NFPA No.

101

LIFE SAFETY CODE 1976

NATIONAL FIRE PROTECTION ASSOCIATION

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See Inside Back Cover for Official NFPA Definitions

SC-FM-76

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Errata

Editorial corrections to the 1976 Life Safety Code Code NFPA 101

The Committee on Safety to Life wishes to correct the following editorial errors which appeared in the 1976 revision of NFPA 101, the Life Safety Code. The editorial changes are as follows:

1. Page 101-51: 6-1.2.2.5, add asterisk following subparagraph number.
2. Page 101-58: 6-3.7.1, add asterisk following subparagraph number.
3. Page 101-62: 6-6.2.4 Exception, change last line to read "an engineered smoke control system."
4. Page 101-63: 6-6.4.5 Exception 2, add to end of exception the parenthetical expression "(Also see 10-2.3.6.7.1 and 10-3.3.6.7.1.)".
5. Page 101-106: 10-2.2.3.1, delete asterisk.
6. Page 101-106: 10-2.2.3.2, add asterisk following subparagraph number.
7. Page 101-107: 10-2.2.5.1 Exception 3. Referenced subparagraph "10-2.2.5.7" should read "10.2.2.5.5".
8. Page 101-108: 10-2.2.8.3, delete asterisk.
9. Page 101-108: 10-2.2.8.4, add asterisk following subparagraph number.
10. Page 101-112: 10-2.3.6.5, delete asterisk.
11. Page 101-115: 10-2.3.6.7.3, add asterisk after subparagraph number.
12. Page 101-119 and 101-120: 10-3.2.5.1 Exception 3, reference to subparagraph "10-3.2.5.6" should read "10-3.2.5.4".
13. Page 101-121: 10-3.2.8.5, change last word in first line to "automatic".
14. Page 101-224: delete appendix note A-9-1.3.5.
15. Page 101-225: Appendix Note "A-10-2.2.3.1" should read "A-10-2.2.3.2".
16. Page 101-226: "A-10-2.2.8.3" should read "A-10-2.2.8.4".
17. Page 101-227: "A-10-2.3.6.5" should read "A-10-2.3.6.6".
18. Page 101-227: "A-10-2.3.6.6" should read "A-10-2.3.6.7.3".
19. Page 101-227: "A-10-2.3.6.7.1" second paragraph, if existing, should be separate appendix note numbered "A-10-2.3.6.7.3".

Life Safety Code

The Committee on Safety to Life wishes to correct the following editorial errors in the 1976 edition of the Life Safety Code, NFPA 101.

1. Page 101-50: 6-1.2.2.1, Reference to "6-1.2.1" in first line should read "6-1.2.1.1".
2. Page 101-51: 6-1.2.3.1, Reference to "6-1.2.1" in first line should read "6-1.2.1.1".
3. Page 101-52: 6-1.2.4.1, Reference to "6-1.2.1" in first line should read "6-1.2.1.1".
4. Page 101-53: 6-1.2.5.1. Reference to "6-1.2.1" in first line should read "6-1.2.1.1".

NFPA 101, Life Safety Code® — 1976

1. Delete exception to Paragraph 10-3.4.1.

NFPA 232, Protection of Records

1. Revise Paragraph 3-1.1 to read as follows:

All records in file rooms shall be kept in noncombustible containers.

Code for Safety to Life from Fire in Buildings and Structures

NFPA 101 — 1976

The 1976 Edition of the Life Safety Code

This 1976 edition of the Life Safety Code supersedes the 1973 edition and was adopted by the National Fire Protection Association on November 17, 1976.

Major changes from the 1973 edition include: a complete renumbering in conformance with the NFPA style manual, restructuring of internal chapter organization to a standard format, and significant changes in the requirements contained in Chapters 5, 6, 10, 11, and 12. All changes in requirements have been identified by a vertical line in the margin. A cross reference index to the 1973 edition has been included to assist the user.

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This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

Origin and Development of 101

The *Life Safety Code* had its origin in the work of the Committee on Safety to Life of the National Fire Protection Association which was appointed in 1913. For the first few years of its existence the Committee devoted its attention to a study of the notable fires involving loss of life and in analyzing the causes of this loss of life. This work led to the preparation of standards for the construction of stairways, fire escapes, etc., for fire drills in various occupancies and for the construction and arrangement of exit facilities for factories, schools, etc., which form the basis of the present Code. These reports were adopted by the National Fire Protection Association and published in pamphlet form as "Outside Stairs for Fire Exits" (1916) and "Safeguarding Factory Workers from Fire" (1918). A pamphlet, "Exit Drills in Factories, Schools, Department Stores and Theatres," published in 1912 following its presentation by the late Committee member, Mr. R. H. Newbern, at the 1911 annual meeting of the Association, although antedating the organization of the Committee, is considered as having the status of a Committee publication and had been used with the other pamphlets as a groundwork for the present Code. These pamphlets were widely circulated and put into quite general use.

In 1921 the Committee was enlarged to include representation of certain interested groups not previously participating, and work was started on the further development and integration of previous Committee publications to provide a comprehensive guide to exits and related features of life safety from fire in all classes of occupancy, to be known as the *Building Exits Code*. Various drafts were published, circulated and discussed over a period of years and the first edition of the *Building Exits Code* was published by the National Fire Protection Association in 1927. Thereafter the Committee continued its deliberations, adding new material on features not originally covered, and revising various details in the light of fire experience and practical experience in the use of the Code. New editions were published in 1929, 1934, 1936, 1938, 1939, 1942, and 1946 to incorporate the amendments adopted by the National Fire Protection Association.

The Cocoanut Grove Night Club fire in Boston in 1942 in which 492 lives were lost focused national attention upon the importance of adequate exits and related fire safety features. Public attention to exit matters was further stimulated by the series of hotel fires in 1946 (LaSalle, Chicago — 61 dead; Canfield, Dubuque — 19 dead; and the Winecoff, Atlanta — 119 dead). The *Building Exits Code* thereafter was used to an increasing extent for legal regulatory purposes. However, the Code was not in suitable form for adoption into law, as it had been drafted as a reference document containing many advisory provisions useful to designers of buildings, but not appropriate for legal use. This led to a decision by the committee to re-edit the entire Code limiting the body of the text to requirements suitable for mandatory application and placing advisory and explanatory material in notes. The re-editing also involved adding to the Code provisions on many features in order to produce a complete

document. Preliminary work was carried on concurrently with development of the 1948, 1949, 1951 and 1952 editions. The results were incorporated in the 1956 edition, and further refined in subsequent editions dated 1957, 1958, 1959, 1960, 1961 and 1963.

In 1955 separate documents, NFPA 101B and NFPA 101C were published on nursing homes and interior finish, respectively. NFPA 101C was revised in 1956. These publications have since been withdrawn.

In 1963 the Safety to Life Committee was reconstructed. The Committee was decreased in size to include only those having very broad knowledge in fire matters and representing all interested factions. The Committee serves as a review and correlating committee for seven Sectional Committees whose personnel include members having a special knowledge and interest in various portions of the Code.

Under the revised structure, the Sectional Committees through the Safety to Life Committee prepared the 1966 edition of the Code which was a complete revision of the 1963 edition. The Code title was changed from *Building Exits Code* to the *Code for Life Safety from Fire in Buildings and Structures*, the text was put in "code language" and all explanatory notes were placed in an appendix. The contents of the Code were arranged in the same general order as contents of model building codes because the Code is used primarily as a supplement to building codes.

The Code was placed on a three-year revision schedule, with new editions adopted in 1967, 1970 and 1973.

In all of the work in developing the various sections of the Code the groups particularly concerned have been consulted. Reports have been published by the NFPA for review by all concerned and any comments received have been discussed and many have been adopted by the Committee or at meetings of the NFPA. Records of the discussions and action taken by the NFPA will be found in the *Technical Committee Reports* and the *Technical Committee Documentation.*

The Committee welcomes comments and suggestions on the *Life Safety Code.* Any reader may file a request for consideration of changes. Such requests should be filed in writing, giving specific proposals and supporting data.

Interpretations

Those who after diligent study of the *Life Safety Code* are in doubt as to the meaning or intent of some specifically identified section or paragraph of this Code, may write to the Secretary of the Committee for an interpretation.

Appropriate excerpts from the NFPA "Regulations Governing Technical Committees" and giving details on the procedures to be followed in submitting requests for interpretations are given below.

Since the NFPA "Regulations Governing Technical Committees" require that all official interpretations rendered be published by the Association, all information shall be submitted in writing. Plans and sketches may be submitted as supplementary material but shall not be necessary for a complete understanding of the question requiring interpretation or the interpretation itself. No judgments will be rendered by the Interpretations Committee regarding the degree of compliance with the Code of a set of drawings.

Extracts from NFPA "Regulations Governing Technical Committees," Section 110. Official Interpretations.

112. Nature of Official Interpretations. Two general forms of Official Interpretations shall be recognized:

(a) Those making an interpretation of the literal text,

(b) Those making an interpretation of the intent of the Committee when the particular text was adopted.

113. Editions to Be Interpreted. A Technical Committee shall render official interpretations on the text of the latest officially adopted document and any text of earlier editions which is identical to the text in the latest document. A committee may render to the requester an official interpretation on text of an outdated document which has been revised in or deleted from later editions. It should, if possible, inform the requester why the text was revised or deleted.

114. Procedures for Requesting Official Interpretations. Those desiring an Interpretation shall direct their requests to the Chairman or Secretary (if any) of the Committee concerned, c/o National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210, supplying five identical copies of a statement in which shall appear specific references to a single problem, identifying article, section or paragraph of the document with which they are concerned. Such a request shall be on the business stationery of the inquirer and shall be duly signed. A request involving an actual field situation shall so state and all parties shall be named.

115. Handling of Requests for Official Interpretations. A request for an Official Interpretation may be processed exactly the way it has been sub-

Text continues on page XII.

TABLE OF CONTENTS

			Page
Chapter 1	**Administration**		
Section	1–1	Title	101–1
Section	1–2	Purpose	101–1
Section	1–3	Scope	101–1
Section	1–4	Application	101–2
Section	1–5	Occupancy	101–4
Chapter 2	**Fundamental Requirements**		101–5
Chapter 3	**Definitions**		101–7
Chapter 4	**Classification of Occupancy and Hazard of Contents**		
Section	4–1	Classification of Occupancy	101–12
Section	4–2	Hazard of Contents	101–15
Chapter 5	**Means of Egress**		
Section	5–1	Application	101–16
Section	5–2	Types of Exit Components	101–17
Section	5–3	Capacity of Means of Egress	101–41
Section	5–4	Number of Exits	101–42
Section	5–5	Arrangement of Means of Egress	101–42
Section	5–6	Measurement of Travel Distance to Exits	101–43
Section	5–7	Discharge from Exits	101–44
Section	5–8	Illumination of Means of Egress	101–45
Section	5–9	Emergency Lighting	101–46
Section	5–10	Exit Marking	101–47
Section	5–11	Special Provisions for Occupancies with High Hazard Contents	101–48
Chapter 6	**Features of Fire Protection**		
Section	6–1	Protection of Vertical Openings — Combustible Concealed Spaces	101–49
Section	6–2	Interior Finish	101–54
Section	6–3	Protective Signaling Systems	101–56
Section	6–4	Automatic Sprinklers and Other Extinguishing Equipment	101–60
Section	6–5	Protection from Hazards	101–61
Section	6–6	Construction and Compartmentation	101–61
Chapter 7	**Building Service Equipment**		
Section	7–1	Utilities	101–64
Section	7–2	Air Conditioning, Heating, and Ventilating	101–64
Section	7–3	Elevators, Dumbwaiters, and Vertical Conveyors	101–65
Section	7–4	Rubbish Chutes, Incinerators, and Laundry Chutes	101–65

Chapter 8 Places of Assembly *Page*

Section 8–1 Application 101–66
Section 8–2 Means of Egress Requirements 101–69
Section 8–3 Protection 101–73
Section 8–4 Building Services 101–78
Section 8–5 Special Provisions 101–78

Chapter 9 Educational Occupancies

Section 9–1 General Requirements 101–80
Section 9–2 Means of Egress Requirements 101–83
Section 9–3 Protection 101–86
Section 9–4 Building Services 101–87
Section 9–5 Special Provisions 101–88

Chapter 10 Health Care and Penal Occupancies

Section 10–1 General Requirements 101–101
Section 10–2 New Health Care Occupancies 101–104
Section 10–3 Existing Health Care Occupancies 101–117
Section 10–4 Penal Occupancies 101–128

Chapter 11 Residential Occupancies

Section 11–1 General Requirements 101–132
Section 11–2 Hotels 101–133
Section 11–3 Apartment Buildings 101–140
Section 11–4 Dormitories 101–155
Section 11–5 Lodging or Rooming Houses 101–157
Section 11–6 One- and Two-Family Dwellings 101–158

Chapter 12 Mercantile Occupancies

Section 12–1 General Requirements 101–160
Section 12–2 Means of Egress Requirements 101–162
Section 12–3 Protection 101–165
Section 12–4 Building Services 101–167
Section 12–5 Special Provisions 101–168

Chapter 13 Business Occupancies

Section 13–1 General Requirements 101–170
Section 13–2 Means of Egress Requirements 101–171
Section 13–3 Protection 101–174
Section 13–4 Building Services 101–175
Section 13–5 Special Provisions 101–176

Chapter 14 Industrial Occupancies *Page*
Section 14–1 General Requirements **101–177**
Section 14–2 Means of Egress Requirements **101–177**
Section 14–3 Protection **101–181**

Chapter 15 Storage Occupancies
Section 15–1 General Requirements **101–182**
Section 15–2 Means of Egress Requirements **101–182**
Section 15–3 Protection **101–184**
Section 15–4 Special Provisions **101–185**

Chapter 16 Occupancies in Unusual Structures
Section 16–1 General Requirements **101–188**
Section 16–2 Means of Egress Requirements **101–188**
Section 16–3 Protection **101–192**
Section 16–4 Special Provisions **101–192**

Chapter 17 Operating Features
Section 17–1 General Requirements **101–194**
Section 17–2 Places of Assembly **101–196**
Section 17–3 Educational Occupancies **101–198**
Section 17–4 Health Care and Penal Occupancies **101–200**
Section 17–5 Residential Occupancies **101–202**
Section 17–6 Mercantile Occupancies **101–204**
Section 17–7 Business Occupancies **101–204**

Appendix A Notes **101–205**

Appendix B Referenced Publications **101–237**

Cross Reference Index to 1973 Edition **101–241**

Index **101–251**

NOTICE

An asterisk (*) following the number or letter designating a paragraph indicates explanatory material on that paragraph in Appendix A.

Continued from page IX

mitted, or it may be rephrased to clarify the intent. A committee may refuse to consider a request if it is found not to be in proper form or not consistent with 112 and 113. The request or the rephrased version of it and any pertinent background information shall be sent to the requester and all parties named in the request for comment. A deadline for the receipt of comments shall be established.

Code for Safety to Life from Fire in Buildings and Structures

NFPA 101 — 1976

CHAPTER 1 ADMINISTRATION

SECTION 1–1 TITLE

1–1.1 This *Code* shall be known as the *Life Safety Code*, may be cited as such, and is referred to herein as "this *Code*" or "the *Code*."

SECTION 1–2 PURPOSE

1–2.1 The purpose of this *Code* is to specify measures which will provide that degree of public safety from fire which can be reasonably required.

1–2.2 The *Code* endeavors to avoid requirements which might involve unreasonable hardships or unnecessary inconvenience or interference with the normal use and occupancy of a building, but insists upon compliance with a minimum standard for fire safety necessary in the public interest, even though a financial hardship may be involved in some individual cases.

SECTION 1–3 SCOPE

1–3.1 This *Code* deals with life safety from fire and like emergencies.

1–3.2 The *Code* covers construction, protection, and occupancy features to minimize danger to life from fire, smoke, fumes, or panic before buildings are vacated.

1–3.3 The *Code* specifies the number, size, and arrangement of exit facilities sufficient to permit prompt escape of occupants from buildings or structures in case of fire or other condition dangerous to life.

1–3.4 The *Code* recognizes that life safety is more than a matter of exits and accordingly deals with various matters besides exits which are considered essential to life safety and, in some cases, specifies limits beyond which the hazard is so great that no practical amount of exits can give assurance of any reasonable safety.

1–3.5 Panic. The *Code* recognizes that panic in a burning building may be uncontrollable, but deals with the potential panic hazard through measures

designed to prevent the development of panic. Experience indicates that panic seldom develops, even in the presence of potential danger, so long as occupants of buildings are moving toward exits which they can see within a reasonable distance with no obstructions or undue congestion in the path of travel. However, any uncertainty as to the location or adequacy of means of egress, the presence of smoke, or stoppage of exit travel, such as may occur when one person stumbles and falls on stairs, may be conducive to panic. Panic danger is greatest when there are numbers of people in a confined area.

1–3.6 Vehicles, vessels, or other mobile structures shall be treated as buildings in regard to means of egress requirements, when in fixed locations and occupied as buildings unless otherwise permitted by a specific NFPA standard.

1–3.7 Nothing in this *Code* is intended to prevent the use of new methods or new devices as provided in 1–4.2, providing technical data is submitted to the authority having jurisdiction to demonstrate that the new method or device is equivalent in quality, strength, fire resistance, effectiveness, durability, and safety to that prescribed by this *Code*.

1–3.8 This *Code* does not attempt to cover general fire prevention or building construction features, such as are commonly dealt with in fire prevention codes and building codes, nor to protect the individual from the results of his own careless acts, such as smoking in bed.

1–3.9 Neither the prevention of accidental personal injuries during the course of normal occupancy of buildings nor the preservation of property from loss by fire has been considered as the basis for any of the provisions of this *Code*, but many of the requirements of the Code will contribute toward these objectives.

SECTION 1–4 APPLICATION

1–4.1 New and Existing Buildings (*See also 1–4.2 and 1–5.3.*)

1–4.1.1 This *Code* covers both new and existing construction. In various sections of the *Code* there are specific provisions for existing structures differing from those for new construction. Where there are no specific provisions in this *Code* for existing structures, the requirements for new construction shall apply, subject to the modification provisions of 1–4.1.2.

1–4.1.2 Any modification of the requirements for new buildings which, in the absence of specific provisions are applied to existing buildings, shall be allowed only to the extent that, in the opinion of the authority having jurisdiction, reasonable life safety against the hazards of fire, explosion, and panic is provided and maintained.

1–4.1.3 Where separate provisions of this *Code* dealing with the same features are applicable to any given situation, the less restrictive of differing requirements shall be the minimum for the purpose of this *Code.*

Exception: When any requirements of Chapters 8 through 17 are more restrictive than corresponding requirements in Chapters 1 through 7, the more restrictive requirements of Chapters 8 through 17 shall be the minimum.

1–4.1.4 Alterations. Changes or alterations to any building or structure, whether new or existing, shall be in conformity with the provisions of this *Code.*

1–4.1.5 Mixed Occupancies.

1–4.1.5.1 In case two or more classes of occupancy occur in the same building or structure, so intermingled that separate safeguards are impracticable, exit facilities, construction, protection, and other safeguards shall conform to the following requirements.

1–4.1.5.2 Exit facilities shall be sufficient to meet exit requirements for each individual room and section and for the maximum occupant load of the entire building.

1–4.1.5.3 Construction, protection, and other safeguards shall meet requirements of the most hazardous occupancy.

Exception: As otherwise specified in Chapters 8 through 16.

1–4.2 Equivalency Concepts.

1–4.2.1 Nothing in this *Code* is intended to prevent the use of systems, methods or devices of equivalent quality, strength, fire resistance, effectiveness, durability and safety to those prescribed by this *Code,* providing technical data is submitted to the authority having jurisdiction to demonstrate equivalency and the system, method or device is approved for the intended purpose.

1–4.2.2 The specific requirements of this *Code* for existing buildings may be modified by the authority having jurisdiction to allow alternative arrangements that will secure as nearly equivalent safety to life from fire as practical, but in no case shall the modification afford less safety to life than compliance with the corresponding provisions contained in this *Code* for existing buildings. (*See also 1–4.2.1.*)

1–4.3 Provisions in Excess of Code Requirements. Nothing in this *Code* shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in this *Code.*

1–4.4 Discretionary Powers of Authority Having Jurisdiction (*see also 1–4.2*). The authority having jurisdiction shall determine the adequacy of exits and other measures for life safety from fire in accordance with the provisions of this *Code.* In cases of practical difficulty or unnecessary hardship, the authority having jurisdiction may grant exceptions from this *Code,* but only when it is clearly evident that reasonable safety is thereby secured.

SECTION 1–5 OCCUPANCY (*See also Section 17–1.*)

1–5.1 Existing buildings and structures shall not be occupied or used in violation of the provisions of this *Code* applicable thereto.

Exception: The authority having jurisdiction may modify the general rule above, under two conditions:

(a) The occupancy of the building in question is the same as it was prior to the adoption or amendment of these requirements.

(b) Only those requirements whose application would be clearly impractical in the judgment of the authority having jurisdiction shall be modified.

1–5.2 No building or structure under construction shall be occupied in whole or in part until all exit facilities required for the part occupied are completed and approved for use.

1–5.3 Changes of Occupancy. A change from one occupancy classification to another, in any building or structure, whether necessitating a physical alteration or not, may be made only if such building or structure conforms with the requirements of this *Code* applying to new buildings of the proposed new use.

1–5.4* Existing buildings may be occupied during repairs or alterations only if all existing exits and all existing fire protection are continuously maintained or, in lieu thereof, other measures are taken which provide equivalent safety.

CHAPTER 2 FUNDAMENTAL REQUIREMENTS

2–1 Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of fire or other emergency. The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergency will not depend solely on any single safeguard; additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to some human or mechanical failure.

2–2 Every building or structure shall be so constructed, arranged, equipped, maintained and operated as to avoid undue danger to the lives and safety of its occupants from fire, smoke, fumes, or resulting panic during the period of time reasonably necessary for escape from the building or structure in case of fire or other emergency.

2–3 Every building or structure shall be provided with exits of kinds, numbers, location and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available, and the height and type of construction of the building or structure, to afford all occupants convenient facilities for escape.

2–4 In every building or structure, exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening shall be installed to prevent free escape from the inside of any building.

Exception: Locks shall be permitted in mental, detention, or corrective institutions where supervisory personnel are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

2–5 Every exit shall be clearly visible or the route to reach it shall be conspicuously indicated in such a manner that every occupant of every building or structure who is physically and mentally capable will readily know the direction of escape from any point. Each path of escape, in its entirety, shall be so arranged or marked that the way to a place of safety is unmistakable. Any doorway or passageway not constituting an exit or way to reach an exit, but of such a character as to be subject to being mistaken for an exit, shall be so arranged or marked as to minimize its possible confusion with an exit and the resultant danger of persons endeavoring to escape from fire finding themselves trapped in a dead-end space, such as a cellar or storeroom, from which there is no other way out.

2–6 In every building or structure equipped for artificial illumination, adequate and reliable illumination shall be provided for all exit facilities.

2–7 In every building or structure of such size, arrangement, or occupancy that a fire may not itself provide adequate warning to occupants, fire alarm facilities shall be provided where necessary to warn occupants of the existence of fire so that they may escape or to facilitate the orderly conduct of fire exit drills.

2–8 Every building or structure, section, or area thereof of such size, occupancy, and arrangement that the reasonable safety of numbers of occupants may be endangered by the blocking of any single means of egress due to fire or smoke shall have at least two means of egress remote from each other, so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency conditions.

2–9 Every vertical way of exit and other vertical opening between floors of a building shall be suitably enclosed or protected as necessary to afford reasonable safety to occupants while using exits, and to prevent spread of fire, smoke, or fumes through vertical openings from floor to floor before occupants have entered exits.

2–10* Compliance with this *Code* shall not be construed as eliminating or reducing the necessity for other provisions for safety of persons using a structure under normal occupancy conditions, nor shall any provision of the *Code* be construed as requiring or permitting any condition that may be hazardous under normal occupancy conditions.

CHAPTER 3 DEFINITIONS

SECTION 3–1 GENERAL

3–1.1 The following terms, for the purposes of this *Code*, shall have the meanings given in this chapter, if not otherwise modified for a specific occupancy.

3–1.2 Words used in the present tense include the future; words used in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural the singular.

3–1.3 Where terms are not defined in this chapter, they shall have their ordinarily accepted meanings or such as the context may imply.

SECTION 3–2 DEFINITIONS

Addition: An extension or increase in floor area or height of a building or structure.

Apartment Building: *see 11–1.*

Approved: Accepted by the authority having jurisdiction under the provisions of the *Code* by reason of tests or investigations conducted by it or by an agency satisfactory to the authority, based upon nationally accepted test standards or principles.

Area: *see Floor Area.*

Arena Stage: A stage or platform open on at least 3 sides to audience seating. It may be with or without overhead scene handling facilities.

Authority Having Jurisdiction: The duly authorized representative or agency having legal enforcement responsibility in cases where this *Code* is applied with the force of law.

Automatic: Providing a function without the necessity of human intervention.

Building: Any structure used or intended for supporting or sheltering any use or occupancy. The term building shall be construed as if followed by the words "or portions thereof." (*See Structure.*)

Building (Existing): Any structure erected prior to the adoption of this *Code* or for which a permit for construction has been issued.

Business Occupancy: *see 4–1.*

Child Day Care Centers: *see 9–1.*

Combustible: Capable of undergoing combustion.

Combustion: A chemical process that involves oxidation sufficient to produce light or heat.

Common Atmosphere (Educational Occupancies): *see 9–1.*

Court: An open, uncovered and unoccupied space, unobstructed to the sky, bounded on three or more sides by exterior building walls.

Court (Enclosed): A court bounded on all sides by the exterior walls of a building or exterior walls and lot lines on which walls are allowable.

Dormitories: *see 11–1.*

Educational Occupancies: *see 9–1.*

Existing: That which is already in existence at the date when this *Code* goes into effect, as existing buildings, structures, or exit facilities.

Exit: That portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in this *Code* to provide a protected way of travel to the exit discharge.

Exit Access: That portion of a means of egress which leads to an entrance to an exit.

Exit Discharge: That portion of a means of egress between the termination of an exit and a public way.

Family Day Care Home: *see 9–1.*

Fire Resistance Rating: The time, in minutes or hours, that materials or assemblies have withstood a fire exposure as established in accordance with the test procedures of *Standard Methods of Fire Tests of Building Construction and Materials* (NFPA 251). (*See Appendix B.*)

Fire Window: A window assembly, including frame, wired glass and hardware which, under the *Standard for Fire Tests of Window Assemblies* (NFPA 257) (*see Appendix B*), meets the fire protective requirements for the location in which it is to be used.

Flame Spread: The propagation of flame over a surface. *See section 6–2.*

Flexible Plan Educational Buildings: *see 9–1.*

Floor Area, Gross: Gross floor area shall be the floor area within the inside perimeter of the outside walls of the building under consideration with no deduction for hallways, stairs, closets, thickness of interior walls, columns, or other features. Where the term area is used elsewhere in this *Code*, it shall be understood to be gross area unless otherwise specified.

Floor Area, Net: Net floor area shall be the actual occupied area, not including accessory unoccupied areas or thickness of walls.

General Industrial Occupancies: *see 14–1.*

Group Day Care Homes: *see 9–1.*

Guard: A vertical protective barrier erected along exposed edges of stairways, balconies, etc.

Handrail: A bar, pipe, or similar member designed to furnish persons with a handhold. (A handrail, if of suitable design, may also serve as part of a guard.)

Hazardous Areas: Areas of structures, buildings, or parts thereof used for purposes that involve highly combustible, highly flammable, or explosive products or materials which are likely to burn with extreme rapidity or which may produce poisonous fumes or gases, including highly toxic or noxious alkalies, acids, or other liquids or chemicals which involve flame, fume, explosive, poisonous or irritant hazards; also uses that cause division of material into fine particles or dust subject to explosion or spontaneous combustion, and uses that constitute a high fire hazard because of the form, character, or volume of the material used.

Health Care Occupancies: *see 4–1.*

High Hazard Industrial Occupancy: *see 14–1.*

Horizontal Exit: *see Section 5–2.4.*

Hospital: *see 10–1.*

Hotel: *see 11–1.*

Industrial Occupancy: *see 4–1.*

Interior Finish: *see 6–2.*

Interior Room (Educational Occupancies): *see 9–1.*

Limited-combustible: As applied to a building construction material, means a material, *not complying with the definition of noncombustible material*, which, in the form in which it is used, has a potential heat value not exceeding 3500 Btu per pound,[1] *and* complies with one of the following paragraphs (a) or (b). Materials subject to increase in combustibility or flame spread rating beyond the limits herein established through the effects of age, moisture, or other atmospheric condition shall be considered combustible.

(a) Materials having a structural base of noncombustible material, with a surfacing not exceeding a thickness of ⅛ of an inch which has a flame spread rating not greater than 50.

(b) Materials, in the form and thickness used, other than as described in (a), having neither a flame spread rating greater than 25 nor evidence of continued progressive combustion *and* of such composition that surfaces that would be exposed by cutting through the material on any plane would have neither a flame spread rating greater than 25 nor evidence of continued progressive combustion.

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[1]Gross, D. & Natrella, M. G., "Tentative Method of Test for Potential Heat of Materials in Building Fires," *Fire Test Performance*, ASTM STP 464, 1970, pp. 147–152. (Also see NFPA 220, Standard Types of Building Construction.) (*See Appendix B.*)

Load, Live: The weight superimposed by the use and occupancy of the building, not including the wind load, earthquake load, or dead load.

Lodging Homes: *see 11–1.*

Means of Egress: *see 5–1.*

Means of Escape: A way out of a small residential unit which does not conform to the strict definition of means of egress, but does meet the intent of the definition by providing an alternate way out of a building.

Mercantile Occupancies: *see 4–1.*

Noncombustible: A material which, 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. Materials reported as noncombustible, when tested in accordance with the *Standard Method of Test for Noncombustibility of Elementary Materials*, ASTM E 136–73, shall be considered noncombustible materials.

Nursing Homes: *see 10-1.*

Occupancy: The purpose for which a building or portion thereof is used or intended to be used.

Occupant Load: The total number of persons that may occupy a building or portion thereof at any one time.

