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MEMORANDUM

TO: Technical Committee on Animal Housing Facilities

FROM: Kelly Carey, *Committee Administrator*

DATE: October 27, 2020

SUBJECT: NFPA 150 Second Draft Technical Committee FINAL Ballot Results (A2021)

According to the final ballot results, all ballot items received the necessary affirmative votes to pass ballot.

29 Members Eligible to Vote

8 Members Not Returned (*Bahra, Day, Dvorscak, Gulati, Haas, Hoberg, Rieck, Wright*)

The attached report shows the number of affirmative, negative, and abstaining votes as well as the explanation of the vote for **each** revision.

To pass ballot, **each** revision requires: (1) a simple majority of those eligible to vote and (2) an affirmative vote of $\frac{2}{3}$ of ballots returned. See Sections 3.3.4.3.(c) and 4.3.10.1 of the *Regulations Governing the Development of NFPA Standards*.



Second Revision No. 1-NFPA 150-2020 [Section No. 2.3.3]

2.3.3 ASTM Publications.

ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

ASTM D396, *Standard Specification for Fuel Oils*, 2019a .

ASTM D3699, *Standard Specification for Kerosene*, 2018a 2019 .

ASTM D6448, *Industrial Burner Fuels from Used Lube Oils*, 2016.

ASTM D6751, *Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuel*, 2019.

ASTM D6823, *Standard Specification for Commercial Burner Fuels from Used Lube Boiler Fuels with Used Lubricating Oils*, 2008, reapproved 2013.

ASTM D7666, *Standard Specification for Triglyceride Burner Fuel* , 2012, reapproved 2019.

ASTM E84, *Standard Test Method of Surface Burning Characteristics of Building Materials*, 2019b 2020 .

ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, 2018c 2019 .

ASTM E814, *Standard Test Method for Fire Tests of ~~Through~~ Penetration Fire Stops Stop Systems* , 2013a, reapproved 2017 .

ASTM E1354, *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*, 2017.

ASTM E1591, *Standard Guide for Obtaining Data for Fire Growth Models*, 2013.

ASTM E1966, *Standard Test Method for Fire-Resistive Joint Systems*, 2015, reapproved 2019.

ASTM E2307, *Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, ~~Multi-story~~ Multi-Story Apparatus*, 2019.

Submitter Information Verification

Committee: ASF-AAA

Submission Date: Wed Aug 19 09:26:35 EDT 2020

Committee Statement

Committee Statement: Updates to reference standards.

Response Message: SR-1-NFPA 150-2020

Public Comment No. 1-NFPA 150-2020 [Section No. 2.3.3]

Ballot Results

✔ This item has passed ballot

29 Eligible Voters

8 Not Returned
21 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

Bahra, Nandeep
Day, Richard L.
Dvorscak, Michelle
Gulati, Ajay
Haas, Paul M.
Hoberg, Shelena
Rieck, Brian L.
Wright, Thomas Steven

Affirmative All

Adams, Melanie
Aler, Clay P.
Black, Art
Boucher, John P.
Cohen, Hal
Fox, Donii
Husted, Rebecca M.
Jones, Dena
Keenan, Michael J.
Learned, Scott
McBride, Jeffery P.
Meerschaert, Gary
Morrison, Brian
Neiderheiser, Rita L.
Raisi, Kameron
Rosenberger, Mark S.
Ryan, Amy Q.
Schwab, Peter T.
Scibetta, Joe
Spencer, Matthew G.
Wynnyczuk, Peter



Second Revision No. 4-NFPA 150-2020 [Section No. 2.4]

2.4 References for Extracts in Mandatory Sections.

NFPA 1, *Fire Code*, 2018 2021 edition.

NFPA 72[®], *National Fire Alarm and Signaling Code*[®], 2019 2022 edition.

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*, 2019 2022 edition.

NFPA 96, *Standard for Ventilation and Control and Fire Protection of Commercial Cooking Operations*, 2017 2021 edition.

NFPA 101[®], *Life Safety Code*[®], 2018 2021 edition.

NFPA 5000[®], *Building Construction and Safety Code*[®], 2018 2021 edition.

Submitter Information Verification

Committee: ASF-AAA

Submittal Date: Wed Sep 02 08:44:37 EDT 2020

Committee Statement

Committee Statement: Updates to edition years based on updated references.

Response Message: SR-4-NFPA 150-2020

Ballot Results

✓ **This item has passed ballot**

29 Eligible Voters

8 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bahra, Nandeeep

Day, Richard L.

Dvorscak, Michelle

Gulati, Ajay

Haas, Paul M.

Hoberg, Shelena

Rieck, Brian L.

Wright, Thomas Steven

Affirmative All

Adams, Melanie

Aler, Clay P.

Black, Art

Boucher, John P.

Cohen, Hal

Fox, Donii

Husted, Rebecca M.

Jones, Dena

Keenan, Michael J.

Learned, Scott

McBride, Jeffery P.

Meerschaert, Gary

Morrison, Brian

Neiderheiser, Rita L.

Raisi, Kameron

Rosenberger, Mark S.

Ryan, Amy Q.

Schwab, Peter T.

Scibetta, Joe

Spencer, Matthew G.

Wynnyczuk, Peter



Second Revision No. 2-NFPA 150-2020 [Sections 6.2.6.2, 6.2.6.3]

6.2.6.2* Category 6 Class A.

Facilities where animals are housed without constant supervision.

A.6.2.6.2

Examples include facilities where animals are unattended indoors, such as boarding facilities, without staff supervision.

6.2.6.3* Category 6 Class B.

Facilities where animals are housed with constant supervision.

A.6.2.6.3

Examples include facilities that are staffed 24/7.

Submitter Information Verification

Committee: ASF-AAA

Submittal Date: Wed Aug 19 11:40:20 EDT 2020

Committee Statement

Committee Statement: Correction of error A.6.2.6.2 should have been with 6.2.6.3 and A.6.2.6.3 should have been associated with 6.2.6.2.

Response Message: SR-2-NFPA 150-2020

Ballot Results

✔ This item has passed ballot

29 Eligible Voters

8 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bahra, Nandeeep

Day, Richard L.

Dvorscak, Michelle
Gulati, Ajay
Haas, Paul M.
Hoberg, Shelena
Rieck, Brian L.
Wright, Thomas Steven

Affirmative All

Adams, Melanie
Aler, Clay P.
Black, Art
Boucher, John P.
Cohen, Hal
Fox, Donii
Husted, Rebecca M.
Jones, Dena
Keenan, Michael J.
Learned, Scott
McBride, Jeffery P.
Meerschaert, Gary
Morrison, Brian
Neiderheiser, Rita L.
Raisi, Kameron
Rosenberger, Mark S.
Ryan, Amy Q.
Schwab, Peter T.
Scibetta, Joe
Spencer, Matthew G.
Wynnyczuk, Peter



Second Revision No. 3-NFPA 150-2020 [Chapter 9]

Chapter 9 Fire Protection

9.1 General.

9.1.1

Requirements for protection from fire and special hazards shall be in accordance with NFPA 1, NFPA 101, or NFPA 5000, and this chapter, unless modified by the animal category chapter.

9.1.2

Where a change in category occurs and the installed fire protection systems are no longer necessary or no longer required, the facility owner shall either maintain the systems in full operation or completely remove them.

9.2 Sprinkler Protection.

9.2.1

Where automatic sprinklers are required by this *Code* throughout the animal housing facility, the system shall be installed in accordance with the requirements of Section 9.2.

9.2.2

Required automatic sprinkler systems shall be in accordance with NFPA 13.

9.2.3

Quick-response sprinklers shall be utilized in animal housing facilities.

9.2.4

Sprinkler systems shall be supervised.

9.2.4.1

Alarms shall be transmitted to an approved, proprietary alarm-receiving facility, a remote station, a central station, or the fire department.

9.2.4.2

Where a fire alarm system is not required by another section of this *Code*, a single manual pull station shall be provided in accordance with NFPA 72 at a location approved by the AHJ.

9.2.5

Sprinklers shall be inspected, tested, and maintained in accordance with NFPA 25.

9.2.6

A sprinkler system impairment program shall be implemented in accordance with NFPA 25.

9.2.7

In areas protected by automatic sprinklers, automatic heat-detection devices required by other sections of this *Code* shall not be required.

9.2.8

Automatic sprinkler systems installed to make use of an alternative permitted by this *Code* shall be considered required systems and shall meet the provisions of this *Code* that apply to required systems. [101:9.7.1.5]

9.2.9

Sprinkler piping serving not more than six sprinklers for any hazardous area shall be permitted to be connected directly to a domestic water supply system having a capacity sufficient to provide 0.15 gpm/ft² (6.1 mm/min) throughout the entire enclosed area. [101:9.7.1.2]

9.2.10

Sprinkler piping serving hazardous areas as described in 9.2.9 shall be provided with an indicating shutoff valve, supervised in accordance with NFPA 13, and installed in an accessible, visible location between the sprinklers and the connection to the domestic water supply. [101:9.7.1.3]

9.3 Fire Detection, Alarm, and Communication Systems.**9.3.1 General.****9.3.1.1**

The provisions of Section 9.3 shall apply only where specifically required by another section of this *Code*.

9.3.1.2

Fire detection, alarm, and communications systems installed to make use of an alternative permitted by this *Code* shall be considered required systems and shall meet the provisions of this *Code* applicable to required systems. [101:9.6.1.2]

9.3.1.3

Fire alarm systems required by this *Code* shall be installed, tested, and maintained in accordance with the applicable requirements of *NFPA 70* and *NFPA 72* ~~unless it is an approved existing installation, which shall be permitted to be continued in use.~~ unless otherwise permitted by 9.3.1.4. [101:9.6.1.3].

9.3.1.4

An approved existing installation, which shall be permitted to be continued in use and shall comply with 9.3.1.5. [101:9.6.1.4]

9.3.1.5

To ensure operational integrity, the fire alarm system shall have an approved maintenance and testing program complying with the applicable requirements of *NFPA 70* and *NFPA 72*. [101:9.6.1.4 9.6.1.5]

9.3.1.6

Fire alarm system impairment procedures shall comply with *NFPA 72*. [101:9.6.1.5 9.6.1.6]

9.3.1.7*

Modifications to Section 9.3 shall be permitted to accommodate the needs of the animal occupants with approval of the AHJ.

