exit Access Stairways	In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps that do not comply with one of the conditions listed in this section shall be enclosed with a shaft enclosure constructed in accordance with Section 713. 1.Exit access stairways and ramps that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories. 2.In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit. 3.Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed. 4.Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories. 5.Exit access stairways and ramps within an atrium complying with the provisions of Section 404. 6.Exit access stairways and ramps in open parking garages that serve only the parking garage. 7.Exit access stairways and ramps serving smoke-protected or open-air assembly seating complying with the exit access travel distance requirements of Section 1029.7. 8.Exit access stairways and ramps between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities.	In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps shall be enclosed with a shaft enclosure constructed in accordance with Section 713. Exceptions: 1.Exit access stairways and ramps that serve or atmospherically communicate between only two adjacent stories. Such interconnected stories shall not be open to other stories. 2.In Group R-1, R-2 or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit. 3.Exit access stairways serving and contained within a Group R-3 congregate residence or a Group R-4 facility are not required to be enclosed. 4.Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories. 5.Exit access stairways and ramps within an atrium complying with the provisions of Section 404. 6.Exit access stairways and ramps in open parking garages that serve only the parking garage. 7.Exit access stairways and ramps serving smoke-protected or open-air assembly seating complying with the exit access travel distance requirements of Section 1030.7. 8.Exit access stairways and ramps between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums and sports facilities. 9.Exterior exit access stairways or ramps between occupied roofs.

1020.2.1	Hoistway protection	Elevator hoistway openings shall be protected in accordance with Section 3006.2.1.	Elevator hoistway doors in elevators hoistway enclosures required to be fire-resistance rated shall be protected in accordance with Section 716. Elevator hoistway doors shall also be protected in accordance with Section 3006.2.
1020.5	Dead-end Corridors	Where more than one exit or exit access doorway is required, the exit access shall be arranged such that dead-end corridors do not exceed 20 feet (6096 mm) in length. Exceptions: 1.In in Group I-3, Condition 2, 3 or 4, occupancies, the dead end in a corridor shall not exceed 50 feet (15 240 mm). 2.In occupancies in Groups B, E, F, I-1, M, R-1, R-2, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm). 3.A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor.	Where more than one exit or exit access doorway is required, the exit access shall be arranged such that dead-end corridors do not exceed 20 feet (6096 mm) in length. Exceptions: 1.In Group I-3, Condition 2, 3 or 4, occupancies, the dead end in a corridor shall not exceed 50 feet (15 240 mm). 2.In occupancies in Groups B, E, F, I-1, M, R-1, R-2, S and U, where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the length of the dead-end corridors shall not exceed 50 feet (15 240 mm). 3.A dead-end corridor shall not be limited in length where the length of the dead-end corridor is less than 2.5 times the least width of the dead-end corridor. 4.In Group I-2, Condition 2 occupancies, the length of dead-end corridors that do not serve patient rooms or patient treatment spaces shall not exceed 30 feet (9144 mm).
1020.6	Air movement in corridors	Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts. Exceptions: 1.Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor. 2.Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited. 3.Where located within tenant spaces of 1,000 square feet (93 m2) or less in area, utilization of corridors for conveying return air is permitted. 4.Incidental air movement from pressurized rooms within health care facilities, provided that the corridor is not the primary source of supply or return to the room.	Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts. Exceptions: 1.Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor. 2.Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited. 3.Where located within tenant spaces of 1,000 square feet (93 m2) or less in area, utilization of corridors for conveying return air is permitted. 4. Transfer air movement required to maintain the pressurization difference within health care facilities in accordance with ASHRAE 170.
1023.5	Penetrations	Penetrations into or through interior exit stairways and ramps are prohibited except for the following: 1.Equipment and ductwork necessary for independent ventilation or pressurization. 2.Fire protection systems. 3.Security systems. 4.Two-way communication systems. 5.Electrical raceway for fire department communication systems. 6.Electrical raceway serving the interior exit stairway and ramp and terminating at a steel box not exceeding 16 square inches (0.010 m2). Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent interior exit stairways and ramps.	Penetrations into or through interior exit stairways and ramps are prohibited except for the following: 1.Equipment and ductwork necessary for independent ventilation or pressurization. 2.Fire protection systems. 3.Security systems. 4.Two-way communication systems. 5.Electrical raceway for fire department communication systems. 6.Electrical raceway serving the interior exit stairway and ramp and terminating at a steel box not exceeding 16 square inches (0.010 m2). 7.Structural elements, such as beams or joists, supporting the interior exit stairway or ramp or enclosure. 8.Structural elements, such as beams or joists, supporting a roof at the top of the interior exit stairway or ramp. Such penetrations shall be protected in accordance with Section 714. There shall not be penetrations or communication openings, whether protected or not, between adjacent interior exit stairways and ramps.
1023.7.1	Building exterior walls	(new)	Buildingexterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening in an interior exit stairway or ramp shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the topmost landing of the stairway or ramp, or to the roof line, whichever is lower.
1023.7.2	Roof assemblies	(new)	Where the interior exit stairway or ramp extends above an adjacent roof of the same building, the adjacent roof assembly shall have a fire-resistance rating of not less than 1 hour and openings shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. The fire-resistance rating and opening protection shall extend horizontally not less than 10 feet (3048 mm) from the exterior wall of the stairway or ramp, or to the perimeter of the adjacent roof, whichever is less. Exceptions: 1.The roof assembly need not be rated and openings in the roof need not be protected where they are adjacent to the penthouse of the stairway or ramp, unless otherwise required by this code. 2.The adjacent roof assembly need not be rated and adjacent openings in the roof need not be protected where the exterior wall of the stairway or ramp has a fire-resistance rating of 1 hour and openings are protected by opening protectives having a fire protection rating of not less than 3/4 hour, extending not less than 10 feet (3048 mm) above the roof.
1023.11	Tactile floor-level signs	(new)	Where floor level signs are provided in interior exit stairways and ramps, a floor-level sign identifying the floor level in visual characters, raised characters and braille complying with ICC A117.1 shall be located at each floor-level landing adjacent to the door leading from the interior exit stairway and ramp into the corridor.

1024.8	Exit passageway exterior walls	(new)	Exterior walls of the exit passageway shall comply with Section 705. Where nonrated walls or unprotected openings enclose the exterior of the exit passageway and the walls or openings are exposed by other parts of the building at an angle of less than 180 degrees (3.14 rad), the building exterior walls within 10 feet (3048 mm) horizontally of a nonrated wall or unprotected opening shall have a fire-resistance rating of not less than 1 hour. Openings within such exterior walls shall be protected by opening protectives having a fire protection rating of not less than 3/4 hour. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor of the exit passageway, or to the roof line, whichever is lower.
1030.6.2.3	Automatic sprinklers	Enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seating shall be protected with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Exceptions: 1.The floor area used for contests, performances or entertainment provided that the roof construction is more than 50 feet (15 240 mm) above the floor level and the use is restricted to low fire hazard uses. 2.Press boxes and storage facilities less than 1,000 square feet (93 m2) in area. 3.Outdoor seating facilities where seating and the means of egress in the seating area are essentially open to the outside.	Enclosed areas with walls and ceilings in buildings or structures containing smoke-protected assembly seatingshall be protected with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Exceptions: 1.The floor area used for contests, performances or entertainment provided that the roof construction is more than 50 feet (15 240 mm) above the floor level and the use is restricted to low fire hazard uses. 2.Press boxes and storage facilities less than 1,000 square feet (93 m2) in area. ➡
1030.16	Handrails at Social Stairs	Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and stepped aisles shall be provided with handrails in compliance with Section 1014 located either at one or both sides of the aisle or within the aisle width.	Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and stepped aisles shall be provided with handrails in compliance with Section 1014 located either at one or both sides of the aisle or within the aisle width. Where stepped aisles have seating on one side and the aisle width is 74 inches (1880 mm) or greater, two handrails are required. Where two handrails are required, one of the handrails shall be within 30 inches (762 mm) horizontally of the stepped aisle.
1031.2	EERO - Where required	Basements and sleeping rooms below the fourth story above grade plane shall have not fewer than one exterior emergency escape and rescue opening in accordance with this section. Where basements contain one or more sleeping rooms, emergency escape and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such openings shall open directly into a public way or to a yard or court that opens to a public way. Exceptions: 1.Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue openings. 2.Emergency escape and rescue openings are not required from basements or sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court or exterior exit balcony that opens to a public way. 3.Basements without habitable spaces and having not more than 200 square feet (18.6 m2) in floor area shall not be required to have emergency escape and rescue openings. 4.Within individual dwelling and sleeping units in Groups R-2 and R-3, where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided that the basement has one of the following: 4.1.One means of egress and one emergency escape and rescue opening. 4.2.Two means of egress.	Basements and sleeping rooms below the fourth story above grade plane shall have not fewer than one emergency escape and rescue opening in accordance with this section. Where basements contain one or more sleeping rooms, an emergency escape and rescue opening shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Such openings shall open directly into a public way or to a yardor courtthat opens to a public way. Exceptions: 1.Basements with a ceiling height of less than 80 inches (2032 mm) shall not be required to have emergency escape and rescue openings. 2.Emergency escape and rescue openings are not required from basements or sleeping rooms that have an exit door or exit access door that opens directly into a public way or to a yard, court or exterior egress balcony that opens to a public way. 3.Basements without habitable spaces and having not more than 200 square feet (18.6 m2) in floor area shall not be required to have emergency escape and rescue openings. 4.Storm shelters are not required to comply with this section where the shelter is constructed in accordance with ICC 500. 5.Within individual dwelling and sleeping units in Groups R-2 and R-3, where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3, sleeping rooms in basements shall not be required to have emergency escape and rescue openings provided that the basement has one of the following: 5.1.One means of egress and one emergency escape and rescue opening. 5.2.Two means of egress.
1031	Emergency Escape and Rescue Openings	(expanded section)	(see 1031.5.1 thru 1031.6)
1103.2.11	Residential Group R-1 or R-3	Buildings of Group R-1 containing not more than five sleeping units for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter.	Buildings of Group R-1 containing not more than five dwelling units and sleeping units in aggregate for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter. Buildings of Group R-3 congregate living facilities (transient) or boarding houses (transient) containing not more than five sleeping units for rent or hire that are also occupied as the residence of the proprietor are not required to comply with this chapter.
1104.5	Location	Accessible routes shall coincide with or be located in the same area as a general circulation path. Where the circulation path is interior, the accessible route shall be interior. Where only one accessible route is provided, the accessible route shall not pass through kitchens, storage rooms, restrooms, closets or similar spaces. Exceptions: 1.Accessible routes from parking garages contained within and serving Type B units are not required to be interior. 2.A single accessible route is permitted to pass through a kitchen or storage room in an Accessible unit, Type A unit or Type B unit.	Accessible routes shall comply with all of the following: 1.Accessible routes shall coincide with or be located in the same area as a general circulation path. 2.Where the general circulation path is interior to the building, the accessible route shall also be interior to the building. 3.Where only one accessible route is provided, the accessible route shall not pass through kitchens, storage rooms, restrooms, closets or similar spaces. Exceptions: 1.Accessible routes from parking garages contained within and serving Type B units are not required to be interior. 2.A single accessible route is permitted to pass through a kitchen or storage room in an Accessible unit, Type A unit or Type B unit.