One-Two- (1-2-) Family Dwellings: *see 11–1.*

Open Industrial Structures: *see 14–1.*

Open Plan Educational Buildings: *see 9–1.*

Outpatient (Ambulatory) Clinics: *see 10–1.*

Outside Stairs: Outside stairs include stairs in which at least one side is open to the outer air. *See Section 5–2.5.*

Penal Occupancies: *see 4–1.*

Place of Assembly: *see 4–1.*

Platform, Enclosed (Stage): *see 8–1.*

Plenum: An air compartment or chamber to which one or more ducts are connected and which forms part of an air distribution system.

Proscenium Wall: *see 8–1.*

Public Way: Any street, alley or other parcel of land essentially open to the outside air, deeded, dedicated, or otherwise permanently appropriated to the public for public use and having a clear width of not less than 10 feet.

Ramp: An inclined floor surface. *See Section 5–2.6.*

Residential Occupancies: *see 4–1.*

Residential-custodial Care Facility: *see 10–1.*

Room (Educational Occupancies): *see 9–1.*

Rooming House: *see 11–1.*

Self-closing: Equipped with an approved device which will insure closing after having been opened.

Separate Atmosphere (Educational Occupancies): *see 9–1.*

Separate Means of Egress (Educational Occupancies): *see 9–1.*

Smoke Detector: A device which senses visible or invisible particles of combustion.

Special Purpose Industrial Occupancies: *see 14–1.*

Stage: *see 8–1.*

Storage Occupancy: *see 4–1.*

Stores: *see 12–1.*

Story: That portion of a building included between the upper surface of a floor and the upper surface of the floor or roof next above.

Street: Any public thoroughfare (street, avenue, boulevard) 30 feet or more in width which has been dedicated or deeded to the public for public use and is accessible for use by the fire department in fighting fire. Enclosed spaces and tunnels, even though used for vehicular and pedestrian traffic, are not considered as streets for the purposes of the *Code.*

Street Floor: Any story or floor level accessible from the street or from outside the building at ground level with floor level at main entrance not more than three risers above or below ground level at these points, and so arranged and utilized as to qualify as the main floor. Where due to differences in street levels there are two or more stories accessible from the street, each is a street floor for the purposes of the *Code.* Where there is no floor level within the specified limits for a street floor above or below ground level, the building shall be considered as having no street floor.

Structure: That which is built or constructed. The term structure shall be construed as if followed by the words "or portion thereof." *See Building.*

Thrust Stage: *see 8–1.*

Unit of Exit Width: *see 5–3.*

Vertical Opening: An opening through a floor or roof.

Yard: An open, unoccupied space other than a court, unobstructed from the ground to the sky, except where specifically provided by the *Code,* on the lot on which a building is situated.

CHAPTER 4 CLASSIFICATION OF OCCUPANCY AND HAZARD OF CONTENTS

SECTION 4–1 CLASSIFICATION OF OCCUPANCY

4–1.1* A building or structure shall be classified as follows, subject to the ruling of the authority having jurisdiction in case of question as to the proper classification in any individual case.

4–1.2* Assembly (*for requirements see Chapter 8*). Places of assembly include, but are not limited to, all buildings or portions of buildings used for gathering together 50 or more persons for such purposes as deliberation, worship, entertainment, amusement, or awaiting transportation. Assembly occupancies include:

Theaters
Motion picture theaters
Assembly halls
Auditoriums
Exhibition halls
Museums
Skating rinks
Gymnasiums
Bowling lanes
Pool rooms
Armories
Restaurants
Churches
Dance halls
Club rooms
Passenger stations and terminals of air, surface, underground, and marine public transportation facilities
Recreation piers
Courtrooms
Conference rooms
Drinking establishments
Mortuary chapels

Occupancy of any room or space for assembly purposes by less than 50 persons in a building of other occupancy and incidental to such other occupancy shall be classed as part of the other occupancy and subject to the provisions applicable thereto.

4–1.3* Educational (*for requirements see Chapter 9*). Educational occupancies include all buildings used for the gathering of groups of 6 or more persons for purposes of instruction. Educational occupancies include:

Schools
Universities
Colleges
Academies
Nursery schools
Kindergartens
Child day care facilities

Other occupancies associated with educational institutions shall be in accordance with the appropriate parts of this *Code*.

Exception: Licensed day care facilities shall include those of any capacity.

In cases where instruction is incidental to some other occupancy, the section of this *Code* governing such other occupancy shall apply.

4–1.4 Health Care (*for requirements see Chapter 10*). Health care occupancies are those used for purposes such as medical or other treatment or care of persons suffering from physical or mental illness, disease or infirmity; for the care of infants, convalescents or aged persons. Health care occupancies provide sleeping facilities for the occupants and are occupied by persons who are mostly incapable of self-preservation because of age, physical or mental disability, or because of security measures not under the occupants' control.

Health care occupancies are treated in this *Code* in the following groups:

(a) Health care facilities
    Hospitals
    Nursing homes

(b) Residential-custodial care
    Nurseries
    Homes for the aged
    Mentally retarded care institutions

4–1.5 Penal Occupancies (*for requirements see Chapter 10*). Penal occupancies (also known as Residential-Restrained Care Institutions) are those used to house occupants under some degree of restraint or security. Penal occupancies are occupied by persons who are mostly incapable of self-preservation because of security measures not under the occupants' control.

Penal occupancies are treated in this *Code* in the following group:

Residential-restrained care
    Penal institutions
    Reformatories
    Jails

4–1.6 Residential (*for requirements see Chapter 11*). Residential occupancies are ones in which sleeping accommodations are provided for normal residential purposes and include all buildings designed to provide sleeping accommodations.

Exception: Those classified under Institutional Occupancies.

Residential occupancies are treated separately in this *Code* in the following groups:

(a) Hotels
    Motels

(b) Apartments

(c) Dormitories
    Orphanages for age 6 years and older

(d) Lodging or rooming houses

(e) 1- and 2-family dwellings

4–1.7* **Mercantile** (*for requirements see Chapter 12*). Mercantile occupancies include stores, markets, and other rooms, buildings, or structures for the display and sale of merchandise. Included in this occupancy group are:

Supermarkets	Drugstores
Department stores	Auction rooms
Shopping centers	

Minor merchandising operations in buildings, predominantly of other occupancies, such as a newsstand in an office building, shall be subject to the exit requirements of the predominant occupancy.

4–1.8* **Business** (*for requirements see Chapter 13*). Business occupancies are those used for the transaction of business (other than that covered under Mercantile), for the keeping of accounts and records, and similar purposes. Included in this occupancy group are:

Doctors' offices	Town halls
Dentists' offices	Courthouses
City halls	Libraries
General offices	Outpatient clinics, ambulatory

Minor office occupancy incidental to operations in another occupancy shall be considered as a part of the predominating occupancy and shall be subject to the provisions of this *Code* applying to the predominating occupancy.

4–1.9 Industrial (*for requirements see Chapter 14*). Industrial occupancies include factories making products of all kinds and properties devoted to operations such as processing, assembling, mixing, packaging, finishing or decorating, and repairing, including, among others, the following:

Factories of all kinds	Laundries
Laboratories	Creameries
Dry cleaning plants	Gas plants
Power plants	Refineries
Pumping stations	Sawmills
Smokehouses	

4–1.10* **Storage** (*for requirements see Chapter 15*). Storage includes all buildings or structures utilized primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals. Included in this occupancy group are:

Warehouses	Parking garages
Cold storage	Hangars
Freight terminals	Grain elevators
Truck and marine terminals	Barns
Bulk oil storage	Stables

Minor storage incidental to another occupancy shall be treated as part of the other occupancy.

4–1.11 Unusual Structures. Occupancies in unusual structures include any building or structure which cannot be properly classified in any of the preceding occupancy groups, either by reason of some function not encompassed or some unusual combination of functions necessary to the purpose of the building or structure. Such miscellaneous buildings and structures shall conform to the fundamental principles stated in Chapter 2 of this *Code* and to any specific provisions applicable thereto in Chapter 16.

4–1.12 Mixed Occupancies (*see 1–4.1.5*).

SECTION 4–2 HAZARD OF CONTENTS

4–2.1 General.

4–2.1.1 The hazard of contents, for the purpose of this *Code*, shall be the relative danger of the start and spread of fire, the danger of smoke or gases generated, the danger of explosion or other occurrence potentially endangering the lives and safety of the occupants of the building or structure.

4–2.1.2* Hazard of contents shall be determined by the authority having jurisdiction on the basis of the character of the contents and the processes or operations conducted in the building or structure.

Exception: Where the flame spread rating of the interior finish or other features of the building or structure are such as to involve a hazard greater than the hazard of contents, the greater degree of hazard shall govern.

4–2.1.3* Where different degrees of hazard of contents exist in different parts of a building or structure, the most hazardous shall govern the classification for the purpose of this *Code*.

Exception: Where hazardous areas are segregated or protected, as specified in Section 6–5 and the applicable sections of Chapters 8 through 16.

4–2.2 Classification of Hazard of Contents.

4–2.2.1* The hazard of contents of any building or structure shall be classified as low, ordinary, or high, in accordance with 4–2.2.2, 4–2.2.3 and 4–2.2.4.

4–2.2.2* Low hazard contents shall be classified as those of such low combustibility that no self-propagating fire therein can occur and that, consequently, the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

4–2.2.3* Ordinary hazard contents shall be classified as those which are liable to burn with moderate rapidity or to give off a considerable volume of smoke, but from which neither poisonous fumes nor explosions are to be feared in case of fire.

4–2.2.4* High hazard contents shall be classified as those which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire. (*For means of egress requirements see Section* 5–11.)

CHAPTER 5 MEANS OF EGRESS

SECTION 5–1 GENERAL

5–1.1 Application.

5–1.1.1* Means of egress for both new and existing buildings shall comply with this chapter.

Exception No. 1: As more restrictive requirements may be imposed for individual occupancies by Chapters 8 through 15.

Exception No. 2: As special modifications may be permitted for special structures in Chapter 16.

5–1.1.2 Any alteration or addition that would reduce means of egress below the requirements for new buildings is prohibited.

5–1.1.3 Any change of occupancy that would result in means of egress below the requirements for new buildings is prohibited.

5–1.2* Definitions.

5–1.2.1 A means of egress is a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consists of 3 separate and distinct parts: (a) the way of exit access, (b) the exit and, (c) the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts and yards.

5–1.2.2 Exit access is that portion of a means of egress which leads to an entrance to an exit.

5–1.2.3 Exit is that portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in this *Code* to provide a protected way of travel to the exit discharge.

5–1.2.4 Exit discharge is that portion of a means of egress between the termination of an exit and a public way.

5–1.2.5* A horizontal exit is a way of passage from one building to an area of refuge in another building on approximately the same level, or a way of passage through or around a wall or partition to an area of refuge on approximately the same level in the same building, which affords safety from fire or smoke from the area of incidence and areas communicating therewith (*see 5–2.4*).

5–1.3 Enclosure of Exits. (*See also 6–1.*)

5–1.3.1 When an exit is required to be protected by separation from other parts of the building by some requirement of this *Code*, the separating construction shall meet the following requirements:

(a) The separation shall have at least a 1-hour fire resistance rating when the exit connects 3 stories or less. This applies whether the stories connected are above or below the story at which exit discharge begins.

(b) The separation shall have at least a 2-hour fire resistance rating when the exit connects 4 or more stories, whether above or below the level of exit discharge. It shall be constructed of an assembly of non-combustible or limited-combustible materials and shall be supported by construction having at least a 2-hour fire resistance rating.

(c) Any opening therein shall be protected by an approved self-closing fire door (*also see 5–2.1.2.3*).

Exception: Fire doors which have been specifically approved as a pair not requiring an astragal at the meeting edges.

(d) Openings in exit enclosures shall be limited to those necessary for access to the enclosure from normally occupied spaces and for egress from the enclosure.

5–1.3.2 Interior Finish in Exits. The flame spread of interior finish shall be limited to Class A and Class B in exit enclosures. Chapters 8 through 16 governing individual occupancies may impose further limitations.

5–1.3.3 No exit enclosure shall be used for any purpose, such as piping for flammable liquids or gases, which could interfere with its value as an exit. (*Also see 5–2.2.2.2.*)

5–1.4* Headroom. Means of egress shall be so designed and maintained as to provide adequate headroom as provided in other sections of this *Code* (*see 5–2.2.1.2*) but in no case shall the ceiling height be less than 7 feet, 6 inches nor any projection from the ceiling be less than 6 feet, 8 inches from the floor.

5–1.5 Changes in Elevation. Changes in elevation in areas constituting part of a means of egress shall be by stairs or by ramps.

Exception: Changes in elevation that do not exceed 21 inches shall be by ramps.

5–1.6 Workmanship, Impediments to Egress.

5–1.6.1 Doors, stairs, ramps, passages, signs, and all other components of means of egress shall be of substantial, reliable construction and shall be built or installed in a workmanlike manner.

5–1.6.2 Any device or alarm installed to restrict the improper use of a means of egress shall be so designed and installed that it cannot, even in case of failure, impede or prevent emergency use of such means of egress.

SECTION 5–2 TYPES OF EXIT COMPONENTS

5–2.1 Doors.

5-2.1.1 General.

5–2.1.1.1 Application.

5–2.1.1.1.1 A door assembly, including the doorway, frame, door, and necessary hardware, may be used as a component in a means of egress when it conforms to the general requirements of Section 5–1 and to the special requirements of this section. As such, the assembly is designated as a door.

5–2.1.1.1.2 Every door and every principal entrance which are required to serve as an exit shall be so designed and constructed that the way of exit travel is obvious and direct. Windows which because of their physical configuration or design and the materials used in their construction could be mistaken for doors shall be made inaccessible to the occupants by barriers or railings conforming to the requirements of 5–2.2.3.

5–2.1.1.2 Units of Exit Width.

5–2.1.1.2.1 In determining the units of exit width for a doorway, only the clear width of the doorway, when the door is in the open position, shall be measured. Any projections into the doorway by doorstops or by the hinge stile shall be disregarded.

5–2.1.1.2.2 Where a doorway is divided by mullions, the allowable units of exit width for the entire doorway shall be the sum of the units of exit width calculated separately for each individual door in the opening.

5–2.1.1.3 Width and Floor Level.

5–2.1.1.3.1* No single door in a doorway shall be less than 28 inches wide.

5–2.1.1.3.2 No single door in a doorway shall exceed 48 inches in width.

5–2.1.1.3.3 The floor on both sides of a door shall be substantially level and shall have the same elevation on both sides of the door, for a distance on each side at least equal to the width of the widest single door. When the door discharges to the outside or to an exterior balcony, exterior exit, or exterior exit access, the floor level outside the door may be one step lower than the inside but not more than 8 inches lower.

5–2.1.1.4 Swing and Force to Open.

5–2.1.1.4.1* Any door used in an exit and not exempted by 5–2.1.1.4.4 or other provisions of this *Code* shall be so designed and installed that when a force is applied to the door on the side from which egress is to be made, it shall swing in the direction of exit travel from any position to the full instant use of the opening in which it is installed. During its opening process or when fully opened, a door shall not obstruct the exit width as determined by 5–2.1.1.2.1.

5–2.1.1.4.2 A door giving access to a stairway shall swing in the direction of exit travel. A door during its swing shall not block stairs or landings. In new buildings any door, at any point in its swing, shall neither reduce the effective width of stair or landing to less than one unit of exit width nor when open interfere with the full use of the stairs.

5–2.1.1.4.3 An exit door or exit access door swinging into an aisle or passageway shall not restrict the effective width thereof at any point during its swing to less than ½ the required widths hereafter specified.

5–2.1.1.4.4 Any door in a means of egress shall be of the side-hinged, swinging type and shall swing in the direction of exit travel when serving a high hazard area or an occupant load of more than 50. Such doors shall conform to the appropriate requirements of 5–2.1.

5–2.1.1.4.5 The force required to fully open doors shall not exceed 50 pounds applied to the latch stile.

5–2.1.1.4.6* Screen and Storm Doors. No screen door or storm door in connection with any required exit shall swing against the direction of exit travel in any case where doors are required to swing with the exit travel.

5–2.1.2 Hardware for Doors in Means of Egress.

5–2.1.2.1 Locks, Latches, Alarm Devices.

5–2.1.2.1.1* A door shall be so arranged as to be readily opened from the side from which egress is to be made at all times when the building served thereby is occupied. Locks, if provided, shall not require the use of a key for operation from the inside of the building.

5–2.1.2.1.2* A latch or other fastening device on a door shall be provided with a knob, handle, panic bar, or other simple type of releasing device, the method of operation of which is obvious, even in darkness.

5–2.1.2.1.3 No lock, padlock, hasp, bar, chain, or other device, or combination thereof shall be installed or maintained at any time on or in connection with any door on which panic hardware is required by this *Code*, if such device prevents, or is intended to prevent, the free use of the door for purposes of egress.

5–2.1.2.2 Panic Hardware.

5–2.1.2.2.1 When a door is required to be equipped with panic hardware by some other provision of this *Code*, the panic hardware shall cause the door latch to release when a force of not to exceed 15 pounds is applied to the releasing devices in the direction of exit travel.

5–2.1.2.2.2* Such releasing devices shall be bars or panels, the actuating portion of which shall not be less than one-half of the width of the door leaf, and placed at heights suitable for the service required, not less than 30 nor more than 44 inches above the floor.

5–2.1.2.2.3 Only approved panic hardware shall be used.

5–2.1.2.2.4 Required panic hardware shall not be equipped with any locking or dogging device, set screw, or other arrangement which can be used to prevent the release of the latch when pressure is applied to the bar.

Exception: As permitted in 10–4.

5–2.1.2.3 Self-Closing Devices. A door designed to be kept normally closed in a means of egress, such as a door to a stair enclosure or horizontal exit, shall be a self-closing door and shall not at any time be secured in the open position.

Exception: In any building of low or ordinary hazard contents, as defined in 4–2.2.2 and 4–2.2.3, where the authority having jurisdiction approves the installation and finds that the circumstances are such that reasonable life safety from fire and smoke is not endangered thereby, stairway doors, doors in smoke partitions, and doors on horizontal exits may be automatic closing, where

(a) Upon release, the door becomes self-closing, and

(b) An approved release device is provided, so arranged that any interruption of the hold open feature will cause the door to be released, and

(c) The release device is so designed that the door may be instantly released manually by some simple and readily obvious operation, and upon release the door becomes self-closing, and

(d) The automatic releasing mechanism or medium will be activated by (1) the operation of an approved automatic sprinkler system which protects the entire building, including both sides of any horizontal exit, the door of which is held open by any release so controlled, or (2) the operation of an approved automatic fire detecting system installed to protect the entire building, so designed and installed as to provide for actuation of the system so promptly as to preclude the generation of heat or smoke sufficient to interfere with egress before the system operates, or (3) by the operation of approved smoke detectors installed in such a way to detect smoke on either side of the door opening, as detailed in NFPA 72E (Section 8–2), and

(e) Any sprinkler or fire detection system or smoke detector is provided with such supervision and safeguards as are necessary to assure complete reliability of operation in case of fire. (Also see 6–4.)

5–2.1.3 Special Doors, Devices in Means of Egress.

5-2.1.3.1 Powered-Operated Doors.

5–2.1.3.1.1 Where required doors are operated by power, such as doors with photo-electric actuated mechanism to open the door upon the approach of a person or doors with power-assisted manual operation, the design shall be such that in event of power failure the door may be opened manually to permit exit travel or closed where necessary to safeguard means of egress.

5–2.1.3.1.2 If a power-operated door is to be accepted as a required exit, it shall also swing with the exit travel by manual means.

5–2.1.3.2 Revolving Doors.

5–2.1.3.2.1 A revolving door shall not be used in a means of egress.

Exception: Where specifically permitted by some individual occupancy chapter of this Code for an exit from the level of exit discharge directly to the outside, in which case:

(*a*) *Such door(s) shall not be used at the foot or at the top of stairs at the level of exit discharge.*

(*b*) *Such door(s) shall not be given credit for more than 50 percent of the required units of exit width.*

(*c*) *Such revolving door(s) shall be of approved type(s).*

5–2.1.3.2.2* Each allowed revolving door may receive credit as constituting ½ unit of exit width.

5–2.1.3.2.3 The number of revolving doors used as exit doors shall not exceed the number of swinging doors used as exit doors within 20 feet thereof.

Exception: Revolving doors may serve as exits without adjacent swinging doors for street floor elevator lobbies, if no stairways or doors from other parts of the building discharge through the lobby, and the lobby has no occupancy other than as a means of travel between elevators and street.

5–2.1.3.2.4* Revolving doors shall be equipped with means to prevent their rotation at too rapid a rate to permit orderly egress.

5–2.1.3.3 Turnstiles.

5–2.1.3.3.1* No turnstile or similar device to restrict travel to one direction or to collect fares or admission charges shall be so placed as to obstruct any required means of egress.

Exception: Approved turnstiles not over 3 feet high, which turn freely in the direction of exit travel, shall be permitted in any occupancy where revolving doors are permitted.

5–2.1.3.3.2 Turnstiles over 3 feet high shall be subject to the requirements for revolving doors.

5–2.1.3.3.3 Turnstiles in or furnishing access to required exits shall be of such design as to provide 22 inches clear width as the turnstile rotates.

5–2.1.3.3.4 No turnstile shall be placed in any required means of egress.

5–2.1.3.3.5 Turnstiles shall be rated the same as revolving doors as regards units of exit width and rates of travel.

5–2.1.3.4 Doors in Folding Partitions. When permanently mounted folding or movable partitions are used to divide a room into smaller spaces, a swinging door or open doorway shall be provided as a way of exit access from each such space.

Exception: Under the following conditions the swinging door may be omitted and the partition may be used to enclose the space completely.

(*a*) *The subdivided space shall not be used by more than 20 persons at any time.*

(*b*) *The use of the space shall be under adult supervision.*

(c) The partitions shall be so arranged that they do not extend across any aisle or corridor used as a way of access to the required exits from the floor.

(d) The partitions shall conform to the interior finish and other applicable requirements of this Code.

(e) The partitions shall be an approved type, shall have a simple method of release, and shall be capable of being opened quickly and easily by inexperienced persons in case of emergency.

5–2.2 Interior Stairs.

5–2.2.1 General.

5–2.2.1.1 All stairs serving as required means of egress shall be of permanent fixed construction.

5–2.2.1.2 Classification of Stairs. Stairs shall be Class A or Class B in accordance with the following table:

	Class A	Class B
Minimum width clear of all obstructions, *except handrails which may project not more than 3½ in. each side and stringers which may project not more than 1½ in., each side*	44 in.	44 in.; 36 in., where total occupant load of all floors served by stairways is less than 50.
Maximum height of risers	7½ in.	8 in.
Minimum width of tread exclusive of nosing or projection	10 in.	9 in.
Winders	None	None
Minimum headroom	6 ft. 8 in.	6 ft. 8 in.
Maximum height between landings	12 ft.	12 ft.
Minimum dimension of landings in direction of travel	44 in.	44 in.
Doors opening immediately on stairs, without landing at least width of door	No	No

5–2.2.1.3 Enclosures. All interior stairs shall be enclosed in accordance with the provisions of Section 5–1 of this *Code*.

Exception: Open stairs permitted by 6–1.1.2.

5–2.2.1.4 Monumental Stairs. Monumental stairs, either inside or outside, shall be accepted as required exits if all requirements for exit stairs are complied with, including required enclosures and minimum width of treads.

Exception: Curved stairs may be accepted with a radius of 25 feet or more at the inner edges.

5–2.2.2 Stair Details.

5–2.2.2.1 Each new stair and platform, landing, etc., used in conjunction therewith in buildings more than 3 stories in height and in new buildings required by this *Code* to be of fire-resistive construction, shall be of noncombustible material throughout.

Exception: Handrails are exempted from this requirement.

5–2.2.2.2 There shall be no enclosed usable space under stairs in an exit enclosure nor shall the open space under such stairs be used for any purpose. (*Also see 5–1.3.3.*)

5–2.2.2.3 Each stair, platform, landing, balcony, and stair hallway floor shall be designed to carry a live load of 100 pounds per square foot, or a concentrated load of 300 pounds, so located as to produce maximum stress conditions.

5–2.2.2.4 No arrangement of treads known as winders shall be permitted in new stairways.

Exception: As permitted by 5–2.2.1.4 for curved monumental stairways.

5–2.2.2.5 Stairways and intermediate landings shall continue with no decrease in width along the direction of exit travel.

5–2.2.2.6 Where material of stair treads and landings is such as to involve danger of slipping, nonslip material shall be provided on tread surface.

5–2.2.2.7 The height of every riser and the width of every tread shall be so proportioned that the sum of 2 risers and a tread, exclusive of its nosing or projection, is not less than 24 nor more than 25 inches.

5–2.2.2.8 The minimum number of risers in any one flight of stairs shall be 3.

5–2.2.2.9 Treads of stairs and landing floors shall be solid.

5–2.2.2.10 There shall be no variation exceeding $\frac{3}{16}$ inch in the depth of treads or in height of risers in any flight.

Exception: As permitted by 5–2.2.1.4 for monumental stairs.

5–2.2.2.11 Every tread less than 10 inches deep shall have a nosing or an effective projection of approximately 1 inch over the level immediately below.

5–2.2.2.12 Stairs and other exits shall be so arranged as to make clear the direction of egress to the street. Exit stairs that continue beyond the floor of discharge shall be interrupted at the floor of discharge by partitions, doors, or other effective means.

5–2.2.3 Guards and Handrails.

5–2.2.3.1* Means of egress such as stairs, stair landings, balconies, ramps and aisles, located along the edge of open-sided floors and mezzanines, shall have guards to prevent falls over the open side. Each new stair and Class B ramp shall have handrails on both sides. (*Also see 5–2.2.3.4.*)

5–2.2.3.2 Required guards and handrails shall continue for the full length of each flight of stairs.

5–2.2.3.3 The design of guards and handrails and the hardware for attaching handrails to guards, balusters, or masonry walls shall be such that there are no projecting lugs on attachment devices or nonprojecting corners or members of grilles or panels which may engage loose clothing. Openings in guards shall be designed to prevent loose clothing from becoming wedged in such openings.

5–2.2.3.4 Handrail Details.

(a) Handrails on stairs shall be not less than 30 inches nor more than 34 inches above the upper surface of the tread, measured vertically to the top of the rail from a point on the tread 1 inch back from the leading edge or nosing.

Exception: On stairways designed for use by children, an additional handrail may be provided lower than the main handrail.

(b) Handrails shall provide a clearance of at least 1½ inches between handrail and wall to which fastened.

(c) Handrails shall be of such design and so supported as to withstand a load of not less than 200 pounds applied at any point, downward or horizontally.

(d) Handrails shall be so designed to permit continuous sliding of hands on them.

(e) Every stairway required to be more than 88 inches in width shall have not less than 1 intermediate handrail for each 88 inches in required width. (*Also see 5–2.2.3.1.*)

Exception: On monumental outside stairs 2 handrails may be permitted.

5–2.2.3.5 Guard Details.

(a) The height of guards required by 5–2.2.3.1 shall be measured vertically to the top of the guard from a point on the tread 1 inch back from the leading edge or from the floor of landings or balconies.

(b) Guards shall be not less than 42 inches high. Guards protecting changes in level one story or less on interior balconies and mezzanines shall be not less than 36 inches high.

Exception: Balconies located in assembly occupancies.

(c) Guards shall be so constructed that the area in the plane of the guard from the top of floor, riser, or curb to the minimum required height of guard shall be subdivided or filled in one of the following manners:

1. A sufficient number of intermediate longitudinal rails so that the clear distance between rails measured at right angles to the run of rail does not exceed 10 inches. The bottom rails shall not be more than 10 inches from the top of floor, tread, or curb measured vertically. The point of measurement from treads shall be as provided in 5–2.2.3.5(a).

2. Vertical balusters spaced not more than 6 inches apart.

3. Areas filled wholly or partially by panels of solid wire mesh by expanded metal construction, or by ornamental grilles which provide protection against falling through the guard equivalent to that provided by the intermediate rails or vertical balusters specified in the two preceding paragraphs.

4. The lower part of the area may consist of a continuous substantial curb, the top of which is parallel to the run of stairs or level areas and the height of which is not less than 3 inches on stairs (measured at right angles to the curb from its top to the nosing of the tread) and not less than 6 inches for level areas.

5. Masonry walls may be used for any portion of the guard.

6. Any combination of the foregoing that provides equivalent safety.

(d) Enclosure walls and guards consisting of masonry, railings, or other construction either shall be designed for loads transmitted by attached handrails or shall be designed to resist a horizontal force of 50 pounds per lineal foot applied at the top of the guard, whichever condition produces maximum stresses. For walls or guards higher than minimum height the specified force shall be applied at a height of 42 inches above the floor or tread.

(e) Intermediate rails, balusters, and panel fillers shall be designed for a uniform load of not less than 25 pounds per square foot over the gross area of the guard (including the area of any openings in the guard) of which they are a part. Reactions due to this loading need not be added to the loading specified by 5–2.2.3.5(d) in designing the main supporting members of guards.

5–2.3 Smokeproof Towers.

5–2.3.1* A smokeproof tower shall be a stairway enclosure so designed that the movement into the smokeproof tower of products of combustion, produced by a fire occurring in any part of the building, shall be limited.

5–2.3.2 The appropriate design method shall be any system which meets the performance level stipulated in 5–2.3.1, above, or that given in 5–2.3.3 through 5–2.3.8, below.

5–2.3.3 A smokeproof tower, as herein specified, shall be a continuous fire-resistive enclosure protecting a stairway from fire or smoke in the building served, with communication between the building and the tower by means of balconies directly open to the outer air.

5–2.3.4 Stairs, enclosure walls, vestibules, balconies and other components of smokeproof towers shall be of noncombustible materials, and all other requirements specified in 5–2.2 for inside stairs shall apply to stairs in smokeproof towers.

5–2.3.5 Stairways shall be completely enclosed by walls having a 2-hour fire resistance rating and comprised of noncombustible material. There shall be no openings in walls separating the enclosure from the interior of the building. Fixed or automatic fire windows are permitted in an exterior wall of the stair enclosure not subject to severe fire exposure hazard as defined in the *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, NFPA 80A (*see Appendix B*), from the same or nearby buildings.

