**Chapter 4 General Requirements**

4.1\* Goals and Objectives

4.1.1\* Goals

The goals of this Code shall be to provide a reasonable level of safety, property protection, and public welfare from the hazards created by fire, explosion, and other hazardous conditions.

4.1.2\* Objectives

To achieve the goals stated in 4.1.1, the goals and objectives of 4.1.3 through 4.1.5 shall be used to determine the intent of this Code.

4.1.3\* Safety

This Code shall provide for life safety by reducing the probability of injury or death from fire, explosions, or events involving hazardous materials.

4.1.3.1 Safety From Fire

4.1.3.1.1\* Safety-From-Fire Goals

The fire safety goals of this Code shall be as follows:

To provide an environment for the occupants in a building or facility and for the public near a building or facility that is reasonably safe from fire and similar emergencies

To protect fire fighters and emergency responders

4.1.3.1.2 Safety-From-Fire Objectives

4.1.3.1.2.1

Buildings and facilities shall be designed, constructed, and maintained to protect occupants who are not intimate with the initial fire development for the amount of time needed to evacuate, relocate, or defend in place.

4.1.3.1.2.2\*

Buildings shall be designed and constructed to provide reasonable safety for fire fighters and emergency responders during search and rescue operations.

4.1.3.1.2.3

Buildings shall be designed, located, and constructed to reasonably protect adjacent persons from injury or death as a result of a fire.

4.1.3.1.2.4

Buildings shall be designed, located, and constructed to provide reasonable access to the building for emergency responders.

4.1.3.1.2.5\*

Operations shall be conducted at facilities in a safe manner that minimizes, reduces, controls, or mitigates the risk of fire injury or death for the operators, while protecting the occupants not intimate with initial fire development for the amount of time needed to evacuate, relocate, or defend in place.

4.1.3.2 Safety During Building Use

4.1.3.2.1\* Safety-During-Building-Use Goal

The safety-during-building-use goal of this Code shall be to provide an environment for the occupants of the building that is reasonably safe during the normal use of the building.

4.1.3.2.2 Safety-During-Building-Use Objectives

4.1.3.2.2.1

Buildings shall be designed and constructed to reduce the probability of death or injury of persons from falling during normal use of the building.

4.1.3.2.2.2

Buildings shall be designed and constructed to provide for reasonably safe crowd movement during emergency and nonemergency conditions.

4.1.3.2.2.3

Buildings shall be designed and constructed to provide reasonable life safety for occupants and workers during construction and demolition.

4.1.3.2.2.4

Buildings shall be designed and constructed to provide reasonable notification to occupants of fire and other emergency situations.

4.1.3.2.2.5

Buildings shall be designed and constructed to provide reasonable signage and lighting to identify hazards, exits, means of egress, and other building safety features.

4.1.3.3 Safety From Hazardous Materials

4.1.3.3.1 Safety-From-Hazardous-Materials Goal

The safety-from-hazardous-materials goal of this Code shall be to provide an environment for the occupants in a building or facility and to those adjacent to a building or facility that is reasonably safe from exposures to adverse affects from hazardous materials present therein.

4.1.3.3.2 Safety-From-Hazardous-Materials Objectives

4.1.3.3.2.1

The storage, use, or handling of hazardous materials in a building or facility shall be accomplished in a manner that provides a reasonable level of safety for occupants and for those adjacent to a building or facility from health hazards, illness, injury, or death during normal storage, use, or handling operations and conditions.

4.1.3.3.2.2\*

The storage, use, or handling of hazardous materials in a building or facility shall be accomplished in a manner that provides a reasonable level of safety for occupants and for those adjacent to a building or facility from illness, injury, or death due to the following conditions:

An unplanned release of the hazardous material

A fire impinging upon the hazardous material or the involvement of the material in a fire

The application of an external force on the hazardous material that is likely to result in an unsafe condition

4.1.4 Property Protection

4.1.4.1 Property Protection Goal

The property protection goal of this Code shall be to limit damage created by a fire, explosion, or event associated with hazardous materials to a reasonable level to the building or facility and adjacent property.

4.1.4.2 Property Protection Objectives

4.1.4.2.1\* Prevention of Ignition

The facility shall be designed, constructed, and maintained, and operations associated with the facility shall be conducted, to prevent unintentional explosions and fires that result in failure of or damage to adjacent compartments, emergency life safety systems, adjacent properties, adjacent outside storage, and the facility's structural elements.