9.3.2 Signal Initiation.**9.3.2.1**

Where required by other sections of this *Code*, actuation of the fire alarm system shall occur by any or all of the following means of initiation but shall not be limited to such means:

- (1) Manual fire alarm initiation
- (2) Automatic detection
- (3) Extinguishing system operation

[101:9.6.2.1]

9.3.2.2

Manual fire alarm boxes shall be used only for fire-protective signaling purposes.

9.3.2.3

A manual fire alarm box shall be located within 60 in. (1525 mm) of exit doorways.

9.3.2.4

Manual fire alarm boxes shall be mounted on both sides of grouped openings over 40 ft (12.2 m) in width, and within 60 in. (1525 mm) of each side of the opening. [101:9.6.2.4]

9.3.2.5

Additional manual fire alarm boxes shall be located so that, on any given floor in any part of the building, no horizontal distance on that floor exceeding 200 ft (61 m) shall need to be traversed to reach a manual fire alarm box. [101:9.6.2.5]

9.3.2.6

Manual fire alarm boxes shall be accessible, unobstructed, and visible. [101:9.6.2.7]

9.3.2.7

Where a sprinkler system provides automatic detection and alarm system initiation, it shall be provided with an approved alarm initiation device that operates when the flow of water is equal to or greater than that from a single automatic sprinkler. [101:9.6.2.8]

9.3.2.8

Where a total (complete) coverage smoke detection system is required by another section of this *Code*, automatic detection of smoke in accordance with *NFPA 72* shall be provided in all occupiable areas in environments that are suitable for proper smoke detector operation. [101:9.6.2.9]

9.3.3 Smoke Alarms.**9.3.3.1**

Where required by another section of this *Code*, single-station and multiple-station smoke alarms shall be in accordance with *NFPA 72*.

9.3.3.2

Where automatic smoke detection is required, smoke alarms shall not be used as a substitute.

9.3.3.3

~~Smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a between 10 ft (3.0 m) radial distance and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance, unless listed for installation in close proximity to cooking appliances. the devices comply with the following: Smoke alarms and smoke detectors installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance shall be equipped with an alarm silencing means or use photoelectric detection.~~

- (1) ~~Prior to May 1, 2022, smoke alarms and smoke detectors installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance shall be equipped with an alarm silencing means, or use photoelectric detection, or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, *Smoke Alarms*, the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems*, or subsequent editions.~~
- (2) ~~Effective May 1, 2022, smoke alarms and smoke detectors shall be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.~~

[72:29.8.3.4(4) 29.11.3.4(4)]

9.3.3.4

~~Smoke alarms or and smoke detectors that use photoelectric detection shall not be permitted for installation at a~~ installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance ~~greater than 6 ft (1.8 m) along a horizontal flow path from any a~~ stationary or fixed cooking appliance ~~when . When the following conditions are met:~~ 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this Code , and when the kitchen or cooking area and adjacent spaces have no clear interior partitions or headers, smoke alarms or smoke detectors shall be permitted for installation at a radial distance between 6 ft (1.8 m) and 10 ft (3.0 m) from any stationary or fixed cooking appliance unless the devices comply with the following:

~~The kitchen or cooking area and adjacent spaces have no clear interior partitions or headers.~~

~~The 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of NFPA 72 .~~

- (1) Prior to May 1, 2022, the devices shall use photoelectric detection or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.
- (2) Effective May 1, 2022, the devices shall be listed for resistance to common nuisance sources from cooking nuisance alarms in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

[72:29.8.3.4(4) 29.11.3.4(5)]

9.3.3.5

Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations. [101:9.6.2.10.6 9.6.2.10.7]

9.3.3.6

System smoke detectors in accordance with *NFPA 72* and arranged to function in the same manner as single-station or multiple-station smoke alarms shall be permitted in lieu of smoke alarms. [101:9.6.2.10.7 9.6.2.10.8]

9.3.3.7

Smoke alarms, other than battery-operated smoke alarms as permitted by other sections of this Code, shall be powered in accordance with the requirements of *NFPA 72*. [101:9.6.2.10.8 9.6.2.10.9]

9.3.3.8

Where two or more smoke alarms are required within a suite of rooms, or similar area, they shall be arranged so that operation of any smoke alarm shall cause the alarm in all smoke alarms within the suite of rooms, or similar area to sound, unless otherwise permitted by one of the following: 9.3.3.8.1 or 9.3.3.8.2 .

9.3.3.8.1

The requirement of 9.3.3.8 shall not apply to configurations that provide equivalent distribution of the alarm signal.

9.3.3.8.2

The alarms described in 9.3.3.8 shall sound only within a suite of rooms, or similar area, and shall not actuate the building fire alarm system, unless otherwise permitted by the AHJ.

9.3.3.9

Smoke alarms shall be permitted to be connected to the building fire alarm system for the purpose of annunciation in accordance with *NFPA 72*. [101:9.6.2.10.11 9.6.2.10.12]

9.4 Occupant Notification.

9.4.1

Occupant notification shall be provided to alert occupants of a fire or other emergency where required by other sections of this Code. [101:9.6.3.1]

9.4.2

Occupant notification shall be in accordance with 9.4.3 through 9.4.6.8, unless otherwise provided in 9.4.2.1 through 9.4.2.3.

9.4.2.1

Elevator lobby, hoistway, and associated machine room smoke detectors used solely for elevator recall, and heat detectors used solely for elevator power shutdown, shall not be required to activate the building evacuation alarm if the power supply and installation wiring to such detectors are monitored by the building fire alarm system, and if the activation of such detectors initiates a supervisory signal at a constantly attended location. [101:9.6.3.2.1]

9.4.2.2

Smoke detectors used solely for closing dampers or heating, ventilating, and air-conditioning system shutdown shall not be required to activate the building evacuation alarm, provided that the power supply and installation wiring to the detectors are monitored by the building fire alarm system, and the activation of the detectors initiates a supervisory signal at a constantly attended location. [101:9.6.3.2.2]

9.4.2.3

Smoke detectors located at doors for the exclusive operation of automatic door release shall not be required to activate the building evacuation alarm, provided that the power supply and installation wiring to the detectors are monitored by the building fire alarm system, and the activation of the detectors initiates a supervisory signal at a constantly attended location. [101:9.6.3.2.3]

9.4.3

Where permitted by Chapters 11 through 18, a presignal system shall be permitted where the initial fire alarm signal is automatically transmitted without delay to a municipal fire department, to a fire brigade (if provided), and to an on-site staff person trained to respond to a fire emergency. [101:9.6.3.4]

9.4.4

A positive alarm sequence shall be permitted, provided that it is in accordance with *NFPA 72*.

9.4.5

Unless otherwise provided in 9.4.5.1 through 9.4.5.5, notification signals for occupants to evacuate shall be by audible and visible signals in accordance with *NFPA 72* and ICC/ANSI A117.1, *American National Standard for Accessible and Usable Buildings and Facilities*, or other means of notification acceptable to the authority having jurisdiction. [101:9.6.3.5 9.6.3.6]

9.4.5.1

Areas not subject to occupancy by persons who are hearing impaired shall not be required to comply with the provisions for visible signals. [101:9.6.3.5.1 9.6.3.6.1]

9.4.5.2

Visible-only signals shall be provided to accommodate the needs of the animals and occupants with the approval of the AHJ.

9.4.5.3

Visible signals shall not be required in exit stair enclosures. [101:9.6.3.5.5 9.6.3.6.5]

9.4.5.4

Visible signals shall not be required in elevator cars. [101:9.6.3.5.6 9.6.3.6.6]

9.4.5.5

Where visible signals are not required, as permitted by 9.4.5.3 or 9.4.5.4, documentation of such omission shall be maintained.

9.4.6

The general evacuation alarm signal shall operate in accordance with one of the methods prescribed by 9.4.6.1 through 9.4.6.2. [~~101:9.6.3.6~~ 9.6.3.7]

9.4.6.1

The general evacuation alarm signal shall operate throughout the entire building other than the locations described in 9.4.6.3 and 9.4.6.4. [~~101:9.6.3.6.1~~ 9.6.3.7.1]

9.4.6.2

Where the evacuation of animals is not practical, all of the following shall apply:

- (1) The private operating mode, as described in *NFPA 72* shall be permitted to be used.
- (2) Only the attendants and other personnel required to evacuate animals from a zone, area, floor, or building shall be required to be notified.
- (3) Notification of personnel as specified in 9.4.6.2(2) shall include means to readily identify the zone, area, floor, or building in need of evacuation.

9.4.6.3

The general evacuation signal shall not be required in exit stair enclosures. [~~101:9.6.3.6.4~~ 9.6.3.7.4]

9.4.6.4

The general evacuation signal shall not be required in elevator cars. [~~101:9.6.3.6.5~~ 9.6.3.7.5]

9.4.6.5

Audible alarm notification appliances shall be of such character and so distributed as to be effectively heard above the average ambient sound level that exists under normal conditions of occupancy. [~~101:9.6.3.7~~ 9.6.3.8]

9.4.6.6

Audible alarm notification appliances shall produce signals that are distinctive from audible signals used for other purposes in a given building. [~~101:9.6.3.8~~ 9.6.3.9]

9.4.6.7

Automatically transmitted or live voice evacuation or relocation instructions shall be permitted to be used to notify occupants and shall comply with either 9.4.6.7.1 or 9.4.6.7.2. [~~101:9.6.3.9~~ 9.6.3.10]

9.4.6.7.1

Automatically transmitted or live voice evacuation or relocation instructions shall be in accordance with *NFPA 72*. [~~101:9.6.3.9.1~~ 9.6.3.10.1]

9.4.6.7.2

Where permitted by Chapters 11 through 18, automatically transmitted or live voice announcements shall be permitted to be made via a voice communication or public address system that complies with all of the following:

- (1) Occupant notification, either live or recorded, shall be initiated at a constantly attended receiving station by personnel trained to respond to an emergency.
- (2) An approved secondary power supply shall be provided for other than existing, previously approved systems.
- (3) The system shall be audible above the expected ambient noise level.
- (4) Emergency announcements shall take precedence over any other use.