5–2.3.6 Access to the smokeproof tower shall be provided from every story through vestibules open to the outside on an exterior wall or from balconies overhanging an exterior wall, but not subject to severe fire exposure hazard as defined in the *Recommended Practice for Protection of Buildings from Exterior Fire Exposures*, NFPA 80A. (*See Appendix B.*) Every such vestibule, balcony or landing shall have an unobstructed length and width not less than the required width of exit doors serving same and exit discharge shall open directly to a street or alley or yard or to an enclosed court open at the top not less than 20 feet in width and 1,000 square feet in area. Balconies or vestibules shall have guards not less than 42 inches high conforming with 5–2.2.3.5(c). Wall openings exposing balconies or vestibules shall be protected in accordance with 5–2.5.1.3.1.

5–2.3.7* Access from a building to vestibules or balconies shall be through doorways not less than 40 inches wide for new and 36 inches wide for existing towers. These openings and the entrances to the towers shall be provided with approved, self-closing fire doors swinging with the exit travel. Clear wired glass not exceeding 720 square inches shall be provided in all doors giving access to the enclosure.

5–2.3.8 The level of a vestibule or balcony floor shall be placed no more than 8 inches below the floor level of each story where climatic conditions involve the possibility of blocking doors by snow or ice. In mild climates in which this hazard is not presented, the floors shall be approximately level. There shall be no step from the vestibule or balcony into the stair enclosure.

5–2.4 Horizontal Exits.

5–2.4.1 General.

5–2.4.1.1* **Application.** Horizontal exits may be substituted for other exits to an extent that the total exit capacity of the other exits (stairs, ramps, doors leading outside the building) will not be reduced below half that required for the entire area of the building or connected buildings if there were no horizontal exits.

5–2.4.1.2 Egress from Area of Refuge.

5–2.4.1.2.1 Every fire section for which credit is allowed in connection with a horizontal exit shall have in addition to the horizontal exit or exits at least one stairway, doorway leading outside, or other standard exit. Any fire section not having a stairway or doorway leading outside shall be considered as part of an adjoining section with stairway.

5–2.4.1.2.2* Every horizontal exit for which credit is given shall be so arranged that there are continuously available paths of travel leading from each side of the exit to stairways or other standard means of egress leading to outside the building.

5–2.4.1.2.3 Whenever either side of the horizontal exit is occupied, the doors used in connection with the horizontal exit shall be unlocked.

5–2.4.1.2.4 The floor area on either side of a horizontal exit shall be sufficient to hold the occupants of both floor areas, allowing not less than 3 square feet clear floor area per person.

5–2.4.2 Walls for Horizontal Exits.

5–2.4.2.1 Walls or partitions separating buildings or areas between which there are horizontal exits shall be an assembly of noncombustible material having a 2-hour fire resistance rating. They shall provide a separation continuous to ground. (*Also see 6–6.3.*)

Exception No. 1: Such walls or partitions may be omitted on the street floor when they are supported on other construction having at least a 2-hour fire resistance rating continuous to the ground and meet all the conditions in the following Exception No. 2.

Exception No. 2: Where a fire partition is used to provide a horizontal exit in any story of a building, such partition may be omitted in any lower story under the following conditions:

(a) The open fire area story from which the fire partition is omitted shall be separated from the stories above by construction having at least a 2-hour fire resistance rating.

(b) Required exits from the stories above the open fire area story shall be separated therefrom by construction having a 2-hour fire resistance rating and shall discharge outside without travel through the open fire area story.

(c) Vertical openings between the open fire area story and the stories above shall be enclosed with construction having a 2-hour fire resistance rating. Other details shall be in accordance with the applicable provisions of Section 6–1.

Exception No. 3: Where a fire partition is used to provide a horizontal exit for any story below the discharge level, such partition may be omitted at the level of exit discharge under the following conditions:

(a) The open fire area story from which the fire partition is omitted shall be separated from the stories below by construction having at least a 2-hour fire resistance rating.

(b) Required exits from stories below the open fire area story shall be separated from the open fire area story by construction having a 2-hour fire resistance rating and shall discharge directly outside without travel through the open fire area story.

(c) Vertical openings between the open fire area story and the floors below shall be enclosed with construction having a 2-hour fire resistance rating. Other details shall be in accordance with the applicable provisions of Section 6–1.

5–2.4.2.2* Any opening in such walls, whether or not such opening serves as an exit, shall be adequately protected in an approved manner against the passage of fire or smoke.

5–2.4.2.3* Swinging fire doors on horizontal exits shall swing with the exit travel. Where a horizontal exit serves areas on both sides of a wall, there shall be adjacent openings with swinging doors at each, opening in opposite directions, with signs on each side of the wall or partition indicating as the exit the door which swings with the travel from that side, or other approved arrangements providing doors always swinging with any possible exit travel.

5–2.4.2.4* Sliding fire doors shall not be used on a horizontal exit.

Exception: Where the doorway is protected by a fire door on each side of the wall in which it occurs, one fire door shall be of the swinging type as provided in 5–2.4.2.3, and the other may be an automatic sliding fire door that shall be kept open whenever the building is occupied.

5–2.4.3 Bridges and Balconies.

5–2.4.3.1 Each bridge or balcony utilized in conjunction with horizontal exits shall comply with the structural requirements for outside stairs and shall have guards and handrails in general conformity with the requirements of 5–2.2 for stairs and 5–2.3 for smokeproof towers.

5–2.4.3.2 Every bridge or balcony shall be at least as wide as the door leading to it and not less than 44 inches for new construction.

5–2.4.3.3 Every door leading to a bridge or balcony serving as a horizontal exit from a fire area shall swing with the exit travel out of the fire area.

5–2.4.3.4 Where the bridge or balcony serves as a horizontal exit in one direction, only the door from the bridge or balcony into the area of refuge shall swing in.

5–2.4.3.5 Where the bridge or balcony serves as a horizontal exit in both directions, doors shall be provided in pairs swinging in opposite directions, only the door swinging with the exit travel to be counted in determination of exit width.

Exception No. 1: If the bridge or balcony has sufficient floor area to accommodate the occupant load of either connected building or fire area on the basis of 3 square feet per person.

Exception No. 2: In existing buildings by specific permission of the authority having jurisdiction, in which case doors on both ends of the bridge or balcony may swing out from the building.

5–2.4.3.6 The bridge or balcony floor shall be approximately level with the building floor.

Exception: In climates where balconies may be subject to accumulation of snow or ice, one step, not to exceed 8 inches, may be permitted below the level of the inside floor.

5–2.4.3.7* Ramps shall be employed where there is a difference in level between connected buildings or floor areas. Steps may be used where the difference in elevation is greater than 21 inches. Ramps and stairs shall be in accordance with the sections of this *Code* pertaining to ramps, stairs, and outside stairs.

5–2.4.3.8 All wall openings, in both of the connected buildings or fire areas, any part of which is within 10 feet of any bridge or balcony as measured horizontally or below, shall be protected with fire doors or fixed metal-frame wired glass windows.

Exception: Where bridges have solid sides not less than 6 feet in height, such protection of wall openings may be omitted.

5–2.5 Outside Stairs.

5–2.5.1 General.

5–2.5.1.1 Any permanently installed stair outside of the building served is acceptable in a means of egress under the same condition as an inside stair, provided that such stairs comply with all the requirements hereinbefore stated for inside stairs.

Exception: As modified by the following paragraphs of this subsection.

5–2.5.1.2 Subject to the approval of the authority having jurisdiction, outside stairs may be accepted where leading to roofs of other sections of the building or adjoining building, where the construction is fire resistive, where there is a continuous and safe means of exit from the roof, and all other reasonable requirements for life safety are maintained.

5–2.5.1.3 Enclosures.

5–2.5.1.3.1 Under all conditions where enclosure of inside stairways is required, outside stairs shall be separated from the interior of the building by fire-resistive walls the same as required for inside stairway enclosures with fire doors or fixed wired glass windows protecting any openings therein. In buildings three stories or less in height, such protection need not be provided where there is a remote second exit.

If 4 stories or more in height openings shall be protected as follows:

(a) Horizontally. If within 15 feet of any balcony, platform, or stairway, constituting a part of the exit. This provision does not apply to a platform or walkway leading from the same floor to the exit. Protection need not extend around a right angle corner (outside angle 270 degrees) of the building if there is more than one exit.

(b) Below. If within 3 stories or 35 feet of any balcony, platform, walkway, or stairway constituting a part of the exit, or within 2 stories or 20 feet of a platform or walkway leading from any story to the exit.

(c) Above. If within 10 feet of any balcony, platform, or walkway as measured vertically, or from any stair treads as measured vertically from the face of the outside riser.

(d) Top story. Protection for wall openings in the top story shall not be required where stairs do not lead to the roof.

5–2.5.1.3.2 All openings below shall be protected, where a stairway is located in a court the least dimension of which is less than one-third its height, or in an alcove having a width less than one-third its height and a depth greater than one-fourth its height.

5–2.5.1.3.3* Visual Enclosure. Outside stairs shall be so arranged as to avoid any handicap to the use of the stairs by persons having a fear of high places. For stairs more than 3 stories in height any arrangement intended to meet this requirement shall be at least 4 feet in height.

5–2.5.1.3.4 Weather Protection. Outside stairs in climates subject to snow and ice shall be protected to prevent accumulation of snow or ice.

5–2.5.2 Balconies. Balconies to which access doors lead shall be approximately level with the floor of the building.

Exception: In climates where balconies may be subject to accumulation of snow or ice, one step, not to exceed 8 inches, may be permitted below the level of the inside floor.

5–2.5.3 Stair Details (*see 5–2.5.1.1*).

5–2.5.3.1 For outside stairs of monumental type, constructed of stone or concrete, nosings shall not be required if treads are at least 11 inches deep.

5–2.5.3.2 Treads shall be solid.

5–2.5.3.3 Risers shall be solid.

Exception: The skirt type, having 1 inch space for drainage, shall be permitted.

5–2.5.3.4 No structural metal member shall be employed, the entire surface of which is not capable of being inspected and painted.

Exception: Where embedded in masonry or concrete or where a suitable fire-resistive and waterproof covering is provided.

5–2.5.3.5 All supporting members for balconies and stairs which are in tension and are fastened directly to the building shall pass through the wall and be securely fastened on the opposite side, or they shall be securely fastened to the framework of the building. Metal members shall be protected effectively against corrosion where they pass through walls.

5–2.5.3.6 Balcony and stair railings shall be designed to withstand both a vertical or horizontal force applied separately of 50 pounds per lineal foot applied at the top of the railing. Where enclosures are used in place of railings, the horizontal load shall be considered to be applied at a height of 42 inches above the stair tread or balcony floor.

5–2.6 Ramps.

5–2.6.1 Inside Ramps.

5–2.6.1.1 General. A ramp shall be permitted as a component in a means of egress when it conforms to the general requirements of Section 5–1 and to the special requirements of this subsection.

5–2.6.1.2 Classification. A ramp shall be designated as Class A or Class B in accordance with the following table:

	Class A	Class B
Minimum width	44 in.	30 in.
Maximum slope	1 in 10	1 in 8
Maximum height between landings	No limit	12 ft.
Capacity in persons per unit of exit width (*except as modified by Chapters 8 through 16*)		
Down	100	100
Up	100	60

Exception: Existing Class A ramps with slopes of 1 to 1 3/16 in 12 and Existing Class B ramps with slopes of 1 3/16 to 2 in 12 are permitted subject to the approval of the authority having jurisdiction.

5–2.6.1.3 Enclosure.

5–2.6.1.3.1 When a ramp inside a building is used as an exit or exit component, it shall be protected by separation from other parts of the building, as specified in 5–1.3.

5–2.6.1.3.2 Fixed wired glass panels in steel sash may be installed in such a separation in a fully sprinklered building.

5–2.6.1.3.3* There shall be no enclosed usable space under ramps in an exit enclosure nor shall the open space under such ramps be used for any purpose.

5–2.6.1.4 Other Details.

5–2.6.1.4.1 A ramp and the platforms and landings associated therewith shall be designed for not less than 100 pounds per square foot live load.

5–2.6.1.4.2 The slope of a ramp shall not vary between landings. Landings shall be level and changes in direction of travel, if any, shall be made only at landings.

5–2.6.1.4.3 A ramp used as a means of egress in a building more than 3 stories in height, or in a building of any height of noncombustible or fire-resistive construction, shall be of an assembly of noncombustible or limited-combustible material. The ramp floor and landings shall be solid and without perforations.

5–2.6.1.4.4 A ramp shall have a roughened or a nonslip surface.

5–2.6.1.4.5 Guards and handrails complying with 5–2.2.3 shall be provided in comparable situations for ramps.

Exception: Handrails are not required on Class A ramps.

5–2.6.2 Outside Ramps.

5–2.6.2.1 General. Any ramp permanently installed on the outside of the building served shall be accepted as a component in a means of egress under the same conditions as an inside ramp, provided it complies with all requirements for inside ramps as modified by the following provisions of 5–2.6.2.

5-2.6.2.2 Enclosures.

5–2.6.2.2.1 Under all conditions where enclosure of inside ramps is required, outside ramps serving as exits shall be separated from the interior of the building by wall construction that has a fire resistance rating equal to that required for such enclosure. In buildings three stories or less in height, such protection need not be provided where there is a remote second exit. If the ramp is 4 stories or more in height, the openings shall be protected as follows:

(a) Horizontally. If within 15 feet of any balcony, platform or ramp, serving as component part of the exit. This provision does not apply to a platform or walkway serving as access to the exit. Protection need not extend around a right angle corner (outside angle 270 degrees) of the building, if there is more than one exit.

(b) Below. If within 3 stories or 35 feet of any balcony, platform walkway, or ramp constituting a part of the exit, or within 2 stories or 20 feet of a platform or walkway leading from any story to the exit.

(c) Above. If within 10 feet of any balcony, platform, or walkway, as measured vertically, or from the surface of a ramp.

(d) Top story. Protection for wall openings in the top story shall not be required where the ramp does not lead to the roof.

5–2.6.2.2.2 All openings below shall be protected where a ramp is located in a court the least dimension of which is less than one third its height, or in an alcove having a width less than one third its height and a depth greater than one fourth of its height.

5–2.6.2.2.3* **Visual Protection.** Outside ramps shall be so arranged as to avoid any handicap to their use by persons having a fear of high places. For ramps more than 3 stories in height, any arrangement intended to meet this requirement shall be at least 4 feet in height.

5–2.6.2.2.4 Weather Protection. Outside ramps in climates subject to snow and ice shall be protected to prevent accumulation of snow or ice.

5–2.6.2.2.5 Balconies to which access doors lead shall be approximately level with the floor of the building.

Exception: In climates where balconies may be subject to accumulation of snow or ice, one step, not to exceed 8 inches, may be permitted below the level of the inside floor.

5–2.6.2.3 Ramp Details.

5–2.6.2.3.1 Structural metal members where used shall be capable of inspection over their entire length.

Exception: Where embedded in masonry or concrete, where a suitable fire-resistive and waterproof covering is provided, or where corrosion-resistive metals are used.

5–2.6.2.3.2 All supporting members for balconies and ramps which are in tension and are fastened directly to the building shall pass through the wall and be securely fastened on the opposite side or shall be securely fastened to the framework of the building. Metal members shall be protected effectively against corrosion where they pass through walls.

5–2.6.2.3.3 Balcony and ramp railings shall be designed to withstand both a vertical or horizontal force applied separately of 50 pounds per lineal foot applied at the top of the railing. Where enclosures are used in place of railings, the horizontal load shall be considered to be applied at a height of 42 inches above the stair tread or balcony floor.

5–2.7* Exit Passageways.

5–2.7.1 General. Any hallway, corridor, passage, tunnel, underfloor passageway, or overhead passageway shall be permitted as an exit passageway and as an exit or exit component when conforming to all other requirements of Section 5–1 as modified by the provisions of this section.

5–2.7.2 Enclosure. An exit passageway shall be protected by separation from other parts of the building as specified in 5–1.3.

Exception: Fixed wired glass panels in steel sash may be installed in such a separation in a fully sprinklered building.

5–2.7.3 Width. The width of an exit passageway shall be adequate to accommodate the aggregate capacity of all exits discharging through it.

5–2.7.4 Floor. The floor shall be solid and without perforations.

5–2.8 Escalators and Moving Walks.

5–2.8.1 General.

5–2.8.1.1* An escalator or moving walk may be accepted as a component in a means of egress when it conforms to the general requirements of Section 5–1 and to the special requirements of this subsection.

5–2.8.1.2 Enclosure (*see 6–1.2*).

5–2.8.2 Escalators.

5–2.8.2.1* An escalator shall comply with the applicable requirements for stairs in 5–2.2.

Exception: As modified in 5–2.8.2.2 through 5–2.8.2.7.

5–2.8.2.2 Escalators constituting a means of egress shall operate only in the direction of egress.

5–2.8.2.3 An escalator shall be of the horizontal tread type and shall be of noncombustible construction throughout.

Exception: Step tread surfaces, handrails and step wheels.

5–2.8.2.4 A single escalator 32 inches wide shall be given credit for 1 unit of exit width. An escalator 48 inches wide shall be given credit for 2 units of exit width.

5–2.8.2.5 There shall be an unobstructed space of at least 4 inches outside the handrail and above the handrail for the full length of the escalator.

5–2.8.2.6 No single escalator shall have an uninterrupted vertical travel of more than 1 story.

5–2.8.2.7* An escalator shall be designed and operated according to generally accepted standards of safe engineering practice.

5–2.8.3 Moving Walks.

5–2.8.3.1 An inclined moving walk shall comply with the applicable requirements of 5–2.6 for ramps, and a level moving walk shall comply with the applicable requirements of 5–2.7 for exit passageways.

Exception: As modified in 5–2.8.3.2 through 5–2.8.3.3.

5–2.8.3.2 No moving walk capable of being operated in the direction contrary to normal exit travel shall be used in a means of egress.

5–2.8.3.3* A moving walk shall be designed and operated according to generally accepted standards of safe engineering practice.

5–2.9 Fire Escape Stairs.

5–2.9.1 General.

5–2.9.1.1 Application.

5–2.9.1.1.1* Fire escape stairs may be used in required means of egress only in existing buildings, subject to the provisions of the occupancy chapter applying.

5–2.9.1.1.2 Fire escape stairs shall not constitute more than 50 percent of the required exit capacity in any case.

5–2.9.1.1.3 Fire escape stairs shall not be accepted as constituting any part of the required means of egress for new buildings.

5–2.9.1.2 Fire escape stairs shall provide a continuous unobstructed safe path of travel to the ground or other safe area of refuge to which they lead. Where the fire escape is not continuous, as in cases where stairs lead to an adjoining roof which must be crossed before continuing downward travel, the direction of travel shall be clearly indicated, and suitable walkways with handrails shall be provided where necessary. Where a single means of egress consists of a combination of inside stairs and fire escape stairs, each shall comply with the applicable provisions of this *Code*, and the two shall be so arranged and connected as to provide a continuous safe path of travel.

5–2.9.1.3 Types. The following types of fire escape stairs are recognized by this *Code:*

(a) Return platform type, superimposed runs.

(b) Straight run type, with platforms continuing in the same direction.

Either of the above types may be parallel to or at right angles to the building. They may be attached to buildings or erected independently of them and connected by bridges. (*See also 5–2.9.7 for swinging stairs.*)

5–2.9.2 Protection of Openings.

5–2.9.2.1 Fire escape stairs shall be so arranged that they will be exposed by the smallest possible number of window and door openings. There shall be no transoms over doors. Every opening, any portion of which is in the limits specified below, shall be completely protected by approved fire doors or metal-frame wired glass windows as follows:

(a) Horizontally. If within 15 feet of any balcony, platform, or stairway, constituting a part of the escape proper.

Exception No. 1: This provision does not apply to a platform or walkway leading from the same floor to the escape proper.

Exception No. 2: Protection need not extend around a right angle corner (outside angle 270 degrees) of the building where stairs are remote from such corner.

(b) Below. If within 3 stories or 35 feet of any balcony, platform, walkway, or stairway constituting a part of the escape proper, or within 2 stories or 20 feet of a platform or walkway leading from any story to the escape proper.

(c) Above. If within 10 feet of any balcony, platform, or walkway as measured vertically, or from any stair treads as measured vertically from the face of the outside riser.

(d) Top story. Protection for wall openings shall not be required where stairs do not lead to the roof.

5–2.9.2.2 Where a fire escape stair is located in a court, the least dimension of which is less than one-third its height, or in an alcove having a width less than one-third its height and depth greater than one-fourth its height, all openings below shall be protected.

Exception: The provisions of 5–2.9.2 may be modified by the authority having jurisdiction in consideration of automatic sprinkler protection, low hazard occupancy, or other special conditions.

5–2.9.3 Access.

5–2.9.3.1 Access to fire escape stairs shall be provided in accordance with 5–2.9.4 and the general provisions of 5–4.1.2.

5–2.9.3.2* Where access is by way of double hung windows, such windows shall be so counterbalanced and maintained that they can be readily opened with a minimum of physical effort. Insert screens, if any, on any type of opening giving access to fire escape stairs shall be of types that may be readily opened or pushed out. No storm sash shall be used on any window providing access to fire escape stairs.

5–2.9.3.3 Fire escape stairs shall extend to the roof in all cases where the roof is subject to occupancy or is constructed and arranged to provide an area of refuge from fire. In all cases where stairs do not extend to the roof, access thereto shall be provided by a ladder in accordance with 5–2.10.

Exception: Such ladders are not required in the case of roofs with pitch steeper than 2 inches to the foot.

5–2.9.3.4 Balconies to which access doors lead shall be approximately level with the floor of the building or, in climates where balconies may be subject to accumulation of snow or ice, one step no more than 8 inches below the level of the inside floor.

5–2.9.3.5 Balconies to which access is secured through windows with sills above the inside floor level shall be not more than 18 inches below the sill. In no case shall the balcony level be above the sill.

5–2.9.4* Stair Details. Fire escape stairs, depending upon the requirements of Chapters 8 through 16 of this *Code*, shall be in accordance with Table 5–2.9.4 and subsequent paragraphs.

5–2.9.5 Guards and Handrails.

5–2.9.5.1 All fire escapes shall have walls or guards on both sides, in accordance with 5–2.2.3.

Table 5–2.9.4

	Existing Stairs	Existing Stairs Serving 10 or less occupants (very small buildings)
Minimum widths	22 in. clear between rails	18 in. clear between rails
Minimum horizontal dimension any landing or platform	22 in.	18 in.
Maximum rise	9 in.	12 in.
Minimum tread, exclusive of nosing	9 in.	6 in.
Minimum nosing or projection	1 in.	No requirement
Tread construction	Solid, ½ in. dia. perforations permitted	Flat metal bars on edge, or square bars secured against turning, spaced 1¼ in. max. on centers
Winders (spiral)	None	Permitted subject to capacity penalty
Risers	None	No requirement
Maximum height between landings	12 ft.	No requirement
Headroom, minimum	7 ft.	6 ft. 6 in.
Access to escape	Door or casement windows 24 in. x 6 ft. 6 in. or double hung windows 30 x 36 in. clear opening	Windows
Level of access opening	Not over 12 in. above floor; steps if higher	Same
Discharge to ground	Swinging stair section permitted	Swinging stair, or ladder if approved
Capacity, number of persons	45 per unit,* access by door; 20 if access by climbing over window sill	10; if winders or ladder from bottom balcony, 5; if both, 1

*See 5-2.1.1.3 for counting fractions of a unit for stairs more than 1 unit wide.

5–2.9.5.2 All fire escapes shall have handrails on both sides, not less than 30 inches nor more than 42 inches high measured vertically from a point on the stair tread one inch back from the leading edge, all in general conformity to the requirements for stair handrails in 5–2.2.3.

5–2.9.5.3 Handrails and guards shall be so constructed as to withstand a force of 200 pounds applied downward or horizontally at any point.

5–2.9.6 Materials and Strength.

5–2.9.6.1 Iron, steel, or concrete, or other approved noncombustible materials, shall be used for the construction of fire escape stairs, balconies, railings, and other features appurtenant thereto.

5–2.9.6.2 Balconies and stairs shall be designed to carry a live load of 100 pounds per square foot or a concentrated load of 300 pounds so located as to produce maximum stress conditions.

5–2.9.6.3 Structural metal members where used shall be capable of inspection over their entire length.

Exception: Where embedded in masonry, concrete, where a suitable fire-resistive and waterproof covering is provided, or where corrosion-resistive metals are used.

5–2.9.6.4 All supporting members for balconies and stairs which are in tension and are fastened directly to the building shall pass through the wall and be securely fastened on the opposite side or they shall be securely fastened to the framework of the building. Where metal members pass through walls, they shall be protected effectively against corrosion.

5–2.9.6.5 Balcony and stair railings shall be designed to withstand both a vertical or horizontal force applied separately of 50 pounds per lineal foot applied at the top of the railing. Where enclosures are used in place of railings, the horizontal load shall be considered to be applied at a height of 42 inches above the stair tread or balcony floor.

Exception: As provided in 5–2.9.6.6.

5–2.9.6.6 Notwithstanding the provisions of 5–2.9.6.2 and 5–2.9.6.5, the authority having jurisdiction may approve any existing fire escape stair for a very small building when it has been shown by load test or other evidence satisfactory to him to have adequate strength.

5–2.9.7 Swinging Stairs.

5–2.9.7.1 Swinging stair sections shall not be used for fire escape stairs.

Exception: Where termination over sidewalks, alleys, or driveways makes it impracticable to build stairs permanently to the ground. Where used, swinging stairs shall comply with 5–2.9.7.2 through 5–2.9.7.9.

5–2.9.7.2 Swinging section of stairs shall not be located over doors, over the path of travel from any other exit, or in any location where there are or are likely to be obstructions.

5–2.9.7.3 Width of swinging section of stairs shall be at least equal to that of the stairs above.

5–2.9.7.4 Pitch shall not be steeper than that of the stairs above.

5–2.9.7.5 Railings shall be provided similar in height and construction to those required for the stairs above. Railings shall be designed to prevent any possibility of injury to persons at head of stairs or on balconies when stairs swing downward. Minimum clearance between moving sections where hands might be caught shall be 4 inches.

5–2.9.7.6 If distance from lowest platform to ground exceeds 12 feet, an intermediate balcony not more than 12 feet from the ground or less than 7 feet in the clear underneath shall be provided with width not less than that of the stairs and length not less than 4 feet.

5–2.9.7.7 Counterweight shall be provided for swinging stairs and this shall be of type balancing about a pivot, no cables being used. Counterweight shall be securely bolted in place, but sliding ball weights or their equivalent may be used to hold stairs up and to help lower them. Counterbalancing shall be such that a weight of 150 pounds, one step from pivot, will not start swinging section downward, and a weight of 150 pounds, one quarter of the length of the swinging stairs from the pivot, will positively cause stairs to swing down.

5–2.9.7.8 Pivot for swinging stairs shall either have a corrosion resistant assembly or have sufficient clearance to prevent sticking on account of corrosion.

5–2.9.7.9* No device to lock swinging stair section in up position shall be installed.

5–2.10 Fire Escape Ladders.

5–2.10.1 General. No form of ladder shall be used as a fire escape under the provisions of this *Code*.

Exception No. 1: Ladders conforming to the following specifications may be used:

(*a*) *To provide access to unoccupied roof spaces as permitted by 5–2.9.3.3.*

(*b*) *To provide a means of escape from boiler rooms, grain elevators and towers, as permitted by Chapters 15 and 16, and elevated platforms around machinery or similar spaces subject to occupancy only by able-bodied adults, not more than 3 in number.*

Exception No. 2: Existing ladders may be accepted to provide access to the street from the lowest balcony of fire escape stairs for very small buildings, if approved by the authority having jurisdiction, subject to the limitations in capacity specified in 5–2.9.4.

5–2.10.2 Installation.

5–2.10.2.1* All ladders shall be permanently installed in fixed position, supported by rigid connection to the building or structure at intervals not exceeding 10 feet.

5–2.10.2.2 Where ladders provide access to roofs or elevated platforms, rails shall extend not less than 45 inches above roof lines or platform floor or 45 inches above coping or parapet, if there is one. Extension of side rails to roof shall be carried over coping or parapet to afford hand hold.

5–2.10.2.3 Ladders shall be arranged parallel to buildings or structures with travel either between ladder and building, in which case minimum clearance between center of rungs and building shall be 27 inches, or outside of ladder, in which case minimum clearance between center of rungs and building shall be 6½ inches.

5–2.10.2.4 Ladders shall be vertical or positively inclined. No negative incline (i.e., ladder sloping out over head of person using it) shall be permitted.

5–2.10.3 Construction.

5–2.10.3.1 Ladders shall be constructed of iron, of steel, or of other metal in design having equivalent strength and resistance to corrosion.

5–2.10.3.2 Rails of iron or steel ladders shall be not less than ½ inch x 2 inches in section, not less than 16 inches apart.

5–2.10.3.3 Rungs shall be not less than ⅞ inch diameter and shall be riveted or welded in position, not less than 10 inches nor more than 12 inches on centers.

5–2.10.3.4 The lowest rung of any ladder shall be not more than 12 inches above the level of the ground or balcony floor beneath it.

5–2.11 Slide Escapes.

5–2.11.1 General.

5–2.11.1.1 A slide escape may be used as a component in a means of egress where specifically authorized by Chapters 8 through 16.

5–2.11.1.2 Each slide escape shall be of an approved type.

5–2.11.1.3 Slide escapes used as exits shall comply with the applicable requirements of Chapter 5 for other types of exits, subject to the discretion of the authority having jurisdiction.

5–2.11.2 Capacity.

5–2.11.2.1 Slide escapes, where permitted as required exits, shall be rated at one exit unit per slide, with rated travel capacity of 60 persons.

5–2.11.2.2 Slide escapes shall not constitute more than 25 percent of the required number of units of exit width from any building or structure or any individual story or floor thereof.

Exception: As permitted for high hazard manufacturing buildings or structures.

SECTION 5–3 CAPACITY OF MEANS OF EGRESS

5–3.1 Occupant Load.

5–3.1.1* The capacity of means of egress for any floor, balcony, tier, or other occupied space shall be sufficient for the occupant load thereof.

5–3.1.2 The occupant load shall be the maximum number of persons that may be in the space at any time, as determined by the authority having jurisdiction, but shall not be less than the number computed in accordance with the requirements of Chapters 8 through 16 for individual occupancies. (Where both gross and net area figures are given for the same occupancy class, the gross area figure shall be applied to the building or structure as a whole. A separate calculation shall then be made for those spaces where occupant load is determined on the basis of net area and if the total occupant load determined on the net area basis exceeds that on the gross area basis, the means of egress shall be based on the larger occupant load figure.)