4.1.4.2.2\* Fire Spread and Explosions

In the event that a fire or explosion occurs, the building or facility shall be sited, designed, constructed, or maintained, and operations associated with the facility shall be conducted and protected, to reasonably reduce the impact of unwanted fires and explosions on the adjacent compartments, emergency life safety systems, adjacent properties, adjacent outside storage, and the facility's structural elements.

4.1.4.2.3 Structural Integrity

The facility shall be designed, constructed, protected, and maintained, and operations associated with the facility shall be conducted, to provide a reasonable level of protection for the facility, its contents, and adjacent properties from building collapse due to a loss of structural integrity resulting from a fire.

4.1.4.2.4 Hazardous Materials

The facility shall be designed, constructed, and maintained, and operations associated with the facility shall be conducted, to provide reasonable property protection from damage resulting from fires, explosions, and other unsafe conditions associated with the storage, use, and handling of hazardous materials therein.

4.1.5 Public Welfare

4.1.5.1\* Public Welfare Goal

The public welfare goal of this Code shall be to maintain a high probability that buildings and facilities that provide a public welfare role for a community continue to perform the function for their intended purpose following a fire, explosion, or hazardous materials event.

4.1.5.2\* Public Welfare Objective

Buildings and facilities that provide a public welfare role for a community shall be designed, constructed, maintained, and operated to provide reasonable assurance of continued function following a fire, explosion, or hazardous materials event.

4.1.6\* Security Features

Where buildings are designed and constructed to include security features to protect occupants or contents, such features shall not compromise compliance with requirements of this Code.

4.2 Assumptions

4.2.1\* Single Fire Source

4.2.1.1

The fire protection methods of this Code shall assume that multiple simultaneous fire incidents will not occur.

4.2.1.2

The single fire source assumption shall not preclude the evaluation of multiple design fire scenarios as required by Section 5.4.

4.2.2\* Single Hazardous Material Release

4.2.2.1

The protection methods of this Code shall assume that multiple simultaneous unauthorized releases of hazardous materials from different locations will not occur.

4.2.2.2

The single hazardous material release assumption shall not preclude the evaluation of multiple design scenarios as required by Section 5.4.

4.2.3\* Incidents Impinging on Hazardous Materials

The protection methods of this Code shall assume that a fire, explosion, hazardous materials release, or external force that creates a dangerous condition has the potential to impinge on hazardous materials being stored, handled, or used in the building or facility under normal conditions. (See Section 5.4 for performance-based design scenarios.)

4.3 Compliance Options

Compliance with the goals and objectives of Section 4.1 shall be provided in accordance with either of the following:

The prescriptive-based provisions per 4.3.1

The performance-based provisions per 4.3.2

4.3.1 Prescriptive-Based Option

4.3.1.1

A prescriptive-based option shall be in accordance with Chapter 1 through Chapter 4, Chapter 6, and Chapter 10 through Chapter 75 of this Code.

4.3.1.2

Where specific requirements contained in Chapter 20 for occupancies differ from general requirements contained in Chapter 1 through Chapter 4 and Chapter 10 through Chapter 75, the requirements of Chapter 20 shall govern.

4.3.2 Performance-Based Option

4.3.2.1

A performance-based option shall be in accordance with Chapter 1 through Chapter 5 of this Code.

4.3.2.2

Prescriptive requirements shall be permitted to be used as part of the performance approach, if they, in conjunction with the performance features, meet the overall goals and objectives of this Code.

4.4 Fundamental Requirements

4.4.1 Multiple Safeguards

4.4.1.1

The design of every building or structure intended for human occupancy shall be such that reliance for property protection and safety to life does not depend solely on any single safeguard.

4.4.1.2

Additional safeguard(s) shall be provided for property protection and life safety in the event that any single safeguard is ineffective due to inappropriate human actions, building failure, or system failure.

4.4.2 Appropriateness of Safeguards

Every building or structure shall be provided with means of egress and other safeguards of the kinds, numbers, locations, and capacities appropriate to the individual building or structure, with due regard to the following:

Characteristics of the occupancy

Capabilities of the occupants

Number of persons exposed

Fire protection available

Capabilities of response personnel

Height and type of construction of the building or structure

Other factors necessary to provide occupants with a

reasonable degree of safety

Other factors necessary to protect the building and

contents from damage

4.4.3 Means of Egress

4.4.3.1 Unobstructed Egress

4.4.3.1.1

In every occupied building or structure, means of egress from all parts of the building shall be maintained free and unobstructed.