1105.1.1	Power-operatetd doors at public entrances	(new)	In facilities with the occupancies and building occupant loads greater than indicated in Table 1105.1.1, each public entrance required to be accessible shall have a minimum of one door be a power-operated door or a low-energy power-operated door. Where the accessible public entrance includes doors in series, such as a vestibule, a minimum of one set of two doors in series shall meet the requirements of this section. Exceptions: 1.For the purpose of determining power-operated door requirements, a tenant space with its own exterior public entrance shall be considered a separate facility and building. 2.The requirements of this section are not applicable to mixed-use facilities where the total building occupant load for the occupancies listed in Table 1105.1.1 is calculated as the sum of the ratios of the actual occupant load of each occupancy divided by the building occupant load threshold of each occupancy and the sum of the ratios is less than 1.
1107.2.2	Vehicle space size	(new)	Accessible vehicle spaces shall comply with the requirements for a van accessible parking space that is 132 inches (3350 mm) minimum in width with an adjoining access aisle that is 60 inches (1525 mm) minimum in width.
1108.5.1.2	Accessible units in Group I-1, Condition 2	(new)	In Group I-1, Condition 2, at least 10 percent, but not less than one, of the dwelling units and sleeping units shall be Accessible units. Accessible dwelling units and sleeping units shall be dispersed among the various classes of units. Exceptions: 1.Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2, in not more than 50 percent of the Accessible units. 2.Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3, in not more than 50 percent of the Accessible units.
1108.5.2.1	Accessible units	At least 50 percent but not less than one of each type of the dwelling units and sleeping units shall be Accessible units.	At least 50 percent but not less than one of each type of the dwelling units and sleeping units shall be Accessible units. Exceptions: 1.Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2, in not more than 90 percent of the Accessible units. 2.Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3, in not more than 90 percent of the Accessible units.
1108.6.1.1	Accessible units	Accessible dwelling units and sleeping units shall be provided in accordance with Table 1107.6.1.1. On a multiple-building site, where structures contain more than 50 dwelling units or sleeping units, the number of Accessible units shall be determined per structure. On a multiple-building site, where structures contain 50 or fewer dwelling units or sleeping units, all dwelling units and sleeping units on a site shall be considered to determine the total number of Accessible units. Accessible units shall be dispersed among the various classes of units.	Accessible dwelling units and sleeping units shall be provided in accordance with Table 1108.6.1.1. On a multiple-building site, where structures contain more than 50 dwelling units or sleeping units, the number of Accessible units shall be determined per structure. On a multiple-building site, where structures contain 50 or fewer dwelling units or sleeping units, all dwelling units and sleeping units on a site shall be considered to determine the total number of Accessible units. Accessible units shall be dispersed among the various classes of units. Exceptions: 1.Where all dwelling units and sleeping units contain showers and none contain bath tubs, the total number of required Accessible units specified by Table 1108.6.1.1 shall be permitted to provide standard or alternate roll-in type showers with seats. 2.Where Exception 1 is applicable, transfer showers shall be permitted to be substituted for all but the minimum required number of roll-in showers.
1110.2.1.2	Family or assisted-use toilet rooms	Family or assisted-use toilet rooms shall include only one water closet and only one lavatory. A family or assisted-use bathing room in accordance with Section 1109.2.1.3 shall be considered to be a family or assisted-use toilet room. Exception: The following additional fixtures shall be permitted in a family or assisted-use toilet room: 1.A urinal. 2.A child-height water closet. 3.A child-height lavatory.	Family or assisted-use toilet rooms shall include only one water closet and only one lavatory. A family or assisted-use bathing room in accordance with Section 1110.2.1.3 shall be considered to be a family or assisted-use toilet room. Exception: The following additional plumbing fixtures shall be permitted in a family or assisted-use toilet room: 1.A urinal. 2.A child-height water closet. 3.A child-height lavatory. 4.An adult changing station also used for bathing.
1110.2.3.1	Size	(new)	Standard roll-in-type shower compartments shall have a clear inside dimension of not less than 60 inches (1525 mm) in width and 30 inches (760 mm) in depth, measured at the center point of opposing sides. An entry not less than 60 inches (1525 mm) in width shall be provided.
1110.2.3.2	Clearance	(new)	A clearance of not less than 60 inches (1525 mm) in length adjacent to the 60-inch (1525 mm) width of the open face of the shower compartment, and not less than 30 inches (760 mm) in depth, shall be provided. Exceptions: 1.A lavatory complying with ICC A117.1, Section 606 shall be permitted at one end of the clearance. 2.Where the shower compartment exceeds minimum sizes, the clear floor space shall be placed adjacent to the grab bars and not less than 30 inches (762 mm) from the back wall.

1110.2.3.3.2	Sidewall grab bars	(new)	The sidewall grab bars shall extend the length of the wall and extend within 6 inches (150 mm) of the adjacent back wall. Exceptions: 1.The sidewall grab bar shall not be required to exceed 30 inches (760 mm) in length. The side grab bar shall be located with one end within 6 inches (152 mm) of the back wall with a grab bar complying with Section 1110.2.3.3.1. 2.Where the sidewalls are located 72 inches (1830 mm) or greater apart, a grab bar is not required on one of the sidewalls.
1110.4.1	Adult changing stations - where required	(new)	Not fewer than one adult changing station shall be provided in the following locations: 1.In assembly and mercantile occupancies, where family or assisted-use toilet or bathing rooms are required to comply with Section 1110.2.1. 2.In Group B occupancies providing educational facilities for students above the 12th grade, where an aggregate of 12 or more male and female water closets are required to serve the classrooms and lecture halls. 3.In Group E occupancies, where a room or space used for assembly purposes requires an aggregate of six or more male and female water closets for that room or space. 4.In highway rest stops and highway service plazas.
1110.4.2	Room	(new)	Adult changing stations shall be located in toilet rooms that include only one water closet and only one lavatory. Fixtures located in such rooms shall be included in determining the number of fixtures provided in an occupancy. The occupants shall have access to the required adult changing station at all times that the associated occupancy is occupied. Exception:Adult changing stations shall be permitted to be located in family or assisted toilet rooms required in Section 1110.2.1.
1110.6.1	Washing machines	(new)	Where three or fewer washing machines are provided, not fewer than one shall be accessible. Where more than three washing machines are provided, not fewer than two shall be accessible.
1110.8	Bottle Filling Stations	(new)	Where bottle-filling stations are provided, they shall be accessible. Exception: Bottle-filling stations over drinking fountains for standing persons are not required to be accessible, provided that bottle-filling stations are also located over the drinking fountains for persons using wheelchairs.
1110.13.2	Service Windows	Where counters are provided for sales or distribution of goods or services, at least one of each type provided shall be accessible. Where such counters are dispersed throughout the building or facility, accessible counters shall also be dispersed.	Where counters or windows are provided for sale or distribution of goods or services, at least one of each type of counter and window provided shall be accessible. Where such counters or windows are dispersed throughout the building or facility, accessible counters or windows shall also be dispersed.
1110.15	Operable Parts	Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible. Exceptions: 1.Operable parts that are intended for use only by service or maintenance personnel shall not be required to be accessible. 2.Electrical or communication receptacles serving a dedicated use shall not be required to be accessible. 3.Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to be accessible. 4.Floor electrical receptacles shall not be required to be accessible. 5.HVAC diffusers shall not be required to be accessible. 6.Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to be accessible. 7.Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to comply with Section 1010.1.9.2.	Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible. Exceptions: 1.Operable parts that are intended for use only by service or maintenance personnel shall not be required to be accessible. ➡ 2.Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to comply with Section 1010.2.3. 3.Operable parts exempted in accordance with ICC A117.1 are not required to be accessible.
1111.4.14	Swimming pools, wading pools, cold baths, hot tubs and spas	Swimming pools, wading pools, hot tubs and spas shall be accessible and be on an accessible route. Exceptions: 1.Catch pools or a designated section of a pool used as a terminus for a water slide flume shall not be required to provide an accessible means of entry, provided that a portion of the catch pool edge is on an accessible route. 2.Where spas or hot tubs are provided in a cluster, at least 5 percent, but not less than one spa or hot tub in each cluster, shall be accessible and be on an accessible route. 3.Swimming pools, wading pools, spas and hot tubs that are required to be accessible by Sections 1110.2.2 and 1110.2.3 are not required to provide accessible means of entry into the water.	Swimming pools, wading pools, cold baths, hot tubs and spas shall be accessible and be on an accessible route. Exceptions: 1.A catch pool or a designated section of a pool used as a terminus for a water slide flume shall not be required to provide an accessible means of entry, provided that a portion of the catch pool edge is on an accessible routeor, where the area at the catch pool edge is located on a raised platform restricted to use by staff and persons exiting the pool, an accessible route serves the gate or area where participants discharge from the activity. 2.Where spas, cold baths or hot tubs are provided in a cluster, at least 5 percent, but not less than one of each type of spa, cold bath or hot tub in each cluster, shall be accessible and be on an accessible route. 3.Swimming pools, wading pools, spas, cold baths and hot tubs that are required to be accessible by Sections 1111.2.2 and 1111.2.3 are not required to provide accessible means of entry into the water.