5–3.1.3 Where exits serve more than 1 floor, only the occupant load of each floor considered individually need be used in computing the capacity of the exits at that floor, provided that exit capacity shall not be decreased in the direction of exit travel.

5–3.1.4 When means of egress from floors above and below converge at an intermediate floor, the capacity of the means of egress from the point of convergence shall be not less than the sum of the two.

5–3.2 Units of Exit Width.

5–3.2.1* Means of egress shall be measured in units of exit width of 22 inches. Fractions of a unit less than 12 inches shall not be counted. Fractions of a unit comprising 12 or more inches, added to one or more full units, shall be counted as ½ unit of exit width.

5–3.2.2* Width of means of egress shall be measured in the clear at the narrowest point of the exit component under consideration.

Exception No. 1: A handrail may project inside the measured width on each side not more than 3½ inches.

Exception No. 2: A stringer may project inside the measured width on each side not more than 1½ inches.

5–3.3* Capacity per Unit of Width. The capacity in number of persons per unit of width for approved components of means of egress shall be as follows:

(a) Level egress components, and Class A ramps — 100 for travel in either direction.

(b) Class B ramps — 60 for travel in the up direction, 100 for travel in the down direction.

(c) Stairways — 60 for travel in either direction.

5–3.4 Minimum Width.

5–3.4.1 The minimum width of any way of exit access shall be as specified for individual occupancies by Chapters 8 through 16; but in no case shall such width be less than 28 inches.

5–3.4.2 Where a single way of exit access leads to an exit, its capacity in terms of width shall be at least equal to the required capacity of the exit to which it leads. Where more than one way of exit access leads to an exit, each shall have a width adequate for the number of persons it must accommodate.

SECTION 5–4 NUMBER OF EXITS

5–4.1 General.

5–4.1.1 Number of exits shall be as specified for the particular occupancy in Chapters 8 through 16.

5–4.1.2 Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times (*see 5–5.1.1*). Where exits are not immediately accessible from an open floor area, safe and continuous passageways, aisles, or corridors shall be maintained leading directly to every exit, and shall be so arranged as to provide convenient access for each occupant to at least 2 exits by separate ways of travel.

Exception: Where a single exit or limited dead ends are permitted by other provisions of this Code.

SECTION 5–5 ARRANGEMENT OF MEANS OF EGRESS

5–5.1 General.

5–5.1.1 Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times.

5–5.1.2* When more than one exit is required from a story, at least two of the exits shall be remote from each other and so arranged and constructed as to minimize any possibility that both may be blocked by any one fire or other emergency condition.

5–5.1.3 Means of egress shall be so arranged that there are no dead end pockets, hallways, corridors, passageways or courts whose depth exceeds the limits specified for individual occupancies by Chapters 8 through 16.

5–5.2 Impediments to Egress (*see also 5–1.6 and 5–2.1.2*).

5–5.2.1 In no case shall access to an exit be through a bathroom, bedroom, or other room subject to locking.

Exception: Where the exit is required to serve only the bedroom or other room subject to locking, or adjoining rooms constituting part of the same dwelling or apartment used for single family occupancy.

5–5.2.2* Ways of exit access and the doors to exits to which they lead shall be so designed and arranged as to be clearly recognizable. Hangings or draperies shall not be placed over exit doors or otherwise so located as to conceal or obscure any exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit.

5–5.3 High Hazard Occupancies. Exit access shall be so arranged that it will not be necessary to travel toward any area of high hazard occupancy in order to reach the nearest exit.

Exception: Where the path of travel is effectively shielded from the high hazard location by suitable partitions or other physical barriers.

5–5.4 Exterior Ways of Exit Access.

5–5.4.1 Access to an exit may be by means of any exterior balcony, porch, gallery, or roof that conforms to the requirements of this chapter.

5–5.4.2 A permanent, reasonably straight path of travel shall be maintained over the required exterior way of exit access.

5–5.4.3 There shall be no obstruction by railings, barriers, or gates that divide the open space into sections appurtenant to individual rooms, apartments, or other subdivisions.

5–5.4.4 An exterior way of exit access shall be so arranged that there are no dead ends in excess of 20 feet.

5–5.4.5 Any gallery, balcony, bridge, porch or other exterior exit access that projects beyond the outside wall of the building shall comply with the requirements of this chapter as to width and arrangement.

5–5.4.6 Exterior ways of exit access shall have smooth, solid floors, substantially level, and shall have guards on the unenclosed sides at least equivalent to those specified in 5–2.2.3.

5–5.4.7 Where accumulation of snow or ice is likely because of the climate, the exterior way of exit access shall be protected by a roof.

5–5.4.8 The materials of construction shall be as permitted for the building served.

SECTION 5–6 MEASUREMENT OF TRAVEL DISTANCE TO EXITS

5–6.1* The maximum travel distance in any occupied space to at least one exit, measured in accordance with the following requirements, shall not exceed the limits specified for individual occupancies by Chapters 8 through 16.

5–6.2* The travel distance to an exit shall be measured on the floor or other walking surface along the center line of the natural path of travel, starting 1 foot from the most remote point, curving around any corners or obstructions with a 1-foot clearance therefrom, and ending at the center of the doorway or other point at which the exit begins. Where measurement includes stairs, it shall be taken in the plane of the tread nosing.

5–6.3 In the case of open areas, distance to exits shall be measured from the most remote point subject to occupancy.

5–6.4 In the case of individual rooms subject to occupancy by not more than 6 persons, distance to exits shall be measured from the doors of such rooms, provided the path of travel from any point in the room to the room door does not exceed 50 feet.

5–6.5 Where open stairways or ramps are permitted as a path of travel to required exits, such as between mezzanines or balconies and the floor below, the distance shall include the travel on the stairway or ramp, and the travel from the end of the stairway or ramp to reach an outside door or other exit, in addition to the distance to reach the stairway or ramp.

5–6.6 Where any part of an exterior way of exit access is within 15 feet horizontal distance of any unprotected building opening, as permitted by 5–2.5.1.3.1 for outside stairs, the distance to the exit shall include the length of travel to ground level.

SECTION 5–7 DISCHARGE FROM EXITS

5–7.1* All exits shall terminate directly at a public way or at an exit discharge. Yards, courts, open spaces, or other portions of the exit discharge shall be of required width and size to provide all occupants with a safe access to a public way.

Exception: As permitted by 5–7.2 and 5–7.5.

5–7.2 Where permitted for individual occupancies by Chapters 8 through 16, a maximum of 50 percent of the exits may discharge through areas on the level of discharge provided all of the following are met:

(a) Such exits discharge to a free and unobstructed way to the exterior of the building, which way is readily visible and identifiable from the point of discharge from the exit.

(b) The level of discharge is provided with automatic sprinkler protection and any other portion of the level of discharge with access to the discharge area is provided with automatic sprinkler protection or separated from it in accordance with the requirements for the enclosure of exits (*see 5–1.3*).

Exception: The requirements of 5–7.2(b) may be waived if the discharge area is a vestibule or foyer meeting all of the following, and where allowed in Chapters 8 through 16:

(1) The depth from the exterior of the building is not greater than 10 feet and the length is not greater than 20 feet.

(2) The foyer is separated from the remainder of the level of discharge by construction providing protection at least the equivalent of wired glass in steel frames.

(3) The foyer serves only for means of egress including exits directly to the outside.

(c) The entire area on the level of discharge is separated from areas below by construction having a minimum of 2-hour fire resistance rating.

5–7.3 The exit discharge shall be so arranged and marked as to make clear the direction of egress to a public way. Exit stairs that continue beyond the level of discharge shall be interrupted at the level of discharge by partitions, doors, or other physical barriers.

5–7.4 Stairs, ramps, bridges, balconies, escalators, moving walks and other components of an exit discharge shall comply with the detailed requirements of this chapter for such components.

5–7.5 Subject to the approval of the authority having jurisdiction, exits may be accepted where:

(a) They discharge to the roof or other sections of the building or adjoining buildings,

(b) The roof has a fire resistance rating at least the equivalent of that required for the exit enclosure,

(c) There is a continuous and safe means of egress from the roof, and

(d) All other reasonable requirements for life safety are maintained.

SECTION 5–8 ILLUMINATION OF MEANS OF EGRESS

5-8.1 General.

5–8.1.1* Illumination of means of egress shall be provided in accordance with this section for every building and structure, when required in Chapters 8 through 16.

5–8.1.2 Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use. Artificial lighting shall be employed at such places and for such periods of time as required to maintain the illumination to the minimum foot-candle values herein specified.

5–8.1.3* The floors of means of egress shall be illuminated at all points including angles and intersections of corridors and passageways, stairways, landings of stairs, and exit doors to values of not less than 1.0 foot-candle measured at the floor.

Exception: In auditoriums, theatres, concert or opera halls, and other places of assembly, the illumination of the floors of exit access may be reduced during such periods of the performances to values not less than one-fifth foot candle.

5–8.1.4 Any required illumination shall be so arranged that the failure of any single lighting unit, such as the burning out of an electric bulb, will not leave any area in darkness.

5–8.1.5 The same equipment or units installed to meet the requirements of Section 5–10 may also serve the function of illumination of means of egress, provided that all applicable requirements of this section for such illumination are also met.

5–8.2 Sources of Illumination.

5–8.2.1 Illumination of means of egress shall be from a source of reasonably assured reliability, such as public utility electric service.

5–8.2.2* Where electricity is used as a source of illumination of means of egress, the installation shall be properly made in accordance with the *National Electrical Code*, NFPA 70. (*See Appendix B.*)

5–8.2.3 No battery operated electric light nor any type of portable lamp or lantern shall be used for primary illumination of means of egress, but may be used as an emergency source to the extent permitted under Emergency Lighting, 5–9.

5–8.2.4* No luminescent, fluorescent, or reflective material shall be permitted as a substitute for any of the required illumination herein specified.

SECTION 5–9 EMERGENCY LIGHTING

5–9.1 General.

5–9.1.1 Emergency lighting facilities for means of egress shall be provided for every building or structure in accordance with this section when required in Chapters 8 through 16.

5–9.1.2 Where maintenance of illumination depends upon changing from one energy source to another, there shall be no appreciable interruption of illumination during the changeover. Where emergency lighting is provided by a prime mover-operated electric generator, a delay of not more than 10 seconds shall be permitted.

5–9.2 Performance of System.

5–9.2.1 Emergency lighting facilities shall be arranged to maintain the specified degree of illumination for a period of one and one half hours in the event of failure of the normal lighting. (*Also see 5–8.1.3.*)

5–9.2.2* Electric battery-operated emergency lights shall use only reliable types of storage batteries, provided with suitable facilities for maintenance in properly charged condition. Dry batteries shall not be used to satisfy these requirements. Electric storage batteries used in such lights or units shall be approved for their intended use and shall comply with the *National Electrical Code*, NFPA 70. (*See Appendix B.*)

5–9.2.3* An emergency lighting system shall be so arranged as to provide the required illumination automatically in the event of any interruption of normal lighting, such as any failure of public utility or other outside electrical power supply, opening of a circuit breaker or fuse, or any manual act(s), including accidental opening of a switch controlling normal lighting facilities.

5–9.2.4 An emergency lighting system either shall be continuously in operation or shall be capable of repeated automatic operation without manual intervention.

SECTION 5–10 EXIT MARKING

5–10.1 General.

5–10.1.1* Where required by the provisions of Chapters 8 through 16, exits shall be marked by a readily visible sign.

5–10.1.2 Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants, and in any case where required by the applicable provisions of Chapters 8 through 16 for individual occupancies.

5–10.1.3* Every required sign designating an exit or way of exit access shall be so located and of such size, distinctive color, and design as to be readily visible and shall provide contrast with decorations, interior finish, or other signs. No decorations, furnishings, or equipment which impair visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision to the required exit sign of such a character as to so detract attention from the exit sign.

5–10.2 Size of Signs. Every sign required by 5–10 shall have the word "EXIT" or other required wording in plainly legible letters not less than 6 inches high with the principal strokes of letters not less than ¾ inch wide.

Exception: Existing signs having the required wording in plainly legible letters not less than 4½ inches high may be continued in use.

5–10.3* Illumination of Signs. Every sign shall be suitably illuminated by a reliable light source giving a value of not less than 5 foot-candles on the illuminated surface. Such illumination shall be continuous as required under the provisions of Section 5–8, Illumination of Means of Egress, and where emergency lighting facilities are required, exit signs shall be illuminated from the same source.

5–10.4 Specific Requirements.

5–10.4.1 Directional Signs.

5–10.4.1.1 A sign reading "EXIT," or similar designation, with an arrow indicating the direction, shall be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent.

5–10.4.1.2 Escalators, Moving Walks. A sign complying with 5–10.2 indicating the direction of the nearest approved exit shall be placed at the point of entrance to any escalator or moving walk that is not in a means of egress.

5–10.4.2 Special Signs.

5–10.4.2.1* Any door, passage, or stairway which is neither an exit nor a way of exit access, and which is so located or arranged as to be likely to be mistaken for an exit, shall be identified by a sign reading "NOT AN EXIT" or similar designation or shall be identified by a sign indicating its actual character, such as "TO BASEMENT," "STOREROOM," "LINEN CLOSET" or the like.

5–10.4.2.2 A door designed to be kept normally closed shall bear a sign reading substantially as follows:

FIRE EXIT

Please keep door closed

SECTION 5–11 SPECIAL PROVISIONS FOR OCCUPANCIES WITH HIGH HAZARD CONTENTS (*See Section 4–2.*)

5–11.1* In all cases where the contents are classified as high hazard, exits shall be provided of such types and numbers and so arranged as to permit all occupants to escape from the building or structure or from the hazardous area thereof to the outside or to a place of safety with a travel distance of not over 75 feet, measured as specified in 5–6.2.

5–11.2 Capacity of exits provided in accordance with 5–11.1 shall be as specified in the applicable section of Chapters 8 through 16, but not less than such as to provide one unit for each 30 persons where exit is by inside or outside stairs or one unit for each 50 persons where exit is by doors at grade level, by horizontal exits or by Class A ramps.

5–11.3 At least two exits shall be provided from each building or hazardous area thereof.

5–11.4 Means of egress shall be so arranged that there are no dead end pockets, hallways, corridors, passageways, or courts.

CHAPTER 6 FEATURES OF FIRE PROTECTION

SECTION 6–1 PROTECTION OF VERTICAL OPENINGS — COMBUSTIBLE CONCEALED SPACES

6–1.1 General.

6–1.1.1 Every stairway, elevator shaft, light and ventilation shaft, chute, and other opening between stories shall be enclosed or protected to prevent the spread of fire or smoke.

Exception: Where unenclosed openings are specifically permitted by 6–1.1.2 or by other sections of this Code by reason of automatic sprinkler protection or other special features.

6–1.1.2 In any building with low hazard occupancy or with ordinary hazard occupancy with automatic sprinkler protection, up to 3 communicating floor levels are permitted without enclosure protection between floors, provided all the following conditions are met:

(a) The arrangement is permitted by the applicable occupancy section of this *Code* and by the authority having jurisdiction.

(b) The lowest or next to the lowest level is a street floor.

(c) The entire area, including all communicating floor levels, is sufficiently open and unobstructed so that it may be assumed that a fire or other dangerous condition in any part will be immediately obvious to the occupants of all communicating levels and areas.

(d) Exit capacity is sufficient to provide simultaneously for all the occupants of all communicating levels and areas, all communicating levels in the same fire area being considered as a single floor area for purposes of determination of required exit capacity.

(e) Each floor level, considered separately, has at least one-half of its individual required exit capacity provided by an exit or exits leading directly out of that area without traversing another communicating floor level or being exposed to the spread of fire or smoke therefrom.

(f) All requirements of this *Code* with respect to interior finish, protection of hazards, construction and other features are fully observed, without waivers.

Exception: Openings in floors of educational and institutional occupancies shall be enclosed as required in Chapters 9 and 10, respectively.

6–1.1.3 Each floor opening, as specified in 6–1.1.1, shall be enclosed by substantial walls having fire resistance not less than required for stairways, 6–1.1.4, with approved fire doors or windows provided in openings therein, all so designed and installed as to provide a complete barrier to the spread of fire or smoke through such openings.

6–1.1.4* The enclosing walls of floor openings serving stairways or ramps shall be so arranged as to provide a continuous path of escape, including landings and passageways, in accordance with Section 5–2.2, providing protection for persons using the stairway or ramp against fire or smoke therefrom in other parts of the building. Such walls shall have fire resistance as follows:

Exception: Quarter inch thick wired glass in metal frames may be accepted in existing buildings and in new buildings to such extent as permitted by other chapters of this Code.

(a) New buildings 4 stories or more in height — noncombustible construction of two hours fire resistance.

(b) Other new buildings — 1 hour.

(c) Existing buildings — ½ hour.

Exception to (c): Where a greater resistance is required by the authority having jurisdiction in consideration of the hazard of the individual building.

6–1.2 Special Provisions for Escalator Openings.

6–1.2.1 Any escalator serving as a required exit shall be enclosed in the same manner as exit stairs.

6–1.2.1.1* An escalator not constituting an exit shall have its floor opening enclosed or protected as required for other vertical openings.

Exception: In lieu of such protection, in buildings completely protected by a standard supervised sprinkler system in accordance with Section 6–4, escalator openings may be protected by any one of the methods as described in 6–1.2.2 through 6–1.2.5, or by the method prescribed by the appropriate NFPA standard, listed in Appendix B.

6–1.2.2 Sprinkler-Vent Method.

6–1.2.2.1 Under the conditions specified in 6–1.2.1, escalator openings may be protected by the "sprinkler-vent" method, consisting of a combination of an automatic fire or smoke detection system, automatic exhaust system and an automatic water curtain meeting the following requirements and of a design meeting the approval of the authority having jurisdiction.

6–1.2.2.2* The exhaust system shall be of such capacity as to create a downdraft through the escalator floor opening. The downdraft shall have an average velocity of not less than 300 feet per minute under normal conditions for a period of not less than 30 minutes.

6–1.2.2.3 Operation of the exhaust system for any floor opening shall be initiated by an approved device in the story involved and shall be by any one of the following means in addition to a manual means for operating and testing the system:

(a) Thermostats — fixed temperature, rate-of-rise, or a combination of both.

(b) Water flow in the sprinkler system.

(c) Approved supervised smoke detection. Smoke detection devices, if used, shall be so located that the presence of smoke is detected before it enters the stairway.

6–1.2.2.4* Electric power supply to all parts of the exhaust system and its control devices shall be designed and installed for maximum reliability.

6–1.2.2.5 Any fan or duct used in connection with an automatic exhaust system shall be of the approved type and shall be installed in accordance with the applicable standards listed in Appendix B.

6–1.2.2.6 Periodic tests, not less frequently than quarterly, shall be made of the automatic exhaust system to maintain the system and the control devices in good working condition.

6–1.2.2.7 The water curtain shall be formed by open sprinklers or spray nozzles so located and spaced as to form a complete and continuous barrier along all exposed sides of the floor opening and reaching from the ceiling to the floor. Water intensity for water curtain shall be not less than approximately 3 gallons per minute per lineal foot of water curtain, measured horizontally around the opening.

6–1.2.2.8 The water curtain shall operate automatically from thermal responsive elements of fixed temperature type so placed with respect to the ceiling (floor) opening that the water curtain comes into action upon the advance of heat toward the escalator opening.

6–1.2.2.9 Every automatic exhaust system, including all motors, controls and automatic water curtain system, shall be supervised in an approved manner, similar to that specified for automatic sprinkler system supervision.

6–1.2.3 Spray Nozzle Method.

6–1.2.3.1 Under the conditions specified in 6–1.2.1, escalator openings may be protected by the spray nozzle method, consisting of a combination of an automatic fire or smoke detection system and a system of high velocity water spray nozzles meeting the following requirements and of a design meeting the approval of the authority having jurisdiction.

6–1.2.3.2 Spray nozzles shall be of the open type and shall have a solid conical spray pattern with discharge angles between 45 and 90 degrees. The number of nozzles, their discharge angles and their location shall be such that the escalator opening between the top of the wellway housing and the treadway will be completely filled with dense spray on operation of the system.

6–1.2.3.3 The number and size of nozzles and water supply shall be sufficient to deliver a discharge of 2 gallons of water per square foot per minute through the wellway, area to be figured perpendicular to treadway.

6–1.2.3.4 Spray nozzles shall be so located as to effectively utilize the full advantage of the cooling and counterdraft effect. They shall be so positioned that the center line of spray discharge is as closely as possible in line with the slope of the escalator; not more than an angle of 30 degrees with the top slope of the wellway housing. Nozzles shall be positioned, also, so that the center line of discharge is at an angle of not more than 30 degrees from the vertical sides of the wellway housing.

6–1.2.3.5* Spray nozzles shall discharge at a minimum pressure of at least 25 pounds per square inch. Water supply piping may be taken from the sprinkler system, provided that in so doing an adequate supply of water will be available for the spray nozzles and the water pressure at the sprinkler farthest from the supply riser is not reduced beyond the required minimum.

6–1.2.3.6 Control valves shall be readily accessible to minimize water damage.

6–1.2.3.7 A noncombustible or limited-combustible draft curtain shall be provided extending at least 20 inches below and around the opening and a solid noncombustible wellway housing at least 5 feet long measured parallel to the handrail, and extending from the top of the handrail enclosure to the soffit of the stairway or ceiling above, at each escalator floor opening. When necessary, spray nozzles shall be protected against mechanical injury or tampering that might interfere with proper discharge.

6–1.2.3.8* The spray nozzle system shall operate automatically from thermal response elements of the fixed temperature type, so placed with respect to the ceiling (floor) opening that the spray nozzle system comes into action upon the advance of heat towards the escalator opening. Supervised smoke detection located in or near the escalator opening may be used to sound an alarm. The spray nozzle system shall also be provided with manual means of operation.

6–1.2.3.9 Control valves for the spray nozzle system, and approved smoke detection or thermostatic devices shall be supervised in accordance with the applicable provisions of Section 6–3.

6–1.2.4 Rolling Shutter Method.

6–1.2.4.1* Under the conditions specified in 6–1.2.1, escalator openings above the street floor only may be protected by the rolling shutter method, consisting of an automatic self-closing rolling shutter which completely encloses the top of each escalator, meets the following requirements, and the design of which meets the approval of the authority having jurisdiction.

6–1.2.4.2 The shutter shall close off the wellway opening immediately upon the automatic detection, by an approved heat-actuated or smoke-sensitive device, of fire or smoke in the vicinity of the escalator. In addition, there shall be provided a manual means of operating and testing the operation of the shutter.

6–1.2.4.3 The shutter assembly shall be capable of supporting a weight of 200 pounds applied on any one square foot of area and shall be not less resistant to fire or heat than 24 gage steel.

6–1.2.4.4 The shutter shall operate at a speed of not greater than 30 feet per minute. It shall be equipped with a sensitive leading edge, which shall arrest the progress of the moving shutter and cause it to retract a distance of approximately 6 inches upon the application of a force not in excess of 20 pounds applied on the surface of the leading edge. The shutter, following retraction, shall continue to close immediately.

6–1.2.4.5 Automatic rolling shutters shall be provided with an electric contact which will disconnect the power supply from the escalator and apply the brakes as soon as the shutter starts to close and will prevent further operation of the escalator until the escalator is again in the open position.

6–1.2.4.6* The electrical supply to the control devices for actuation of the automatic rolling shutter shall be so designed and installed as to provide maximum reliability.

6–1.2.4.7 Rolling shutters shall be operated at least once a week in order to make sure that they remain in proper operating condition.

6–1.2.5 Partial Enclosure Method.

6–1.2.5.1 Under the conditions specified in 6–1.2.1, escalator openings may be protected by a partial enclosure, or so-called kiosk, so designed as to provide an effective barrier to the spread of smoke from floor to floor.

6–1.2.5.2 Partial enclosures shall be of construction providing fire resistance equivalent to that specified for stairway enclosures in the same building, with openings therein protected by approved self-closing fire doors, or may be of approved wired glass and metal frame construction with wired glass panel doors. Such doors may be equipped with electric opening mechanism to open the door automatically upon the approach of a person. However, the mechanism shall be such as to return the door to its closed position upon any interruption of electric current supply, and the adjustment shall be such that the pressure of smoke will not cause opening of the door.

6–1.3 Firestopping — Concealed Spaces.

6–1.3.1 In new construction any concealed space in which materials having a flame-spread rating greater than Class A as defined in Section 6–2 are exposed shall be effectively firestopped with approved materials, as provided below.

Exception: If the space is sprinklered in accordance with Section 6–4.

(a) Every exterior and interior wall and partition shall be firestopped at each floor level, at the top story ceiling level, and at the level of support for roofs.

(b) Every unoccupied attic space shall be subdivided by firestops into areas not to exceed 3,000 square feet.

(c)* Any concealed space between the ceiling and the floor or roof above shall be firestopped for the full depth of the space along the line of support for the floor or roof structural members and, if necessary, at other

locations to form areas not to exceed 1,000 square feet for any space between the ceiling and floor and 3,000 square feet for any space between the ceiling and roof.

6–1.3.2 In every existing building, firestopping shall be provided as required by the provisions of Chapters 8 through 16.

SECTION 6–2 INTERIOR FINISH

6–2.1 General.

6–2.1.1* Interior finish means the exposed interior surfaces of buildings including, but not limited to, fixed or movable walls and partitions, columns, and ceilings. For requirements on decorations and furnishings, see Sections 17–1.2 and 17–1.3.

6–2.1.2* A finish floor or floor covering used on floors shall be exempt from the requirements of this section provided, however, that in any case where the authority having jurisdiction finds a floor surface of unusual hazard the floor surface shall be considered a part of the interior finish for the purposes of this *Code*.

6–2.1.3* Cellular or foamed plastic materials shall not be used as interior finish.

Exception No. 1: Cellular or foamed plastic materials may be permitted on the basis of fire tests which substantiate on a reasonable basis their combustibility characteristics, for the use intended, in actual fire conditions.

Exception No. 2: Cellular or foamed plastic may be used for trim, as provided in 6–2.4, provided it is not less than 20 pounds per cubic foot in density.

6–2.1.4 The classification of interior finish materials specified in 6–2.1.5 shall be that of the basic material used by itself or in combination with other materials.

Exception No. 1: Subsequently applied paint or wall covering not exceeding 1/28 inch in thickness.

Exception No. 2: The authority having jurisdiction shall include such finishes in the determination of classification in any case where in the opinion of the authority having jurisdiction they are of such character or thickness or so applied as to affect materially the flame spread or smoke development characteristics.

6–2.1.5* Interior finish materials shall be grouped in the following classes, in accordance with their flame spread and smoke development:

Class A Interior Finish. Flame Spread 0–25, Smoke Developed 0–450. Includes any material classified at 25 or less on the flame spread test scale and 450 or less on the smoke test scale described in 6–2.1.6. Any element thereof when so tested shall not continue to propagate fire.

Class B Interior Finish. Flame Spread 26–75, Smoke Developed 0–450. Includes any material classified at more than 25 but not more than 75 on the flame spread test scale and 450 or less on the smoke test scale described in 6–2.1.6.

Class C Interior Finish. Flame Spread 76–200, Smoke Developed 0–450. Includes any material classified at more than 75 but not more than 200 on the flame spread test scale and 450 or less on the smoke test scale described in 6–2.1.6.

Exception: Existing interior finishes complying with the above flame spread ratings only may be continued in use.

6–2.1.6* Interior finish materials as specified in 6–2.1.5 shall be classified in accordance with NFPA 255, *Method of Test of Surface Burning Characteristics of Building Materials* (*see Appendix B*).

6–2.1.7* Any interior finish material shown by test to present an unreasonable life hazard due to the character of the products of decomposition shall be used only with the approval of the authority having jurisdiction.

6–2.1.8 Classification of interior finish materials shall be in accordance with tests made under conditions simulating actual installations, provided that the authority having jurisdiction may by rule establish the classification of any material on which a rating by standard test is not available.

6–2.2 Fire Retardant Paints.

6–2.2.1 In existing buildings the required flame spread or smoke development classification of interior surfaces may be secured by applying approved fire retardant paints or solutions to existing interior surfaces having a higher flame spread rating than permitted.

6–2.2.2 Fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary fire retardant properties.

6–2.3 Automatic Sprinklers. Where a complete standard system of automatic sprinklers is installed, Class C interior finish materials may be used in any location where Class B is normally specified, and Class B interior finish materials may be used in any location where Class A is normally specified.

Exception: Unless specifically prohibited elsewhere in this Code.

6–2.4 Trim and Incidental Finish. Interior finish not in excess of 10 percent of the aggregate wall and ceiling areas of any room or space may be Class C materials in occupancies where interior finish of Class A or Class B is required.

6–2.5* Use of Interior Finishes. Interior finish material shall be used in accordance with requirements for individual classes of occupancy specified elsewhere in the *Code*. Wherever the use of Class C interior finish material is specified Class A or B shall be permitted; where Class B is specified, Class A shall be permitted.

SECTION 6–3 PROTECTIVE SIGNALING SYSTEMS

6–3.1* **General.** The provisions of this section cover alarm signaling systems which provide fire and extinguishing system alarm and supervisory signals. These systems are primarily intended for the protection of life by indicating abnormal conditions and secondarily to summon assistance.

6–3.2 Initiation of Signal Indication.

6–3.2.1 As provided in Chapters 8 through 16, a signaling system shall provide signal indication, due to any or all of the following means of initiation:

(a) Manual fire alarm initiation.

(b) Automatic fire detection and alarm initiation.

(c) Automatic smoke detection and alarm initiation.

(d) Automatic detection and alarm initiation of extinguishing system operation.

(e) Automatic detection and alarm initiation of industrial processes or other conditions endangering life.

(f) Monitoring and supervisory signal initiation of conditions which would prevent operation of an extinguishing system.

(g) Voice communication alarm initiation.

6–3.3 System Types.

6–3.3.1 Systems contemplated by this *Code* are classified into four types in accordance with the type of action of the signal indicating devices following the operation of an alarm initiating device.

6–3.3.2* These types are: Noncoded systems, common coded systems, selective coded systems and dual coded systems.

6–3.3.3 A common coded, selective coded, or dual coded system shall be used only as permitted by the provisions of Chapters 8 through 16 or as specifically authorized by the authority having jurisdiction.