4.4.3.1.2

No lock or fastening shall be permitted that prevents free escape from the inside of any building other than in health care occupancies and detention and correctional occupancies where staff are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

4.4.3.1.3

Means of egress shall be accessible to the extent necessary to ensure reasonable safety for occupants having impaired mobility.

4.4.3.2 Awareness of Egress System

4.4.3.2.1

Every exit shall be clearly visible, or the route to reach every exit shall be conspicuously indicated.

4.4.3.2.2

Each means of egress, in its entirety, shall be arranged or marked so that the way to a place of safety is indicated in a clear manner.

4.4.3.2.3 Lighting

Illumination of means of egress shall be provided. [See 5.3.4(10).]

4.4.4\* Occupant Notification

In every building or structure of such size, arrangement, or occupancy that a fire itself could not provide adequate occupant warning, fire alarm systems shall be provided where necessary to warn occupants of the existence of fire.

4.4.5 Vertical Openings

Every vertical opening between the floors of a building shall be suitably enclosed or protected, as necessary, to provide the following:

Reasonable safety to occupants while using the means of egress by preventing spread of fire, smoke, or fumes through vertical openings from floor to floor to allow occupants to complete their use of the means of egress

Limitation of damage to the buildings and its contents

4.4.6 System Design/Installation

Any fire protection system, building service equipment, feature of protection, or safeguard provided to achieve the goals of this Code shall be designed, installed, and approved in accordance with applicable codes and standards referenced in Chapter 2.

4.5 General Requirements

4.5.1 Authority Having Jurisdiction (AHJ)

4.5.1.1

The AHJ shall determine whether the provisions of this Code are met.

4.5.1.2

Where it is evident that a reasonable degree of safety is provided, any requirement shall be permitted to be modified if its application would be hazardous under normal occupancy conditions in the judgment of the AHJ.

4.5.2 Historic Structures and Cultural Resource Buildings

The provisions of this Code shall be permitted to be modified by the AHJ for buildings or structures identified and classified as historic structures in accordance with Section 20.17.

4.5.3 Provisions in Excess of Code Requirements

Nothing in this Code shall be construed to prohibit a better type of building construction, an additional means of egress, or an otherwise more safe condition than that specified by the minimum requirements of this Code.

4.5.4 Conditions for Occupancy

No new construction or existing building shall be occupied in whole or in part in violation of the provisions of this Code unless the following conditions exist:

A plan of correction has been approved.

The occupancy classification remains the same.

No serious life safety hazard exists as judged by the AHJ.

4.5.5 Warrant of Fitness

4.5.5.1

Where compliance with this Code is effected by means of a performance-based design, the owner shall annually certify compliance with the conditions and limitations of the design by submitting a warrant of fitness acceptable to the AHJ.

4.5.5.2

The warrant of fitness shall attest that the building features, systems, and use have been inspected and confirmed to remain consistent with design specifications outlined in the documentation required by 5.1.8 and 5.7.3 and that they continue to satisfy the goals and objectives specified in Section 4.1. (See 5.1.11.)

4.5.6 Construction, Repair, and Improvement Operations

4.5.6.1

Buildings or portions of buildings shall be permitted to be occupied during construction, repair, alterations, or additions only where required means of egress and required fire protection features are in place and continuously maintained for the portion occupied or where alternative life safety measures and building protection measures acceptable to the AHJ are in place.

4.5.6.2 Escape Facilities

4.5.6.2.1

In buildings under construction, adequate escape facilities shall be maintained at all times for the use of construction workers.

4.5.6.2.2

Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, ladders, or other approved means or devices arranged in accordance with the general principles of the Code insofar as they can reasonably be applied to buildings under construction.

4.5.6.3

Flammable, hazardous, or explosive substances or equipment for repairs or alterations shall be permitted in a building while the building is occupied if the condition of use and safeguards provided do not create any additional danger or impediment to egress beyond the normally permissible conditions in the building and is such that materials are safeguarded when the building is unoccupied.

4.5.7\* Changes of Occupancy

4.5.7.1

In any building or structure, whether or not a physical alteration is needed, a change from one occupancy classification to another shall be permitted only where such a structure, building, or portion thereof conforms with the requirements of this Code that apply to new construction for the proposed new use, except as follows:

Where, in the opinion of the AHJ, the proposed occupancy or change in use is not more hazardous than the existing use, based on life safety and fire risk, the AHJ shall be permitted to approve such change of occupancy provided compliance with the requirements of this Code for buildings of like occupancy or use are specifically incorporated to safeguard the life, health, and welfare of persons.