[**101** : 9.6.3.10.2]

9.4.6.8

Unless otherwise permitted by another section of this *Code*, audible and visible fire alarm notification appliances shall comply with either 9.4.6.8.1 or 9.4.6.8.2. [**101**:~~9.6.3.10~~ 9.6.3.11]

9.4.6.8.1

Audible and visible fire alarm notification appliances shall be used only for fire alarm system or other emergency purposes. [**101**:~~9.6.3.10.1~~ 9.6.3.11.1]

9.4.6.8.2

Emergency voice/alarm communication systems shall be permitted to be used for other purposes in accordance with *NFPA 72*. [**101**:~~9.6.3.10.2~~ 9.6.3.11.2]

9.5 Emergency Forces Notification.

9.5.1

Where required by another section of this *Code*, emergency forces notification shall be provided to alert the municipal fire department and fire brigade (if provided) of fire or other emergency. [**101**:9.6.4.1]

9.5.2

Where emergency forces notification is required by another section of this *Code*, the fire alarm system shall be arranged to transmit the alarm automatically via any of the following means acceptable to the AHJ authority having jurisdiction and shall be in accordance with *NFPA 72*:

- (1) Auxiliary fire alarm system
- (2) Central station fire alarm system
- (3) Proprietary supervision station fire alarm system
- (4) Remote supervising station fire alarm system

[**101**:9.6.4.2]

9.5.3

Where fire alarm systems are required to provide emergency forces notification, supervisory signals and trouble signals shall sound and be visibly displayed either at an approved, remotely located receiving facility or at a location within the protected building that is constantly attended by qualified personnel.

9.6 Fire Safety Functions.

9.6.1

Emergency control functions shall be installed in accordance with the requirements of *NFPA 72*. [**101**:~~9.6.5.1~~ 9.6.6.1]

9.6.2

Where required by another section of this *Code*, the following functions shall be actuated:

- (1) Release of hold-open devices for doors or other opening protectives
- (2) Stairwell or elevator shaft pressurization
- (3) Smoke management or smoke control systems
- (4) Unlocking of doors
- (5) Elevator recall and shutdown
- (6) HVAC shutdown

[~~101:9.6.5.2~~ 9.6.6.2]

9.6.3 Location of Controls.

Operator controls, alarm indicators, and manual communications capability shall be installed at a convenient location acceptable to the authority having jurisdiction. [~~101:9.6.6~~ 9.6.7]

9.7 Annunciation.

9.7.1

Where alarm annunciation is required by another section of this *Code*, it shall comply with 9.7.1.1 through 9.7.7. [~~101:9.6.7.4~~ 9.6.8.1]

9.7.1.1

Alarm annunciation at the control center shall be by means of audible and visible indicators. [~~101:9.6.7.2~~ 9.6.8.2]

9.7.1.2

For the purposes of alarm annunciation, each floor of the building, other than floors of existing buildings, shall be considered as not less than one zone, unless otherwise permitted by 9.7.1.3.3, or another section of this *Code*. [~~101:9.6.7.3~~ 9.6.8.3]

9.7.1.3

Where a floor area exceeds 22,500 ft² (2090 m²), additional fire alarm zoning shall be provided, and the length of any single fire alarm zone shall not exceed 300 ft (91 m) in any direction, except as provided in 9.7.1.3.1 through 9.7.1.3.3, or as otherwise modified by another section of this *Code*. [~~101:9.6.7.4~~ 9.6.8.4]

9.7.1.3.1

Where permitted by another section of this *Code*, fire alarm zones shall be permitted to exceed 22,500 ft² (2090 m²), and the length of a zone shall be permitted to exceed 300 ft (91 m) in any direction. [~~101:9.6.7.4.1~~ 9.6.8.4.1]

9.7.1.3.2

Where the building is protected by an automatic sprinkler system, the area of the fire alarm zone shall be permitted to coincide with the allowable area of the sprinkler system.

9.7.1.3.3

Where a building not exceeding four stories in height is protected by an automatic sprinkler, the sprinkler system shall be permitted to be annunciated on the fire alarm system as a single zone.

9.7.2

A system trouble signal shall be annunciated by means of audible and visible indicators in accordance with *NFPA 72*. [~~101:9.6.7.5~~ 9.6.8.5]

9.7.3

A system supervisory signal shall be annunciated by means of audible and visible indicators in accordance with *NFPA 72*. [~~101:9.6.7.6~~ 9.6.8.6]

9.7.4

Where the system serves more than one building, each building shall be annunciated separately. [~~101:9.6.7.7~~ 9.6.8.7]

9.7.5

Where permitted by another section of this *Code*, the alarm zone shall be permitted to coincide with the permitted area for smoke compartments. [~~101:9.6.7.8~~ 9.6.8.8]

9.7.6

Where a graphic annunciation panel is required by another section of this *Code*, the graphic annunciation panel shall identify animal housing areas within the building.

9.7.7

Where the locations of animal facilities are sensitive, the specific locations of animal housing shall be provided to the fire department but shall not be subject to the graphic annunciator panel requirement in 9.7.6.

9.8 Fire Barriers.**9.8.1 General.****9.8.1.1**

Fire barriers used to provide enclosure, subdivision, or protection under this *Code* shall be classified in accordance with one of the following fire resistance ratings:

- (1) 3-hour fire resistance rating
- (2) 2-hour fire resistance rating
- (3) 1-hour fire resistance rating
- (4) ½-hour fire resistance rating

[~~101:8.3.1.1~~]

9.8.1.2

Fire barriers shall comply with one of the following:

- (1) The fire barriers are continuous from outside wall to outside wall or from one fire barrier to another, or a combination thereof, including continuity through all concealed spaces, such as those found above a ceiling, including interstitial spaces.
- (2) The fire barriers are continuous from outside wall to outside wall or from one fire barrier to another, and from the floor to the bottom of the interstitial space, provided that the construction assembly forming the bottom of the interstitial space has a fire resistance rating not less than that of the fire barrier.

[~~101:8.3.1.2~~]

9.8.1.3

Walls used as fire barriers shall comply with ~~Chapter 7 the requirements~~ of *NFPA 221* applicable to fire barrier walls. ~~The NFPA 221 limitation on percentage width of openings shall not apply.~~ [~~101:8.3.1.3~~]

9.8.1.4

The *NFPA 221* limitation on percentage width of openings shall not apply.

9.8.2 Walls.**9.8.2.1**

The fire-resistive materials, assemblies, and systems used shall be limited to those permitted in this *Code* and this chapter. [101:8.3.2.1]

9.8.2.1.1

Fire resistance-rated glazing tested in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*, shall be permitted. [101:8.3.2.1.1]

9.8.2.1.2

Fire resistance-rated glazing shall bear the identifier “W-XXX” where “XXX” is the fire resistance rating in minutes. Such identification shall be permanently affixed.

9.8.2.2

The construction materials and details for fire-resistive assemblies and systems for walls described shall comply with all other provisions of this *Code*, except as modified herein. [101:8.3.2.2]

9.8.2.3

Interior walls and partitions of nonsymmetrical construction shall be evaluated from both directions and assigned a fire resistance rating based on the shorter duration obtained in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*. When the wall is tested with the least fire-resistive side exposed to the furnace, the wall shall not be required to be subjected to tests from the opposite side. [101:8.3.2.3]

9.8.3 Fire Doors and Windows.

9.8.3.1

Openings required to have a fire protection rating by Table 9.8.4.2 shall be protected by approved, listed, and labeled fire door assemblies and fire window assemblies and their accompanying hardware, including all frames, closing devices, anchorage, and sills in accordance with the requirements of NFPA 80 except as otherwise specified in this *Code*. [101:8.3.3.2.5 8.3.3.2.6]

9.8.3.1.1

Fire resistance-rated glazing tested in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*, shall be permitted in fire door assemblies and fire window assemblies where tested and installed in accordance with their listings. [101:8.3.3.6.8]

9.8.3.1.2

Fire resistance-rated glazing shall be marked in accordance with 9.8.3.12 and Table 9.8.4.2. Such marking shall be permanently affixed.

9.8.3.2

Fire protection ratings for products required to comply with 9.8.3 shall be as determined and reported by a nationally recognized testing agency in accordance with NFPA 252; NFPA 257; UL 10B, *Fire Tests of Door Assemblies*; UL 10C, *Positive Pressure Fire Tests of Door Assemblies*; or UL 9, *Fire Tests of Window Assemblies*. [101:8.3.3.2.1]

9.8.3.2.1

Fire protection-rated glazing shall be evaluated under positive pressure in accordance with NFPA 257.

9.8.3.2.2

All products required to comply with 9.8.3.2 shall bear an approved label.

9.8.3.2.3 Labels.

Labels on fire door assemblies shall be maintained in a legible condition. [101:8.3.3.3.3]

9.8.3.3

Unless otherwise specified, fire doors shall be self-closing or automatic-closing. [101:8.3.3.3.5]

9.8.3.4

Floor fire door assemblies shall be tested in accordance with NFPA 288 and shall achieve a fire resistance rating not less than the assembly being penetrated. Floor fire door assemblies shall be listed and labeled.

9.8.3.5

Fire protection-rated glazing shall be permitted in fire barriers having a required fire resistance rating of 1 hour or less and shall be of an approved type with the appropriate fire protection rating for the location in which the barriers are installed. [101:8.3.3.6.5]

9.8.3.6

Glazing in fire window assemblies, other than in existing fire window installations of wired glass and other fire-rated glazing material, shall be of a design that has been tested to meet the conditions of acceptance of NFPA 257 or UL 9, *Fire Tests of Window Assemblies*. [101:8.3.3.6.6]

9.8.3.7

Fire protection-rated glazing in fire door assemblies, other than in existing fire-rated door assemblies, shall be of a design that has been tested to meet the conditions of acceptance of NFPA 252, UL 10B, *Fire Tests of Door Assemblies*, or UL 10C, *Positive Pressure Fire Tests of Door Assemblies*. [101:8.3.3.6.7]

9.8.3.8

Fire resistance-rated glazing complying with 9.8.2.1.1 shall be permitted in fire doors and fire window assemblies in accordance with their listings.