6–3.4 Signal Indicating Devices.

6–3.4.1 Audible alarm indicating devices shall be of such character and so distributed to be effectively heard above the maximum noise level obtained under normal conditions of occupancy.

6–3.4.2 Audible alarm indication shall produce signals which are distinctive from audible signaling indicating devices used for other purposes in the same area.

6–3.4.3* Audible fire alarm devices as required by Chapters 8 through 16 other than voice communication shall be used only for fire alarm system purposes.

6–3.4.4* Visual alarm indicating devices may be used in lieu of audible devices, where permitted by Chapters 8 through 16.

6–3.4.5 Where a protective signaling system is required for purpose of evacuation, it shall be so installed as to provide effective warning of fire in any part of the building.

Exception: Where a building is divided by (1) fire walls into separate fire sections or (2) by other means with adequate safeguards against the spread of fire or smoke from one section to another, each section may be considered a separate building.

6–3.5 Common Requirements.

6–3.5.1 Protective signaling systems and their component devices or equipment shall be approved for the purpose for which installed.

6–3.5.2 Systems shall be under the supervision of a qualified, responsible person, who shall cause proper tests and inspection to be made at prescribed intervals and shall have general charge of all alterations and additions to the system.

6–3.5.3 Systems shall be tested periodically, as specified by the provisions of Chapter 17 or as specified by the authority having jurisdiction.

6–3.5.4 System components or equipment shall be restored to normal condition promptly after each test or alarm and shall be kept in normal condition for operation.

6–3.5.5 Systems shall be arranged to cause effective response of all required signal indicating devices without the necessity of manual operation after the operation of any signal initiating device.

6–3.5.6 A signaling system may be arranged to automatically perform local, incidental control functions necessary to make the premises safer in event of fire or to make it possible to hear alarm signals. The performance of incidental control functions, such as the release of self-opening or self-closing doors, shutting off supplies of gas, fuel oil, or electrical power, switching on emergency lights, switching off air supply ventilating fans, and the like, shall not in any way impair the effective response of all required alarm indicating devices. The performance of incidental control functions shall not interfere with the power for lighting or for operating elevators.

6–3.6 Manual Alarm Initiation.

6–3.6.1 Manual fire alarm boxes shall be used only for fire protective signaling purposes.

6–3.6.2 A manual fire alarm box shall be provided in the natural path of escape from fire, near each exit from an area and shall be readily accessible, unobstructed and at visible points.

6–3.6.3 Additional fire alarm boxes shall be so located that from any part of the building not more than 200 feet horizontal distance on the same floor must be traversed in order to reach a fire alarm box.

6–3.6.4 Manual fire alarm boxes shall be arranged such that there will be no difference between the sounding of actual alarms and drill signals.

6–3.6.5 Each manual fire alarm box on a system shall be of the same general type.

6–3.6.6 Manual fire alarm boxes shall be tested periodically, as specified by the provisions of Chapter 17 or as specified by the authority having jurisdiction.

6–3.7 Automatic Detection and Alarm Initiation.

6–3.7.1 Automatic fire detection alarm initiating devices shall be installed in areas as required by the provisions of Chapters 8 through 16. They shall be located upon the ceiling, on the side walls near the ceiling, or at other appropriate locations after an engineering survey has been made. (*See NFPA 72E, Standard on Automatic Fire Detectors, for details concerning location, spacing and testing of fire detectors.*)

6–3.7.2 Automatic fire detection alarm initiating devices shall be approved for the particular application, spacings and locations.

6–3.7.3* Automatic fire detection alarm initiation devices shall be tested periodically, as specified by the provisions of Chapter 17 or as specified by the authority having jurisdiction.

6–3.7.4 The connection of automatic fire detection devices shall not impair the effectiveness and dependability of operation of manual fire alarm boxes to sound the alarm indicating signals.

6–3.8 Automatic Smoke Detection and Alarm Initiation.

6–3.8.1 Automatic smoke detection alarm initiating devices shall be installed in areas as required by the provisions of Chapters 8 through 16. The location of smoke detection devices shall be based upon a survey of the area to be protected. They shall be so located and adjusted to operate reliably in case of smoke production in any part of the protected area. (*See NFPA 72E, Standard on Automatic Fire Detectors, for details concerning location, spacing and testing of fire detectors.*)

6–3.8.2 Automatic smoke detection devices shall be approved for the particular application, spacing, and locations.

6–3.8.3 Automatic smoke detection devices shall be tested periodically, as specified by the provisions of Chapters 8 through 17 or as specified by the authority having jurisdiction.

6–3.8.4 The connection of smoke detection devices shall not impair the effectiveness and dependability of operation of manual fire alarm boxes to operate the alarm indicating devices.

6–3.9 Extinguishing System Alarm Initiation.

6–3.9.1 Where a sprinkler system provides automatic detection and alarm initiation it shall be provided with an alarm initiation device which will operate when the flow of water is equal to or greater than that from a single automatic sprinkler.

6–3.9.2 Extinguishing system alarm initiating devices shall be installed on systems as required by the provisions of Chapters 8 through 16.

6–3.9.3 Extinguishing system alarm initiating devices shall be approved for the particular application and location.

6–3.9.4 Extinguishing system alarm devices shall be tested periodically, as specified by the provisions of Chapters 8 through 17 or as specified by the authority having jurisdiction.

6–3.9.5 Means for manually operating the extinguishing system alarm signaling system shall be provided. The manual means shall be located where designated by the authority having jurisdiction.

6–3.10 Extinguishing System Supervisory Signal Initiation.

6–3.10.1 Supervisory signal initiating devices, which monitor valves, pressure, water level, temperature, pumps and other conditions which could impair or prevent operation of an extinguishing system, shall be provided where required by the provisions of Chapters 8 through 16.

6–3.10.2 Audible signals from alarm devices initiated by operation of supervisory signal initiating devices shall be separate and distinct from those indicating manual or automatic system operation.

6–3.10.3 Installation of a supervisory signal initiating device shall not interefere with the normal operation of any part of the extinguishing system.

6–3.10.4 Supervisory signal initiating devices shall be tested periodically, as specified by the provisions of Chapters 8 through 17 or as specified by the authority having jurisdiction.

6–3.10.5 The connection of supervisory signal initiating devices shall be installed so as not to impair the effectiveness and dependability of operation of manual fire alarm boxes to sound alarm indicating signals.

6–3.11 Municipal Fire Department Notification.

6–3.11.1* An alarm signaling system shall be so arranged that the normal operation of any required alarm initiating device will automatically transmit an alarm to the municipal fire department or to such other outside assistance as may be available when required by Chapters 8–16.

6–3.11.2 An alarm signaling system may be connected to the municipal fire department by:

(a) Direct connect by remote station system.

(b) Auxiliary connect by municipal alarm system.

(c) Alarm transmission by an approved central station system.

SECTION 6–4 AUTOMATIC SPRINKLERS AND OTHER EXTINGUISHING EQUIPMENT

6–4.1 Automatic Sprinklers.

6–4.1.1* Each automatic sprinkler system shall be installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems*, where specified by the requirements of this *Code*. (*See Appendix B.*)

6–4.1.2* In areas protected by automatic sprinklers, automatic heat detection devices required by other sections of this *Code* may be deleted.

6–4.1.3* Where automatic sprinkler protection is provided, other requirements of this *Code* may be modified to such extent as permitted by the provisions of this *Code*.

6–4.2 Supervision.

6–4.2.1* When supervised automatic sprinkler protection is specified in this *Code*, a distinct supervisory signal shall be provided to indicate a condition that will impair the satisfactory operation of the sprinkler system. This shall include but not be limited to monitoring of control valves, fire pump power supplies and running conditions, water tank levels and temperatures, pressure of pressure tanks, and air pressure on dry pipe valves.

6–4.2.2 Supervisory signals for sprinkler systems shall terminate in a location within the protected building or premises which is constantly attended by qualified personnel in the employ of the owner, or shall terminate in an approved remote receiving facility.

6–4.2.3 When supervised automatic sprinkler protection is specified in this *Code*, waterflow alarms shall be transmitted to an approved proprietary alarm receiving facility, remote station, central station, or the fire department. Such connections shall be installed in accordance with appropriate NFPA standards listed in Appendix B (NFPA 71 and 72 series).

6–4.3* Other Automatic Extinguishing Equipment. In any occupancy where the character of the potential fuel for fire is such that extinguishment or control of fire may be more effectively accomplished by a type of automatic extinguishing system other than an automatic sprinkler system such as carbon dioxide, dry chemical, foam, Halon 1301, or water spray, a standard extinguishing system of other type may be installed in lieu of an automatic sprinkler system. Such systems shall be installed in accordance with appropriate NFPA Standards. (*See Appendix B.*)

6–4.4 Manual Extinguishing Equipment.

6–4.4.1* When required by the provisions of Chapters 8 through 16, portable fire extinguishers shall be installed in accordance with NFPA Standard No. 10, *Standard for the Installation of Portable Fire Extinguishers.* (*See Appendix B.*)

6–4.4.2* When required by the provisions of Chapters 8–16, standpipe and hose systems shall be provided in accordance with NFPA Standard No. 14, *Standard for the Installation of Standpipe and Hose Systems.* (*See Appendix B.*)

SECTION 6–5 PROTECTION FROM HAZARDS

6–5.1 Protection shall be provided from any area having a degree of hazard greater than that normal to the general occupancy of the building or structure such as storage of combustibles or flammables, heat producing appliances, or maintenance purposes as follows:

(a) Enclosure with construction in accordance with Section 6–6 with a fire resistance rating as specified by Chapters 8 through 16, but not less than 1 hour, or

(b) Protection with automatic extingishing systems in accordance with Section 6–4 as required by Chapters 8 through 16, or

(c) Both (a) and (b) above when specified by Chapters 8 through 16.

Exception: In existing buildings or structures, as permitted by Chapters 8 through 16, an automatic fire or smoke detection system in accordance with Section 6–3 may be substituted for the automatic extinguishing system if the enclosure above is achieved.

6–5.2* Where hazardous processes or storage are of such a character as to introduce an explosion potential, explosion venting or an explosion suppression system specifically designed for the hazard involved shall be provided.

6–5.3 A hazardous operation or process may be conducted in a detached structure sufficiently remote from other buildings to avoid any danger to occupants of other buildings. Protection for the safety of any occupants of the detached structure shall be provided.

SECTION 6–6 CONSTRUCTION AND COMPARTMENTATION

6–6.1 General. Buildings or structures occupied or used according to the individual occupancy Chapters 8 through 16, shall meet the minimum construction requirements of those Chapters. The *Standard on Types of Building Construction*, NFPA 220 (*see Appendix B*), shall be used to determine the requirements for the construction classification.

6–6.2* Smoke Partitions.

6–6.2.1* Smoke partitions required by this *Code* shall be continuous from outside wall to outside wall and from floor slab to the underside of the floor slab or roof slab above, including continuity through all concealed spaces such as those found above a ceiling, including interstitial spaces.

Exception: Smoke partitions are not required in interstitial spaces when such spaces are designed and protected as a separate fire area of a building or structure. (Also see 10–2.3.6.7.1 and 10–3.3.6.7.1.)

6–6.2.2* Doors in smoke partitions shall be of a swinging type with the door assembly having a fire protection rating of at least 20 minutes. Such doors shall close the opening with only the minimum clearance necessary for proper operation and shall be without undercuts, louvers, or grilles. If vision panels are used in the doors, such glass shall be approved transparent wired glass.

Exception: Existing door assemblies previously accepted as the equivalent of hollow metal, steel-covered wood, 1¾-inch thick solid bonded wood core, or approved fire retardant treated wood construction, shall be permitted.

6–6.2.3 Door assemblies in smoke partitions shall comply with the provisions of 5–2.1.

6–6.2.4 An approved damper designed to resist the passage of smoke shall be provided at each point a duct penetrates a smoke partition. The damper shall close upon detection of smoke by an approved smoke detector, located within the duct.

Exception: This requirement need not apply for duct work which is part of a smoke detector system.

6–6.2.5 Openings in smoke partitions for building service equipment other than air handling ductwork shall be protected in accordance with Section 6–1.

6–6.3 Fire Partitions.

6–6.3.1 Fire partitions shall be constructed with fire resistance ratings as required by other provisions of this *Code*.

6–6.3.2* Door assemblies in fire partitions shall be of an approved type and with appropriate rating for the location in which installed. Fire doors shall be in accordance with the *Standard for Fire Doors and Windows*, NFPA 80 (*see Appendix B*). Fire doors shall have their fire protection ratings measured in accordance with *Standard Methods of Fire Tests of Door Assemblies*, NFPA 252 (*see Appendix B*).

6–6.3.3 Door assemblies in fire partitions shall comply with the provisions of 5–2.1.

6–6.3.4 Openings in fire partitions for air handling ductwork or air movement shall be protected with fire dampers.

Exception: This requirement need not apply for duct work which is part of an engineered smoke control system.

6–6.3.5 Openings in fire partitions for building service equipment other than air handling ductwork shall be protected in accordance with Section 6–1.

6–6.4 Ceilings and Floors.

6–6.4.1 Ceilings used to define fire areas or to which smoke partitions may terminate shall provide equivalent smoke separation to that provided by smoke partitions.

6–6.4.2 Ceilings used to define fire areas shall be of a design which has been tested to meet the conditions of acceptance of Tests of Ceiling Construction in the *Standard Methods of Fire Tests of Building Construction and Materials*, NFPA 251. (*See Appendix B.*)

6–6.4.3 Floors used to define fire areas or to which smoke partitions may terminate shall provide equivalent smoke separation to that provided by smoke partitions.

6–6.4.4 Floors used to define fire areas shall be of a design which has been tested and met the conditions of acceptance 27(a), 27(b), 28(a), and 28(b) of Tests of Floor and Roof Assemblies in the *Standard Methods of Fire Tests of Building Construction and Materials*, NFPA 251. (*See Appendix B.*)

6–6.4.5 Fire and smoke partitions shall continue through concealed spaces above the ceiling of Floor-ceiling or Roof-ceiling assemblies.

Exception No. 1: As specifically permitted by the occupancy Chapters 8 through 16.

Exception No. 2: Smoke partitions are not required in interstitial spaces when such spaces are designed and protected as a separate fire area of a building or structure.

CHAPTER 7 BUILDING SERVICE EQUIPMENT

SECTION 7–1 UTILITIES

7–1.1 Equipment utilizing gas and related gas piping shall be installed in accordance with the *National Fuel Gas Code*, NFPA 54, or the *Standard for Storage and Handling of Liquefied Petroleum Gases*, NFPA 58. (*See Appendix B.*)

Exception: Existing installations may be continued in service, subject to approval by the authority having jurisdiction.

7–1.2 Electrical wiring and equipment installed shall be in accordance with the *National Electrical Code*, NFPA 70. (*See Appendix B.*)

Exception: Existing installations may be continued in service, subject to approval by the authority having jurisdiction.

SECTION 7–2 AIR CONDITIONING, HEATING, AND VENTILATING

7–2.1 Air conditioning, heating, and ventilating ductwork and related equipment shall be installed in accordance with the applicable *Standard on Air Conditioning and Ventilating Systems*, NFPA 90A or 90B. (*See Appendix B.*)

Exception: Existing installations may be continued in service, subject to approval by the authority having jurisdiction.

7–2.2 Ventilating or Heat Producing Equipment shall be installed in accordance with the applicable standards below:

(a) *Standard for the Installation of Blower and Exhaust Systems*, NFPA 91. (*See Appendix B.*)

(b) *Standard for Chimneys, Fireplaces, and Vents*, NFPA 211. (*See Appendix B.*)

(c) *Standard for Oil Burning Equipment*, NFPA 31. (*See Appendix B.*)

(d) *National Fuel Gas Code*, NFPA 54. (*See Appendix B.*)

(e) *National Electrical Code*, NFPA 70. (*See Appendix B.*)

Exception: Existing installations may be continued in service, subject to approval by the authority having jurisdiction.

7–2.3 Commercial cooking equipment installed for use in occupancies shall be in accordance with the *Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment*, NFPA 96. (*See Appendix B.*)

Exception: Existing installations may be continued in service, subject to approval by the authority having jurisdiction.

SECTION 7–3 ELEVATORS, DUMBWAITERS, AND VERTICAL CONVEYORS

7–3.1* Elevators shall not be considered an exit component.

Exception: When specifically permitted by individual occupancy Chapters 8 through 16 and when measures satisfactory to the authority having jurisdiction are taken to provide smoke control for the elevator shaft.

7–3.2 Elevators shall be installed in accordance with the *Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks;* ANSI A 17.1b. (*See Appendix B.*)

7–3.3 Vertical conveyors, including dumbwaiters and pneumatic conveyors serving various stories in a building shall be separately enclosed within walls or partitions in accordance with the provisions of Section 6–1. Service openings shall not open to an exit. Service openings, when required to be open on several stories at the same time for purposes of operation of the conveyor, shall be provided with closing devices which will close all service doors upon activation of smoke detectors which are located inside and outside the shaft enclosure in locations acceptable to the authority having jurisdiction.

SECTION 7–4 RUBBISH CHUTES, INCINERATORS, AND LAUNDRY CHUTES

7–4.1* Each rubbish chute or chute to incinerator shall be separately enclosed within walls or partitions in accordance with the provisions of Section 6–1. Openings serving chutes and incinerator flues shall be protected in accordance with Section 6–1. Doors for such chutes or incinerator flues shall not open directly to an exit, corridor, or normally occupied room, but shall open to a separate room or closet. The room or closet shall be separated from other spaces in accordance with Sections 6–5 and 6–6.

Exception: Existing installations with properly enclosed service chutes and with properly installed and maintained service openings may open to a corridor or normally occupied room, subject to approval by the authority having jurisdiction.

7–4.2 Rubbish chutes, laundry chutes and incinerators shall be installed and maintained in accordance with the *Standard on Incinerators and Rubbish Handling*, NFPA 82. (*See Appendix B.*)

Exception: Existing installations may be continued in service, subject to approval by the authority having jurisdiction.

7–4.3 Laundry chutes shall be enclosed and any openings protected as for rubbish chutes in 7–4.1

Exception: Existing installations may be continued in service, subject to approval by the authority having jurisdiction.

CHAPTER 8 PLACES OF ASSEMBLY

(See also Chapter 17.)

SECTION 8–1 GENERAL REQUIREMENTS

8–1.1 Application.

8–1.1.1 The requirements of this chapter apply to both new and existing places of assembly. *(See 8–1.3 for definition.)*

Exception No. 1: Where otherwise stated.

Exception No. 2: An existing building housing an assembly occupancy established prior to the effective date of this Code may have its use continued if it conforms or is made to conform to the provisions of this Code to the extent that, in the opinion of the authority having jurisdiction, reasonable life safety against the hazards of fire, explosions, and panic is provided and maintained.

Existing buildings shall comply with Sections 8–3.1, 8–3.2, 8–3.5.2.

8–1.1.2 Mixed Occupancies.

8–1.1.2.1* Any place of assembly and its access to exits in buildings of other occupancy, such as ballrooms in hotels, restaurants in stores, roof top places of assembly, or assembly rooms in schools shall be so located, separated, or protected as to avoid any undue danger to the occupants of the place of assembly from a fire originating in the other occupancy or smoke therefrom.

8–1.1.2.2 Occupancy of any room or space for assembly purposes by less than 50 persons in a building of other occupancy and incidental to such other occupancy shall be classed as part of the other occupancy and subject to the provisions applicable thereto.

8–1.1.2.3 Places of assembly in buildings of other occupancy may use exits common to the place of assembly and the other occupancy provided that the assembly area and the other occupancy considered separately each have exits sufficient to meet the requirements of this *Code*.

8–1.1.2.4* Exits shall be sufficient for simultaneous occupancy of both the place of assembly and other parts of the building.

Exception: Where the authority having jurisdiction determines that the conditions are such that simultaneous occupancy will not occur, such as in certain schools per Chapter 9.

8–1.2* Special Definitions.

Arena Stage is a stage or platform open on at least 3 sides to audience seating. It may be with or without overhead scene handling facilities.

Places of Assembly include, but are not limited to, all buildings or portions of buildings used for gathering together 50 or more persons for such purpose as deliberation, worship, entertainment, dining, amusement or awaiting transportation.

Platform Enclosed is a partially enclosed portion of an assembly room the ceiling of which is not more than 5 feet above the proscenium opening and which is designed or used for the presentation of plays, demonstrations, or other entertainment wherein scenery, drops, decorations, or other effects may be installed or used.

A Proscenium Wall is a fire resistive wall which separates a stage or enclosed platform from the public or spectators' area of an auditorium or theater.

Stage is a partially enclosed portion of an assembly building which is designed or used for the presentation of plays, demonstrations, or other entertainment wherein scenery, drops, or other effects may be installed or used, and where the distance between the top of the proscenium opening and the ceiling above the stage is more than 5 feet.

Thrust Stage is that portion of a stage which projects into the audience on the audience side of a proscenium wall or opening.

8–1.3 Classification of Occupancy. (*See 4–1.2.*)

8-1.3.1 Classification of Places of Assembly. Each place of assembly shall be classified according to its capacity, as follows: Class A, capacity 1,000 persons or more; Class B, capacity 300 to 1,000 persons; Class C, capacity 50 to 300 persons.

8–1.4 Classification of Hazard of Contents. Contents of assembly occupancies shall be classified in accordance with the provisions of Section 4–2.

8–1.5 Occupant Load.

8–1.5.1 The occupant load permitted in any assembly building, structure, or portion thereof shall be determined by dividing the net floor area or space assigned to that use by the square feet per occupant as follows:

(a) An assembly area of concentrated use without fixed seats such as an auditorium, church, chapel, dance floor, and lodge room — 7 square feet per person.

(b) An assembly area of less concentrated use such as a conference room, dining room, drinking establishment, exhibit room, gymnasium, or lounge — 15 square feet per person.

(c) Standing room or waiting space — 3 square feet per person.

(d) Bleachers, pews, and similar bench type seating — 18 linear inches per person.

(e) Fixed Seating. The occupant load of an area having fixed seats shall be determined by the number of fixed seats installed. Required aisle space serving the fixed seats shall not be used to increase the occupant load.

Exception: In existing places of assembly the authority having jurisdiction may permit occupancy by number of persons not to exceed that for which

the existing means of egress are adequate, provided that measures are established satisfactory to the authority having jurisdiction to prevent occupancy by any greater number of persons than permitted by room area or by fixed seating.

8–1.5.2 The occupant load permitted in a building or portion thereof may be increased above that specified in 8–1.5 if the necessary aisles and exits are provided subject to the approval of the authority having jurisdiction. An approved aisle, exit, and/or seating diagram may be required by the authority having jurisdiction to substantiate an increase in occupant load.

8–1.5.3 Waiting Spaces. In theaters and similar places of public assembly where persons are admitted to the building at times when seats are not available for them and are allowed to wait in a lobby or similar space until seats are available, such use of lobby or similar space shall not encroach upon the required clear width of exits. Such waiting shall be restricted to areas other than the required means of egress. Exits shall be provided for such waiting spaces on the basis of one person for each 3 square feet of waiting space area. Such exits shall be in addition to the exits specified for the main auditorium area and shall conform in construction and arrangement to the general rules for exits given in this chapter.

8–1.6 Location of Places of Assembly. The location of a place of assembly shall be limited as follows:

(a) In a building of fire-resistive construction, a Class A, B or C place of assembly shall be permitted at the level of exit discharge and in any story above the level of exit discharge.

(b) In buildings of heavy timber, protected noncombustible, protected ordinary and protected wood-frame construction, a Class B or Class C place of assembly shall be permitted at the level of exit discharge.

Exception to (b): Class A places of assembly of the above construction types may be permitted at the level of exit discharge for occupancies listed in 4–1.2, except theaters, motion picture theaters, and dance halls.

(c) In buildings of noncombustible, ordinary and wood-frame construction, a Class C place of assembly shall be permitted at the level of exit discharge.

(d) In buildings of any type construction, a Class A, B or C place of assembly shall be permitted in any story below the level of exit discharge if the story in which the place of assembly and any story intervening between that story and the level of exit discharge are provided with complete automatic sprinkler protection.

If there is any opening between the level of exit discharge and the exits serving the place of assembly, the level of exit discharge shall also be sprinklered.

Exception: Existing places of assembly may be permitted at greater heights than specified in buildings provided with automatic sprinkler protection in accordance with Section 6–4.

SECTION 8–2 MEANS OF EGRESS REQUIREMENTS

8–2.1 General. (*See 8–1.1.2, Mixed Occupancies.*)

8–2.2* Types of Exits.

8–2.2.1 Exits of the specified number and width shall be of one or more of the following types, in accordance with the provisions of Chapter 5 of this *Code:*

(a) Doors of the swinging type leading directly outside or to a lobby or passageway leading to the outside of the building (*see Section 5–2.1*).

(b) Horizontal exits (*see Section 5–2.4*).

(c) Smokeproof towers (*see Section 5–2.3*).

(d) Interior stairs, Class A for all new places of assembly (*see Section 5–2.2*).

(e) Outside stairs. Same requirements as for interior stairs, including intermediate handrails on monumental stairs serving main entrance doors (*see Section 5–2.5*).

(f) Ramps. Class A for all new Class A places of assembly; Class B for Class B and Class C places of assembly (*see Section 5–2.6*).

(g) Escalators (*see Section 5–2.8*).

(h) Exit passageways (*see Section 5–2.7*).

8–2.2.2 Turnstiles. No turnstiles, revolving doors, or other devices to restrict the movement of persons shall be installed in any place of assembly in such a manner as to interfere in any way with required exit facilities. (*See Chapter 5 for further requirements for turnstiles.*)

8–2.3 Capacity of Means of Egress.

8–2.3.1* Every place of assembly, every tier or balcony, and every individual room used as a place of assembly shall have exits sufficient to provide for the total capacity thereof as determined in accordance with 8–1.5.1 and as follows:

(a) No individual unit of exit width shall serve more than 100 persons.

(b) Doors leading outside the building at grade level, or not more than 3 risers above or below grade, Class A ramps or horizontal exits — 100 persons per exit unit adjusted according to location of exits as required in 8–2.3.2 and 8–2.3.3.

(c) Stairs or other type of exit not specified in (b) above — 75 persons per exit unit.

8–2.3.2 Main Exit. Every assembly occupancy shall be provided with a main exit. The main exit shall be of sufficient width to accommodate one-half of the total occupant load, but shall be not less than the total required width of all aisles, exit passageways and stairways leading thereto, and shall be at the level of exit discharge or shall connect to a stairway or ramp leading to a street.

Exception: A bowling alley shall have a main exit of sufficient capacity to accommodate 50 percent of the total occupant load without regard to the number of aisles which it serves.

8–2.3.3 Other Exits. Each level of an assembly occupancy shall have access to the main exit *and* shall be provided with exits of sufficient width to accommodate two-thirds of the total occupant load served by that level. Such exits shall discharge directly to a street or into an exit court, enclosed stairway, outside stairway, or exit passageway leading to a street. Such exits shall be located as far apart as practicable and as far from the main exit as practicable. Such exits shall be accessible from a cross aisle or a side aisle.

Exception: Where only two exits are required, each exit shall be of sufficient width to accommodate not less than half the total occupant load.

8–2.4 Number of Exits.

8–2.4.1 Every Class A place of assembly (capacity over 1,000 persons or more) shall have at least 4 separate exits as remote from each other as practicable.

8–2.4.2 Every Class B place of assembly (capacity over 300 to 1,000 persons) shall have at least 2 separate exits as remote from each other as practicable, and if of a capacity of over 600, at least 3, each exit not less than 2 units.

8–2.4.3* Every Class C place of assembly (capacity 50 to 300 persons) shall have at least 2 means of egress, consisting of separate exits or doors leading to a corridor or other spaces giving access to 2 separate and independent exits in different directions.

8–2.5 Arrangement of Means of Egress.

8–2.5.1 Exits shall be remote from each other and shall be arranged to minimize the possibility that they may be blocked by any emergency.

Exception: A common path of travel may be permitted for the first 20 feet from any point.

8–2.5.2 Seating.

(a) The spacing of rows of seats shall provide a space of not less than 12 inches from the back of one seat to the front of the most forward projection of the seat immediately behind it, when the seat is in the down position, as measured horizontally between vertical planes.

(b) Rows of seats between aisles shall have not more than 14 seats.

(c) Rows of seats opening on to an aisle at one end only shall have not more than 7 seats.

(d) Seats without dividing arms shall have their capacity determined by allowing 18 inches per person.

(e) Continental seating.

(1) With continental seating, the spacing of rows of unoccupied seats shall provide a clear width between rows measured horizontally as follows (automatic or self-rising seats shall be measured in the seat-up position; other seats shall be measured in the seatdown position): 18 inches clear width between rows of 18 seats or less; 20 inches clear width between rows of 35 seats or less; 21 inches clear width between rows of 45 seats or less; 22 inches clear width between rows of 46 seats or more.

(2) With continental seating, the number of intervening seats between any seat and an aisle may be increased to 49 where exit doors are provided along each side aisle of the row of seats at the rate of 1 pair of exit doors for each 5 rows of seats. Such exit doors shall provide a minimum clear width of 66 inches discharging into a foyer, lobby or to the exterior of the building. There shall be not more than 5 seat rows between pairs of doors.

(f) Where bleacher or grandstand seating is used indoors, seats shall have no backs. Rows of seats shall be spaced not less than 22 inches nor more than 30 inches back to back. Such seating shall be not more than 11 rows high between cross aisles. The capacity of such seating shall be based on 18 inches per person. In addition, such seating shall comply with NFPA 102, *Tents, Grandstands and Air-Supported Structures*. (*See Appendix B.*)

8–2.5.3 Aisles. Every portion of any assembly building which contains seats, tables, displays, equipment, or other materials shall be provided with aisles leading to exits as follows:

(a) When serving more than 60 seats, every aisle shall be not less than 3 feet wide when serving seats on one side only, and not less than 3 feet 6 inches wide when serving seats on both sides. Such minimum width shall be measured at the point farthest from an exit, cross aisle, or foyer and shall be increased in width by 1½ inches for each 5 feet in length toward the exit, cross aisle, or foyer.

(b) When serving 60 seats or less, aisles shall be not less than 30 inches wide.