1111.4.15	Shooting facilities with firing positions	Where shooting facilities with firing positions are designed and constructed at a site, at least 5 percent, but not less than one, of each type of firing position shall be accessible and be on an accessible route.	Where shooting facilities with firing positions are designed and constructed at a site, at least 5 percent, but not less than one, of each type of firing position shall be accessible and be on an accessible route. Exception: Shooting facilities with firing positions on free-standing platforms that are elevated more than 12 feet (3660 mm) above grade, provided that the aggregate area of the elevated firing positions is not more than 500 square feet (46 m2), are not required to be accessible.
1112.6	Designations	(new)	Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible. Exceptions: 1.Operable parts that are intended for use only by service or maintenance personnel shall not be required to be accessible. 2.Electrical or communication receptacles serving a dedicated use shall not be required to be accessible. 3.Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to be accessible. 4.Floor electrical receptacles shall not be required to be accessible. 5.HVAC diffusers shall not be required to be accessible. 6.Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to be accessible. 7.Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to comply with Section 1010.1.9.2.
1201.1	Scope	The provisions of this chapter shall govern ventilation, temperature control, lighting, yards and courts, sound transmission, room dimensions, surrounding materials and rodentproofing associated with the interior spaces of buildings.	The provisions of this chapter shall govern ventilation, temperature control, lighting, yards and courts, sound transmission, enhanced classroom acoustics, interior space dimensions, access to unoccupied spaces, toilet and bathroom requirements and ultraviolet (UV) germicidal irradiation systems associated with the interior spaces of buildings.
1202.3	Insulation of Unvented Attics	(new conditions)	5.2.In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented attics shall meet the following requirements: 5.2.1.A vapor diffusion port shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port. 5.2.2.The port area shall be greater than or equal to 1/600 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement. 5.2.3.The vapor permeable membrane in the vapor diffusion port shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96. 5.2.4.The vapor diffusion port shall serve as an air barrier between the attic and the exterior of the building. 5.2.5.The vapor diffusion port shall protect the attic against the entrance of rain and snow. 5.2.6.Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (50 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space. 5.2.7.The roof slope shall be greater than or equal to 3 units vertical in 12 units horizontal (3:12). 5.2.8.Where only air-permeable insulation is used, it shall be installed directly below the structural roof sheathing, on top the attic floor, or on top of the ceiling. 5.2.9.Where only air-permeable insulation is used and is installed directly below the structural roof sheathing, air shall be supplied at a flow rate greater than or equal to 50 cubic feet per minute (23.6 L/s) per 1,000 square feet (93 m2) of ceiling. 5.3.The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.
1207.2	Enhanced Classroom Acoustics	(new)	In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms with a volume of 20,000 cubic feet (566 m3) or less.
1208.3	Dwelling unit size	(new)	Dwelling units shall have a minimum of 190 square feet (17.7 m2) of habitable space.
1208.5	Efficiency dwelling units	An efficiency living unit shall conform to the requirements of the code except as modified herein: 1.The unit shall have a living room of not less than 220 square feet (20.4 m2) of floor area. An additional 100 square feet (9.3 m2) of floor area shall be provided for each occupant of such unit in excess of two. 2.The unit shall be provided with a separate closet. 3.The unit shall be provided with a kitchen sink, cooking appliance and refrigeration facilities, each having a clear working space of not less than 30 inches (762 mm) in front. Light and ventilation conforming to this code shall be provided. 4.The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.	Efficiency dwelling units shall conform to the requirements of the code except as modified herein: 1.The unit's habitable space shall comply with Sections 1208.1 through 1208.4. 2.The unit shall be provided with a separate closet. 3.For other than Accessible, Type A and Type B dwelling units, the unit shall be provided with a kitchen sink, cooking appliance and refrigerator, each having a clear working space of not less than 30 inches (762 mm) in front. Light and ventilation conforming to this code shall be provided. 4.The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.

1210.2.3	Adult changing table surround	(new)	Walls and partitions within 2 feet (610 mm) measured horizontally from each end of the adult changing table and to a height of not less than 72 inches (1829 mm) above the floor shall have a smooth, hard, nonabsorbent surface, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.
1210.3	Restroom Privacy	Privacy at water closets and urinals shall be provided in accordance with Sections 1209.3.1 and 1209.3.2.	Public restrooms shall be visually screened from outside entry or exit doorways to ensure user privacy within the restroom. This provision shall also apply where mirrors would compromise personal privacy. Privacy at water closets and urinals shall be provided in accordance with Sections 1210.3.1 and 1210.3.2. Exception: Visual screening shall not be required for single-occupant toilet rooms with a lockable door.
1211.1	UV germicidal irradiation systems	(new)	Where ultraviolet (UV) germicidal irradiation systems are provided, they shall be listed and labeled in accordance with UL 8802 and installed in accordance with their listing and the manufacturer's instruction.
1402.7	Exterior wall veneers manufactured using combustible adhesives	(new)	Exterior wall assemblies on buildings of Type I, II, III or IV construction that are greater than 40 feet (12 192 mm) in height above grade plane and contain an exterior wall veneer manufactured using a combustible adhesive to laminate a metal core with noncombustible facing materials shall be tested in accordance with, and comply with, the acceptance criteria of NFPA 285, with the adhesive level at the maximum application rate intended for use. Combustibility shall be determined in accordance with Section 703.3.
1404.3	Vapor Retarders	Not fewer than one layer of No.15 asphalt felt, complying with ASTM D226 for Type 1 felt or other approved materials, shall be attached to the studs or sheathing, with flashing as described in Section 1404.4, in such a manner as to provide a continuous water-resistive barrier behind the exterior wall veneer.	Vapor retarder materials shall be classified in accordance with Table 1404.3(1). A vapor retarder shall be provided on the interior side of frame walls in accordance with Table 1404.3(2) and Tables 1404.3(3) or 1404.3(4) as applicable, or an approved design using accepted engineering practice for hygrothermal analysis. Vapor retarders shall be installed in accordance with Section 1404.3.2. The appropriate climate zone shall be selected in accordance with Chapter 3 of the International Energy Conservation Code. Exceptions: 1.Basement walls. 2.Below-grade portion of any wall. 3.Construction where accumulation, condensation or freezing of moisture will not damage the materials. 4.A vapor retarder shall not be required in Climate Zones 1, 2, and 3. 5.In Climate Zones 4 through 8, a vapor retarder on the interior side of frame walls shall not be required where the assembly complies with Table 1404.3(5).
1404.4.1	Fenestration flashing	(new)	Flashing of the fenestration to the wall assembly shall comply with the fenestration manufacturer's instructions or, for conditions not addressed by the fenestration manufacturer's instructions, shall comply with one of the following: 1.The water-resistive barrier manufacturer's flashing instructions. 2.The flashing manufacturer's flashing instructions. 3.A flashing design or method of a registered design professional. 4.Other approved methods.
1406.10.	Metal Composite Material Cladding	Where installed on buildings of Type I, II, III and IV construction, MCM systems shall comply with Sections 1406.10.1 through 1406.10.4, or Section 1406.11.	Where installed on buildings of Types I, II, III and IV construction, metal composite material (MCM) shall comply with Sections 1406.10.1 and 1406.10.2 for installations up to 40 feet (12 192 mm) above grade plane. Where installed on buildings of Type I, II, III and IV construction, MCMs and MCM systems shall comply with Sections 1406.10.1 through 1406.10.3, for installations greater than 40 feet (12 192 mm) above grade plane.
1405.1.1	Type I, II, III and IV-HT construction	On buildings of Types I, II, III and IV construction, exterior wall coverings shall be permitted to be constructed of combustible materials, complying with the following limitations: 1.Combustible exterior wall coverings shall not exceed 10 percent of an exterior wall surface area where the fire separation distance is 5 feet (1524 mm) or less. 2.Combustible exterior wall coverings shall be limited to 40 feet (12 192 mm) in height above grade plane. 3.Combustible exterior wall coverings constructed of fire-retardant-treated wood complying with Section 2303.2 for exterior installation shall not be limited in wall surface area where the fire separation distance is 5 feet (1524 mm) or less and shall be permitted up to 60 feet (18 288 mm) in height above grade plane regardless of the fire separation distance. 4.Wood veneers shall comply with Section 1404.5.	On buildings of Types I, II, III and IV-HT construction, exterior wall coverings shall be permitted to be constructed of combustible materials, complying with the following limitations: 1.Combustible exterior wall coverings shall not exceed 10 percent of an exterior wall surface area where the fire separation distance is 5 feet (1524 mm) or less. 2.Combustible exterior wall coverings shall be limited to 40 feet (12 192 mm) in height above grade plane. Exceptions: 1.Metal composite material (MCM) systems complying with Section 1406. 2.Exterior insulation and finish systems (EIFS) complying with Section 1407. 3.High-pressure decorative exterior-grade compact laminate (HPL) systems complying with Section 1408. 4.Exterior wall coverings containing foam plastic insulation complying with Section 2603. 3.Combustible exterior wall coverings constructed of fire-retardant-treated wood complying with Section 2303.2 for exterior installation shall not be limited in wall surface area where the fire separation distance is 5 feet (1524 mm) or less and shall be permitted up to 60 feet (18 288 mm) in height above grade plane regardless of the fire separation distance. 4.Wood veneers shall comply with Section 1404.6.
Section 1409	Insulated metal panel (IMP)	(new section)	(see new section)
Section 1410	Building-integrated photovoltaic (BIPV) systems for exterior wall coverings and fenestration	(new section)	(see new section)

Section 1412	Soffits and fascias at roof overhanges	(new section)	(see new section)
1503.3	Parapet Walls	(new)	Parapet walls shall be coped or covered in accordance with Sections 1503.3.1 and 1503.3.2. The top surface of the parapet wall shall provide positive drainage.
1503.4	Attic and rafter ventilation	Intake and exhaust vents shall be provided in accordance with Section 1202.2 and the vent product manufacturer's installation instructions.	Intake and exhaust vents for ventilation of attic and enclosed rafter assemblies shall be provided in accordance with Section 1202.2 and the vent product manufacturer's installation instructions. Exception:Unvented attic and unvented enclosed rafter assemblies in accordance with Section 1202.3.
1504.8	Wind resistance of Aggregate-Surfaced Roofs	For a building located in a hurricane-prone region as defined in Section 202, or on any other building with a mean roof height exceeding that permitted by Table 1504.8 based on the exposure category and basic wind speed at the site, the following materials shall not be used on the roof: 1.Aggregate used as surfacing for roof coverings. 2.Aggregate, gravel or stone used as ballast.	Parapets shall be provided for aggregate surfaced roofs and shall comply with Table 1504.8. Such parapets shall be provided on the perimeter of the roof at all exterior sides except where an adjacent wall extends above the roof to a height at least equivalent to that required for the parapet. For roofs with differing surface elevations due to slope or sections at different elevations, the minimum parapet height shall be determined based on each roof surface elevation, and at no point shall the parapet height be less than that required by Table 1504.8. Exception:Ballasted single-ply roof coverings shall be designed and installed in accordance with Section 1504.5.
1507.1.1	Underlayment	Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and photovoltaic shingles shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3). Exceptions: 1.As an alternative, self-adhering polymer modified bitumen underlayment complying with ASTM D1970 and installed in accordance with the manufacturer's installation instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed shall be permitted. 2.As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970 and installed in accordance with the manufacturer's installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment for the applicable roof covering for design wind speeds less than 120 mph (54 m/s) shall be applied over the 4-inch-wide (102 mm) membrane strips. 3.As an alternative, two layers of underlayment complying with ASTM D226 Type II or ASTM D4869 Type IV shall be permitted to be installed as follows: Apply a 19-inch (483 mm) strip of underlayment parallel with the eave. Starting at the eave, apply 36-inch-wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25.4 mm). Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a thickness of not less than 0.010 inch (0.254 mm). Thickness of the outside edge of plastic caps shall be not less than 0.035 inch (0.89 mm). The cap nail shank shall be not less than 0.083 inch for ring shank cap nails and 0.091 inch (2.3 mm) for smooth shank cap nails. The cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch (19.1 mm) into the roof sheathing. 4.Structural metal panels that do not require a substrate or underlayment.	Underlayment in accordance with this section is required for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and BIPV roof coverings. Such underlayment shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D2626, D4869, D6380 Class M, D6757 or D8257 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be fastened in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3). Exception:Structural metal panels that do not require a substrate or underlayment.
1507.8.1	Deck requirements	Wood shingles shall be installed on solid or spaced sheathing. Where spaced sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners.	Wood shingles shall be installed on solid or spaced sheathing. Where spaced sheathing is used, sheathing boards shall be not less than 1-inch by 4-inch (25 mm by 102 mm) nominal dimensions and shall be spaced on centers equal to the weather exposure to coincide with the placement of fasteners. Where 1-inch × 4-inch (25 mm × 102 mm) spaced sheathing is installed at 10 inches (254 mm) on center or greater, additional 1-inch × 4-inch (25 mm × 102 mm) boards shall be installed between the sheathing boards. When wood shingles are installed over spaced sheathing and the underside of the shingles are exposed to the attic space, the attic shall be ventilated in accordance with Section 1202.2. The shingles shall not be backed with materials that will occupy the required air gap space and prevent the free movement of air on the interior side of the spaced sheathing.
1511.2.2	Penthouses - Use limitations	Penthouses shall not be used for purposes other than the shelter of mechanical or electrical equipment, tanks, elevators and related machinery, or vertical shaft openings in the roof assembly.	Penthouses shall not be used for purposes other than the shelter of mechanical or electrical equipment, tanks, elevators and related machinery, stairways or vertical shaft openings in the roof assembly, including ancillary spaces used to access elevators and stairways.
1511.2.4	Type of construction	Penthouses shall be constructed with walls, floors and roofs as required for the type of construction of the building on which such penthouses are built.	Penthouses shall be constructed of building element materials as required for the type of construction of the building. Penthouse exterior walls and roof construction shall have a fire-resistance rating as required for the type of construction of the building. Supporting construction of such exterior walls and roof construction shall have a fire-resistance rating not less than required for the exterior wall or roof supported.
1511.7.6	Lightning protection systems	(new)	Lightning protection system components shall be installed in accordance with Sections 1511.7.6.1, 1511.7.6.2 and 2703.