9.8.3.9

Glazing materials that have been listed and labeled to indicate the type of opening to be protected for fire protection purposes shall be permitted to be used in approved opening protectives in accordance with Table 9.8.4.2 and NFPA 80. [101:8.3.3.6.1]

9.8.3.10

Nonsymmetrical fire protection-rated glazing systems shall be tested with each face exposed to the furnace, and the assigned fire protection rating shall be the shortest duration obtained from the two tests conducted in compliance with NFPA 257 or UL 9, *Fire Tests of Window Assemblies*. [101:8.3.3.6.9]

9.8.3.11

The total combined area of fire protection glazing in fire-rated window assemblies and fire-rated door assemblies used in fire barriers shall not exceed 25 percent of the area of the fire barrier that is common with any room, unless the installation meets one of the following criteria: is an existing fire window installation of wired glass and or other fire-rated protection glazing materials in approved frames.

~~The installation is an existing fire window installation of wired glass and other fire-rated glazing materials in approved frames.~~

~~The fire protection-rated glazing material is installed in approved existing frames.~~

[101:8.3.3.6.10]

9.8.3.12

New fire protection-rated glazing shall be marked in accordance with Table 9.8.3.12 and Table 9.8.4.2, and such marking shall be permanently affixed. [101:8.3.3.6.3]

Table 9.8.3.12 Marking Fire-Rated Glazing Assemblies

<u>Fire Test Standard</u>	<u>Marking</u>	<u>Definition of Marking</u>
ASTM E119 or UL 263	W	Meets wall assembly criteria
NFPA 257 or UL 9	OH	Meets fire window assembly criteria, including the hose stream test
NFPA 252, <u>UL 10B</u> , or <u>UL 10C</u>	D	Meets fire door assembly criteria
	H	Meets fire door assembly hose stream test
	T	Meets 450°F (232°C) temperature rise criteria for 30 minutes
	XXX	The time, in minutes, of fire resistance or fire protection rating of the glazing assembly

[101:8.3.3.6.3]

9.8.3.13

Fire-rated door assemblies shall be inspected and tested in accordance with NFPA 80.

9.8.4 Opening Protectives.**9.8.4.1**

Every opening in a fire barrier shall be protected to limit the spread of fire and restrict the movement of smoke from one side of the fire barrier to the other.

9.8.4.2

The minimum fire rating for opening protectives in fire barriers, fire-rated smoke barriers, and fire-rated smoke partitions shall be in accordance with Table 9.8.4.2. [101:8.3.3.2.2]

Table 9.8.4.2 Minimum Fire Ratings for Opening Protectives in Fire-Resistance-Rated Assemblies and Fire-Rated Glazing Markings

<u>Component</u>	<u>Walls and Partitions (hr)</u>	<u>Fire Door Assemblies (hr)</u>	<u>Door Vision Panel Maximum Size (in.²)</u>	<u>Fire-Rated Glazing Marking Door Vision Panel</u>	<u>Minimum Side Light/Transom Assembly Rating (hr)</u>		<u>Fire-Rat Mark Light/Tra</u>
					<u>Fire Protection</u>	<u>Fire Resistance</u>	
Elevator hoistways	2	1½	155 in. ² c	D-H-90 or D-H-W-90	NP	2	NP
	1	1	155 in. ² c	D-H-60 or D-H-W-60	NP	1	NP
	½	⅓	85 in. ² d	D-20 or D-W-20	⅓	⅓	D-H-20
Elevator lobby (per 7.2.13.4)	1	1	100 in. ² a	≤100 in. ² , D-H-T-60 or D-H-W-60	NP	1	NP
				>100 in. ² , D-H-W-60			
Vertical shafts (including stairways, exits, and refuse chutes)	2	1½	Maximum size tested	D-H-90 or D-H-W-90	NP	2	NP
	1	1	Maximum size tested	D-H-60 or D-H-W-60	NP	1	NP
Replacement panels in existing vertical shafts	½	⅓	Maximum size tested	D-20 or D-W-20	⅓	⅓	D-H-20
Horizontal exits	2	1½	Maximum size tested	D-H-90 or D-H-W-90	NP	2	NP
Horizontal exits served by bridges between buildings	2	¾	Maximum size tested ^e	D-H-45 or D-H-W-45	¾ ^e	¾ ^e	D-H-45

<u>Component</u>	<u>Walls and Partitions (hr)</u>	<u>Fire Door Assemblies (hr)</u>	<u>Door Vision Panel Maximum Size (in.²)</u>	<u>Fire-Rated Glazing Marking Door Vision Panel</u>	<u>Minimum Side Light/Transom Assembly Rating (hr)</u>		<u>Fire-Rat Mark Light/Tra</u>
					<u>Fire Protection</u>	<u>Fire Resistance</u>	
Exit access corridors ^f	1	1/3	Maximum size tested	D-20 or D-W-20	3/4	3/4	D-H-45
	1/2	1/3	Maximum size tested	D-20 or D-W-20	1/3	1/3	D-H-20
Other fire barriers	3	3	100 in. ² a	≤100 in. ² , D-H-180 or D-H-W-180	NP	3	NP
				>100 in. ² , D-H-180 or D-H-W-180	NP	3	NP
	2	1 1/2	Maximum size tested	D-H-90 or D-H-W-90	NP	2	NP
	1	3/4	Maximum size tested ^e	D-H-45 or D-H-W-45	3/4 ^e	3/4 ^e	D-H-45
	1/2	1/3	Maximum size tested	D-20 or D-W-20	1/3	1/3	D-H-20
Smoke barriers ^f	1	1/3	Maximum size tested	D-20 or D-W-20	3/4	3/4	D-H-45
	1/2	1/3	Maximum size tested	D-20 or D-W-20	1/3	1/3	D-H-20
Smoke partitions ^{f,g}	1	1/3	Maximum size tested	D-20 or D-W-20	3/4	3/4	D-H-45
	1/2	1/3	Maximum size tested	D-20 or D-W-20	1/3	1/3	D-H-20

For SI units, 1 in.² = 0.00064516 m².

NP: Not permitted.

^aFire resistance-rated glazing tested to ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*, shall be permitted in the maximum size tested (see 8.3.3.6.8 9.8.3.1.1).

^bFire-rated glazing in exterior windows shall be marked in accordance with Table 8.3.3.6.3 9.8.3.12.

^cSee ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*, for additional information.

^dSee ASME A17.3, *Safety Code for Existing Elevators and Escalators*, for additional information.

^eMaximum area of individual exposed lights shall be 1296 in.² (0.84 m²), with no dimension exceeding 54 in. (1.37 m) unless otherwise tested. [80:Table 4.4.5 Note b and 80:4.4.5.1].

^fFire doors are not required to have a hose stream test per UL 10B, *Fire Tests of Door Assemblies*, or UL 10C, *Positive Pressure Fire Tests of Door Assemblies*.

^gFor residential board and care, see NFPA 101, Chapters 32 and 33.

[101:8.3.3.2.2]

9.8.4.2.1

Fire-rated glazing assemblies marked as complying with hose stream requirements (H) shall be permitted in applications that do not require compliance with hose stream requirements. Fire-rated glazing assemblies marked as complying with temperature rise requirements (T) shall be permitted in applications that do not require compliance with temperature rise requirements. Fire-rated glazing assemblies marked with ratings that exceed the ratings required by this Code shall be permitted.

9.8.5 Penetrations.

9.8.5.1 General.

9.8.5.1.1

The provisions of 9.8.5 shall govern the materials and methods of construction used to protect through-penetrations and membrane penetrations in fire walls, fire barrier walls, and fire-resistance-rated horizontal assemblies. [101:8.3.4.1.1]

9.8.5.1.2

The provisions of 9.8.5 shall not apply to approved existing materials and methods of construction used to protect existing through-penetrations and existing membrane penetrations in fire walls, fire barrier walls, or fire-resistance-rated horizontal assemblies, unless otherwise required by this Code. [101:8.3.4.1.2]

9.8.5.2 Firestop Systems and Devices Required.

9.8.5.2.1

Penetrations for cables, cable trays, conduits, pipes, tubes, combustion vents and exhaust vents, wires, and similar items to accommodate electrical, mechanical, plumbing, and communications systems that pass through a wall, floor, or floor/ceiling assembly constructed as a fire barrier shall be protected by a firestop system or device. [101:8.3.4.2.1]

9.8.5.2.2

The firestop system or device shall be tested in accordance with ASTM E814, *Standard Test Method for Fire Tests of Through Penetration Fire Stops* *Stop Systems*, or UL 1479, *Fire Tests of Through Penetration Firestops*, at a minimum positive pressure differential of 0.01 in. water column (2.5 Pa) between the exposed and the unexposed surface of the test assembly. [101:8.3.4.2.2]

9.8.5.2.3

The requirements of 9.8.5.2 shall not apply where otherwise permitted by any one of the following:

- (1) Where penetrations are tested and installed as part of an assembly tested and rated in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*
- (2) Where penetrations through floors are enclosed in a shaft enclosure designed as a fire barrier
- (3) Where concrete, grout, or mortar has been used to fill the annular spaces around cast-iron, copper, or steel piping, conduit, or tubing that penetrates one or more concrete or masonry fire-resistance-rated assemblies and all of the following applies:
 - (a) The nominal diameter of each penetrating item does not exceed 6 in. (150 mm).
 - (b) The opening size does not exceed 1 ft² (0.09 m²).
 - (c) The thickness of the concrete, grout, or mortar is the full thickness of the assembly.
- (4) Where penetration is limited to one floor, the firestopping material is capable of preventing the passage of flame and hot gases sufficient to ignite cotton waste when subjected to the time-temperature fire conditions of ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*, under a minimum positive pressure differential of 0.01 in. water column (2.5 Pa) at the location of the penetration for the time period equivalent to the required fire resistance rating of the assembly penetrated, and the firestopping materials are used with the following penetrating items:
 - (a) Steel, ferrous, or copper cables
 - (b) Cable or wire with steel jackets
 - (c) Cast-iron, steel, or copper pipes
 - (d) Steel conduit or tubing

[101:8.3.4.2.5.1]

9.8.5.2.4

The maximum nominal diameter of the penetrating item, as indicated in 9.8.5.2.3(4)(a) through 9.8.5.2.3(4)(d), shall not be greater than 4 in. (100 mm) and shall not exceed an aggregate 100 in.² (64,520 mm²) opening in any 100 ft² (9.3 m²) of floor or wall area. [101:8.3.4.2.5.2]

9.8.5.2.5

Firestop systems and devices shall have a minimum 1-hour F rating but not less than the required fire resistance rating of the fire barrier penetrated.