(c) Aisles shall terminate in a cross aisle, foyer, or exit. The width of such cross aisle, foyer, or exit shall be not less than the sum of the required width of the widest aisle plus 50 percent of the total required width of the remaining aisles which it serves.

(d) No dead-end aisle shall be greater than 20 feet in length. In arena or thrust stage theaters, dead-end aisles at the stage shall not exceed five rows beyond a cross aisle.

(e) With continental seating as set forth in 8–2.5.2 (e), side aisles shall be not less than 44 inches in width.

(f) Steps shall not be placed in aisles to overcome differences in level unless the gradient exceeds 1 foot of rise in 8 feet of run. Steps in aisles shall conform to the requirements for Class A stairs as to rise and tread.

Exception: In balconies and galleries rise and tread shall be as for Class A or Class B stairs, but one tread in each seat platform width may have a greater width to accommodate access to seats. Seating platforms shall be of uniform width.

(g) The gradient of sloping aisles shall not exceed 1 foot of rise in 8 feet of run.

8–2.6 Measurement of Travel Distance to Exits. Exits shall be so arranged that the total length of travel from any point to reach an exit will not exceed 150 feet in any place of assembly.

Exception: The travel distance may be increased to 200 feet in assembly occupancies protected by automatic sprinklers.

8–2.7 Discharge from Exits.

8–2.7.1 The level of exit discharging shall be measured at the point of principal entrance to the building.

8–2.7.2 Where the principal entrance to a place of assembly is via a depressed terrace, the terrace shall be at least as wide as the exit which it serves, but not less than 5 feet wide, and it shall be increased in width by 50 percent of any other exits tributary thereto. The level of the terrace shall be considered the level of exit discharge for the purpose of 8–1.6 above.

8–2.8 Special Features.

8–2.8.1 Panic Hardware. An exit door from place of assembly having an exit capacity of 100 or more may be provided with a latch or lock only if it is panic hardware.

8–2.8.2 Railings.

(a) The fasciae of boxes, balconies, and galleries shall not be less than 26 inches high above the adjacent floor or have substantial railings not less than 26 inches high above the adjacent floor.

(b) The height of the rail above footrests on the adjacent floor immediately in front of a row of seats shall be no less than 26 inches. Railings at the ends of aisles shall be not less than 36 inches high for the full width of the aisle and shall be not less than 42 inches high for the width of the aisle where steps occur.

(c) Cross aisles shall be provided with railings not less than 26 inches high above the adjacent floor.

Exception No. 1: Where the backs of seats on the front of the aisle project 24 inches or more above the adjacent floor of the aisle.

Exception No. 2: Existing railings 36 inches high at the ends of aisles where steps occur may continue to be used.

8–2.9 Illumination of Means of Egress.

8–2.9.1 Illumination of means of egress in places of assembly shall be provided in accordance with Section 5–8.

8–2.9.2 In every auditorium or other place of assembly where pictures, motion pictures or other projections are made by means of directed light, the illumination of the floors of exit access may be reduced during such period of projection to values of not less than one-fifth foot-candle.

8–2.10 Emergency Lighting. All places of assembly and their means of egress shall be provided with emergency lighting in accordance with Section 5–9.

Exception: Churches that are Class C places of assembly, used exclusively for religious worship, shall not be required to have emergency lighting. When normal illumination is dependent upon artificial means this exception shall not be allowed.

8–2.11 Marking of Means of Egress. Means of egress shall have signs in accordance with Section 5–10.

SECTION 8–3 PROTECTION

8–3.1 Protection of Vertical Openings. All interior stairways and other vertical openings shall be enclosed and protected as provided in Section 6–1.

Exception: Stairs may be open between balconies and main assembly floors in theaters, churches, or auditoriums where the travel distance is within the allowable limits (see 8–2.6).

8–3.2 Interior Finish.

8–3.2.1 The interior finish requirements of this Section shall be in accordance with Section 6–2 of this *Code* and subject to modifications specified therein.

Exception: In existing places of assembly where interior finish does not conform to the requirements for new assembly buildings, the authority having jurisdiction may apply the provisions of 6–2.2.1, 6–2.2.2 and 6–2.3 as alternate requirements where applicable.

8–3.2.2 Interior finish in all means of egress in all places of assembly shall be Class A.

8–3.2.3 Interior finish in general assembly areas shall be as follows:

(a) In Class A and Class B places of assembly: Class A or Class B interior finish.

(b) In all Class C places of assembly: Class A, B, or C interior finish. (*See 6–2.5.*)

Exception: In any place of assembly, exposed portions of structural members complying with the requirements for heavy timber construction may be permitted.

8–3.2.4 Screens on which pictures are projected shall comply with requirements of Class A or Class B interior finish.

8–3.3 Detection, Alarm and Communication Systems. No requirement other than that given in 8–3.5.1.4.

8–3.4 Extinguishment Requirements. (*See 8–1.6(d), 8–2.6 and 8–3.5.*)

8–3.5 Protection from Hazards.

8–3.5.1 Stage and Enclosed Platform. (*See 8–1.2.*)

8–3.5.1.1 Every stage equipped with fly galleries, gridirons, and rigging for movable theater-type scenery, and every enclosed platform larger than 500 square feet in area shall have a system of automatic sprinklers at the ceiling, under the gridiron, in usable spaces under the stage or platform and in auxiliary spaces and dressing rooms, storerooms, and workshops. Where the distance from the back of the stage to the proscenium wall is less than 30 feet, in lieu of sprinklers under the entire gridiron area, complete peripheral sidewall sprinklers with baffle plates may be substituted. Such sidewall sprinklers shall be not more than 30 inches below the gridiron or 6 inches below the baffle plates.

When openings are provided in the stage floor for stage lifts, trap doors, or stairs, sprinklers spaced 5 feet on centers shall be provided around the opening at the ceiling below the stage, and baffles at least 12 inches in depth shall be installed around the perimeter of the opening.

8–3.5.1.2 Every stage and every enclosed platform larger than 500 square feet shall have a ventilator or ventilators in or above it, operable from the stage floor by hand and also opening by fusible links or other approved automatic heat actuated device, or heat and smoke actuated device, to give a free opening equal to at least 5 percent of the area of the floor of the stage or enclosed platform.

Where mechanical ventilation is provided it shall be so arranged that natural ventilation, at least equal to the above, will be available. Make-up air for mechanical ventilation shall not be obtained from the audience (seating) areas.

8–3.5.1.3 The proscenium opening of every stage shall be provided with a fire resistant curtain constructed and mounted so as to intercept hot gases, flames, and smoke, and to prevent glow from a severe fire on the stage showing on the auditorium side within a 5-minute period. The curtain shall be automatic closing without the use of applied power.

Exception: In lieu of the protection required herein, all the following may be provided:

(a) A noncombustible opaque fabric curtain so arranged that it will close automatically and,

(b) An automatic dry-pipe system of spray heads on both sides of the curtain. Discharge and spacing shall be such that the entire curtain will be wet. Water supply shall be controlled by a deluge valve and shall be sufficient to keep completely wet for 30 minutes or until valve is closed by fire department personnel and,

(c) Curtain, spray heads, stage sprinklers, and vents shall be automatically operated in case of fire, by rate of rise and fixed temperature detectors. Spacing, number, and location of detectors shall be as required by the devices used, with maximum center to center distance of 10 feet. Detectors shall completely cover the periphery of the sprinklered and protected area and,

(d) In addition to automatic operation the protection systems shall be capable of manual operation from a designated fire control station and from a switch located adjacent to the stage exit most remote from the fire control station and,

(e) Sprinkler and water spray supply valves shall be provided with tamper alarms wired to an annunciator panel located at the fire control station and,

(f) Operation of a sprinkler or spray head deluge valve shall automatically activate the emergency ventilating system and close the curtain.

8–3.5.1.4 Every stage shall be provided with a fire control station located on or adjoining the stage. The fire control station shall have the following:

(a) Telltale lights to indicate the operation of all emergency light and power circuits.

(b) Manual operating devices to actuate automatic spray heads at proscenium, proscenium curtain, and smoke vents.

(c) Indicators to show that sprinkler system valves are open and system is charged with water under pressure.

(d) A public address system energized from normal and emergency light and power sources.

(e) An alarm system connected to the manager's office, dressing rooms, and auxiliary stage spaces. It shall not sound an alarm audible in the audience or seating portion of the theater.

8–3.5.1.5 Auxiliary stage spaces such as under-stage areas, dressing rooms, workshops and similar spaces associated with the functioning of a stage shall comply with the following:

(a) No point within any auxiliary space shall be more than 50 feet from a door providing access to an exit.

(b) There shall be at least 2 exits available from every auxiliary stage space, one of which shall be available within a travel distance of 75 feet. A common path of travel of 20 feet to the two exits shall be permitted.

(c) Auxiliary stage spaces shall be equipped with automatic sprinklers when required by the provisions of 8–3.5.1.1.

(d) No workshop involving the use of combustible or flammable paint, liquids, or gases, or their storage shall open directly upon a stage.

8–3.5.1.6 Where automatic sprinkler protection is not provided, the proscenium wall of every theater using movable scenery or decorations shall not have more than 2 openings entering the stage, exclusive of the

proscenium opening. Such openings shall not exceed 21 square feet each and shall be fitted with self-closing fire doors.

8–3.5.1.7 Each stage shall be equipped with a standpipe located on each side of the stage, equipped with a 2½-inch fire department connection, and a 1½-inch hose for occupant use, installed in accordance with NFPA 14.

8–3.5.2 Projection Booth.

8–3.5.2.1 Every place of assembly in which pictures are projected from cellulose acetate, or other safety film using electric arc, Xenon, or other light sources which generate hazardous gases, dust, or radiation, shall have a projection room which complies with 8–3.5.2.2. Where cellulose nitrate film is used the projection room shall comply with NFPA 40, *Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film.* (*See Appendix B.*) (*See also Chapter 17.*)

8–3.5.2.2 Projection Rooms for Safety Film.

8–3.5.2.2.1 Every projection room shall be of permanent construction consistent with the construction requirements for the type of building in which the projection room is located. Openings need not be protected. The room shall have a floor area of not less than 80 square feet for a single machine and at least 40 square feet for each additional machine. Each motion picture projector, floodlight, spotlight, or similar piece of equipment shall have a clear working space not less than thirty inches on each side and at the rear thereof, but only one such space shall be required between adjacent projectors.

The projection room and the rooms appurtenant thereto shall have a ceiling height of not less than 7 feet 6 inches.

8–3.5.2.2.2 Each projection room shall have at least one out-swinging, self-closing door not less than 2 feet 6 inches wide by 6 feet 8 inches high.

8–3.5.2.2.3 The aggregate of ports and openings for projection equipment shall not exceed twenty-five percent of the area of the wall between the projection room and the auditorium.

All openings shall be provided with glass or other approved material, so as to completely close the opening.

8–3.5.2.2.4 Projection booth room ventilation shall be not less than the following:

(a) *Supply Air:* Each projection room shall be provided with two or more separate fresh air inlet ducts with screened openings terminating within 12 inches of the floor, and located at opposite ends of the room. Such air inlets shall be of sufficient size to permit an air change every three minutes. Fresh air may be supplied from the general building air conditioning system, providing it is so arranged that the projection booth will continue to receive one change of air every three minutes, when no other air is supplied by the general air conditioning system.

(b) *Exhaust Air:* Each projection room shall be provided with one or more exhaust air outlets which may be manifolded into a single duct outside the booth. Such outlets shall be so located as to ensure circulation throughout the room. Projection room exhaust air systems shall be independent of any other air systems in the buildings. Exhaust air ducts shall

terminate at the exterior of the building in such a location that the exhaust air cannot be readily recirculated into the supply air system. The exhaust system shall be mechanically operated and of such a capacity as to provide a minimum of one change of air every three minutes. The blower motor shall be outside the duct system.

The projection room ventilation system may also serve appurtenant rooms, such as the generator room and the rewind room.

8–3.5.2.2.5 Each projection machine shall be provided with an exhaust duct which will draw air from each lamp and exhaust it directly to the outside of the building in such a fashion that it will not be picked up by supply inlets. Such a duct shall be of rigid materials, except for a continuous flexible connector approved for the purpose. The lamp exhaust system shall not be interconnected with any other system.

(a) *Electric Arc Projection Equipment:* The exhaust capacity shall be 200 cfm for each lamp connected to the lamp exhaust system, or as recommended by the equipment manufacturer. Auxiliary air may be introduced into the system through a screened opening to stabilize the arc.

(b) *Xenon Projection Equipment:* The lamp exhaust system shall exhaust not less than 300 cfm per lamp, not less than that exhaust volume required or recommended by the equipment manufacturer, whichever is the greater. The external temperature of the lamp housing shall not exceed 130° F when operating.

8–3.5.2.2.6 Miscellaneous Equipment and Storage.

(a) Each projection room shall be provided with rewind and film storage facilities.

(b) A maximum of four containers for flammable liquids not greater than sixteen-ounce capacity and of a nonbreakable type may be permitted in each projection booth.

(c) Appurtenant electrical equipment such as rheostats, transformers, and generators may be located within the booth or in a separate room of equivalent construction.

8–3.5.3 Service Equipment, Hazardous Operations or Processes, and Storage Facilities.

8–3.5.3.1 Rooms containing high pressure boilers, refrigerating machinery of other than domestic refrigerator type, large transformers or other service equipment subject to possible explosion shall not be located directly under or adjacent to required exits. All such rooms shall be effectively cut off from other parts of the building by construction having not less than a 1-hour fire resistance rating.

8–3.5.3.2 All openings between the balance of the building and rooms or enclosures for hazardous operations or processes shall be protected by standard self-closing or automatic fire doors and shall be provided with adequate vents to the outer air, in accordance with Section 6–5 of this *Code*.

8–3.5.3.3 Rooms or spaces for the storage, processing, or use of combustible supplies, flammable liquids or hazardous materials in quantities deemed hazardous by recognized standards; boiler or furnace rooms, fuel storage rooms, maintenance shops, including woodworking and painting areas; kitchens and laundries shall be separated from other parts of the building with enclosures having not less than one (1) hour fire resistance rating; openings shall be protected by self-closing or automatic closing fire rated assemblies. (*See NFPA 80.*)

Exception: Food preparation facilities protected in accordance with NFPA Standard 96, Vapor Removal Cooking Equipment (see Appendix B), are not required to have openings protected between food preparation areas and dining areas.

8–3.5.4 Special Provisions for Food Service Establishments.

8–3.5.4.1 All devices in connection with the preparation of food shall be so installed and operated as to avoid hazard to the safety of occupants.

8–3.5.4.2 All devices in connection with the preparation of food shall be of an approved type and shall be installed in an approved manner.

8–3.6 Minimum Construction Requirements. (*See 8–1.6 and 8–3.5.*)

8–3.7 Smoke Control. (*See NFPA 90A, Air Conditioning and Ventilating Systems; also see Appendix B.*)

SECTION 8–4 BUILDING SERVICES

8–4.1 Utilities. (*See Chapter 7.*)

8–4.2 Air Conditioning. All air conditioning, heating, and ventilation installations shall comply with the provisions of 7–2 of this *Code*.

8–4.3 Elevators. (*See 7–3.*)

SECTION 8–5 SPECIAL PROVISIONS

8–5.1 Windowless or Subterranean Buildings. The requirements of places of assembly shall be in accordance with this chapter and 16–4 of this *Code*.

8–5.2 Outdoor Assembly.

8–5.2.1 All grandstands, tents, and other places of outdoor assembly shall comply with the requirements of NFPA 102, *Tents, Grandstands and Air-Supported Structures.* (*See Appendix B.*)

8–5.3 Special Provisions for Exhibition Halls.

8–5.3.1 No display or exhibit shall be so installed or operated as to interfere in any way with access to any required exit or with visibility of any required exit or of any required exit sign, nor shall any display block access to fire fighting equipment.

8–5.3.2 All displays or exhibits of combustible material or construction and all booths and temporary construction in connection therewith shall be so limited in combustibility or protected as to avoid any undue hazard of fire which might endanger occupants before they have opportunity to use available exits, as determined by the authority having jurisdiction.

8–5.3.3 Any place of assembly used for exhibition or display purposes shall be equipped with a complete automatic fire extinguishing system in accordance with 6–4, when the exhibition or display area exceeds 15,000 square feet.

8–5.3.4 A storage room having an enclosure with a fire resistance rating of at least two hours and protected by an automatic fire extinguishing system shall be provided for combustible materials not on display.

CHAPTER 9 EDUCATIONAL OCCUPANCIES

(See also Chapter 17.)

SECTION 9–1 GENERAL REQUIREMENTS

9–1.1 Application.

9–1.1.1* The requirements of this chapter apply to both new and existing buildings.

Exception No. 1: Where otherwise stated.

Exception No. 2: An existing building housing educational occupancies established prior to the effective date of this Code may have its use continued if it conforms or is made to conform to the provisions of this Code to the extent that, in the opinion of the authority having jurisdiction, reasonable life safety against the hazards of fire, explosion, and panic is provided and maintained.

9–1.1.2 Rooms used for kindergarten or first grade pupils shall not be located above or below the floor of exit discharge. Rooms used for second grade pupils shall not be located more than 1 story above the floor of exit discharge.

9–1.1.3 Educational occupancies shall make provisions for the physically handicapped.

9–1.1.4 Mixed Occupancies. *(See also 9–1.3.)*

9–1.1.4.1. General. In case two or more classes of occupancy occur in the same building or structure so intermingled that separate safeguards are impracticable, the means of egress shall be sufficient to meet the requirements for each individual room or section and for the maximum occupant load of entire building. Construction, protection, and other safeguards shall meet requirements of the most hazardous occupancy.

Exception: As otherwise specified in this chapter.

9–1.1.4.2 Assembly and Educational. Any auditorium, assembly room, cafeteria, gymnasium used for assembly purposes such as athletic events with provisions for seating of spectators, or other spaces subject to assembly occupancy shall comply with Chapter 8, including Special Provisions for Places of Assembly in Buildings of Other Occupancy, which provides that where auditorium and gymnasium exits lead through corridors or stairways also serving as exits for other parts of the building, the exit capacity shall be sufficient to permit simultaneous exit from auditorium and classroom sections.

Exception: In the case of an auditorium and gymnasium of a type suitable only for use of the school occupant load (and therefore not subject to simultaneous occupancy), the same exit capacity may serve both sections.

9–1.1.4.3 Dormitory and Classrooms. Any building used for both classroom and dormitory purposes shall comply with the applicable provisions of Chapter 11 in addition to complying with Chapter 9. Where classroom and dormitory sections are not subject to simultaneous occupancy, the same exit capacity may serve both sections.

9–1.1.4.4 Other Combined Occupancies.

9–1.1.4.4.1 Any other combinations of occupancy not covered in 9–1.1.3.2 and 9–1.1.3.3 shall comply with all applicable chapters of this *Code*, with means of egress adequate to serve all occupancies simultaneously.

9–1.1.4.4.2 Each room having an occupant load of more than 100 shall be located at the floor of exit discharge.

Exception: Buildings of fire-resistive construction.

9–1.2 Special Definitions.

Common Atmosphere. A common atmosphere exits between rooms, spaces or areas within a building, which are not separated by an approved smoke partition.

Flexible Plan and Open Plan Educational Buildings. Include every building or portion of a building not having corridors which comply with 9–3.6.1 and are designed for multiple teaching stations.

(a) Flexible plan buildings have movable corridor walls and movable partitions of full height construction with doors leading from rooms to corridors.

(b) Open plan buildings have rooms and corridors delineated by use of tables, chairs, desks, bookcases, counters, low height (5 feet) partitions, or similar furnishings.

Flexible plan buildings without exit access doors between rooms and corridors shall be classified as open plan buildings.

Interior Room. A room whose only means of egress is through an adjoining or intervening room which is not an exit.

Room. For the purposes of this section, a room is a space or area bounded by any obstructions to egress which at any time enclose more than 80 percent of the perimeter of the space or area. Openings of less than 3 feet clear width and less than 6 feet 8 inches high shall not be considered in computing the unobstructed perimeter.

Separate Atmosphere. A separate atmosphere exists between rooms, spaces or areas that are separated by an approved smoke partition.

Separate Means of Egress. A means of egress separated in such a manner from other required means of egress as to provide an atmospheric separation which precludes contamination of both means of egress by the same fire. (*See Section 6–6.*)

Smoke Partition. (*See Section 6–6.*) For purposes of this section, smoke partitions shall also include floors and openings therein.

9–1.3 Classification of Occupancy. (*See 4–1.3.*)

9–1.3.1 Educational occupancies shall include all buildings used for the gathering of groups of 6 or more persons for purposes of instruction, such as schools, universities, colleges, and academies.

9–1.3.2 Educational occupancy includes part-day, nursery schools, kindergartens, and other schools whose purpose is primarily educational even though the children are of preschool age.

9–1.3.3 Other occupancies associated with educational institutions shall be in accordance with the appropriate parts of this *Code*. (*See Chapters 10, 11, 14, 15, and 16, and 1–4.1.5.*)

9–1.3.4* In cases where instruction is incidental to some other occupancy, the section of this *Code* governing such other occupancy shall apply.

9–1.4 Classification of Hazard of Contents. Contents of educational occupancies shall be classified in accordance with the provisions of Section 4–2.

9–1.5 Occupant Load.

9–1.5.1 The occupant load of educational buildings or any individual story or section thereof for the purpose of determining exits shall be as determined by the authority having jurisdiction but not less than one person for each 20 square feet of net classroom area or 50 square feet of net area of shops, laboratories, and similar vocational rooms. In day nurseries where sleeping facilities are provided, the occupant load shall be not less than one person for each 35 square feet of net area.

9–1.5.2 The occupant load of an area having fixed seats shall be determined by the number of fixed seats installed. Required aisle space serving the fixed seats shall not be used to increase the occupant load. When more than 60 seats, every aisle shall be not less than 3 feet wide when serving seats on one side only and not less than 3 feet 6 inches when serving seats on both sides. When serving 60 seats or less, aisles shall not be less than 30 inches wide. Within a classroom where there are rows of seats with room access to the seats between individual rows, this space does not constitute an aisle. No more than 6 seats shall intervene between any seat and an aisle.

9–1.5.3 The capacity of an educational occupancy or a portion thereof may be modified from that specified above if the necessary aisles and exits are provided. An approved aisle or seating diagram shall be required by the authority having jurisdiction to substantiate such a modification.

9–1.5.4 The occupant load for determining exit requirements of individual lecture rooms, gymnasiums, or cafeterias used for assembly purposes of more than 50 persons shall be determined in accordance with 8–1.5.1 of this *Code*.

SECTION 9–2 MEANS OF EGRESS REQUIREMENTS

9–2.1 General.

9–2.1.1 Every aisle, corridor, balcony, other means of access to exits, and discharge from exits shall be in accordance with Chapter 5.

9–2.1.2 Means of Egress Deficiencies in Existing Buildings.

9–2.1.2.1 Deficiencies may be corrected by adding additional means of egress, preferably those which will provide direct exit discharge to the outside from classroom or student-occupied areas.

9–2.1.2.2 In lieu of direct exit discharge to the outside from classrooms, the requirements of this *Code* may be met by providing communicating doors between classrooms or student-occupied areas that provide access to at least one exit or exit stair without passing through interior corridors.

9–2.2 Types of Exits. Exits of the specified number and width shall be one or more of the following types, in accordance with the provisions of Chapter 5 of this *Code*.

(a) Doors. (*See 5–2.1.*)

(b) Interior Stairs Class A or Class B. (*See 5–2.2.*)

NOTE: Class B stairs shall not be used for student access.

(c) Smokeproof Towers. (*See 5–2.3.*)

(d) Outside Stairs — Class A. (*See 5–2.5*).

(e) Horizontal Exits. (*See 5–2.4.*)

(f) Ramps — Class A or Class B. (*See 5–2.6.*)

9–2.3 Capacity of Means of Egress.

9–2.3.1* Every educational building, and every floor, section or room thereof considered separately shall have exits sufficient to provide for the capacity thereof, comprised of one or more types of exits, as follows:

(a) Any door, in accordance with Section 5–2.1, leading directly outside building at ground level, or not to exceed 3 risers above or below the ground — 100 persons per unit of exit width.

(b) Any door leading outside building but requiring steps of over 3 risers to reach the ground — 100 persons per unit of exit width; steps must have ⅓ more units of width than doors to allow for slower travel rate.

(c) Stairs, smokeproof towers or outside stairs, in accordance with Sections 5–2.2, 5–2.3 and 5–2.5 — 60 persons per unit of exit width.

(d) Ramps, in accordance with 5–2.6.

(1) Class A — 100 persons per unit of exit width.

(2) Class B — 60 persons per unit of exit width.

(e) Horizontal exits, in accordance with 5–2.4 — 100 persons per unit of exit width.

9–2.3.2* The same exit units or fraction thereof required for any individual floor may be counted as simultaneously serving all floors above the first story or floor of exit discharge.

9–2.3.3 Minimum Corridor Width.

9–2.3.3.1 Any corridor shall be not less than 6 feet wide in the clear.

9–2.3.3.2 Drinking fountains or other equipment, fixed or movable, shall not be so placed as to obstruct the required minimum 6-foot corridor width.

9–2.3.3.3 Doors which swing into an exit access corridor shall be recessed to prevent interference with corridor traffic; any doors not so recessed shall open 180 degrees to stop against wall. Doors in any position shall not reduce the required corridor width by more than one half.

9–2.4 Number of Exits.

9–2.4.1 There shall be at least 2 exits available from every floor area.

9–2.4.2 Every room or space with a capacity of over 50 persons or over 1,000 square feet in area shall have at least 2 doorways as remote from each other as practicable. Such doorways shall provide access to separate exits, but, where egress is through corridors, may open upon a common corridor leading to separate exits in opposite directions.

9–2.5 Arrangement of Means of Egress.

9–2.5.1 Exterior Corridors or Balconies.

9–2.5.1.1* Where exterior corridors or balconies are provided as means of exit, they shall open to the outside air except for railings or balustrades with stairs or level exits to grade not over 250 feet apart, so located that an exit will be available in either direction from the door to any individual room or space, with dead ends not to exceed 20 feet. If balconies are enclosed by glass or in any other manner, they shall be treated as interior corridors.

9–2.5.1.2 The floors of balconies (exterior corridors) and stairs shall be solid, without openings, and shall comply with requirements for outside stairs as regards balustrades or railings, width and pitch of stairs, and other details, but are not required to be shielded from fire within the building by blank walls, wired glass windows or the like where the stairs are located on the side of the balcony or corridor away from the building and are separated from the building by the full required width of the balcony or corridor. Regardless of other provisions, exterior balconies and stairs may be of the same type of construction as the building which they serve.

9–2.5.2* Exits shall be so arranged that at least 2 separate exits will be available from every floor area. Exits shall be as remote from each other as practicable, so arranged that there will be no pockets or dead ends of appreciable size in which occupants may be trapped, and in no case shall any dead-end corridor extend more than 20 feet beyond the stairway or other means of exit therefrom.

9–2.5.3 Every classroom or room used for educational purposes or student occupancy below the floor of exit discharge shall have access to at least 1 exit which leads directly to the exterior at level of discharge without entering the floor above.

9–2.6 Measurement of Travel Distance to Exits. Travel distance to an exit shall not exceed 150 feet from any point in a building.

Exception No. 1: For travel distance in open plan buildings, see Section 9–5.2.2.2.

Exception No. 2: The travel distance may be increased to 200 feet in educational occupancies completely protected by a complete automatic extinguishing system.

9–2.7 Discharge from Exits. Discharge from exits shall be arranged in accordance with the provisions of Section 5–7.

9–2.8 Doors and Hardware.

9–2.8.1 Door Closure. All exit doors designed to be kept normally closed shall conform with 5–2.1.2.3.

9–2.8.2 Door Swing. If a room or space is subject to occupancy by more than 50 persons, exit doors shall swing out. Only 1 locking or latching device shall be permitted on a door or a leaf of a pair of doors. (*See also 9–2.3.3.3.*)

9–2.8.3 Panic Hardware. Any required exit door subject to use by 100 or more persons shall be operated by a panic hardware device, in accordance with 5–2.1.2.2.

9–2.9 Illumination of Means of Egress. All educational buildings shall have adequate exit illumination in accordance with 5–8.

9–2.10 Emergency Lighting. Flexible plan and open plan buildings, buildings used for night occupancy, all portions of buildings that are interior and windowless, such as rooms, stairs, areas, or corridors, shall have emergency lighting in accordance with 5–9.

9–2.11 Marking of Means of Egress. All educational buildings shall have signs designating the location of exits or the path of travel to reach them, in accordance with 5–10.

Exception: Signs are not required in situations where location of exits is otherwise obvious and familiar to all occupants, such as in small elementary school buildings.

9–2.12* Windows for Rescue and Ventilation. Every room or space used for classroom or other educational purposes or normally subject to student occupancy shall have at least one outside window used for emergency rescue or ventilation. Such window shall be openable from the inside without the use of tools, and providing a clear opening of not less than 20 inches in width, 24 inches in height and 5.7 square feet in area. The bottom of the opening shall be not more than 44 inches above the floor.

Exception No. 1: In buildings with a complete approved extinguishing system in accordance with Section 6–4.

Exception No. 2: Where the room or space has a door leading directly to the outside of the building.

SECTION 9–3 PROTECTION

9–3.1 Protection of Vertical Openings.

9–3.1.1 Any interior stairway and other vertical opening in educational buildings shall be enclosed and protected in accordance with Section 6–1.

9–3.1.2 Stairs shall be enclosed in accordance with Section 6–1.

Exception: Stairway enclosure will not be required for a stairway serving only one adjacent floor except a basement and not connected with corridors or stairways serving other floors.

9–3.2 Interior Finish. Interior finish shall be Class A in corridors, stairways and other means of egress and may be Class B or C elsewhere, in accordance with the provisions of Section 6–2.

Exception: In existing educational buildings which have interior finish that does not comply with the requirements for new buildings, the provisions of 6–2.2 and 6–2.3 shall be acceptable as alternate requirements.

9–3.3 Detection, Alarm, and Communication Systems.

9–3.3.1 Approved manually operated fire alarm facilities in accordance with Section 6–3 shall be provided in every educational building.

9–3.3.2 In buildings provided with automatic sprinkler protection, the operation of the sprinkler system shall automatically actuate electrical school fire alarm systems.

9–3.3.3 Existing Buildings. Requirements for fire alarm systems for existing educational buildings shall conform to those for new educational buildings subject to the approval of the authority having jurisdiction.