1511.9	Raised-deck systems installed over a roof assembly	(new)	Raised-deck systems installed above a roof assembly shall comply with Sections 1511.9.1 through 1511.9.5.
1512.2	Roof replacement	Roof replacement shall include the removal of all existing layers of roof coverings down to the roof deck. Exception: Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507.	Roof replacement shall include the removal of all existing layers of roof assembly materials down to the roof deck. Exceptions: 1.Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck and the existing sheathing is not water-soaked or deteriorated to the point that it is not adequate as a base for additional roofing, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507 where permitted by the roof covering manufacturer and new ice barrier underlayment manufacturer. 2.Where the existing roof includes a self-adhered underlayment and the existing sheathing is not water-soaked or deteriorated to the point that it is not adequate as a base for additional roofing, the existing self-adhered underlayment shall be permitted to remain in place and covered with an underlayment complying with Tables 1507.1.1(1), 1507.1.1(2) and 1507.1.1(3). 3.Where the existing roof includes one layer of self-adhered underlayment and the existing layer cannot be removed without damaging the roof deck, a second layer of self-adhered underlayment is permitted to be installed over the existing self-adhered underlayment provided that the following conditions are met: 3.1.It is permitted by the roof covering manufacturer and self-adhered underlayment manufacturer. 3.2.The existing sheathing is not water-soaked or deteriorated to the point that it is not adequate as a base for additional roofing. 3.3.The second layer of self-adhered underlayment is installed such that buildup of material at walls, valleys, roof edges, end laps and side laps does not exceed two layers.
1602.1	Notations	The following notations are used in this chapter: D= Dead load. Di= Weight of ice in accordance with Chapter 10 of ASCE 7. E= Combined effect of horizontal and vertical earthquake induced forces as defined in Section 2.3.6 of ASCE 7. F= Load due to fluids with well-defined pressures and maximum heights. Fa= Flood load in accordance with Chapter 5 of ASCE 7. H= Load due to lateral earth pressures, ground water pressure or pressure of bulk materials. L= Roof live load greater than 20 psf (0.96 kN/m2) and floor live load. Lr= Roof live load of 20 psf (0.96 kN/m2) or less. R= Rain load. S= Snow load. T= Cumulative effects of self-straining load forces and effects. Vasd=Allowable stress design wind speed, miles per hour (mph) (km/hr) where applicable. V= Basic design wind speeds, miles per hour (mph) (km/hr) determined from Figures 1609.3(1) through 1609.3(8) or ASCE 7. W= Load due to wind pressure. Wi= Wind-on-ice in accordance with Chapter 10 of ASCE 7.	The following notations are used in this chapter: D=Dead load. Di=Weight of ice in accordance with Chapter 10 of ASCE 7. E=Combined effect of horizontal and vertical earthquake induced forces as defined in Section 12.4 of ASCE 7. F=Load due to fluids with well-defined pressures and maximum heights. Fa=Flood load in accordance with Chapter 5 of ASCE 7. H=Load due to lateral earth pressures, ground water pressure or pressure of bulk materials. L=Live load. Lr=Roof live load. pg(asd)=Allowable stress design ground snow load. pg=Ground snow load determined from Figures 1608.2(1) through 1608.2(4) and Table 1608.2. R=Rain load. S=Snow load. T=Cumulative effects of self-straining load forces and effects. Vasd=Allowable stress designwind speed, mph (m/s) where applicable. V=Basic wind speed, V, mph (m/s) determined from Figures 1609.3(1) through 1609.3(4) or ASCE 7. VT=Tornado speed, mph (m/s) determined from Chapter 32 of ASCE 7. W=Load due to wind pressure. Wi=Wind-on-ice in accordance with Chapter 10 of ASCE 7.

1603.1.4	Wind and tornado deisgn data	The following information related to wind loads shall be shown, regardless of whether wind loads govern the design of the lateral force-resisting system of the structure: 1.Basic design wind speed, V, miles per hour and allowable stress design wind speed, Vasd, as determined in accordance with Section 1609.3.1. 2.Risk category. 3.Wind exposure. Applicable wind direction if more than one wind exposure is utilized. 4.Applicable internal pressure coefficient. 5.Design wind pressures to be used for exterior component and cladding materials not specifically designed by the registered design professional responsible for the design of the structure, psf (kN/ m2).	The following information related to wind loads and, where required by Section 1609.5, tornado loads shall be shown, regardless of whether wind or tornado loads govern the design of the lateral force-resisting system of the structure: 1.Basic wind speed, V, mph (m/s), tornado speed, VT, mph (m/s), and allowable stress design wind speed, Vasd, mph (m/s), as determined in accordance with Section 1609.3.1. 2.Risk category. 3.Effective plan area, Ae, for tornado design in accordance with Chapter 32 of ASCE 7. 4.Wind exposure. Applicable wind direction if more than one wind exposure is utilized. 5.Applicable internal pressure coefficients, and applicable tornado internal pressure coefficients. 6.Design wind pressures and their applicable zones with dimensions to be used for exterior component and cladding materials not specifically designed by the registered design professional responsible for the design of the structure, pounds per square foot (kN/m2). Where design for tornado loads is required, the design pressures shown shall be the maximum of wind or tornado pressures.
Table 1604.5	Risk Categories	(new descriptions)	Risk category III: •Buildings and other structures containing one or more public assembly spaces, each having an occupant load greater than 300 and a cumulative occupant load of these public assembly spaces of greater than 2,500. •Buildings and other structures containing Group E or Group I-4 occupancies or combination therof, with an occupant load greater than 250. •Power-generating stations with individual power units rated 75 MWAC (megawatts, alternating current) or greater, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. Risk category IV: •Group I-3 occupancies other than Condition 1. •Public utility facilities providing power generation, potable water treatment, or wastewater treatment.
1604.5.2	Photovoltaic (PV) panel systems	(new)	Photovoltaic (PV) panel systems and elevated PV support structures shall be assigned a risk category as follows: 1.Ground-mounted PV panel systems serving only Group R-3 buildings shall be assigned to Risk Category I. 2.Ground-mounted PV panel systems other than those described in Items 1 and 5 shall be assigned to Risk Category II. 3.Elevated PV support structures other than those described in Items 4, 5 and 6 shall be assigned to Risk Category II. 4.Rooftop-mounted PV panel systems and elevated PV support structures installed on top of buildings shall be assigned to the same risk category as the risk category of the building on which they are mounted. 5.PV panel systems and elevated PV support structures paired with energy storage systems (ESS) and serving as a dedicated, stand-alone source of backup power for Risk Category IV buildings shall be assigned to Risk Category IV. 6.Elevated PV support structures where the usable space underneath is used for parking of emergency vehicles shall be assigned to Risk Category IV.
1605.1	Load combinations - general	Buildings and other structures and portions thereof shall be designed to resist all of the following: 1.The load combinations specified in Section 1605.2, 1605.3.1 or 1605.3.2. 2.The load combinations specified in Chapters 18 through 23. 3.The seismic load effects including overstrength factor in accordance with Sections 2.3.6 and 2.4.5 of ASCE 7 where required by Chapters 12, 13, and 15 of ASCE 7. With the simplified procedure of ASCE 7, Section 12.14, the seismic load effects including overstrength factor in accordance with Section 12.14.3.2 and Chapter 2 of ASCE 7 shall be used. Applicable loads shall be considered, including both earthquake and wind, in accordance with the specified load combinations. Each load combination shall also be investigated with one or more of the variable loads set to zero. Where the load combinations with overstrength factor in Sections 2.3.6 and 2.4.5 of ASCE 7 apply, they shall be used as follows: 1.The basic combinations for strength design with over- strength factor in lieu of Equations 16-5 and 16-7 in Section 1605.2. 2.The basic combinations for allowable stress design with overstrength factor in lieu of Equations 16-12, 16-14 and 16-16 in Section 1605.3.1. 3.The basic combinations for allowable stress design with overstrength factor in lieu of Equations 16-21 and 16-22 in Section 1605.3.2.	Buildings and other structures and portions thereof shall be designed to resist the strength load combinations specified in ASCE 7, Section 2.3, the allowable stress design load combinations specified in ASCE 7, Section 2.4, or the alternative allowable stress design load combinations of Section 1605.2. Exceptions: 1.The modifications to load combinations of ASCE 7, Section 2.3, ASCE 7, Section 2.4 and Section 1605.2 specified in ASCE 7 Chapters 18 and 19 shall apply. 2.Where the allowable stress design load combinations of ASCE 7, Section 2.4 are used, flat roof snow loads of 45 pounds per square foot (2.15 kN/m2) and roof live loads of 30 pounds per square foot (1.44 kN/m2) or less need not be combined with seismic load. Where flat roof snow loads exceed 45 pounds per square foot (2.15 kN/m2), 15 percent shall be combined with seismic loads. 3.Where the allowable stress design load combinations of ASCE 7 Section 2.4 are used, crane hook loads need not be combined with roof live loads or with more than three-fourths of the snow load or one-half of the wind loads. 4.Where design for tornado loads is required, the alternative allowable stress design load combinations of Section 1605.2 shall not apply when tornado loads govern the design.