9.8.5.2.6 T Ratings.**9.8.5.2.6.1**

Penetrations in fire-resistance-rated horizontal assemblies shall have a T rating of not less than 1 hour, and not less than the fire resistance rating of the horizontal assembly.

[101:8.3.4.2.4.1]

9.8.5.2.6.2

A T rating shall not be required for either of the following:

- (1) Floor penetrations contained within the cavity of a wall assembly
- (2) Penetrations through floors or floor assemblies where the penetration is not in direct contact with combustible material

[101:8.3.4.2.4.2]

9.8.5.3 Sleeves.

Where the penetrating item uses a sleeve to penetrate the wall or floor, the sleeve shall be securely set in the wall or floor, and the space between the item and the sleeve shall be filled with a material that complies with 9.8.5.1. [101:8.3.4.3]

9.8.5.4

Insulation and coverings for penetrating items shall not pass through the wall or floor unless the insulation or covering has been tested as part of the firestop system or device. [101:8.3.4.4]

9.8.5.5

Where designs take transmission of vibrations into consideration, any vibration isolation shall meet one of the following conditions:

- (1) It shall be provided on either side of the wall or floor.
- (2) It shall be designed for the specific purpose.

9.8.5.6 Transitions.

9.8.5.6.1

Where piping penetrates a fire-resistance-rated wall or floor assembly, combustible piping shall not connect to noncombustible piping within 36 in. (915 mm) of the firestop system or device unless it can be demonstrated that the transition will not reduce the fire resistance rating, except in the case of previously approved installations. [101:8.3.4.6.1]

9.8.5.6.2

Unshielded couplings shall not be used to connect noncombustible piping to combustible piping unless it can be demonstrated that the transition complies with the fire-resistive requirements of 9.8.5.1. [101:8.3.4.6.2]

9.8.5.7 Membrane Penetrations.

9.8.5.7.1

Membrane penetrations for cables, cable trays, conduits, pipes, tubes, combustion vents, and exhaust vents, wires, and similar items to accommodate electrical, mechanical, plumbing, and communications systems that pass through a membrane of a wall, floor, or floor/ceiling assembly constructed as a fire barrier shall be protected by a firestop system or device and shall comply with 9.8.5.1 through 9.8.5.2. [101:8.3.4.7.1]

9.8.5.7.2

The firestop system or device shall be tested in accordance with ASTM E814, *Standard Test Method for Fire Tests of Through-Penetration Fire Stops* ~~Stop Systems~~, or UL 1479, *Fire Tests of Through-Penetration Firestops*, at a minimum positive pressure differential of 0.01 in. water column (2.5 Pa) between the exposed and the unexposed surface of the test assembly, unless one of the following applies:

- (1) Membrane penetrations of ceilings that are not an integral part of a fire-resistance-rated floor/ceiling or roof/ceiling assembly
- (2) Membrane penetrations of steel, ferrous, or copper conduit, piping, or tubing, and steel electrical outlet boxes and wires, or combustion vents or exhaust vents where the annular space is protected with an approved material and the aggregate area of the openings does not exceed 100 in.² (64.520 mm²) in any 100 ft² (9.3 m²) of ceiling area
- (3) Electrical outlet boxes and fittings provided that such devices are listed for use in fire-resistance-rated assemblies and are installed in accordance with their listing
- (4) The annular space created by the membrane penetration of a fire sprinkler shall be permitted, provided that the space is covered by a metal escutcheon plate

[101:8.3.4.7.2]

9.8.5.7.3

Where walls or partitions are required to have a minimum 1-hour fire resistance rating, recessed fixtures shall be installed in the wall or partition in such a manner that the required fire resistance is not reduced, unless one of the following criteria is met:

- (1) Any steel electrical box not exceeding 16 in.² (10,300 mm²) in area shall be permitted where the aggregate area of the openings provided for the boxes does not exceed 100 in.² (64,520 mm²) in any 100 ft² (9.3 m²) of wall area, and, where outlet boxes are installed on opposite sides of the wall, the boxes shall be separated by one of the following means:
 - (a) Horizontal distance of not less than 24 in. (610 mm)
 - (b) Horizontal distance of not less than the depth of the wall cavity, where the wall cavity is filled with cellulose loose-fill, rock wool, or slag wool insulation
 - (c) Solid fireblocking
 - (d) Other listed materials and methods
- (2) Membrane penetrations for any listed electrical outlet box made of any material shall be permitted, provided that such boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing.
- (3) The annular space created by the membrane penetration of a fire sprinkler shall be permitted, provided that the space is covered by a metal escutcheon plate.
- (4) Membrane penetrations by electrical boxes of any size or type, which have been listed as part of a wall opening protective material system for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing, shall be permitted.

[101:8.3.4.7.3]

9.8.6 Joints.

9.8.6.1

The provisions of 9.8.6 shall govern the materials and methods of construction used to protect joints in fire barriers, in between fire barriers, and at the perimeter of fire barriers where fire barriers meet other fire barriers, the floor or roof deck above, or the outside walls.

[101:8.3.5.1.1]

9.8.6.2

Joints made within, between, or at the perimeter of fire barriers shall be protected with a joint system that is capable of limiting the transfer of smoke.

9.8.6.3

Testing of the joint system in a fire barrier shall be representative of the actual installation suitable for the required engineering demand without compromising the fire resistance rating of the assembly or the structural integrity of the assembly. [101:8.3.5.2.4]

9.8.6.4

Joints made within or at the perimeter of fire barriers, between fire-resistance-rated assemblies, or where fire barriers meet other fire barriers, the floor or roof deck above, or the outside walls shall be protected with a joint system that is designed and tested to prevent the spread of fire for a time period equal to that of the assembly in which the joint is located.

[101:8.3.5.2.1]

9.8.6.5

Such materials, systems, or devices shall be tested as part of the assembly in accordance with the requirements of ASTM E1966, *Standard Test Method for Fire-Resistive Joint Systems*, or UL 2079, *Tests for Fire Resistance of Building Joint Systems*. [101:8.3.5.2.5]

9.8.6.6

All joint systems shall be tested at their maximum joint width in accordance with the requirements of ASTM E1966, *Standard Test Method for Fire-Resistive Joint Systems*, or UL 2079, *Tests for Fire Resistance of Building Joint Systems*, under a minimum positive pressure differential of 0.01 in. water column (2.5 N/m²) for a time period equal to that of the assembly. [101:8.3.5.2.6]

9.8.6.7

All test specimens shall comply with the minimum height or length required by the standard. [101:8.3.5.2.7]

9.8.6.8

Wall assemblies shall be subjected to a hose stream test in accordance with ASTM E119, *Standard Test Methods for Fire Tests of Building Construction and Materials*, or UL 263, *Fire Tests of Building Construction and Materials*. [101:8.3.5.2.8]

9.8.6.9 Exterior Curtain Walls and Perimeter Joints.**9.8.6.9.1**

Voids created between the fire resistance-rated floor assembly and the exterior curtain wall shall be protected with a perimeter joint system that is designed and tested in accordance with ASTM E2307, *Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Story Apparatus*. [101:8.3.5.4.1]

9.8.6.9.2

The perimeter joint system shall have an F rating equal to the fire resistance rating of the floor assembly. [101:8.3.5.4.2]

9.9 Smoke Barriers.**9.9.1 General.**

Where required, smoke barriers shall be provided to subdivide building spaces for the purpose of restricting the movement of smoke.

9.9.2 Continuity.**9.9.2.1**

Smoke barriers required by this Code shall be continuous from an outside wall to an outside wall, from a floor to a floor, or from a smoke barrier to a smoke barrier, or by use of a combination thereof. [101:8.5.2.1]

9.9.2.2

Smoke barriers required by this Code shall be continuous through all concealed spaces, such as those found above a ceiling, including interstitial spaces. [101:8.5.2.2]

9.9.2.3

A smoke barrier required for an occupied space below an interstitial space shall not be required to extend through the interstitial space, provided that the construction assembly forming the bottom of the interstitial space provides resistance to the passage of smoke equal to that provided by the smoke barrier. [101:8.5.2.3]

9.9.3 Fire Barrier Used as Smoke Barrier.

A fire barrier shall be permitted to be used as a smoke barrier, provided that it meets the requirements of Section 9.9. [101:8.5.3]

9.9.4 Opening Protectives.

9.9.4.1

Doors in smoke barriers shall close the opening, leaving only the minimum clearance necessary for proper operation, and shall be without louvers or grilles. For other than previously approved existing doors, the clearance under the bottom of the doors shall be a maximum of $\frac{3}{4}$ in. (19 mm). [101:8.5.4.1]

9.9.4.2

Latching hardware shall be required on doors in smoke barriers, unless specifically exempted by Chapters 11 through 18. [101:8.5.4.3]

9.9.4.3

Doors in smoke barriers shall be self-closing or automatic-closing.

9.9.4.4

Fire window assemblies shall comply with NFPA 80.