9–3.4 Extinguishment Requirements. Every portion of educational buildings below the floor of exit discharge shall be protected with complete automatic sprinkler protection in accordance with Section 6–4.

9–3.5 Protection from Hazards.

9–3.5.1 Rooms or spaces for the storage, processing, or use of combustible supplies, flammable liquids or hazardous materials in quantities deemed hazardous by recognized standards; boiler or furnace rooms, fuel storage rooms, maintenance shops, including wood-working and painting areas; kitchens and laundries shall be separated from other parts of the building with enclosures having not less than one-(1) hour fire resistance rating. Openings shall be protected by self-closing or automatic closing fire door assemblies. (*See NFPA 80.*)

Exception: Food preparation facilities protected in accordance with NFPA 96, Vapor Removal Cooking Equipment (see Appendix B), are not required to have openings between food preparation areas and the dining areas protected.

9–3.5.2 Janitor closets shall be protected by an automatic sprinkler system, which may be supplied by the domestic water supply system serving no more than six (6) sprinklers and has a water supply sufficient to provide 0.15 GPM per square foot of floor area.

9–3.6 Minimum Construction Requirements.

9–3.6.1 Interior Corridors.

9–3.6.1.1 Every interior corridor shall be of construction having not less than a 1-hour fire resistance rating, and all openings protected with doors, frames and hardware, including closers, that shall all have a fire protection rating of at least 20 minutes.

Exception No. 1: Room doors in existing buildings may be 1¾-inch solid bonded wood core doors or the equivalent.

Exception No. 2: Such corridor protection shall not be required when all classrooms served by such corridors have at least one door directly to the outside or to an exterior balcony or corridor as in 9–2.5.1.

9–3.6.1.2 Any interior corridor more than 300 feet in length shall be divided into reasonably equal sections not exceeding 300 feet in length by smoke partitions installed in accordance with Section 6–6.

9–3.7 Smoke Control. (*See 9–2.12 and 9–3.6.1.2.*)

SECTION 9–4 BUILDING SERVICES

9–4.1 Electrical Wiring and Equipment. Electrical wiring and equipment and all cooking, heating, incinerating and other building service equipment shall be installed in accordance with Chapter 7.

9–4.2 Air Conditioning. Every air-conditioning, heating, and ventilating installation shall comply with 7–2 of this *Code*.

9–4.3 Elevators. (*See 7–3.*)

SECTION 9–5 SPECIAL PROVISIONS

9–5.1 Windowless and Subterranean Buildings. In addition to the requirements of this section for underground and windowless educational buildings, the provisions of 16–4 of this *Code* shall apply and such buildings shall be provided with complete automatic sprinkler protection.

9–5.2 Flexible Plan and Open Plan Buildings.

9–5.2.1 General Requirements.

9–5.2.1.1 Flexible plan and open plan buildings shall not exceed 30,000 square feet in undivided area. A solid wall or smoke partition (Section 6–6) shall be provided at maximum intervals of 300 feet and openings in such walls or partitions shall comply with 6–6.2.

9–5.2.2. Means of Egress Requirements.

9–5.2.2.1 Arrangement of Means of Egress.

9–5.2.2.1.1 Each room occupied by more than 300 persons shall have two (2) or more means of egress entering into separate atmospheres. Where three (3) or more means of egress are required, not more than two (2) of them shall enter into the same atmosphere.

9–5.2.2.1.2 Exit access from interior rooms may pass through an adjoining or an intervening room, provided that the travel distances do not exceed those set forth in 9–5.2.2.2.

Foyers and lobbies constructed as required for corridors shall not be construed as intervening rooms.

Where the only means of egress from a room is through an adjoining or intervening room, smoke detectors shall be installed in the area of the common atmosphere through which the means of egress must pass. The detectors shall actuate alarms audible in the interior room and shall be connected to the school fire alarm system.

Exception No. 1: Where the aggregate occupant load of the interior room or rooms is less than 10.

Exception No. 2: Where enclosures forming interior rooms are less than ⅔ of the floor to ceiling height and do not exceed 8 feet.

Exception No. 3: Interior rooms used exclusively for mechanical and public utility service to the buildings.

9–5.2.2.1.3 Flexible plan schools may have walls and partitions rearranged periodically, only after revised plans or diagrams have been approved by the authority having jurisdiction.

9–5.2.2.1.4 Open plan schools shall have furniture, fixtures, or low height partitions so arranged that exits will be clearly visible and unobstructed, and exit paths are direct, not circuitous. If paths or corridors are established, they shall be at least as wide as required by 9–2.3.3.

9–5.2.2.2 Travel Distance to Exits. No point in a building shall be more than 150 feet from an exit, measured in accordance with 5–6.

Exception: An increase in the above travel distance to 200 feet shall be permitted in a building fully protected by an automatic fire extinguishing system in accordance with Section 6–4 and NFPA 13, *Standard for the Installation of Sprinkler Systems. (See Appendix B.)*

9–5.2.3 Protection.

9–5.2.3.1 Vertical Openings.

9–5.2.3.1.1 All exit stairs shall be enclosed in accordance with 6–1.

9–5.2.3.1.2 Vertical openings other than exits shall be enclosed as required by 6–1. *(See 9–3.1.2 for enclosure of exits.)*

9–5.2.3.2* Interior Finish. Interior finish in flexible plan and open plan buildings shall be as follows:

(a) Corridors in flexible plan buildings — Class A, on rigid material will not deform at temperature below 450° F. Smoke emissions shall be as required in 6–2.

(b) Other than corridor walls — Class A or Class B. *(See 6–2.)*

Exception No. 1: Fixtures and low height partitions not over 5 feet high may be Class C.

Exception No. 2: In one-story buildings the exposed portions of structural members complying with the requirements for heavy timber construction may be permitted.

9–5.2.3.3 Automatic Fire Extinguishing Systems.

9–5.2.3.3.1 Any flexible plan building or open plan building in which the travel distance to exits exceeds 150 feet shall have complete automatic fire extinguishing systems in accordance with Section 6–4. Extinguishing systems shall be electrically interconnected with the school fire alarm system.

9–5.2.3.3.2 Automatic fire extinguishing systems shall be modified to conform with partition changes. Modification plans shall have prior approval of the authority having jurisdiction.

9–5.2.3.4 Protection from Hazards.

9–5.2.3.4.1 Stages in places of assembly shall be separated from school areas by construction having at least a 1-hour fire resistance rating and shall comply with 8–3.5.1. Openings shall be protected by self-closing or automatic closing fire door assemblies having a fire protection rating of ¾ hours.

9–5.2.3.4.2 Shops, laboratories, and similar vocational rooms, as well as storage rooms, shall be separated from school areas by construction having at least a 1-hour fire resistance rating. They shall have exits independent from other areas.

9–5.2.3.5 Smoke Control.

9–5.2.3.5.1 The specific requirements of this section are not intended to prevent the design or use of other systems, equipment or techniques which will effectively prevent the products of combustion from breaching the atmospheric separation.

9–5.2.3.5.2 The provisions of this subsection shall apply only to the requirements for providing separate atmospheres. The fire-resistance requirements shall comply with other provisions of the *Code*.

(a) Walls, partitions and floors forming all of or part of an atmospheric separation shall be of materials consistent with the requirements for the type of construction, but of construction not less effective than a smoke partition. Glass lights of approved wired glass set in steel frames may be installed in such walls or partitions.

(b) Every door opening therein shall be protected with a fire assembly as required elsewhere in the *Code*, but not less than a self-closing or automatic-closing, tight-fitting smoke assembly having a fire protection rating of not less than 20 minutes.

(c) Ducts penetrating atmospheric separation walls, partitions or doors shall be equipped with an approved automatic-closing smoke damper when having openings into more than one atmosphere, or the atmospheric separation shall be maintained by an approved method of smoke control.

(d) All automatic-closing fire assemblies installed in the atmospheric separation shall be activated by approved smoke detectors.

(e) Janitor closets and storage rooms shall be enclosed by materials having one-hour fire resistance. Stages and enclosed platforms shall be constructed in accordance with Chapter 8.

Exception: Doors to janitor closets may have ventilating louvers.

9–5.3 Child Day Care Centers. (*See also 9–5.4 and 9–5.5.*)

9–5.3.1 General Requirements.

9–5.3.1.1* General.

9–5.3.1.1.1 This section establishes life safety requirements for child day care centers, in which more than 12 children receive care, maintenance and supervision for 24 hours or less per day.

9–5.3.1.1.2 The text principally applies to centers for children under 3 years of age. Variations for centers housing children 3 years of age and older are indicated.

9–5.3.1.1.3 Centers housing children 6 years of age and older shall conform to the requirements for educational occupancies, except as noted herein.

9–5.3.1.1.4 Where a facility houses more than one age group, the requirements for the younger children shall apply, unless the area housing the younger children is maintained as a separate fire area.

9–5.3.1.1.5 Mixed Occupancies.

(a) Where centers are located in a building containing mixed occupancies, the separation requirements of the locally applicable building code or, if none exits, a nationally recognized model code, shall be satisfied.

(b) **Centers in Apartment Buildings.**

(i) If the two exit accesses from the center enter the same corridor, as in an apartment building, the exit accesses shall be separated in the corridor by a smoke partition having not less than 1-hour fire resistance rating. The smoke partition shall be so located that there is an exit on each side of it.

(ii) The door in the smoke partition shall be not less than 36 inches wide.

Exception: Existing doors not less than 32 inches wide may be accepted.

(iii) The door and frame assembly in the smoke partition shall have a fire protection rating of at least 20 minutes and shall be equipped with a self-closing device, a latch and an automatic hold-open device activated by a smoke detector. (*See also 5–2.1.2.3.*)

9–5.3.1.1.6 Location. The story below the floor of exit discharge may be used in buildings of fire-resistive construction, protected noncombustible construction, protected wood frame construction and protected ordinary construction. (*See 9–5.3.2.4.2.*)

9–5.3.1.2 Special Definitions (*none*).

9–5.3.1.3 Classification of Occupancy. For the purposes of this section, children are classified in age groups, as follows: Children under 3 years of age, children from 3 through 5 years of age, and children 6 years of age and older.

9–5.3.1.4 Classification of Hazard of Contents. (*Not specifically classified.*)

9–5.3.1.5 Occupant Load. The occupant load for which means of egress shall be provided for any floor shall be the maximum number of persons intended to occupy that floor but not less than one person for each 35 square feet of net floor area used by the children.

9–5.3.2 Means of Egress Requirements.

9–5.3.2.1 General (*none*).

9–5.3.2.2 Types of Exits. (*See 9–2.2.*)

9–5.3.2.2.1 Stairs.

(a) Exit stairs shall be enclosed in accordance with 9–3.1.2.

(b) There shall be no enclosed usable space under stairs in an exit enclosure nor shall the open space within the enclosure either under or adjacent to the stairs be used for any purpose.

9–5.3.2.2.2 Areas of Refuge. In buildings over 5 stories above ground level, areas of refuge shall be provided for occupants of child day care centers, either by smokeproof towers or horizontal exits.

9–5.3.2.3 Capacity of Means of Egress. (*See 9–2.3.*)

9–5.3.2.4 Number of Exits.

9–5.3.2.4.1 Each floor occupied by children shall have not less than two remote exits.

9–5.3.2.4.2 When the story below the exit discharge is used (*see 9–5.3.1.1.6*), the following conditions shall be met:

(a) For up to 30 children there shall be two remote exits. One exit shall discharge directly outside and the vertical travel to ground level shall not exceed 8 feet. There shall be no unprotected opening into the enclosure of the second exit.

(b) For over 30 children a minimum of two exits shall be provided directly outside with one of the two exiting at ground level.

Exception No. 1: The exit directly to ground level is not required if the exits are protected in accordance with 5–1.3 except that there shall be no openings into the exit other than for ingress and egress. Smoke detectors shall be provided in that story and the story of discharge.

Exception No. 2: The exit directly to ground level is not required if one exit complies with Exception No. 1 and sprinklers are used in that story and the story of exit discharge.

9–5.3.2.5 Arrangement of Means of Egress. (*When the story below the exit discharge is used, see also 9–5.3.2.4.2.*)

9–5.3.2.6 Measurement of Travel Distance to Exits.

9–5.3.2.6.1 Travel distance shall be measured in accordance with 5–6.

9–5.3.2.6.2 Travel distance (a) between any room door intended as exit access and an exit shall not exceed 100 feet; (b) between any point in a room and an exit shall not exceed 150 feet; (c) between any point in a sleeping room or suite and an exit access door of that room or suite shall not exceed 50 feet.

Exception: The travel distance in (a) and (b) above may be increased by 50 feet in buildings completely equipped with an automatic fire extinguishing system in accordance with 6–4.

9–5.3.2.6.3 The travel distance to exits in open plan centers for children 3 years of age and older shall be in accordance with 9–5.2.2.2 for open plan schools.

9–5.3.2.7 Discharge from Exits. (*When the story below the exit discharge is used, see also 9–5.3.2.4.2.*) All such exits shall discharge directly to the outside.

9–5.3.2.8 Doors, Locks.

9–5.3.2.8.1 Doors in means of egress shall swing in the direction of exit travel and shall meet the requirements of 9–2.8.2 or 9–2.8.3.

Exception: Doors from an existing center to an exit access in apartment buildings.

9–5.3.2.8.2 Every closet door latch shall be such that children can open the door from inside the closet.

9–5.3.2.8.3 Every bathroom door lock shall be designed to permit opening of the locked door from the outside in an emergency, and the opening device shall be readily accessible to the staff.

9–5.3.2.9 Illumination of Means of Egress. If the facility is used after daylight hours, it shall comply with 5–8.

9–5.3.2.10 Emergency Lighting. Means of egress in each day care center shall be provided with emergency lighting, in accordance with 5–9.

9–5.3.2.11 Marking of Means of Egress. (*No additional special requirements.*) (*See 5–10.*)

9–5.3.3 Protection.

9–5.3.3.1 Protection of Vertical Openings. Any vertical opening in centers shall be enclosed and protected in accordance with Section 6–1.

9–5.3.3.2 Interior Finish.

9–5.3.3.2.1 In centers for children 5 years old or less, interior finish for all walls and ceilings shall be Class A or Class B in accordance with Section 6–2 and floors shall be Class A, B or C. In new construction, interior finish in means of egress shall be Class A and floors in means of egress shall be Class A or Class B.

Exception: Tongue and groove wood flooring over ½-inch thick may be permitted.

9–5.3.3.2.2 In centers for children 6 years of age or older, interior finish for means of egress shall be Class A or Class B and for individual rooms Class A, B or C. Floors shall be Class A, B or C.

9–5.3.3.2.3 Decorations and furnishings shall be in accordance with Chapter 17.

9–5.3.3.3 Detection/Alarm Systems.

9–5.3.3.3.1 There shall be a manually operated fire alarm system on each floor of the center. In centers with more than 100 children, the fire alarm system shall be installed to transmit an alarm by the most direct and reliable method approved by local regulations to the fire department that is legally committed to serve the area in which the center is located.

9–5.3.3.3.2 Smoke detectors shall be installed on the ceiling of each story in front of the doors to the stairways and at no greater than 30 feet spacing in the corridors of all floors containing the center. Detectors shall also be installed in lounges and recreation areas in centers. The detectors may be single station units with an integral alarm having a decibel rating of at least 85.

Exception No. 1: Detectors are not required in fully automatic sprinklered buildings.

Exception No. 2: Detectors are not required in centers housing children 6 years of age and older, if no sleeping facilities are provided.

9–5.3.3.4 Extinguishment Requirements.

9–5.3.3.4.1 Portable fire extinguishers suitable for Class B fires shall be installed in kitchens and cooking areas, and extinguishers suitable for Class A fires shall be installed throughout the remainder of the center. (*See 6–4.*)

9–5.3.3.4.2 Standpipes for fire department use shall be installed in all buildings of 6 stories or more housing child day care centers.

9–5.3.3.5 Protection from Hazards. An area used for general storage, boiler or furnace rooms, fuel storage, janitor's closets, maintenance shops including woodworking and painting areas, laundries and kitchens, shall be separated from other parts of the building with construction having not less than a 1-hour fire resistance rating and all openings shall be protected with self-closing fire doors, or such area shall be provided with automatic sprinkler protection. Where the hazard is severe, both the fire-resistive separation and automatic sprinklers shall be provided.

9–5.3.3.6 Minimum Construction Standards.

9–5.3.3.6.1 Centers shall not be located above the heights indicated for the types of construction given in the following table.

9–5.3.3.6.2 Subdivision into Compartments.

(a) Sleeping areas in centers housing children under 3 years of age shall be compartmented with partitions having a ¾-hour fire resistance rating so there are not more than 6 children in each compartment.

(b) Compartment doors shall be not less than 3 feet wide in new construction and not less than 32 inches wide in existing buildings. Doors and frames shall have a 20-minute fire protection rating and shall be equipped with a self-closing device, a latch and an automatic hold-open device as specified in 10–2.2.8.4.

9–5.3.4 Building Services.

9–5.3.4.1 Electrical Services.

9–5.3.4.1.1 Electrical wiring in new construction shall be installed in accordance with Chapter 7.

TABLE 9–5.3.3.6 HEIGHT AND CONSTRUCTION LIMITS

Type of Construction	*Age Group*	*Number of Stories (Stories are counted starting at floor of exit discharge)* 1	2	3	4 and over
Fire Resistive and Protected Noncombustible	0 to 3	X	X	X	X
	3 thru 5	X	X	X	X
	6 and older	X	X	X	X
Protected Wood Frame and Protected Ordinary	0 to 3	X	See Note 1	Not Permitted	
	3 thru 5	X	X	See Note 1	
	6 and older	X	X	See Note 1	
Heavy Timber	0 to 3	X	See Note 1		
	3 thru 5	X	See Note 1		
	6 and older	X	See Note 1		
Unprotected Noncombustible	0 to 3	X	See Note 1		
	3 thru 5	X	See Note 1		
	6 and older	X	See Note 1		
Unprotected Wood Frame and Unprotected Ordinary	0 to 3	Not Permitted			
	3 thru 5	See Note 2			
	6 and older	See Note 2			

NOTE 1: Permitted if entire building is equipped with an automatic fire extinguishing system.

NOTE 2: May be permitted for children 3 years of age and older if the children are limited to the first floor and number of children is limited to 50 and there are two remote exits; or if they are limited to the first floor and the number of children is limited to 100 and each room has an exit directly to the outside.

9–5.3.4.1.2* In existing buildings, the electrical wiring shall be sized to provide for the load. Receptacles and outlets serviced by extension cord type wiring are prohibited. Electrical appliances shall be grounded in accordance with the *National Electrical Code*, NFPA 70. (*See Appendix B.*)

9–5.3.4.1.3 Special protective receptacle covers shall be installed in all areas occupied by children in centers for children under 5 years of age.

9–5.3.4.2 Air Conditioning, Ventilating, Heating, Cooking, and Other Service Equipment. Air conditioning, ventilating, heating, cooking, and other service equipment shall be in accordance with Chapter 7.

9–5.4 Group Day Care Homes.

9–5.4.1. General Requirements.

9–5.4.1.1* General.

9–5.4.1.1.1 This section establishes life safety requirements for group day care homes, in which at least 7 but not more than 12 children receive care, maintenance and supervision by other than their parent(s) or legal guardian(s) for 24 hours per day or less (generally within a dwelling unit).

9–5.4.1.1.2 The text principally applies to centers for children under 3 years of age. Variations for centers housing children 3 years of age and older are indicated.

9–5.4.1.1.3 Where a facility houses more than one age group, the requirements for the younger age group shall apply, unless the area housing the younger children is maintained as a separate fire area.

9–5.4.1.1.4 Mixed Occupancies.

(a) When a group home is located in a building containing mixed occupancies, the separation requirements of the locally applicable building code or, if none exists, a nationally recognized model code, shall be satisfied.

(b) **Homes in Apartment Buildings.**

(i) If the two exit accesses from the home enter the same corridor, as in an apartment building, the exit accesses shall be separated in the corridor by a smoke partition having not less than a 1-hour fire resistance rating. The smoke partition shall be so located that there is an exit on each side of it.

(ii) The door in the smoke partition shall be not less than 36 inches wide.

Exception: Existing doors not less than 32 inches wide may be accepted.

(iii) The doors and frames in the smoke partition shall have a fire protection rating of at least 20 minutes and shall be equipped with a self-closing device, a latch and an automatic hold-open device as specified in 5–2.1.2.3.

9–5.4.1.2 Special Definitions (*none*).

9–5.4.1.3 Classification of Occupancy. For purposes of this section, children are classified in age groups as follows: children under 3 years of age, children from 3 through 5 years of age, and children 6 years of age and older.

9–5.4.1.4 Classification of Hazard of Contents. (*Not specifically classified.*)

9–5.4.1.5 Occupant Load. (*No special requirements.*)

9–5.4.2 Means of Egress Requirements.

9–5.4.2.1 General (*none*).

9–5.4.2.2 Types of Exits. (*See 9–5.4.2.4.*)

9–5.4.2.3 Capacity of Means of Egress. (*See 9–2.3.*)

9–5.4.2.4 Number of Exits.

9–5.4.2.4.1 Each floor occupied by children shall have not less than two remote means of egress.

9–5.4.2.4.2 Where spaces on the floor above the floor of exit discharge are used for sleeping purposes by children, at least one exit shall lead directly, or through an enclosed stairway, to the outside.

9–5.4.2.4.3 Where children are located on a story below the level of exit discharge (basement) at least one exit directly to the outside at ground level shall be provided. No facility shall be located more than one story below the ground. Any stairway to the story above shall be cut off by a fire barrier containing a door of at least a 20-minute fire protection rating, equipped with a self-closing device and a latch.

9–5.4.2.5 Arrangement of Means of Egress. (*When a story above or below the exit discharge is used, see 9–5.4.2.4.*)

9–5.4.2.6 Measurement of Travel Distance to Exits. (*See 9–2.6.*)

9–5.4.2.7 Discharge from Exits. (*When the story above or below the exit discharge is used, see 9–5.4.2.4.*)

9–5.4.2.8 Doors, Locks.

9–5.4.2.8.1 Every closet door latch shall be such that children can open the door from inside the closet.

9–5.4.2.8.2 Every bathroom door lock shall be designed to permit open- of the locked door from outside in an emergency, and the opening device shall be readily accessible to the staff.

9–5.4.2.9 Illumination and Marking of Means of Egress. (*See 9–5.3.2.9 and 9–5.3.2.11.*)

9–5.4.3 Protection.

9–5.4.3.1 Protection of Vertical Openings. The doorway between the floor of exit discharge and any floor below shall be equipped with a self-closing door plus frame and hardware all of at least a 20-minute fire protection rating. Where the floor above the floor of exit discharge is used for sleeping purposes, there shall be a self-closing door plus frame and hardware all of at least 20-minute fire protection rating at the top or bottom of each stairway.

Exception: Existing self-closing 1¾-inch solid bonded wood core doors without rated frames may be accepted by the authority having jurisdiction.

9–5.4.3.2 Interior Finish.

9–5.4.3.2.1 Interior finish in occupied spaces in the home shall be Class A, B or C, in accordance with Section 6–2.

9–5.4.3.2.2 The interior finish in means of egress shall be Class A or B.

9–5.4.3.3 Detection Systems. Where the floor above the floor of exit discharge is used for sleeping purposes there shall be a smoke detector at the top of the stairs in a building 3 stories or less in height or inside the dwelling unit used as a day care facility in a multiple-dwelling building.

9–5.4.3.4 Extinguishers. A portable fire extinguisher suitable for Class B fires shall be provided for the kitchen and cooking areas.

9–5.4.3.5 Minimum Construction Standards. Each building used as a group day care home shall meet the local minimum housing code and fire prevention code for the applicable class of residential construction, or if none exists, a nationally recognized model code.

9–5.4.4 Building Services.

9–5.4.4.1 Electrical Services.

9–5.4.4.1.1 Electrical wiring in new construction shall be installed in accordance with Chapter 7.

9–5.4.4.1.2* In existing buildings the electrical wiring shall be sized to provide for the load. Electrical appliances shall be grounded in accordance with *National Electrical Code*, NFPA 70. (*See Appendix B.*) Receptacles and outlets serviced by extension cord-type wiring are prohibited.

9–5.4.4.1.3 Special protective receptacle covers shall be installed in all areas occupied by children in homes for children under 5 years of age.

9–5.4.4.2 Heating Equipment.

9–5.4.4.2.1 Any heaters in spaces occupied by children shall be separated from the space by partitions, screens or other means.

9–5.4.4.2.2 If solid partions are used to provide the separation required in 9–5.4.4.2.1, provision shall be made to assure adequate air for combustion and ventilation for the heating equipment.

9–5.5* Family Child Day Care Homes.

9–5.5.1 General Requirements.

9–5.5.1.1 General.

9–5.5.1.1.1 This section establishes life safety requirements for licensed family child day care homes, in which fewer than seven children receive care, maintenance and supervision by other than their parent(s) or legal guardian(s) for less than 24 hours per day (usually a dwelling unit).

9–5.5.1.1.2 The text principally applies to centers for children under 3 years of age. Variations for centers housing children 3 years of age and older are indicated.

9–5.5.1.1.3 Where a facility houses more than one age group, the requirements for the younger children shall apply, unless the area housing the younger children is maintained as a separate fire area.

9–5.5.1.1.4 Mixed Occupancies. Where family child day care homes are located in a building containing mixed occupancies, the separation requirements of the locally applicable building code or, if none exists, a nationally recognized model code, shall be satisfied.

9–5.5.1.2 Special Definitions (*none*).

9–5.5.1.3 Classification of Occupancies. For the purposes of this section, children are classified in age groups, as follows: children under 3 years of age, children from 3 through 5 years of age, and children 6 years of age and older.

9–5.5.1.4 Classification of Hazard of Contents. (*Not specifically classified.*)

9–5.5.1.5 Occupant Load. (*No special requirements.*)

9–5.5.2 Means of Egress Requirements.

9–5.5.2.1 General (*none*).

9–5.5.2.2 Types of Exits. (*See 9–5.5.2.4.*)

9–5.5.2.3 Capacity of Means of Egress. (*See 9–2.3.*)

9–5.5.2.4 Number of Exits.

9–5.5.2.4.1 In a one- or two-family dwelling or building of unprotected wood frame construction used for child care purposes, every room used for sleeping, living, or dining purposes shall have at least two means of egress, at least one of which shall be a door or stairway providing a means of unobstructed travel to the outside of the building at street or ground level. No room or space shall be occupied for living or sleeping purposes which is accessible only by a ladder, folding stairs or through a trap door.

9–5.5.2.4.2 Where children are located on a floor (basement) below the floor of exit discharge, at least one exit shall be provided directly to the outside at ground level. No facility shall be located more than one story below the ground.

9–5.5.2.4.3 Stairs. Every stairway shall comply at least with the minimum requirements for Class B stairs, as described in 5–2.2, in respect to width, risers, and treads and shall be maintained free of items of storage.

9–5.5.2.5 Arrangement of Means of Egress. (*See 9–5.5.2.4.*)

9–5.5.2.6 Measurement of Travel Distance to Exits. (*See 9–2.6.*)

9–5.5.2.7 Discharge from Exits. (*See 9–5.5.2.4.*)

9–5.5.2.8 Doors, Locks.

9–5.5.2.8.1 Each door in a means of egress shall be not less than 24 inches wide.

9–5.5.2.8.2 Every closet door latch shall be such that children can open the door from inside the closet.

9–5.5.2.8.3 Every bathroom door lock shall be designed to permit the opening of the locked door from the outside in an emergency and the opening device shall be readily accessible to the staff.

9–5.5.2.9 Illumination and Marking of Means of Egress. (*See 9–5.3.2.9 and 9–5.3.2.11.*)

9–5.5.3 Protection.

9–5.5.3.1 Protection of Vertical Openings. (*No additional special provisions.*)

9–5.5.3.2 Interior Finish.

9–5.5.3.2.1 Interior finish in occupied spaces in the home shall be Class A, B or C, in accordance with Section 6–2.

9–5.5.3.2.2 The interior finish in means of egress and in rooms into which exits discharge shall be Class A or B.

9–5.5.3.3 Detection Systems. Where the floor above the floor of exit discharge is used for sleeping purposes there shall be a smoke detector at the top of the stairs in a building 3 stories or less with open stairways; or inside the dwelling unit used as a day care facility in a multiple dwelling.

9–5.5.3.4 Extinguishers. A portable fire extinguisher suitable for Class B fires shall be provided for the kitchen and cooking areas.

9–5.5.3.5 Minimum Construction Standards. Each building used as a family child day care home shall meet the local minimum housing code and fire prevention code for the applicable class of residential construction or, if none exists, a nationally recognized model code.

9–5.5.4 Building Services.

9–5.5.4.1 Electrical Services.

9–5.5.4.1.1 Electrical wiring in new construction shall be installed in accordance with Chapter 7.

9–5.5.4.1.2* In existing buildings, the electrical wiring shall be sized to provide for the load. Electrical appliances shall be grounded in accordance with *The National Electrical Code*, NFPA 70. (*See Appendix B.*)

Receptacles and outlets serviced by extension cord-type wiring are prohibited.

9–5.5.4.1.3 Special protective receptacle covers shall be installed in all areas occupied by children in homes for children under 5 years of age.

9–5.5.4.2 Heating Equipment.

9–5.5.4.2.1 Unvented room heaters shall not be permitted. Oil and gas fired room heaters shall be installed in accordance with the applicable standards listed in Appendix B. A guard shall be provided to protect the children from hot surfaces and open flames.

9–5.5.4.2.2 No stove or combustion heater shall be so located as to block escape in case of malfunctioning of the stove or heater.

CHAPTER 10 HEALTH CARE AND PENAL OCCUPANCIES

(Formerly known as Institutional Occupancies)

SECTION 10–1 GENERAL REQUIREMENTS

10–1.1 General.

10–1.1.1 Application.

10–1.1.1.1 Health care facilities are those used for purposes such as medical or other treatment or care of persons suffering from physical or mental illness, disease or infirmity; for the care of infants, convalescents or aged persons.

10–1.1.1.2 Penal facilities are those used for penal or corrective purposes where occupants are housed under some degree of restraint or security.

10–1.1.1.3 Health care and penal facilities provide sleeping facilities for the occupants and are occupied by persons who are mostly incapable of self-preservation because of age, physical or mental disability, or because of security measures not under the occupants' control.