1605.3.2	Alternative basic load combinations	In lieu of the basic load combinations specified in Section 1605.3.1, structures and portions thereof shall be permitted to be designed for the most critical effects resulting from the following combinations. Where using these alternative basic allowable stress load combinations that include wind or seismic loads, allowable stresses are permitted to be increased or load combinations reduced where permitted by the material chapter of this code or the referenced standards. For load combinations that include the counteracting effects of dead and wind loads, only two-thirds of the minimum dead load likely to be in place during a design wind event shall be used. Where using allowable stresses that have been increased or load combinations that have been reduced as permitted by the material chapter of this code or the referenced standards, where wind loads are calculated in accordance with Chapters 26 through 31 of ASCE 7, the coefficient (ω) in the following equations shall be taken as 1.3. For other wind loads, (ω) shall be taken as 1. Where allowable stresses have not been increased or load combinations have not been reduced as permitted by the material chapter of this code or the referenced standards, (ω) shall be taken as 1. Where using these alternative load combinations to evaluate sliding, overturning and soil bearing at the soil-structure interface, the reduction of foundation overturning from Section 12.13.4 in ASCE 7 shall not be used. Where using these alternative basic load combinations for proportioning foundations for loadings, which include seismic loads, the vertical seismic load effect, Ev, in Equation 12.4-4 of ASCE 7 is permitted to be taken equal to zero.	In lieu of the load combinations in ASCE 7, Section 2.4, structures and portions thereof shall be permitted to be designed for the most critical effects resulting from the following combinations. Where using these alternative allowable stress load combinations that include wind or seismic loads, allowable stresses are permitted to be increased or load combinations reduced where permitted by the material chapter of this code or the referenced standards. For load combinations that include the counteracting effects of dead and wind loads, only two-thirds of the minimum dead load likely to be in place during a design wind event shall be used. Where using these alternative load combinations to evaluate sliding, overturning and soil bearing at the soil-structure interface, the reduction of foundation overturning from Section 12.13.4 in ASCE 7 shall not be used. Where using these alternative basic load combinations for proportioning foundations for loadings, which include seismic loads, the vertical seismic load effect, Ev, in Equation 12.4-4 of ASCE 7 is permitted to be taken equal to zero. Where required by ASCE 7, Chapters 12, 13 and 15, the load combinations including overstrength of ASCE 7, Section 2.3.6 shall be used.
1606	Dead Loads	Dead loads are those loads defined in Chapter 2 of this code. Dead loads shall be considered to be permanent loads.	Buildings, structures, and parts thereof shall be designed to resist the effects of dead loads.
1606.3	Weight of fixed service equipment	(new)	In determining dead loads for purposes of design, the weight of fixed service equipment, including the maximum weight of the contents of fixed service equipment, shall be included. The components of fixed service equipment that are variable, such as liquid contents and movable trays, shall not be used to counteract forces causing overturning, sliding, and uplift conditions in accordance with Section 1.3.6 of ASCE 7. Exceptions: 1.Where force effects are the result of the presence of the variable components, the components are permitted to be used to counter those load effects. In such cases, the structure shall be designed for force effects with the variable components present and with them absent. 2.For the calculation of seismic force effects, the components of fixed service equipment that are variable, such as liquid contents and movable trays, need not exceed those expected during normal operation.
1606.4	PV panel systems	(new)	The weight of photovoltaic panel systems, their support system, and ballast shall be considered as dead load.
1606.5	Vegetative and landscapted roofs	(new)	The weight of all landscaping and hardscaping materials for vegetative and landscaped roofs shall be considered as dead load. The weight shall be computed considering both fully saturated soil and drainage layer materials and fully dry soil and drainage layer materials to determine the most severe load effects on the structure.
Table 1607.1	Minimum uniformly distributed live loads	(new)	Vegetative and landscaped roofs: * Roof areass not intended for occupancy = 20 * Roof areas used for assembly purposes = 100 * Public restrooms = Same as live load for area served but not required to exceed 60 psf * Storage above ceilings = 20 * Theater projection, control, and follow spot rooms = 50
1607.3.1	Partial loading of floors	(new)	Where uniform floor live loads are involved in the design of structural members arranged so as to create continuity, the minimum applied loads shall be the full dead loads on all spans in combination with the floor live loads on spans selected to produce the greatest load effect at each location under consideration. Uniform floor live loads applied to selected spans are permitted to be reduced in accordance with Section 1607.13.
1607.3.2	Partial loading of roofs	(new)	Where uniform roof live loads are reduced to less than 20 pounds per square foot (0.96 kN/m2) in accordance with Section 1607.14.1 and are applied to the design of structural members arranged so as to create continuity, the reduced roof live load shall be applied to adjacent spans or to alternate spans, whichever produces the most unfavorable load effect.
1607.5	Partition loads	In office buildings and in other buildings where partition locations are subject to change, provisions for partition weight shall be made, whether or not partitions are shown on the construction documents, unless the specified live load is 80 psf (3.83 kN/m2) or greater. The partition load shall be not less than a uniformly distributed live load of 15 psf (0.72 kN/m2).	In office buildings and in other buildings where partition locations are subject to change, provisions for partition weight shall be made, whether or not partitions are shown on the construction documents. The partition load shall be not less than a live load of 15 pounds per square foot (0.72 kN/m2) and live load reductions in accordance withSection 1607.13 are not permitted to be applied to the partition loads. Exception:A partition live load is not required where the minimum specified live load is 80 pounds per square foot (3.83 kN/m2) or greater.

1607.6	Helipads	(reorganized see 1607.6.1) Helipads shall be designed for the following live loads: 1.A uniform live load, L, as specified in Items 1.1 and 1.2. This load shall not be reduced. 1.1.40 psf (1.92 kN/m2) where the design basis helicopter has a maximum take-off weight of 3,000 pounds (13.35 kN) or less. 1.2.60 psf (2.87 kN/m2) where the design basis helicopter has a maximum take-off weight greater than 3,000 pounds (13.35 kN). 2.A single concentrated live load, L, of 3,000 pounds (13.35 kN) applied over an area of 4.5 inches by 4.5 inches (114 mm by 114 mm) and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated load is not required to act concurrently with other uniform or concentrated live loads. 3.Two single concentrated live loads, L, 8 feet (2438 mm) apart applied on the landing pad (representing the helicopter's two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum take-off weight of the helicopter, and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated loads shall be applied over an area of 8 inches by 8 inches (203 mm by 203 mm) and are not required to act concurrently with other uniform or concentrated live loads. Landing areas designed for a design basis helicopter with maximum take-off weight of 3,000-pounds (13.35 kN) shall be identified with a 3,000 pound (13.34 kN) weight limitation. The landing area weight limitation shall be indicated by the numeral "3" (kips) located in the bottom right corner of the landing area as viewed from the primary approach path. The indication for the landing area weight limitation shall be a minimum 5 feet (1524 mm) in height.	Helipads shall be marked to indicate the maximum takeoff weight. The takeoff weight limitation shall be indicated in units of thousands of pounds and placed in a box that is located in the bottom right corner of the landing area as viewed from the primary approach path. The box shall be not less than 5 feet (1524 mm) in height.
1607.6.1	Concentrated loads	(adjusted to ASCE 7 2022)	Helipads shall be designed for the following concentrated live loads: 1.A single concentrated live load, L, of 3,000 pounds (13.35 kN) applied over an area of 4.5 inches by 4.5 inches (114 mm by 114 mm) and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated load is not required to act concurrently with other uniform or concentrated live loads. 2.Two single concentrated live loads, L, 8 feet (2438 mm) apart applied on the landing pad (representing the helicopter's two main landing gear, whether skid type or wheeled type), each having a magnitude of 0.75 times the maximum takeoff weight of the helicopter, and located so as to produce the maximum load effects on the structural elements under consideration. The concentrated loads shall be applied over an area of 8 inches by 8 inches (203 mm by 203 mm) and are not required to act concurrently with other uniform or concentrated live loads.
1607.7	Passenger vehicle garages	(new)	Floors in garages or portions of a building used for the storage of motor vehicles shall be designed for the uniformly distributed live loads indicated in Table 1607.1 or the following concentrated load: 1.For garages restricted to passenger vehicles accommodating not more than nine passengers, 3,000 pounds (13.35 kN) acting on an area of 4.5 inches by 4.5 inches (114 mm by 114 mm). 2.For mechanical parking structures without slab or deck that are used for storing passenger vehicles only, 2,250 pounds (10 kN) per wheel.
1607.9.2	Guard component loads	Intermediate rails (all those except the handrail), balusters and panel fillers shall be designed to resist a concentrated load of 50 pounds (0.22 kN) in accordance with Section 4.5.1.2 of ASCE 7.	Balusters, panel fillers and guard infill components, including all rails except the handrail and the top rail, shall be designed to resist a concentrated load of 50 pounds (0.22 kN) in accordance with Section 4.5.1.2 of ASCE 7.
1607.9.2	Grab bars, shower seats and accessible benches	Grab bars, shower seats and dressing room bench seats shall be designed to resist a single concentrated load of 250 pounds (1.11 kN) applied in any direction at any point on the grab bar or seat so as to produce the maximum load effects.	Grab bars, shower seats and accessible benches shall be designed to resist a single concentrated load of 250 pounds (1.11 kN) applied in any direction at any point on the grab bar, shower seat, or seat of the accessible bench so as to produce the maximum load effects.
			Where a structure or portions of a structure are accessed by fire department vehicles and other similar emergency vehicles, those portions of the structure subject to such loads shall be designed for the greater of the following loads: 1.The actual operational loads, including outrigger reactions and contact areas of the vehicles as stipulated and approved by the building official. 2.The live loading specified in Section 1607.8.1. Emergency vehicle loads need not be assumed to act concurrently with other uniform live loads.
1607.11.4	Fall arrest, lifeline, and rope descent system anchorages	In addition to any other applicable live loads, fall arrest and lifeline anchorages and structural elements that support these anchorages shall be designed for a live load of not less than 3,100 pounds (13.8 kN) for each attached lifeline, in every direction that a fall arrest load can be applied.	In addition to any other applicable live loads, fall arrest, lifeline, and rope descent system anchorages and structural elements that support these anchorages shall be designed for a live load of not less than 3,100 pounds (13.8 kN) for each attached line, in any direction that the load can be applied. Anchorages of horizontal lifelines and the structural elements that support these anchorages shall be designed for the maximum tension that develops in the horizontal lifeline from these live loads.
1607.17	Fixed Ladder Live Load	(new)	Fixed ladders with rungs shall be designed to resist a single concentrated load of 300 pounds (1.33 kN) in accordance with Section 4.5.4 of ASCE 7. Where rails of fixed ladders extend above a floor or platform at the top of the ladder, each side rail extension shall be designed to resist a single concentrated load of 100 pounds (0.445 kN) in accordance with Section 4.5.4 of ASCE 7. Ship's ladders shall be designed to resist the stair loads given in Table 1607.1.