9.9.5 Ducts and Air-Transfer Openings.**9.9.5.1 General.**

The provisions of 9.9.5 shall govern the materials and methods of construction used to protect ducts and air-transfer openings in smoke barriers. [101:8.5.5.1]

9.9.5.2 Smoke Dampers.**9.9.5.2.1**

Where a smoke barrier is penetrated by a duct or air-transfer opening, a smoke damper designed and tested in accordance with the requirements of UL 555S, *Smoke Dampers*, shall be installed. [101:8.5.5.2.1]

9.9.5.2.2

Where a smoke barrier is also constructed as a fire barrier, a combination fire/smoke damper designed and tested in accordance with the requirements of UL 555, *Fire Dampers*, and UL 555S, *Smoke Dampers*, shall be installed. [101:8.5.5.2.2]

9.9.5.3 Smoke Damper Exemptions.

Smoke dampers shall not be required under any of the following conditions:

- (1) Where ducts or air-transfer openings are part of an engineered smoke control system and the smoke damper will interfere with the operation of a smoke control system
- (2) Where the air in ducts continues to move and the air handling system installed is arranged to prevent recirculation of exhaust or return air under fire emergency conditions
- (3) Where the air inlet or outlet openings in ducts are limited to a single smoke compartment
- (4) Where ducts penetrate floors that serve as smoke barriers
- (5) Where ducts penetrate communicating spaces that do not connect more than three contiguous floors, the lowest or next-to-lowest story within the communicating space is a street floor, the entire floor area of the communicating space is open and unobstructed, such that a fire in any part of the space will be readily obvious to the occupants of the space prior to the time it becomes an occupant hazard, and the building is fully sprinkler protected

9.9.5.4 Installation, Testing, and Maintenance.**9.9.5.4.1**

Air-conditioning, heating, ventilating ductwork, and related equipment, including smoke dampers and combination fire and smoke dampers, shall be installed in accordance with NFPA 90A, NFPA 90B, NFPA 105, or NFPA 80, as applicable. [101:8.5.5.4.1]

9.9.5.4.2

Smoke dampers and combination fire and smoke dampers required by this *Code* shall be inspected, tested, and maintained in accordance with NFPA 105. [101:8.5.5.4.2]

9.9.5.4.3

The equipment specified in 9.9.5.4.1 shall be installed in accordance with the requirements of 9.9.5, the manufacturer's installation instructions, and the equipment listing. [101:8.5.5.4.3]

9.9.5.5 Access and Identification.**9.9.5.5.1**

Access to the dampers shall be provided for inspection, testing, and maintenance. [101:8.5.5.5.1]

9.9.5.5.2

Smoke and combination fire and smoke dampers in new construction shall be provided with an approved means of access, as follows:

- (1) The means of access shall be large enough to allow inspection and maintenance of the damper and its operating parts.
- (2) The access shall not affect the integrity of fire-resistance-rated assemblies or smoke barrier continuity.
- (3) The access openings shall not reduce the fire resistance rating of the assembly.
- (4) Access doors in ducts shall be tight-fitting and suitable for the required duct construction.
- (5) Access and maintenance shall comply with the requirements of the mechanical code.

[101:8.5.5.5.2]

9.9.5.5.3 Identification.

Access points to fire and smoke dampers shall be permanently identified by one of the following:

- (1) A label having letters not less than ½ in. (13 mm) in height and reading as one of the following:
 - (a) FIRE/SMOKE DAMPER
 - (b) SMOKE DAMPER
 - (c) FIRE DAMPER
- (2) Symbols as approved by the authority having jurisdiction

9.9.5.6 Smoke Damper Ratings.

Smoke damper leakage ratings shall be not less than Class II. Elevated temperature ratings shall be not less than 250°F (140°C). [101:8.5.5.6]

9.9.5.7 Smoke Detectors.**9.9.5.7.1**

Required smoke dampers in ducts penetrating smoke barriers shall close upon detection of smoke by approved smoke detectors in accordance with *NFPA 72* unless one of the following conditions exists:

- (1) The ducts penetrate smoke barriers above the smoke barrier doors, and the door release detector actuates the damper.
- (2) Approved smoke detector installations are located within the ducts in existing installations.

[101:8.5.5.7.1]

9.9.5.7.2

Where a duct is provided on one side of the smoke barrier, the smoke detectors on the duct side shall be in accordance with 9.9.5.7.1. [**101:8.5.5.7.2**]

9.9.5.7.3

Required smoke dampers in air-transfer openings shall close upon detection of smoke by approved smoke detectors in accordance with *NFPA 72*. [**101:8.5.5.7.3**]

9.9.6 Penetrations.

9.9.6.1

The provisions of 9.9.6 shall govern the materials and methods of construction used to protect through-penetrations and membrane penetrations of smoke barriers. [**101:8.5.6**]

9.9.6.2

Penetrations for cables, cable trays, conduits, pipes, tubes, vents, wires, and similar items to accommodate electrical, mechanical, plumbing, and communications systems that pass through a wall, floor, or floor/ceiling assembly constructed as a smoke barrier, or through the ceiling membrane of the roof/ceiling of a smoke barrier assembly, shall be protected by a system or material capable of restricting the transfer of smoke. [**101:8.5.6.2**]

9.9.6.3

Where a smoke barrier is also constructed as a fire barrier, the penetrations shall be protected in accordance with the requirements of fire barriers.

9.9.6.4

Where sprinklers penetrate a single membrane of a fire-resistance-rated assembly in buildings equipped throughout with an approved automatic fire sprinkler system, noncombustible escutcheon plates shall be permitted, provided that the space around each sprinkler penetration does not exceed ½ in. (13 mm), measured between the edge of the membrane and the sprinkler. [**101:8.5.6.4**]

9.9.6.5

Where the penetrating item uses a sleeve to penetrate the smoke barrier, the sleeve shall be securely set in the smoke barrier, and the space between the item and the sleeve shall be filled with a listed system or a material capable of restricting the transfer of smoke. [**101:8.5.6.6**]

9.9.6.6

Where designs take transmission of vibrations into consideration, any vibration isolation shall meet one of the following conditions:

- (1) It shall be provided on either side of the smoke barrier.
- (2) It shall be designed for the specific purpose.

9.9.7 Joints.

9.9.7.1

The provisions of 9.9.7 shall govern the materials and methods of construction used to protect joints in between and at the perimeter of smoke barriers or, where smoke barriers meet other smoke barriers, the floor or roof deck above, or the outside walls. The provisions of 9.9.7.1 shall not apply to approved existing materials and methods of construction used to protect existing joints in smoke barriers, unless otherwise required by this Code. [**101:8.5.7.1**]

9.9.7.2

Joints made within, between, or at the perimeter of smoke barriers shall be protected with a joint system that is capable of limiting the transfer of smoke.

9.9.7.3

Smoke barriers that are also constructed as fire barriers shall be protected with a joint system that is designed and tested to resist the spread of fire for a time period equal to the required fire resistance rating of the assembly and restrict the transfer of smoke in accordance with 9.9.7.2. [101:8.5.7.3]

9.9.7.4

Testing of the joint system in a smoke barrier that also serves as fire barrier shall be representative of the actual installation. [101:8.5.7.4]

9.10 Fire Extinguishers.**9.10.1**

Where required by another section of this *Code*, portable fire extinguishers shall be selected, installed, inspected, and maintained in accordance with NFPA 10. [101:9.9]

9.10.2

Fire extinguishers in accordance with 9.10.1 shall have a minimum 2-A:10-B:C rating.

9.10.3

Fire extinguishers shall be located so that the minimum travel distance does not exceed 50 ft (15.2 m), unless permitted by 9.10.5.

9.10.4

Livestock areas not typically occupied by humans shall have a minimum 2-A:10-B:C rated fire extinguisher located at each entrance.

9.10.5*

Alternative placement or physical protection of fire extinguishers shall be permitted with the approval of the AHJ in areas where necessary to prevent injury to the animal occupants or damage to the fire extinguishers.

9.11 Lightning Protection.

Where lightning protection is required by the local building code, lightning protection shall be in accordance with NFPA 780.

9.12 Special Hazards.**9.12.1 Open Flame, Candles, Open Fires, Portable Cooking, and Incinerators.****9.12.1.1***

Open flame, candles, open fires, and incinerators shall not be permitted except as provided in 9.12.1.2.

9.12.1.2

Open flame heating devices that comply with the following shall be permitted:

- (1) NFPA 31
- (2) NFPA 54/ANSI Z223.1
- (3) NFPA 58
- (4) *NFPA 70*
- (5) NFPA 90A
- (6) NFPA 90B
- (7) NFPA 211

9.12.1.3

For animal housing facilities with fuel-burning appliances or equipment, carbon monoxide detection shall be installed in accordance with *NFPA 72*.

9.12.1.4

Portable cooking equipment shall be used only in spaces designated for such use and separated from the animal housing facility.

9.12.2 Smoking.**9.12.2.1**

Smoking shall be prohibited in animal housing facilities.

9.12.2.2

"No Smoking" signs shall be posted in conspicuous, designated locations where smoking is prohibited.

9.12.3 Waste Removal and Housekeeping.**9.12.3.1**

Approved containers for rubbish and other trash materials shall be provided.

9.12.3.2

Rubbish, trash, and other waste material shall be disposed of at regular intervals.

9.12.3.3

Combustible waste or refuse shall be properly stored or disposed of to prevent unsafe conditions.

9.12.3.4

Persons owning or having control of any property shall not allow any combustible waste material to accumulate in any area or in any manner that creates a fire hazard to life or property.

9.12.4 Rubbish Containers.**9.12.4.1 General.**

Rubbish containers kept outside of rooms or vaults shall not exceed 40.5 ft³ (1.15 m³) capacity.

9.12.4.1.1

Containers exceeding a capacity of 5½ ft³ [40 gal (0.15 m³)] shall be provided with lids.

9.12.4.1.2

Rubbish containers and lids shall be constructed of noncombustible materials or nonmetallic materials complying with 9.12.4.2.

9.12.4.2 Nonmetallic Containers.**9.12.4.2.1**

Nonmetallic rubbish containers exceeding a capacity of 5½ ft³ [40 gal (0.15 m³)] shall be manufactured of materials having a peak rate of heat release not exceeding 300 kW/m² at a flux of 50 kW/m² when tested in the horizontal orientation, at a thickness as used in the container but not less than 0.25 in. (6 mm), in accordance with ASTM E1354, *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*.