Change of tenants or ownership shall not be construed to be a change of occupancy classification where the nature of use and assigned occupancy classification remain the same.

4.5.7.2

Where specifically permitted elsewhere in the Code, existing construction features shall be permitted to be continued in use in conversions.

4.5.8 Maintenance, Inspection, and Testing

4.5.8.1

Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature is required for compliance with the provisions of this Code, such device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or other feature shall thereafter be continuously maintained. Maintenance shall be provided in accordance with applicable NFPA requirements or requirements developed as part of a performance-based design, or as directed by the AHJ. [101:4.6.12.1]

4.5.8.2

No existing life safety feature shall be removed or reduced where such feature is a requirement for new construction. [101:4.6.12.2]

4.5.8.3\*

Existing life safety features obvious to the public, if not required by the Code, shall be either maintained or removed. [101:4.6.12.3]

4.5.8.4\*

Existing life safety features that exceed the requirements for new buildings shall be permitted to be decreased to those required for new buildings. [101:4.6.7.4]

4.5.8.5\*

Existing life safety features that do not meet the requirements for new buildings, but that exceed the requirements for existing buildings, shall not be further diminished. [101:4.6.7.5]

4.5.8.6

Any device, equipment, system, condition, arrangement, level of protection, fire-resistive construction, or any other feature requiring periodic testing, inspection, or operation to ensure its maintenance shall be tested, inspected, or operated as specified elsewhere in this Code or as directed by the AHJ. [101:4.6.12.5]

4.5.8.7

Maintenance, inspection, and testing shall be performed under the supervision of a responsible person who shall ensure that testing, inspection, and maintenance are made at specified intervals in accordance with applicable NFPA standards or as directed by the AHJ. [101:4.6.12.6]

4.5.9 Noncombustible Material

4.5.9.1

A material that complies with any one of the following shall be considered a noncombustible material:

\* The material, in the form in which it is used and under the conditions anticipated, will not ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat.

The material is reported as passing ASTM E136, Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C.

The material is reported as complying with the pass/fail criteria of ASTM E136 when tested in accordance with the test method and procedure in ASTM E2652, Standard Test Method for Assessing Combustibility of Materials Using a Tube Furnace with a Cone-shaped Airflow Stabilizer, at 750°C.

[5000:7.1.4.1.1]

4.5.9.2

Where the term limited-combustible is used in this Code, it shall also include the term noncombustible. [5000:7.1.4.1.2]

4.5.10 Limited-Combustible Material

A material shall be considered a limited-combustible material where one of the following is met:

The conditions of 4.5.10.1, and 4.5.10.2, and the conditions of either 4.5.10.3 or 4.5.10.4, shall be met.

The conditions of 4.5.10.5 shall be met.

[5000:7.1.4.2]

4.5.10.1

The material does not comply with the requirements for a noncombustible material in accordance with 4.5.9. [5000:7.1.4.2.1]

4.5.10.2

The material, in the form in which it is used, exhibits a potential heat value not exceeding 3500 Btu/lb (8141 kJ/kg) when tested in accordance with NFPA 259. [5000:7.1.4.2.2]

4.5.10.3

The material shall have a structural base of noncombustible material with a surfacing not exceeding a thickness of 1/8 in. (3.2 mm) where the surfacing exhibits a flame spread index not greater than 50 when tested in accordance with ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials, or UL 723, Test for Surface Burning Characteristics of Building Materials. [5000:7.1.4.2.3]

4.5.10.4

The material shall be composed of materials that in the form and thickness used neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or UL 723 and are of such composition that all surfaces that would be exposed by cutting through the material on any plane would neither exhibit a flame spread index greater than 25 nor exhibit evidence of continued progressive combustion when tested in accordance with ASTM E84 or UL 723. [5000:7.1.4.2.4]

4.5.10.5

Materials shall be considered limited-combustible materials where tested in accordance with ASTM E2965, Standard Test Method for Determination of Low Levels of Heat Release Rate for and Products Using an Oxygen Consumption Calorimeter, at an incident heat flux of 75 kW/m for a 20-minute exposure, and both the following conditions are met:

The peak heat release rate shall not exceed 150 kW/m2 for longer than 10 seconds.

The total heat released shall not exceed 8 MJ/m2.

[5000:7.1.4.2.5]

4.5.10.6

Where the term limited-combustible is used in this Code, it shall also include the term noncombustible. [5000:7.1.4.2.6]