1607.18	Library stack rooms	(new)	The live loading indicated in Table 1607.1 for library stack rooms applies to stack room floors that support nonmobile, double-faced library book stacks, subject to the following limitations: 1.The nominal book stack unit height shall not exceed 90 inches (2290 mm). 2.The nominal shelf depth shall not exceed 12 inches (305 mm) for each face. 3.Parallel rows of double-faced book stacks shall be separated by aisles not less than 36 inches (914 mm) in width.
1607.19.1	Horizontal sway loads	(new)	The design of stadiums and arenas with fixed seats shall include horizontal swaying forces applied to each row of seats as follows: 1.24 pounds per linear foot (0.35 kN/m) of seat applied in a direction parallel to each row of seats. 2.10 pounds per linear foot (0.15 kN/m) of seat applied in a direction perpendicular to each row of seats. The parallel and perpendicular horizontal swaying forces are not required to be applied simultaneously.
1607.20.2	Concentrated loads	(new)	The concentrated wheel load indicated in Table 1607.1 shall be applied on an area of 41/2 inches by 41/2 inches (114 mm by 114 mm).
1607.21	Stair treads	(new)	The concentrated load indicated in Table 1607.1 for stair treads shall be applied on an area of 2 inches by 2 inches (51 mm by 51 mm). This load need not be assumed to act concurrently with the uniform load.
1607.22.1	Uninhabitable attics without storage	(new)	In residential occupancies, uninhabitable attic areas without storage are those where the maximum clear height between the joists and rafters is less than 42 inches (1067 mm), or where there are not two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches (1067 mm) in height by 24 inches (610 mm) in width, or greater, within the plane of the trusses. The live load in Table 1607.1 need not be assumed to act concurrently with any other live load requirement.
1607.22.2	Uninhabitable attics with storage	(new)	In residential occupancies, uninhabitable attic areas with storage are those where the maximum clear height between the joist and rafter is 42 inches (1067 mm) or greater, or where there are two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches (1067 mm) in height by 24 inches (610 mm) in width, or greater, within the plane of the trusses. The live load in Table 1607.1 need only be applied to those portions of the joists or truss bottom chords where both of the following conditions are met: 1.The attic area is accessed from an opening not less than 20 inches (508 mm) in width by 30 inches (762 mm) in length that is located where the clear height in the attic is not less than 30 inches (762 mm). 2.The slope of the joists or truss bottom chords is not greater than 2 units vertical in 12 units horizontal. The remaining portions of the joists or truss bottom chords shall be designed for a uniformly distributed concurrent live load of not less than 10 pounds per square foot (0.48 kN/m2).
1609.1.1	Determination of wind loads	(new exception)	7.Temporary structures complying with Section 3103.6.1.2.
1609.5	Tornado loads	(new)	The design and construction of Risk Category III and IV buildings and other structures located in the tornado-prone region as shown in Figure 1609.5 shall be in accordance with Chapter 32 of ASCE 7, except as modified by this code.
1609.7	Elevators, escalators and other conveying systems	(new)	Elevators, escalators and other conveying systems and their components exposed to outdoor environments shall satisfy the wind design requirements of ASCE 7.
1610.1	Lateral pressures	Foundation walls and retaining walls shall be designed to resist lateral soil loads. Soil loads specified in Table 1610.1 shall be used as the minimum design lateral soil loads unless determined otherwise by a geotechnical investigation in accordance with Section 1803. Foundation walls and other walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure. Retaining walls free to move and rotate at the top shall be permitted to be designed for active pressure. Design lateral pressure from surcharge loads shall be added to the lateral earth pressure load. Design lateral pressure shall be increased if soils at the site are expansive. Foundation walls shall be designed to support the weight of the full hydrostatic pressure of undrained backfill unless a drainage system is installed in accordance with Sections 1805.4.2 and 1805.4.3. Exception: Foundation walls extending not more than 8 feet (2438 mm) below grade and laterally supported at the top by flexible diaphragms shall be permitted to be designed for active pressure.	Structures below grade shall be designed to resist lateral soil loads from adjacent soil. Soil loads specified in Table 1610.1 shall be used as the minimum design lateral soil loads unless determined otherwise by a geotechnical investigation in accordance with Section 1803. Foundation walls and other walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure. Walls that are free to move and rotate at the top, such as retaining walls, shall be permitted to be designed for active pressure. Where applicable, lateral pressure from fixed or moving surcharge loads shall be added to the lateral soil load. Lateral pressure shall be increased if expansive soils are present at the site. Foundation walls shall be designed to support the weight of the full hydrostatic pressure of undrained backfill unless a drainage system is installed in accordance with Sections 1805.4.2 and 1805.4.3. Exception: Foundation walls extending not more than 8 feet (2438 mm) below grade and laterally supported at the top by flexible diaphragms shall be permitted to be designed for active pressure.
1610.2	Uplift loads on floor and foundation	(new)	Basement floors, slabs on ground, foundations, and similar approximately horizontal elements below grade shall be designed to resist uplift loads where applicable. The upward pressure of water shall be taken as the full hydrostatic pressure applied over the entire area. The hydrostatic load shall be measured from the underside of the element being evaluated. The design for upward loads caused by expansive soils shall comply with Section 1808.6.

1611	Rain Loads	Each portion of a roof shall be designed to sustain the load of rainwater that will accumulate on it if the primary drainage system for that portion is blocked plus the uniform load caused by water that rises above the inlet of the secondary drainage system at its design flow. The design rainfall shall be based on the 100-year hourly rainfall rate indicated in Figure 1611.1 or on other rainfall rates determined from approved local weather data.	Each portion of a roof shall be designed to sustain the load of rainwater as per the requirements of Chapter 8 of ASCE 7. Rain loads shall be based on the summation of the static head, ds, hydraulic head, dh, and ponding head, dp, using Equation 16-20. The hydraulic head shall be based on hydraulic test data or hydraulic calculations assuming a flow rate corresponding to a rainfall intensity equal to or greater than the 15-minute duration storm with return period given in Table 1611.1. Rainfall intensity shall be determined in inches per hour for 15-minute duration storms for the risk categories given in Table 1611.1. The ponding head shall be based on structural analysis as the depth of water due to deflections of the roof subjected to unfactored rain load and unfactored dead load. (Equation 16-20)(Equation 16-20) For SI: R = 0.0098(ds + dh + dp) where: dh = Hydraulic head equal to the depth of water on the undeflected roof above the inlet of the secondary drainage system for structural loading (SDSL) required to achieve the design flow, in inches (mm). dp = Ponding head equal to the depth of water due to deflections of the roof subjected to unfactored rain load and unfactored dead load, in inches (mm). ds = Static head equal to the depth of water on the undeflected roof up to the inlet of the secondary drainage system for structural loading (SDSL), in inches (mm). R = Rain load, in pounds per square foot (kN/m2). SDSL is the roof drainage system through which water is drained from the roof when the drainage systems listed in ASCE 7 Section 8.2 (a) through (d) are blocked or not working.
1612.2	Design and construction	The design and construction of buildings and structures located in flood hazard areas, including coastal high-hazard areas and coastal A zones, shall be in accordance with Chapter 5 of ASCE 7 and ASCE 24.	The design and construction of buildings and structures located in flood hazard areas, including coastal high hazard areas and coastal A zones, shall be in accordance with Chapter 5 of ASCE 7 and ASCE 24. Elevators, escalators, conveying systems and their components shall conform to ASCE 24 and ASME A17.1/CSA B44 as applicable. Exception:Temporary structures complying with Section 3103.6.1.3.
1613.1	Earthquake Loads - Scope	(new exception)	6.Temporary structures complying with Section 3103.6.1.4.
1704.6	Structural Observations	Structural observations shall be provided for those structures where one or more of the following conditions exist: 1.The structure is classified as Risk Category IV. 2.The structure is a high-rise building. 3.Such observation is required by the registered design professional responsible for the structural design. 4.Such observation is specifically required by the building official.	Structural observations shall be provided for those structures where one or more of the following conditions exist: 1.The structure is classified as Risk Category III or IV. 2.The structure is a high-rise building. 3.The structure is assigned to Seismic Design Category E, and is greater than two stories above the grade plane. 4.Such observation is required by the registered design professional responsible for the structural design. 5.Such observation is specifically required by the building official.
1705.2.2	Structural stainless steel	(new)	Special inspections and nondestructive testing of structural stainless steel elements in buildings and portions thereof shall be in accordance with the quality assurance inspection requirements of AISC 370.
1705.2.6	Metal building systems	(new)	Special inspections of metal building systems shall be performed in accordance with Sections 1705.2.1, 1705.2.3, 1705.2.4 and 1705.2.5 and Table 1705.2.6. The approved agency shall perform inspections of the erected metal building system to verify compliance with the approved construction documents.
Table 1705.3	Special Inspection of Precast Concrete	(new items)	b. Inspect welding of reinforcement for special moment frames, boundary elements of special structural walls and coupling beams. c. Inspect welded reinforcement splices. d. Inspect welding of primary tension reinforcement in corbels. 11. For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category C, D, E or F, inspect such connections and reinforcement in the field for: a. Installation of the embedded parts b. Completion of the continuity of reinforcement across joints. c. Completion of connections in the field. 12. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5. 13. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.
1705.5.3	Mass Timber Special Inspection	(new)	(see new table for mass timber)
1705.6	Required special inspections and tests of soils	(new item)	4. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the approved geotechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill.