9.12.4.2.2

Such containers shall be permanently labeled indicating capacity and peak rate of heat release.

9.12.4.3 Removal.

Combustible rubbish stored in containers outside of noncombustible vaults or rooms shall be removed from buildings at least once each working day.

9.12.4.4 Rubbish Within Dumpsters.**9.12.4.4.1**

Dumpsters and containers with an individual capacity of 1.5 yd³ [40.5 ft³ (1.15 m³)] or more shall not be stored in buildings or placed within 10 ft (3 m) of combustible walls, openings, or combustible roof eave lines.

9.12.4.4.2

Areas containing dumpsters or containers shall be protected by an approved automatic sprinkler system and enclosed with a fire resistance rating of 1 hour.

9.12.4.5

Approved metal receptacles with self-closing covers shall be provided for the storage or disposal of oil-soaked waste or cloths.

9.12.5 Storage.

Aisles, hallways, or other types of corridors of animal housing facilities shall not be used in any form for permanent storage.

9.12.6 Electrical Fire Safety.**9.12.6.1 General.**

Subsection 9.12.6 shall apply to permanent and temporary electrical appliances, equipment, fixtures, and wiring. [1:11.1.1]

9.12.6.2 Permanent Wiring, Fixtures, and Equipment.**9.12.6.2.1***

All new electrical wiring, fixtures, appliances and equipment shall be installed in accordance with *NFPA 70*. [1:11.1.2.1]

9.12.6.3 Multiplug Adapters.**9.12.6.3.1**

Multiplug adapters, such as multiplug extension cords, cube adapters, strip plugs, and other devices, shall be listed and used in accordance with their listing. [1:11.1.3.1]

9.12.6.3.2

Multiplug adapters shall not be used as a substitute for permanent wiring or receptacles. [1:11.1.3.2]

9.12.6.4 Relocatable Power Taps.**9.12.6.4.1**

Relocatable power taps shall be of the polarized or grounded type with overcurrent protection and shall be listed.

9.12.6.4.2

The relocatable power taps shall be directly connected to a permanently installed receptacle. [1:11.1.4.2]

9.12.6.4.3

Relocatable power tap cords shall not extend through walls, ceilings, or floors; under doors or floor coverings; or be subject to environmental or physical damage. [1:11.1.4.3]

9.12.6.5 Extension Cords.**9.12.6.5.1**

Extension cords shall be plugged directly into an approved receptacle, power tap, or multiplug adapter and shall, except for approved multiplug extension cords, serve only one portable appliance. [1:11.1.5.1]

9.12.6.5.2

The ampacity of the extension cords shall not be less than the rated capacity of the portable appliance supplied by the cord. [1:11.1.5.2]

9.12.6.5.3

The extension cords shall be maintained in good condition without splices, deterioration, or damage. [1:11.1.5.3]

9.12.6.5.4

Extension cords shall be grounded when servicing grounded portable appliances. [1:11.1.5.4]

9.12.6.5.5

Extension cords and flexible cords shall not be affixed to structures; extend through walls, ceilings, or floors, or under doors or floor coverings; or be subject to environmental or physical damage. [1:11.1.5.5]

9.12.6.5.6

Extension cords shall not be used as a substitute for permanent wiring. [1:11.1.5.6]

9.12.7 Utilities.**9.12.7.1 General.****9.12.7.1.1**

The installation of stationary liquid fuel-burning appliances, including but not limited to industrial-, commercial-, and residential-type steam, hot water, or warm air heating appliances; domestic-type range burners; space heaters; and portable liquid fuel-burning equipment shall comply with 9.12.7 and NFPA 31. [1:11.5.1.1]

9.12.7.1.2

Subsection 9.12.7 shall also apply to all accessories and control systems, whether electric, thermostatic, or mechanical, and all electrical wiring connected to liquid fuel-burning appliances and shall comply with 9.12.7 and NFPA 31.

9.12.7.1.3

Subsection 9.12.7 shall also apply to the installation of liquid fuel storage and supply systems connected to liquid fuel-burning appliances and shall comply with 9.12.7 and NFPA 31.

9.12.7.1.4

Subsection 9.12.7 shall also apply to those multifueled appliances in which a liquid fuel is one of the standard or optional fuels. [1:11.5.1.4]

9.12.7.1.5

Subsection 9.12.7 shall not apply to internal combustion engines, oil lamps, or portable devices not specifically covered in NFPA 31. (See *Chapter 11 of NFPA 31 for portable devices that are covered in NFPA 31.*) [1:11.5.1.5]

9.12.7.1.6

The installation of gas-fired heating appliances shall comply with 9.12.7 and NFPA 54. (See *Chapter 69 of NFPA 1 for LP-Gas fuel supply and storage installations.*) [1:11.5.1.6]

9.12.7.1.7

All heating appliances shall be approved or listed. [1:11.5.1.7]

9.12.7.1.8

Electrical wiring and utilization equipment used in connection with oil-burning appliances or equipment shall be installed in accordance with *NFPA 70*.

9.12.7.1.9 Acceptable Liquid Fuels.

9.12.7.1.9.1

The type and grade of liquid fuel used in a liquid fuel-burning appliance shall be that liquid fuel type and grade for which the appliance is listed and approved or is stipulated by the manufacturer. Liquid fuels shall meet one of the following specifications and shall not contain gasoline or any other flammable liquid:

- (1) ASTM D396, *Standard Specification for Fuel Oils*
- (2) ASTM D3699, *Standard Specification for ~~Kerosene~~ Kerosine*
- (3) ASTM D6448, *Industrial Burner Fuels from Used Lube Oils*
- (4) ASTM D6751, *Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuel*
- (5) ASTM D6823, *Standard Specification for ~~Commercial Burner Boiler Fuels from with Used Lube~~ Lubricating Oils*
- (6) ASTM D7666, *Standard Specification for Triglyceride Burner Fuel*

[1:11.5.1.10.1]

9.12.7.1.9.2

Appliances that burn crankcase oil or used oil shall not be used in a residential occupancy. Such appliances shall only be used if all of the following conditions are met:

- (1) The installation is in a commercial or industrial occupancy.
- (2) The oil-burning appliance is designed to burn crankcase oil or used oil and is listed for such use.
- (3) The appliance is installed in accordance with the manufacturer's instructions and with the terms of its listing.
- (4) The installation meets the applicable requirements of Section 4.6 of NFPA 31 and Chapter 12 of NFPA 31.

[1:11.5.1.10.2]

9.12.7.1.9.3

Where heavy oils are used, the following shall be required:

- (1) The oil-burning appliance shall be designed to burn such fuels.
- (2) Means shall be provided to maintain the oil at its proper atomizing temperature.
- (3) Automatically operated burners that require preheating of oil shall be arranged so that no oil can be delivered for combustion until the oil is at the proper atomizing temperature.
- (4) Use of an oil-fired appliance that is listed in accordance with UL 296A, *Waste Oil-Burning Air-Heating Appliances*, shall be deemed as meeting the intent of 9.12.7.1.9.3(1) through 9.12.7.1.9.3(3).

[1:11.5.1.10.3]

9.12.7.1.9.4

A properly sized and rated oil filter or strainer shall be installed in the oil supply line to an oil burner. [1:11.5.1.10.4]

9.12.8 Clothes Dryers.**9.12.8.1**

Clothes dryers shall be cleaned to maintain the lint trap and keep the mechanical and heating components free from excessive accumulations of lint. [1:11.5.1.11.1]

9.12.9 Kerosene Burners and Oil Stoves.

9.12.9.1

Kerosene burners and oil stoves shall be equipped with a primary safety control furnished as an integral part of the appliance by the manufacturer to stop the flow of oil in the event of flame failure. Barometric oil feed shall not be considered a primary safety control. [1:11.5.2.1]

9.12.9.2

A conversion range oil burner shall be equipped with a thermal (heat-actuated) valve in the oil supply line, located in the burner compartment of the stove. [1:11.5.2.2]

9.12.9.3

Kerosene heaters shall be listed and labeled in accordance with UL 647, *Unvented Kerosene-Fired Room Heaters and Portable Heaters*, and their use shall meet all of the following:

- (1) Adequate ventilation shall be provided.
- (2) Kerosene heaters shall not be placed on carpeting.
- (3) Kerosene heaters shall be located not less than 3 ft (0.9 m) from combustible furnishings and drapes.
- (4) Only approved Type 1-K water clear kerosene shall be used.
- (5) Kerosene heaters shall be allowed to cool before refueling.

[1:11.5.2.3]

9.12.10 Portable Electric Heater.**9.12.10.1**

Portable heating appliances shall be used only in spaces designated for such use and separated from the animal housing facility.

9.12.10.2

Portable electric heaters shall be designed and located so that they cannot be easily overturned. [1:11.5.3.2]

9.12.10.3

All portable electric heaters shall be listed. [1:11.5.3.3]

9.12.11

All chimneys, smokestacks, or similar devices for conveying smoke or hot gases to the outer air and the stoves, furnaces, incinerators, boilers, or any other heat-producing devices or appliances shall be installed and maintained in accordance with NFPA 54 and NFPA 211. [1:11.5.4]

9.12.12 Lighting.

Permanently installed lighting shall be provided throughout the animal housing facility.

9.12.13 Flammable and Combustible Liquids.**9.12.13.1**

Flammable and combustible liquids shall be stored in hazardous materials storage cabinets.