1705.1	Structural Integrity of Deep Foundations		
1705.12	Special inspections for wind resistance	Special inspections for wind resistance specified in Sections 1705.11.1 through 1705.11.3, unless exempted by the exceptions to Section 1704.2, are required for buildings and structures constructed in the following areas: 1.In wind Exposure Category B, where Vasd as determined in accordance with Section 1609.3.1 is 120 miles per hour (52.8 m/sec) or greater. 2.In wind Exposure Category C or D, where Vasd as determined in accordance with Section 1609.3.1 is 110 mph (49 m/sec) or greater.	Special inspections for wind resistance specified in Sections 1705.12.1 through 1705.12.3, unless exempted by the exceptions to Section 1704.2, are required for buildings and structures constructed in the following areas: 1.In wind Exposure Category B, where V is 150 miles per hour (67 m/sec) or greater. 2.In wind Exposure Category C or D, where V is 140 mph (62.6 m/sec) or greater.
1705.13.7	Special Inspection of Storage Racks	Periodic special inspection is required for the anchorage of storage racks that are 8 feet (2438 mm) or greater in height in structures assigned to Seismic Design Category D, E or F.	Steel storage racks and steel cantilevered storage racks that are 8 feet (2438 mm) in height or greater and assigned to Seismic Design Category D, E or F shall be provided with periodic special inspection as required by Table 1705.13.7.
1705.15	Sprayed fire-resistant materials	Special inspections and tests of sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.14.1 through 1705.14.6. Special inspections shall be based on the fire-resistance design as designated in the approved construction documents. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. Special inspections and tests shall be performed after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, where applicable.	Special inspections and tests of sprayed fire-resistant materials (SFRM) applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.15.1 through 1705.15.6. Special inspections shall be based on the fire-resistance design as designated in the approved construction documents. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. Special inspections and tests shall be performed during construction with an additional visual inspection after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, and before concealment where applicable. The required sample size shall not exceed 110 percent of that specified by the referenced standards in Sections 1705.15.4.1 through 1705.15.4.9.
1705.16	Intumescent fire-resistive materials	Special inspections and tests for mastic and intumescent fire-resistant coatings applied to structural elements and decks shall be performed in accordance with AWCI 12-B. Special inspections and tests shall be based on the fire-resistance design as designated in the approved construction documents.	Special inspections and tests for intumescent fire-resistive materials applied to structural elements and decks shall be performed in accordance with AWCI 12-B. Special inspections and tests shall be based on the fire-resistance design as designated in the approved construction documents. Special inspections and tests shall be performed during construction. Additional visual inspection shall be performed after the rough installation and, where applicable, prior to the concealment of electrical, automatic sprinkler, mechanical and plumbing systems.
1705.18	Fire-resistant penetrations and joints	In high-rise buildings or in buildings assigned to Risk Category III or IV, special inspections for through-penetrations, membrane penetration firestops, fire-resistant joint systems and perimeter fire barrier systems that are tested and listed in accordance with Sections 714.4.1.2, 714.5.1.2, 715.3 and 715.4 shall be in accordance with Section 1705.17.1 or 1705.17.2.	In high-rise buildings, in buildings assigned to Risk Category III or IV, or in fire areas containing Group R occupancies with an occupant load greater than 250, special inspections for through-penetrations, membrane penetration firestops, fire-resistant joint systemsand perimeter fire containment systems that are tested and listed in accordance with Sections 714.4.1.2, 714.5.1.2, 715.3.1 and 715.4 shall be in accordance with Section 1705.18.1 or 1705.18.2.
1705.2	Sealing of mass timber	(new)	Periodic special inspections of sealants or adhesives shall be conducted where sealant or adhesive required by Section 703.7 is applied to mass timber building elements as designated in the approved construction documents.
1709.5	Window and Door Assemblies	Exception: Structural wind load design pressures for window units smaller than the size tested in accordance with Section 1709.5.1 or 1709.5.2 shall be permitted to be higher than the design value of the tested unit provided such higher pressures are determined by accepted engineering analysis. Components of the small unit shall be the same as the tested unit. Where such calculated design pressures are used, they shall be validated by an additional test of the window unit having the highest allowable design pressure.	Exception: Structural wind load design pressures for window or door assemblies other than the size tested in accordance with Section 1709.5.1 or 1709.5.2 shall be permitted to be different than the design value of the tested assembly, provided that such pressures are determined by accepted engineering analysis or validated by an additional test of the window or door assembly to the alternative allowable design pressure in accordance with Section 1709.5.2. Components of the alternate size assembly shall be the same as the tested or labeled assembly. Where engineering analysis is used, it shall be performed in accordance with the analysis procedures of AAMA 2502.
1709.5.2.1	Garage doors and rolling doors	(new)	Garage doors and rolling doors shall be tested in accordance with either ASTM E330 or ANSI/DASMA 108, and shall meet the pass/fail criteria of ANSI/DASMA 108. Garage doors and rolling doors shall be labeled with a permanent label identifying the door manufacturer, the door model/series number, the positive and negative design wind pressure rating, the installation instruction drawing reference number, and the applicable test standard.
1709.5.3	Impact Protection	(new)	Impact protective systems shall be tested for impact resistance by an approved independent laboratory for compliance with ASTM E1886 and ASTM E1996 and for design wind pressure for compliance with ASTM E330. Required design wind pressures shall be determined in accordance with ASCE 7, and for the purposes of this section, multiplied by 0.6 to convert to allowable stress design. Impact protective systems shall have a permanent label applied in accordance with Section 1703.5.4, identifying the manufacturer, product designation, performance characteristics, and approved inspection agency.
1803.5.4	Groundwater	A subsurface soil investigation shall be performed to determine whether the existing ground water table is above or within 5 feet (1524 mm) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation. Exception: A subsurface soil investigation to determine the location of the ground water table shall not be required where waterproofing is provided in accordance with Section 1805.	A geotechnical investigation shall be performed to determine if: 1.Groundwater is above or within 5 feet (1524 mm) below the elevation of the lowest floor level where such floor is located below the finished ground level adjacent to the foundation. 2.The groundwater depth will affect the design and construction of buildings and structures.
1807.2.5.1	Where required	(new)	At retaining walls located within 36 inches (914mm) of walking surfaces, a guard shall be required between the walking surface and the open side of the retaining wall where the walking surface is located more than 30 inches (762 mm) measured vertically to the surface or grade below at any point within 36 inches (914mm) horizontally to the edge of the open side. Guards shall comply with Section 1607.9.

1809.5.1	Frost Protection at Required Exits	(new)	Frost protection shall be provided at exterior landings for all required exits with outward-swinging doors. Frost protection shall only be required to the extent necessary to ensure the unobstructed opening of the required exit doors.
Table 1810.3.2.6	Allowable Stresses in Deep Foundations	b.The stresses specified apply to the gross cross-sectional area within the concrete surface. Where a temporary or permanent casing is used, the inside face of the casing shall be considered to be the concrete surface.	b. The stresses specified apply to the gross cross-sectional area of the concrete for precast prestressed piles and to the net cross-sectional area for all other piles. Where a temporary or permanent casing is used, the inside face of the casing shall be considered the outer edge of the concrete cross-section.
1810.3.3.1.9	Helical Piles	1.Sum of the areas of the helical bearing plates times the ultimate bearing capacity of the soil or rock comprising the bearing stratum. 2.Ultimate capacity determined from well-documented correlations with installation torque. 3.Ultimate capacity determined from load tests. 4.Ultimate axial capacity of pile shaft. 5.Ultimate axial capacity of pile shaft couplings. 6.Sum of the ultimate axial capacity of helical bearing plates affixed to pile.	1.Base capacity plus shaft resistance of the helical pile. The base capacity is equal to the sum of the areas of the helical bearing plates times the ultimate bearing capacity of the soil or rock comprising the bearing stratum. The shaft resistance is equal to the area of the shaft above the uppermost helical bearing plate times the ultimate skin resistance. 2.Ultimate capacity determined from well-documented correlations with installation torque. 3.Ultimate capacity determined from load tests where required by Section 1810.3.3.1.2. 4.Ultimate axial capacity of pile shaft. 5.Ultimate axial capacity of pile shaft couplings. 6.Sum of the ultimate axial capacity of helical bearing plates affixed to pile.
1810.3.6	Deep Foundation Element Splicing	(new exception)	Exception: For buildings assigned to Seismic Design Category A or B, splices need not comply with the 50-percent tension and bending strength requirements where justified by supporting data.
1810.3.8	Precast Concrete Piles	(new exceptions)	Exceptions: 1.For precast prestressed piles in Seismic Design Category C, the minimum volumetric ratio of spirals or circular hoops required by Section 18.13.5.10.4 of ACI 318 shall not apply in cases where the design includes full consideration of load combinations specified in ASCE 7, Section 2.3.6 or Section 2.4.5 and the applicable overstrength factor, Ω0. In such cases, minimum transverse reinforcement index shall be as specified in Section 13.4.5.6 of ACI 318. 2.For precast prestressed piles in Seismic Design Categories D through F, the minimum volumetric ratio of spirals or circular hoops required by Section 18.13.5.10.5(c) of ACI 318 shall not apply in cases where the design includes full consideration of load combinations specified in ASCE 7, Section 2.3.6 or Section 2.4.5 and the applicable overstrength factor, Ω0. In such cases, minimum transverse reinforcement shall be as specified in Section 13.4.5.6 of ACI 318.
1810.4.5	Vibratory Drivers	(new exceptions)	Exceptions: 1.The pile installation is completed by driving with an impact hammer in accordance with Section 1810.3.3.1.1. 2.The pile is to be used only for lateral resistance.
1901.2	Plain and reinforced concrete	Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code. Except for the provisions of Sections 1904 and 1907, the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical loads or lateral forces from other parts of the structure to the soil. Precast concrete diaphragms in buildings assigned to Seismic Design Category C, D, E or F shall be designed in accordance with the requirements of ASCE 7, Section 14.2.4.	Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as supplemented in Section 1905 of this code.
1901.2.1	Structural concrete with GFRP reinforcement	(new)	Cast-in-place structural concrete internally reinforced with glass fiber reinforced polymer (GFRP) reinforcement conforming to ASTM D7957 and designed in accordance with ACI CODE 440.11 shall be permitted where fire-resistance ratings are not required and only for structures assigned to Seismic Design CategoryA.
1901.7	Tolerances for Structural Concrete	(new section)	Where not indicated in construction documents, structural tolerances for concrete structural elements shall be in accordance with this section.
2109.2.4.8	Exterior Finish of Adobe Masonry	Exterior walls constructed of unstabilized adobe units shall have their exterior surface covered with not fewer than two coats of Portland cement plaster having a minimum thickness of ¾ inch (19.1 mm) and conforming to ASTM C926. Lathing shall comply with ASTM C1063. Fasteners shall be spaced at 16 inches (406 mm) on center maximum. Exposed wood surfaces shall be treated with an approved wood preservative or other protective coating prior to lath application.	Exterior finishes applied to adobe masonry walls shall be of any type permitted by this section or Chapter 14, except where stated otherwise in this section.
2205.2.1	AISC 358 for Prequalified Connections	Structures assigned to Seismic Design Category B or C shall be of any construction permitted in Section 2205. Where a response modification coefficient, R, in accordance with ASCE 7, Table 12.2-1, is used for the design of structures assigned to Seismic Design Category B or C, the structures shall be designed and detailed in accordance with the requirements of AISC 341.	Structures assigned to Seismic Design Category B or C shall be of any construction permitted in Section 2205. Where a response modification coefficient, R, in accordance with ASCE 7, Table 12.2-1, is used for the design of structures assigned to Seismic Design Category B or C, the structures shall be designed and detailed in accordance with the requirements of AISC 341. Beam-to-column moment connections in special moment frames and intermediate moment frames shall be prequalified in accordance with AISC 341, Section K1, qualified by testing in accordance with AISC 341, Section K2, or shall be prequalified in accordance with AISC 358.
2209.3	Steel Storage Racks	(new)	For rack storage structures that are 8 feet (2438 mm) in height or greater to the top load level and assigned to Seismic Design Category D, E, or F at completion of the storage rack installation, a certificate of complianceshall be submitted to the owner or the owner's authorized agent stating that the work was performed in accordance with approved construction documents.
2210.1	Metal Building Systems - general	(new section)	The design, fabrication and erection of a metal building system shall be in accordance with the provisions of this section