9.12.13.2 Hazardous Materials Storage Cabinets.

When storage cabinets are used to increase maximum allowable quantities per control area or to otherwise comply with a specific provision in Section 60.5 of NFPA 1, such cabinets shall be in accordance with the following:

- (1) Cabinets shall be constructed of metal.
- (2) The interior of cabinets shall be treated, coated, or constructed of materials that are nonreactive with the hazardous material stored, and such treatment, coating, or construction shall include the entire interior of the cabinet.
- (3) Cabinets shall be either listed as suitable for the intended storage or constructed in accordance with the following:
 - (a) Cabinets shall be of steel having a thickness of not less than 0.044 in. (1.12 mm) (18 gauge).
 - (b) The cabinet, including the door, shall be double-walled with 1½ in. (38.1 mm) airspace between the walls.
 - (c) Joints shall be riveted or welded and shall be tightfitting.
 - (d) Doors shall be well fitted, self-closing, and equipped with a self-latching device.
 - (e) The bottoms of cabinets utilized for the storage of liquids shall be liquidtight to a minimum height of 2 in. (51 mm).
 - (f) For requirements regarding electrical equipment and devices within cabinets used for the storage of hazardous liquids, compressed gases, or cryogenic fluids, see *NFPA 70*.
- (4) Cabinets shall be marked in conspicuous lettering that reads as follows: HAZARDOUS — KEEP FIRE AWAY

[1:60.5.1.18]

9.13 Fire Department Access.**9.13.1 General.**

Fire department access and fire department access roads shall be provided and maintained in accordance with Section 9.13. [1:18.2.1]

9.13.2 Access to Structures or Areas.**9.13.2.1**

The AHJ shall have the authority to require an access box(es) to be installed in an accessible location where access to or within a structure or area is difficult because of security. The access box(es) shall be of an approved type listed in accordance with UL 1037. [1:18.2.2.1]

9.13.2.2

The AHJ shall have the authority to require fire department access be provided to gated subdivisions or developments through the use of an approved device or system. [1:18.2.2.2]

9.13.2.3

The owner or occupant of a structure or area, with required fire department access as specified in 9.13.2.1 or 9.13.2.2, shall notify the AHJ when the access is modified in a manner that could prevent fire department access. [1:18.2.2.3]

9.13.3 Fire Department Access Roads.**9.13.3.1 Required Access.****9.13.3.1.1**

Approved fire department apparatus access roads shall be provided for every facility, building, or portion of a building hereafter constructed or relocated. [1:18.2.3.1.1]

9.13.3.1.2

Fire department apparatus access roads shall consist of roadways, fire lanes, parking lot lanes, or a combination thereof. [1:18.2.3.1.2]

9.13.3.1.3

The provisions of 9.13.3.1 through 9.13.4.2.1 shall be permitted to be modified by the AHJ where any of the following conditions exists:

- (1) Agricultural buildings having an area not exceeding 400 ft² (37.2 m²)
- (2) Sheds and other detached buildings having an area not exceeding 400 ft² (37.2 m²)

9.13.3.1.4

When fire department apparatus access roads cannot be installed due to location on property, topography, waterways, nonnegotiable grades, or other similar conditions, the AHJ shall be authorized to require additional fire protection features. [1:18.2.3.1.4]

9.13.4 Access to Building.**9.13.4.1**

A fire department apparatus access road shall extend to within 50 ft (15 m) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. [1:18.2.3.2.1]

9.13.4.2 Fire Department Access Roads.

Fire department apparatus access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 ft (46 m) from fire department apparatus access roads as measured by an approved route around the exterior of the building or facility. [1:18.2.3.2.2]

9.13.4.2.1

When buildings are protected throughout with an approved automatic sprinkler system that is installed in accordance with NFPA 13, NFPA 13R, or NFPA 13D, the distance in 9.13.4.2 shall be permitted to be increased to 450 ft (137 m). [1:18.2.3.2.2.1]

9.13.4.3 Multiple Access Roads.

More than one fire department apparatus access road shall be provided when it is determined by the AHJ that access by a single road could be impaired by vehicle congestion, condition of terrain, climate conditions, or other factors that could limit access. [1:18.2.3.3]

9.14 Utilities.

Equipment using fuel gas and related gas piping shall be in accordance with NFPA 54 or NFPA 58. (See Chapter 69 of NFPA 1 for LP-Gas fuel supply and storage installations.) [1:11.4]

9.15 Protection from Vehicle Damage.

Aboveground gas meters, regulators, and piping exposed to vehicular damage shall be protected.

9.16* Additional Safeguards.

In animal housing facilities with animals that are difficult to move, the AHJ shall be permitted to require additional safeguards necessary to protect animal occupants that cannot be safely evacuated.

9.17 Smoke Control.

Where required by another section of this Code, smoke control systems shall be designed, installed, inspected, tested, and maintained in accordance with NFPA 92, NFPA 204, or recommended best practices, as approved by the AHJ.

Supplemental Information

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
150-2019_Chapter_9_SD_edits.docx	Extract updates - for staff use	

Submitter Information Verification

Committee: ASF-AAA

Submission Date: Fri Aug 21 15:25:46 EDT 2020

Committee Statement

Committee Statement: Updates to extracts.

Response Message: SR-3-NFPA 150-2020

Ballot Results

✔ This item has passed ballot

29 Eligible Voters

8 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bahra, Nandeep

Day, Richard L.

Dvorscak, Michelle

Gulati, Ajay

Haas, Paul M.

Hoberg, Shelena

Rieck, Brian L.

Wright, Thomas Steven

Affirmative All

Adams, Melanie

Aler, Clay P.

Black, Art

Boucher, John P.

Cohen, Hal

Fox, Donii

Husted, Rebecca M.

Jones, Dena

Keenan, Michael J.

Learned, Scott

McBride, Jeffery P.

Meerschaert, Gary

Morrison, Brian

Neiderheiser, Rita L.

Raisi, Kameron

Rosenberger, Mark S.

Ryan, Amy Q.

Schwab, Peter T.

Scibetta, Joe

Spencer, Matthew G.

Wynnyczuk, Peter



Second Revision No. 6-NFPA 150-2020 [Section No. A.18.3.4.6]

A.18.3.4.6

Carbon monoxide alarms are not required to meet the requirements of ~~NFPA 720~~ NFPA 72 .

Submitter Information Verification

Committee: ASF-AAA

Submission Date: Tue Sep 15 14:17:05 EDT 2020

Committee Statement

Committee Statement: NFPA 720 was withdrawn and moved into NFPA 72.

Response Message: SR-6-NFPA 150-2020

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✔ **This item has passed ballot**

29 Eligible Voters

8 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bahra, Nandeeep

Day, Richard L.

Dvorscak, Michelle

Gulati, Ajay

Haas, Paul M.

Hoberg, Shelena

Rieck, Brian L.

Wright, Thomas Steven

Affirmative All

Adams, Melanie

Aler, Clay P.

Black, Art

Boucher, John P.

Cohen, Hal
Fox, Donii
Husted, Rebecca M.
Jones, Dena
Keenan, Michael J.
Learned, Scott
McBride, Jeffery P.
Meerschaert, Gary
Morrison, Brian
Neiderheiser, Rita L.
Raisi, Kameron
Rosenberger, Mark S.
Ryan, Amy Q.
Schwab, Peter T.
Scibetta, Joe
Spencer, Matthew G.
Wynnyczuk, Peter



Second Revision No. 7-NFPA 150-2020 [Section No. D.1.1]

D.1.1 NFPA Publications.

National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 1, *Fire Code*, 2021 edition.

NFPA 70[®], *National Electrical Code*[®], 2020 edition.

NFPA 72[®], *National Fire Alarm and Signaling Code*[®], 2022 edition.

NFPA 101[®], *Life Safety Code*[®], 2021 edition.

NFPA 220, *Standard on Types of Building Construction*, 2021 edition.

NFPA 557, *Standard for Determination of Fire Loads for Use in Structural Fire Protection Design*, 2020 edition.

~~NFPA 720, *Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*, 2015 edition.~~

NFPA 1006, *Standard for Technical Rescue Personnel Professional Qualifications*, 2021 edition.

NFPA 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*, 2017 edition.

NFPA 5000[®], *Building Construction and Safety Code*[®], 2021 edition.

NFPA, "Barn Fire Safety, Checklist" 2016.

Submitter Information Verification

Committee: ASF-AAA

Submission Date: Tue Sep 15 14:18:21 EDT 2020

Committee Statement

Committee Statement: 720 was withdrawn and moved into NFPA 72.

Response Message: SR-7-NFPA 150-2020

Ballot Results

✓ This item has passed ballot

29 Eligible Voters

8 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bahra, Nandeep
Day, Richard L.
Dvorscak, Michelle
Gulati, Ajay
Haas, Paul M.
Hoberg, Shelena
Rieck, Brian L.
Wright, Thomas Steven

Affirmative All

Adams, Melanie
Aler, Clay P.
Black, Art
Boucher, John P.
Cohen, Hal
Fox, Donii
Husted, Rebecca M.
Jones, Dena
Keenan, Michael J.
Learned, Scott
McBride, Jeffery P.
Meerschaert, Gary
Morrison, Brian
Neiderheiser, Rita L.
Raisi, Kameron
Rosenberger, Mark S.
Ryan, Amy Q.
Schwab, Peter T.
Scibetta, Joe
Spencer, Matthew G.
Wynnyczuk, Peter



Second Revision No. 8-NFPA 150-2020 [Section No. D.3]

D.3 References for Extracts in Informational Sections.

NFPA 5000[®], Building Construction and Safety Code[®], 2018 2021 edition.

Submitter Information Verification

Committee: ASF-AAA

Submittal Date: Tue Sep 15 14:19:33 EDT 2020

Committee Statement

Committee Statement: Update to referenced standard.

Response Message: SR-8-NFPA 150-2020

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✓ **This item has passed ballot**

29 Eligible Voters

8 Not Returned

21 Affirmative All

0 Affirmative with Comments

0 Negative with Comments

0 Abstention

Not Returned

Bahra, Nandeep

Day, Richard L.

Dvorscak, Michelle

Gulati, Ajay

Haas, Paul M.

Hoberg, Shelena

Rieck, Brian L.

Wright, Thomas Steven

Affirmative All

Adams, Melanie

Aler, Clay P.

Black, Art

Boucher, John P.

Cohen, Hal

Fox, Donii

Husted, Rebecca M.

Jones, Dena

Keenan, Michael J.

Learned, Scott

McBride, Jeffery P.

Meerschaert, Gary

Morrison, Brian

Neiderheiser, Rita L.

Raisi, Kameron

Rosenberger, Mark S.

Ryan, Amy Q.

Schwab, Peter T.

Scibetta, Joe

Spencer, Matthew G.

Wynnyczuk, Peter