2303.2.1	Fire-Retardant Treated Wood - alternate fire testing	(new)	Fire-retardant-treated wood is also any wood product that, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E2768, a listed flame spread index of 25 or less and where the flame front does not progress more than 10.5 feet (3200 mm) beyond the centerline of the burners at any time during the test.
2303.4.1.2	Wood Truss Bracing	(new)	Where the truss design drawings designate the need for permanent individual truss memberrestraint, it shall be accomplished by one of the following methods: 1.PITMR and PITMDBinstalled using standard industry lateral restraint and diagonal bracing details in accordance with TPI 1, Section 2.3.3.1.1, accepted engineering practice, or Figures 2303.4.1.2(1), (3), and (5). 2.Individual truss member reinforcement in place of the specified lateral restraints (i.e., buckling reinforcement such as T-reinforcement, L-reinforcement, proprietary reinforcement, etc.) such that the buckling of any individual truss member is resisted internally by the individual truss. The buckling reinforcement of individual truss members shall be installed as shown on the truss design drawing, on supplemental truss member buckling reinforcement details provided by the truss designer or in accordance with Figures 2303.4.1.2 (2) and (4). 3.A project-specific PITMR and PITMDBdesign provided by any registered design professional.
2304.10.1	Mass Timber Connection Protection	(new)	Connections used with fire-resistance-rated members and in fire-resistance-rated assemblies of Type IV-A, IV-B, or IV-C construction shall be protected for the time associated with the fire-resistance rating. Protection time shall be determined by one of the following: 1.Testing in accordance with Section 703.2 where the connection is part of the fire resistance test. 2.Engineering analysis that demonstrates that the temperature rise at any portion of the connection is limited to an average temperature rise of 250°F (139°C), and a maximum temperature rise of 325°F (181°C), for a time corresponding to the required fire-resistance rating of the structural element being connected. For the purposes of this analysis, the connection includes connectors, fasteners, and portions of wood members included in the structural design of the connection.
2305.1.2	Permanent load durations	(new)	Permanent loads are associated with permanent load duration in accordance with the ANSI/AWC NDS. For wood shear walls and wood diaphragms designed to resist lateral loads of permanent load duration only and that are not in combination with wind or seismic lateral loads, the design unit shear capacities shall be taken as the AWC SDPWS nominal unit shear capacities, multiplied by 0.2 for use with allowable stress design in Section 2306 and 0.3 for use with load and resistance factor design in Section 2307.
2308.2.7	Hillside light-frame construction	(new)	Design in accordance with Section 2308.3 shall be provided for the floor immediately above the cripple walls or post and beam systems and all structural elements and connections from this floor down to and including connections to the foundation and design of the foundation to transfer lateral loads from the framing above in buildings where all of the following apply: 1.The grade slope exceeds 1 unit vertical in 5 units horizontal where averaged across the full length of any side of the building. 2.The tallest cripple wall clear height exceeds 7 feet (2134 mm); or, where a post and beam system occurs at the building perimeter, the post and beam system tallest post clear height exceeds 7 feet (2134 m). 3.Of the total plan area below the lowest framed floor, whether open or enclosed, less than 50 percent is occupiable space having interior wall finishes conforming to Section 2304.7 or Chapter 25. Exception:Light-frame buildings in which the lowest framed floor is supported directly on concrete or masonry walls over the full length of all sides except the downhill side of the building are exempt from this provision.
Table 2308.7.3.1	Rafter Tie Connections	(new table)	(see table)
2403.3	Framing	To be considered firmly supported, the framing members for each individual pane of glass shall be designed so the deflection of the edge of the glass perpendicular to the glass pane shall not exceed 1/175 of the glass edge length or ¾ inch (19.1 mm), whichever is less, when subjected to the larger of the positive or negative load where loads are combined as specified in Section 1605.	To be considered firmly supported, the framing members for each individual pane of glass shall be designed so that the deflection of the edge of the glass perpendicular to the glass pane does not exceed 1/175 of the glass edge length where the glass edge length is not more than 13 feet 6 inches (4115 mm), or 1/240 of the glass edge length + 1/4 inch (6.4 mm) where the glass edge length is greater than 13 feet 6 inches (4115 mm), when subjected to the larger of the positive or negative load where loads are combined as specified in Section 1605.
2407.1.1	Loads	The panels and their support system shall be designed to withstand the loads specified in Section 1607.8. Glass guard elements shall be designed using a factor of safety of four.	Glass handrails and guards and their support systems shall be designed to withstand the loads specified in Section 1607.9. Calculated stresses for the loads specified in Section 1607.9 shall be less than or equal to 3,000 pounds per square inch (20.7 MPa) for heat-strengthened glass and less than or equal to 6,000 pounds per square inch (41.4 MPa) for fully tempered glass.

2510.6.1	Dry climates (Water-Resistive Barriers for Stucco)	(new)	One of the following shall apply for dry (B) climate zones: 1.The water-resistive barrier shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of water-resistive barrier complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing, installed in accordance with Section 1404.4 and intended to drain to the water-resistive barrier, is directed between the layers. 2.The water-resistive barrier shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of water-resistive barrier complying with ASTM E2556, Type II. The water-resistive barrier shall be separated from the stucco by a layer of foam plastic insulating sheathing or other nonwater absorbing layer, or a drainage space or means of drainage complying with Section 2510.6.2. Flashing installed in accordance with Section 1404.4 and intended to drain to the water-resistive barrier shall be directed to the exterior side of the water-resistive barrier.
2703.1	Lightning protection systems	(new Section)	Lightning protection systems shall be installed in accordance with NFPA 780 or UL 96A. UL 96A shall not be utilized for buildings used for the production, handling or storage of ammunition, explosives, flammable liquids, flammable gases or other explosive ingredients including dust.
2902.1.2	Single-user toilet and bathing room fixtures	The plumbing fixtures located in single-user toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet facilities and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified for use by either sex.	The plumbing fixtures located in single-user toilet facilities and single-user rooms, including family or assisted-use toilet facilities and bathing rooms, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. The number of fixtures in single-user toilet facilities, single-user bathing rooms and family or assisted-use toilet facilities shall be deducted proportionately from the required gender ratios of Table 2902.1. Single-user toilet facilities and bathing rooms, and family or assisted-use toilet facilities and bathing rooms shall be identified as being available for use by all persons regardless of their sex. The total number of fixtures shall be based on the required number of separate facilities or based on the aggregate of any combination of single-user or separate facilities.
2902.2	Separate facilities	(new exceptions)	5.Separate facilities shall not be required to be designated by sex where single-user toilets rooms are provided in accordance with Section 2902.1.2. 6.Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets are installed in accordance with Section 405.3.4 of the International Plumbing Code. Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.
2902.3.3	Toilet Fixtures in Storage Facilities	Exception: The location and maximum distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are approved.	Exceptions: 1.The location and maximum distances of travel to required employee facilities in factory and industrial occupancies shall be permitted to exceed that required by this section, provided that the location and maximum distances of travel are approved. 2.The location and maximum distances of travel to required public and employee facilities in Group S occupancies shall be permitted to exceed that required by this section, provided that the location and maximum distances of travel are approved.
2902.3.6	Door locking	Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms.	Where a toilet facility is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet facilities. Exception: The egress door of a multiple occupant toilet room shall be permitted to be lockable from inside the room where all the following criteria are met: 1.The egress door shall be lockable from the inside of the room only by authorized personnel by the use of a key or other approved means. 2.The egress door shall be readily openable from the toilet room in accordance with Section 1010.2. 3.The egress door shall be capable of being unlocked from outside the room with a key or other approved means.
3001.2	Emergency Elevator Communication Systems	An emergency two-way communication system shall be provided that: 1.Is a visual and text-based and a video-based 24/7 live interactive system. 2.Is fully accessible by the deaf, hard of hearing and speech impaired, and shall include voice-only options for hearing individuals. 3.Has the ability to communicate with emergency personnel utilizing existing video conferencing technology, chat/text software or other approved technology.	An elevator emergency two-way communication system that includes both visual and audible communication modes complying with the requirements in ASME A17.1/CSA B44 shall be provided in each elevator car. The system shall provide a means to enable authorized personnel to verify: 1.The presence of someone in the car. 2.That the person(s) is trapped. Once an entrapment is verified, the system shall enable authorized personnel to: 1.Determine if assistance is needed. 2.Communicate when help is on the way. 3.Communicate when help arrives on site.

3103.1.1	Extended period of service time	(new)	Public-occupancy temporary structures shall be permitted to remain in service for 180 days or more without complying with requirements in this code for new building or structures where extensions for up to 1 year are granted by the Building Official in accordance with Section 108.1 and where the following conditions are satisfied: 1.Additional inspections as determined by the building official shall be performed by a qualified person to verify that site conditions and the approved installation comply with the conditions of approval at the time of final inspection. 2.A qualified person shall perform follow-up inspections after initial occupancy at intervals not exceeding 180 days to verify the site conditions and the installation conform to the approved site conditions and installation requirements. Inspection records shall be kept and shall be made available for verification by the building official. 3.An examination shall be performed by a registered design professional to determine the adequacy of the temporary structure to resist the structural loads required in Section 3103.6. 4.Relocation of the public-occupancy temporary structure shall require a new permit application. 5.The use or occupancy approved at the time of final inspection shall remain unchanged. 6.A request for an extension is submitted to the building official. The request shall include records of the inspections and examination in Items 1 and 3.
3114.1	Public-Use Restrooms in Flood Hazard Areas	(new)	For the purpose of this section, public restroom buildings are located on publicly owned lands in flood hazard areas and intended for public use. Public restroom buildings and portions of other buildings that contain public restrooms are limited to toilet rooms, bathrooms, showers and changing rooms. Public restroom buildings and portions of buildings that contain public restrooms shall comply with the requirements of this section. Public-use restrooms that are not elevated or dry flood-proofed in accordance with Section 1612 shall comply with Section 3114.2. Portions of buildings that include uses other than public-use toilet rooms, bathrooms, showers and changing rooms shall comply with Section 1612.
3115	Intermodal Shipping Containers	(new)	The provisions of Section 3115 and other applicable sections of this code shall apply to intermodal shipping containers that are repurposed for use as buildings or structures, or as a part of buildings or structures. Exceptions: 1.Intermodal shipping containers previously approved as existing relocatable buildings complying with Chapter 14 of the International Existing Building Code. 2.Stationary storage battery arrays located in intermodal shipping containers complying with Chapter 12 of the International Fire Code. 3.Intermodal shipping containers that are listed as equipment complying with the standard for equipment, such as air chillers, engine generators, modular data centers, and other similar equipment. 4.Intermodal shipping containers housing or supporting experimental equipment are exempt from the requirements of Section 3115, provided that they comply with all of the following: 4.1.Such units shall be single stand-alone units supported at grade level and used only for occupancies as specified under Risk Category I in Table 1604.5. 4.2.Such units are located a minimum of 8 feet (2438 mm) from adjacent structures, and are not connected to a fuel gas system or fuel gas utility. 4.3.In hurricane-prone regions and flood hazard areas, such units are designed in accordance with the applicable provisions of Chapter 16.
3302.1	Owner's responsibility for fire protection - site safety plan	(new)	The owner or owner’s authorized agent shall be responsible for the development, implementation and maintenance of an approved, written site safety plan establishing a fire prevention program at the project site applicable throughout all phases of the construction, repair, alteration or demolition work. The plan shall be submitted and approved before a building permit is issued. Any changes to the plan shall address the requirements of this chapter and other applicable portions of the International Fire Code, the duties of staff and staff training requirements. The plan shall be submitted for approval in accordance with the International Fire Code.
3313.1	Fire Protection During Construction	An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material arrives on the site.	An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible building materials arrive on the site, on commencement of vertical combustible construction, and on installation of a standpipe system in buildings under construction, in accordance with Sections 3313.2 through 3313.5. Exception: The fire code official is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.
3313.2	Combustible building materials	(new)	When combustible building materials of the building under construction are delivered to a site, a minimum fire flow of 500 gallons per minute (1893 L/m) shall be provided. The fire hydrant used to provide this fire flow supply shall be within 500 feet (152 m) of the combustible building materials, as measured along an approved fire apparatus access lane. Where the site configuration is such that one fire hydrant cannot be located within 500 feet (152 m) of all combustible building materials, additional fire hydrants shall be required to provide coverage in accordance with this section.