10–1.1.1.4 Buildings or sections of buildings which house, or in which care is rendered to mental patients, including the mentally retarded, who are capable of judgment in taking action for self-preservation under emergency conditions, in the opinion of the governing body of the facility and the governmental agency having jurisdiction, may come under other chapters of this *Code* instead of Chapter 10.

10–1.1.1.5 Health care and penal occupancies shall include all buildings or parts thereof with occupancy as described in this chapter.

10–1.1.1.6 It shall be recognized that in buildings housing various types of psychiatric patients, or used as penal facilities, it may be necessary to lock doors and bar windows to confine and protect building inhabitants. In such instances, the authority having jurisdiction shall make appropriate modifications to those sections of this *Code* which would otherwise require the keeping of exits unlocked.

10–1.1.1.7 It shall be also recognized that some psychiatric patients are not capable of seeking safety without guidance.

10–1.1.1.8 In buildings in which doors are locked or windows are barred, provisions shall be made for the rapid removal of occupants by such reliable means as the remote control of locks or by keying all locks to keys readily available to guards or attendants.

10–1.1.2 Total Concept. All health care and penal facilities shall be so designed, constructed, maintained, and operated as to minimize the possibility of a fire emergency requiring the evacuation of occupants. Because

the safety of occupants of health care and penal facilities cannot be assured adequately by dependence on evacuation of the building, their protection from fire shall be provided by appropriate arrangement of facilities, adequate staffing, and careful development of operating and maintenance procedures composed of the following:

(a) Proper design, construction, and compartmentation;

(b) Provision for detection, alarm, and extinguishment; and

(c) Fire prevention and the planning, training, and drilling in programs for the isolation of fire, transfer of occupants to areas of refuge or evacuation of the building.

10–1.1.3 Additions.

10–1.1.3.1 Any fire resistive or protected non-combustible addition shall be separated from any existing structure not conforming to the provisions within Section 10–3 by a noncombustible or limited-combustible fire partition having at least a two-hour fire resistance rating. All other additions shall be separated from any existing structure not conforming to the provisions within Section 10–3 by a fire partition having at least a two-hour fire resistance rating.

10–1.1.3.2 Communicating openings in dividing fire partitions required by 10–1.1.3.1 shall occur only in corridors and shall be protected by approved self-closing fire doors. (*Also see 6–6.*)

10–1.1.3.3 Doors in partitions required by 10–1.1.3.1 shall normally be kept closed.

Exception: Doors may be held open only if they meet the requirements of 10–2.2.8.4.

10–1.1.3.4 Doors serving as required exits shall swing with exit traffic.

10–1.1.4 Conversions. An existing building may be converted to a hospital, nursing home, or residential-custodial care institution only if it complies with all requirements for new institutional buildings. (*See Section 10–2.*)

10–1.1.5 Modernization or Renovation. No construction in either modernization or renovation projects shall diminish the fire safety features of the facility below the level of new construction as described elsewhere in this *Code*. Alterations or installations of new building services equipment shall be accomplished as nearly as possible in conformance with the requirements for new construction.

10–1.1.6 Construction Operations. See Section 1–5.4 and Chapter 17 for life safety provisions during construction.

10–1.2 Special Definitions.

(a) Hospital. A building or part thereof used for the medical, psychiatric, obstetrical or surgical care, on a 24-hour basis of 4 or more inpatients.

Hospital, wherever used in this *Code*, shall include general hospitals, mental hospitals, tuberculosis hospitals, children's hospitals, and any such facilities providing inpatient care.

(b) Nursing Home. A building or part thereof used for the lodging, boarding and nursing care, on a 24-hour basis, of 4 or more persons who, because of mental or physical incapacity, may be unable to provide for their own needs and safety without the assistance of another person. Nursing home, wherever used in this *Code*, shall include nursing and convalescent homes, skilled nursing facilities, intermediate care facilities, and infirmaries of homes for the aged.

(c) Residential-Custodial Care Facility. A building, or part thereof, used for the lodging or boarding of 4 or more persons who are incapable of self-preservation because of age, or physical or mental limitation. This includes facilities such as homes for the aged, nurseries (custodial care for children under 6 years of age), and mentally retarded care institutions. Day care facilities that do not provide lodging or boarding for institutional occupants are not covered in this section of the *Code*.

(d) Residential-Restrained Care Institution. A building, or part thereof, used to house occupants under some degree of restraint or security.

10–1.3 Classification of Occupancy. (*See 4–1.4 and 4–1.5.*)

10–1.3.1 Health care occupancies comprise two groups: Groups (a) and (b) which are treated together in Chapter 10. Penal occupancies comprise one group: Group (c) which is considered separately in Section 10–4.

(a) Health Care Facilities (hospitals and nursing homes).

(b) Residential-Custodial Care (nurseries, homes for the aged, mentally retarded care institutions, etc.).

(c) Residential-Restrained Care (penal institutions, reformatories, jails, etc.). (*See Section 10–4.*)

10–1.3.2 Mixed Occupancies.

10–1.3.2.1* Sections of health care or penal facilities may be classified as other occupancies if they meet all of the following conditions:

(a) They are not intended to serve health care or penal occupants for purposes of housing, treatment, customary access, or means of egress.

(b) They are adequately separated from areas of health care or penal occupancies by construction having a fire resistance rating of at least two hours.

10–1.3.2.2 Ambulatory care, medical clinics and similar facilities which are contiguous to health care occupancies but are primarily intended to provide outpatient services may be classified as office occupancy provided that all of the following conditions are met:

(a) Such facilities are separated from health care occupancies by not less than two-hour fire-resistive construction.

(b) The required means of egress for the health care occupancy be separate from and not through the office occupancy.

(c) That access for treatment, examination or consultation for bedridden or litter borne health care patients be prohibited in the office occupancy.

(d) That procedures requiring general anesthesia be prohibited in the office occupancy.

10–1.3.2.3 Health care or penal occupancies in buildings housing other occupancies shall be completely separated from them by construction having a fire resistance rating of at least two hours as provided for additions in 10–1.1.3.1.

10–1.3.2.4 All means of egress from health care or penal occupancies that traverse nonhealth care or nonpenal spaces shall conform to requirements of this *Code* for health care or penal occupancies.

10–1.3.2.5* Auditoriums, chapels, staff residential areas or other occupancies provided in connection with health care or penal facilities shall have exits provided in accordance with other applicable sections of this *Code*.

10–1.3.2.6 Any area with a hazard of contents classified higher than that of the health care or penal occupancy and located in the same building shall be protected as required in Section 10–2.3.5.

10–1.3.2.7 Nonhealth care related occupancies classified as containing high-hazard contents shall not be permitted in buildings housing health care or penal occupancies.

10–1.4 Classification of Hazard of Contents. The classification of hazard of contents shall be as defined in 4–2.

10–1.5 Occupant Load. The occupant load for which means of egress shall be provided for any floor shall be the maximum number of persons intended to occupy that floor, but not less than 1 person for each 120 square feet gross floor area in health care or penal sleeping departments and not less than 1 person for each 240 square feet of gross floor area of inpatient health care treatment departments. Gross floor areas shall be measured within the exterior building walls with no deductions. (*See Chapter 3.*)

SECTION 10–2 NEW HEALTH CARE OCCUPANCIES

10–2.1 General Requirements.

10-2.1.1 General.

10–2.1.1.1 New facilities shall comply with the provisions of both Section 10–1 and (this) Section 10–2. (*See Chapter 17 for operating features.*)

10–2.1.1.2 Application. This section establishes life safety requirements for the design of all new hospitals, nursing homes, and residential-custodial care facilities. Where requirements vary, the specific occupancy, such as hospital, nursing home, nursery, residential-custodial care facility, home for the aged, or mentally retarded care facility, is named in the paragraph pertaining thereto.

10–2.1.2 Special Definitions. (*See 10–1.2.*)

10–2.1.3 Classification of Occupancy. (*See 10–1.3.*)

10–2.1.4 Classification of Hazard of Contents. (*See 10–1.4.*)

10–2.1.5 Occupant Load. (*See 10–1.5.*)

10–2.2 Means of Egress Requirements.

10–2.2.1 General. Every aisle, passageway, corridor, exit discharge, exit location and access shall be in accordance with Chapter 5.

Exception: As modified in the following paragraphs.

10–2.2.2* Types of Exits. Exits shall be restricted to the permissible types described in 10–2.2.2.1 through 10–2.2.2.7.

10–2.2.2.1 Doors Leading Directly Outside the Building. (*See Section 5–2.1.*)

10–2.2.2.2 Class A Interior Stairs. (*See Section 5–2.2.*)

10–2.2.2.3 Smokeproof Towers. (*See Section 5–2.3.*)

10–2.2.2.4 Outside Stairs. (*See Section 5–2.5.*)

10–2.2.2.5* Horizontal Exits. A horizontal exit shall be in conformance with Section 5–2.4, modified as below.

(a) At least 30 net square feet per occupant in a hospital or nursing home or 15 net square feet per occupant in a residential-custodial care facility shall be provided on each side of the horizontal exit for the total number of occupants in adjoining compartments.

(b) A single door may be used as a horizontal exit if it serves one direction only and is at least 44 inches wide.

Exception: A door a minimum of 36 inches wide may be provided within residential-custodial care facilities.

(c) A horizontal exit in a hospital or nursing home in a corridor 8 feet or more in width serving as a means of egress from both sides of the doorway shall have the opening protected by a pair of swinging doors, arranged to swing in the opposite direction from the other, with each door being at least 44 inches wide.

(d) A horizontal exit in a residential-custodial care facility in a corridor 6 feet or more in width serving as a means of egress from both sides of the

doorway shall have the opening protected by a pair of swinging doors, arranged to swing in the opposite direction from each other, with each door being at least 32 inches wide.

(e) An approved vision panel is required in each horizontal exit door. Center mullions are prohibited.

(f) For institutional occupancies, the total exit capacity of the other exits (stairs, ramps, doors leading outside the building) shall not be reduced below ⅓ that required for the entire area of the building.

10–2.2.2.6 Class A Ramps. (*See Section 5–2.6.*) Ramps shall not exceed 6 feet in vertical dimension between top and bottom floor elevations. Ramp width shall be as specified in 10–2.2.5.2.

Exception: A Class B ramp may be used where the height of the ramp is 1 foot or less.

10–2.2.2.7 Exit Passageways. (*See Section 5–2.7.*)

10–2.2.2.8 Revolving Doors. Revolving doors shall not be counted as required exits and shall be installed only as specifically stated in Section 5–2.1.3.2.

10–2.2.2.9 Elevators. Elevators constitute a supplementary facility, but shall not be counted as required exits. (*Also see 7–3.*)

10–2.2.2.10 For doors in horizontal exits and smoke partitions, see 5–2.1, 6–6, 10–2.2.2.5, and 10–2.3.6.6.

10–2.2.3 Capacity of Means of Egress. (*See also 10–2.2.5.2 and 10–2.2.5.3.*)

10–2.2.3.1* The capacity of any required means of egress shall be based on its width as defined in 5–3

10–2.2.3.2 The capacity of means of egress providing travel by means of stairs shall be 22 persons per exit unit; and means of egress providing horizontal travel (without stairs) such as doors or horizontal exits, shall be 30 persons per exit unit.

Exception: The capacity of means of egress in Health Care Occupancies equipped throughout with an approved automatic fire extinguishing system may be increased to 35 persons per exit unit for travel by means of stairs, and to 45 persons per exit unit for horizontal travel without stairs.

10-2.2.4 Number of Exits.

10-2.2.4.1 At least 2 exits of the types described in 10–2.2.2.1 thru 10–2.2.2.7, located remote from each other, shall be provided for each floor or fire section of the building.

10–2.2.4.2 At least one approved exit shall be provided from each required smoke compartment into which patients may be moved in a fire emergency.

10–2.2.4.3 At least 1 exit from each floor or fire section shall be a door leading directly outside the building, interior stair, outside stair, smokeproof tower, ramp or exit passageway.

10–2.2.5 Arrangement of Means of Egress.

10–2.2.5.1 Every patient sleeping room shall have an exit access door leading directly to an exit access corridor.

Exception No. 1: If there is an exit door opening directly to the outside from the room at ground level.

Exception No. 2: One adjacent room, such as a sitting or anteroom, may intervene, if all doors along the means of egress are equipped with nonlockable hardware other than provided in 10–2.2.8, and if the intervening room is not used to serve as an exit access for more than 8 patient sleeping beds.

Exception No. 3: Exception No. 2 above shall apply to special nursing suites permitted in 10–2.2.5.7 without being limited to 8 beds or basinettes.

10–2.2.5.2 Aisles, corridors and ramps required for exit access or exit in a hospital or nursing home shall be at least 8 feet in clear and unobstructed width.

Exception: Corridors and ramps in adjunct areas not intended for the housing, treatment, or use of inpatients, may be a minimum of 6 feet in clear and unobstructed width.

10–2.2.5.3 Aisles, corridors and ramps required for exit access or exit in a residential-custodial care facility shall be at least 6 feet in clear and unobstructed width.

10–2.2.5.4 Any room, and any suite of rooms as permitted in 10–2.2.5.1, of more than 1,000 square feet shall have at least 2 exit access doors remote from each other.

10–2.2.5.5 Any patient sleeping room which complies with the requirements previously set forth in this section may be subdivided with nonfire-rated, noncombustible or limited-combustible partitions, provided that the arrangement allows for direct and constant visual supervision by nursing personnel. Rooms which are so subdivided shall not exceed 5,000 square feet.

10–2.2.5.6 Every corridor shall provide access to at least two approved exits in accordance with Section 5–4. Means of egress shall be in accordance with Section 5–5 without passing through any intervening rooms or spaces other than corridors or lobbies.

10–2.2.5.7 Every exit or exit access shall be so arranged that no corridor or aisle has a pocket or dead end exceeding 30 feet.

10–2.2.6 Measurement of Travel Distance to Exits.

10–2.2.6.1 Travel distance shall be measured in accordance with Section 5–6.

10–2.2.6.2 Travel distance (a) between any room door required as exit access and an exit shall not exceed 100 feet; (b) between any point in a room and an exit shall not exceed 150 feet; (c) between any point in an institutional sleeping room or suite and an exit access door of that room or suite shall not exceed 50 feet.

Exception: The travel distance in (a) *or* (b) *above may be increased by 50 feet in buildings completely equipped with an approved automatic fire extinguishing system.*

10–2.2.7 Discharge from Exits.

10–2.2.7.1 All required ramps or stairs shall discharge directly to the outside at grade or be arranged to travel through an exit passageway discharging to the outside.

10–2.2.8 Doors, Locks.

10–2.2.8.1 Locks installed on patient sleeping room doors shall be so arranged that they can be locked only from the corridor side. All such locks shall be arranged to permit exit from the room by a simple operation without the use of a key.

Exception No. 1: Doors in homes for the aged may be lockable by the occupant, if they can be unlocked from the opposite side and keys are carried by attendants at all times. (*Also see 5–2.1.2.1.1 and 5–2.1.2.1.2.*)

Exception No. 2: Special door locking arrangements in psychiatric and penal facilities are permitted as discussed in 10–1.1.1.6 and 10–1.1.1.8.

10–2.2.8.2 Doors leading directly to the outside of the building may be subject to locking from the room side.

10–2.2.8.3* Exit access doors from hospital and nursing home sleeping rooms; diagnostic and treatment areas, such as X-ray, surgery, or physical therapy; all doors between these spaces and the required exits; and all exit doors serving these spaces shall be at least 44 inches wide. Doors from residential-custodial sleeping rooms and doors from nursery rooms; and doors between these spaces and the required exits; and all exit doors serving these spaces shall be at least 36 inches wide.

Exception No. 1: Exit doors which are so located as not to be subject to use by any institutional occupant may be not less than 30 inches wide.

Exception No. 2: Doors in exit stair enclosures shall be not less than 36 inches wide.

10–2.2.8.4 Any door in an exit enclosure, horizontal exit, a required enclosure of a hazardous area (except boiler rooms, heater rooms, and mechanical equipment rooms) or smoke partition may be held open only by an automatic release device which complies with 5–2.1.2.3. Each of the following systems shall be arranged so as to initiate the closing action of all such doors by zone or throughout the entire facility:

(a) The required manual alarm system (10–2.3.3).

(b) The required and approved automatic smoke detection system

(10–2.3.3.6) or a local device designed to detect smoke on either side of the opening, and

(c) A complete automatic fire extinguishing or complete automatic fire detection system.

10–2.2.9 Illumination of Means of Egress.

10–2.2.9.1* Each health care facility shall be provided with illumination of means of egress in accordance with Section 5–8.

10–2.2.9.2 Illumination for means of egress in hospitals shall be supplied by the Life Safety Branch of the hospital electrical system as described in Chapter 3, NFPA 76A, *Standard for Essential Electrical Systems for Health Care Facilities.* (*See Appendix B and 10–2.4.1.*)

10–2.2.10 Emergency Lighting.

10–2.2.10.1* Each health care facility shall be provided with emergency lighting in accordance with Section 5–9.

10–2.2.10.2 Emergency lighting for hospitals shall be supplied by the Life Safety Branch of the hospital electrical system as described in NFPA 76A, *Standard for Essential Electrical Systems for Health Care Facilities.* (*See Appendix B and 10.2.4.1.*)

10–2.2.11 Marking of Means of Egress.

10–2.2.11.1* Each health care facility shall be provided with exit markings in accordance with Section 5–10.

10–2.2.11.2 Illumination of required exit and directional signs in hospitals shall be supplied by the Life Safety Branch of the hospital electrical system as described in NFPA 76A, *Standard for Essential Electrical Systems for Health Care Facilities.* (*See Appendix B and 10–2.4.1.*)

10–2.3 Protection.

10–2.3.1 Protection of Vertical Openings.

10–2.3.1.1 Any stairway, ramp, elevator hoistway, light or ventilation shaft, chute and other vertical opening between stories shall be enclosed in accordance with 6–1.1.1, 6–1.1.3, and 6–1.1.4 with construction having a 2-hour fire resistance rating.

Exception No. 1: One-hour rated enclosures are permitted in buildings required to be of one-hour construction.

Exception No. 2: Stairs that do not connect to a corridor, do not connect more than two levels, and do not serve as a means of egress need not comply with these regulations.

Exception No. 3: The fire resistance rating of enclosures in health care occupancies equipped throughout with an approved automatic extinguishing

system may be reduced to one hour in buildings up to, and including, three stories in height.

Exception No. 4: Duct penetrations of floor assemblies which are protected in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems.

10–2.3.1.2 A door in a stair enclosure shall be self-closing, shall normally be kept in a closed position, and shall be marked in accordance with 5–10.4.2.

10–2.3.2 Interior Finish.

10–2.3.2.1 Interior finish of walls and ceilings in means of egress and of any room shall be Class A in accordance with Section 6–2.

Exception No. 1: Walls and ceilings may have Class A or B interior finish in individual rooms of not over four persons in capacity.

Exception No. 2: The provisions of Section 6–2, permitting a class of interior finish with a higher flamespread in buildings with automatic extinguishing systems, shall not apply to health care occupancies.

10–2.3.2.2 Floor finish material shall be Class A or B throughout all hospitals, nursing homes and residential-custodial care facilities.

Exception No. 1: The provisions of Section 6–2, permitting a class of interior finish with a higher flamespread in buildings with automatic extinguishing systems, shall not apply to floor finish material in health care occupancies.

Exception No. 2: Tongue and groove wood flooring, one-half inch thick or greater, shall be permitted in health care facilities equipped throughout with an approved automatic extinguishing system.

10–2.3.2.3 For fire tests of floor finish materials such as carpet, the assembly tested shall include underlayment when used.

10–2.3.3 Detection, Alarm and Communication Systems.

10–2.3.3.1 Required fire detection and signaling devices and systems shall be in accordance with Section 6–3.

10–2.3.3.2* Every building shall have a manually operated fire alarm system in accordance with Section 6–3, and such system shall be electrically supervised.

10–2.3.3.3 Operation of any fire alarm activating device shall automatically, without delay, accomplish general alarm indication and control functions. Zoned, coded systems shall be permitted to be used.

10–2.3.3.4* The fire alarm system shall be arranged to transmit an alarm automatically to the fire department legally committed to serve the area in which the health care facility is located, by the most direct and reliable method approved by local regulations.

10–2.3.3.5 Internal audible alarm devices shall be provided and shall be installed in accordance with Section 6–3.

10–2.3.3.6 An approved automatic smoke detection system shall be installed in all corridors of new nursing homes and new residential-custodial care facilities. Such systems shall be installed in accordance with 6–3 and with the applicable standards listed in Appendix B, but in no case shall smoke detectors be spaced further apart than 30 feet on centers or more than 15 feet from any wall. All automatic smoke detection systems required by this section shall be electrically interconnected to the fire alarm system.

Exception: Where each patient sleeping room is protected by such an approved detection system and a local detector is provided at the smoke partition and horizontal exits, such corridor systems will not be required on the patient sleeping room floors.

10–2.3.3.7 Any fire detection device or system required by this section shall be electrically interconnected with the fire alarm system.

10–2.3.3.8 Any alarm system(s) and any detection system(s) required in any health care occupancy shall be provided with an alternative power supply in accordance with NFPA 72A, *Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems.* (*See Appendix B.*)

10–2.3.4 Extinguishment Systems.

10–2.3.4.1* Complete, approved automatic fire extinguishing protection shall be provided throughout all health care facilities. (*See 10–2.3.6 for construction types permitted.*)

Exception: Buildings of fire-resistive construction of any height or protected noncombustible construction not over 1 story in height.

10–2.3.4.2 Where exceptions are stated in the provisions of this *Code* for health care occupancies equipped throughout with an approved automatic extinguishing system, and where such systems are required, the systems shall be in complete accordance with Section 6–4 for systems in light hazard occupancies and shall be electrically interconnected with the fire alarm system.

10–2.3.4.3 The main sprinkler control valve(s) shall be electrically supervised so that at least a local alarm will sound at a constantly attended location when the valve is closed.

10–2.3.4.4 The sprinkler piping, serving no more than 6 sprinklers for any isolated hazardous area, may be connected directly to a domestic water supply system having a capacity sufficient to provide 0.15 gallons per minute per square foot of floor area throughout the entire enclosed area. An indicating shutoff valve shall be installed in an accessible location between the sprinklers and the connection to the domestic water supply. (*For sprinkler requirements for hazardous areas see 10–2.3.5, and for sprinkler requirements for chutes see 10–2.4.4.*)

10–2.3.4.5 Portable fire extinguishers shall be provided in all health care occupancies in accordance with Section 6–4.4.1.

10–2.3.5 Protection from Hazards.

10–2.3.5.1* Any hazardous area shall be safeguarded in accordance with Section 6–5. Hazardous areas include, but are not restricted to the following. Those areas accompanied by a dagger (†) in the list shall have both fire resistant separation and a complete extinguishment system.

Boiler and heater rooms
Laundries
Kitchens
Repair shops
Handicraft shops
Employee locker rooms
†Soiled linen rooms
†Paint shops
†Rooms or spaces, including repair shops, used for the storage of combustible supplies and equipment in quantities deemed hazardous by the authority having jurisdiction.
†Trash collection rooms
Gift shops

10–2.3.5.2 Laboratories shall be protected in accordance with NFPA *56C, Laboratories in Health-Related Institutions.* (*See Appendix B.*)

10–2.3.5.3 Cooking facilities shall be protected in accordance with 7–2.3.

10–2.3.6* Minimum Construction Requirements.

10–2.3.6.1 For the purpose of 10–2.3.6, stories shall be counted starting at the lowest level of exit discharge.

10–2.3.6.2 Health care buildings of 1 story in height only may be constructed of protected noncombustible construction, fire-resistive construction, protected ordinary construction, protected wood frame construction, heavy timber construction, or unprotected noncombustible construction. All levels below the level of exit discharge shall be separated from the level of exit discharge by at least protected noncombustible construction. (*See 10–2.3.4 for automatic extinguishment requirements.*)

10–2.3.6.3 Health Care buildings 2 stories or more in height shall be of fire-resistive construction.

Exception: Health care buildings up to and including three stories in height may be constructed of protected noncombustible construction if equipped throughout with an approved automatic extinguishing system.

10–2.3.6.4 For construction requirements of enclosures of vertical openings between floors, see 10–2.3.1.1.

10–2.3.6.5* All interior walls and partitions in buildings of fire-resistive and noncombustible construction shall be of noncombustible or limited combustible materials.

10–2.3.6.6* Subdivision of Building Spaces.

10–2.3.6.6.1 Smoke partitions shall be provided, regardless of building construction type, as follows:

(a) To divide every story used by inpatients for sleeping or treatment, or any story having an occupant load of 50 or more persons, into at least two compartments (*see 10–1.5*), and

(b) To limit on any story the maximum area of each smoke compartment to no more than 22,500 square feet, of which neither length nor width shall be no more than 150 ft.

Exception: Protection may be accomplished in conjunction with the provision of horizontal exits.

10–2.3.6.6.2 Smoke partitions shall be provided on stories which are usable but unoccupied.

10–2.3.6.6.3 Any required smoke partition shall be constructed in accordance with 6–6 and shall have a fire resistance rating of at least 1 hour.

10–2.3.6.6.4 At least 30 net square feet per occupant for the total of bed or litter patients shall be provided on each side of the smoke partition. On other stories not housing bed or litter patients at least six net square feet per occupant shall be provided on each side of the smoke partition for the total number of occupants in adjoining compartments.

10–2.3.6.6.5 Corridor openings in smoke partitions shall be protected by a pair of swinging doors, each door to swing in a direction opposite from the other. The minimum door width shall be as follows:

(a) Hospitals and nursing homes: 44 inches.

(b) Residential-custodial care institutions: 32 inches.

10–2.3.6.6.6 Doors in smoke partitions shall comply with 6–6.2.2 and shall be self-closing.

Exception: Doors may be held open only if they meet the requirements of 10–2.2.8.4.

10–2.3.6.6.7 Vision panels of approved transparent wired glass not exceeding 720 square inches in steel frames shall be provided in each door in a smoke partition.

10–2.3.6.6.8* Rabbets, bevels, or astragals are required at the meeting edges, and stops are required on the head and sides of door frames in smoke partitions. Positive latching hardware is not required. Center mullions are prohibited.

10–2.3.6.6.9 An approved damper designed to resist the passage of smoke shall be provided at each point a duct penetrates a smoke partition required by 10–2.3.6.6.1. The damper shall close upon detection of smoke by an approved smoke detector, located within the duct. (*Also see 6–6.*)

Exception: Buildings designed with an engineered smoke control system in accordance with NFPA 90A, Standard for the Installation of Air Con-

ditioning and Ventilating Systems (see Appendix B), need not comply with this requirement.

10–2.3.6.7 Construction of Corridor Walls.

10–2.3.6.7.1* Corridors shall be separated from all other areas by partitions. Such partitions shall be continuous from the floor slab to the underside of the roof or floor slab above, through any concealed spaces such as those above the suspended ceilings, and through interstitial structural and mechanical spaces, and shall have a fire resistance rating of at least one hour.

Exception No. 1: In health care occupancies equipped throughout with an approved automatic extinguishing system, a corridor may be separated from all other areas by non fire rated partitions, and where suspended ceilings are provided, the partitions may be terminated at the suspended ceiling.

Exception No. 2: Corridor partitions may terminate at ceilings which are not an integral part of a floor construction if there exists five feet or more of space between the top of the ceiling subsystem and the bottom of the floor or roof above, provided:

(a) The ceiling meets the conditions of acceptance for ceiling construction specified in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251 (See Appendix B), for a test period of 1 hour or more, and

(b) Corridor partitions form smoke-tight joints with the ceilings (joint filler, if used, must be noncombustible) and,

(c) Each compartment of interstitial space which constitutes a separate smoke area is vented, in case of smoke emergency, to the outside by mechanical means having sufficient capacity to provide at least two air changes per hour, but in no case having a capacity less than 5,000 cfm, and

(d) The interstitial space shall not be used for storage, and

(e) The space shall not be used as a plenum for supply, exhaust or return air except as noted in Paragraph c.

Exception No. 3: Waiting areas on a patient sleeping floor may be open to the corridor, provided:

(a) The area does not exceed 250 square feet, and

(b) The area is located to permit direct supervision by the facility staff, and

(c) The area is equipped with an electrically supervised automatic smoke detection system installed in accordance with 10–2.3.3, and

(d) Not more than one such waiting area is permitted in each smoke compartment.

Exception No. 4: Waiting areas on floors other than institutional sleeping floor may be open to the corridor, provided:

(a) Each area does not exceed 600 square feet, and

(b) The area is located to permit direct supervision by the facility staff, and

(c) The area is arranged not to obstruct any access to required exits, and

(d) The area is equipped with an electrically supervised, automatic smoke detection system installed in accordance with 10–2.3.3.

Exception No. 5: Space for doctors' and nurses' charting, communications, and related clerical areas may be open to the corridor.

10–2.3.6.7.2 Fixed wired glass vision panels shall be permitted in corridor walls provided they do not exceed 1,296 square inches in area and are mounted in approved steel frames.

Exception: There shall be no restrictions in area and fire resistance of glass in buildings fully protected by an approved automatic extinguishing system.

10–2.3.6.7.3 Doors with at least a 20-minute fire protection rating shall be used on openings other than those serving exits or required enclosures of hazardous areas, in accordance with 6–6.3 (*see Chapters 5 and 6*). Doors shall be provided with latches of a type suitable for keeping the door tightly closed and acceptable to the authority having jurisdiction. Fixed wired glass vision panels may be installed in doors, provided such panels do not exceed 720 square inches in area in a 20-minute door or exceed the wired glass area permitted in a labeled door, and are mounted in approved steel frames.

Exception No. 1: In buildings equipped with complete approved automatic extinguishing systems, such doors and frames are not required to have a fire protection rating, but shall be so constructed to resist the passage of smoke.

Exception No. 2: In buildings equipped with complete approved automatic extinguishing systems, there is no restriction on the area of vision panels in such doors and the vision panels do not need to be wired glass.

Exception No. 3: Door closing devices are not required on doors in corridor wall openings other than those serving exits or required enclosures of hazardous areas.

Exception No. 4: Labeled door frames are not required on openings other than those serving exits or required enclosures of hazardous areas, providing the door frames and stops are of steel construction.

10–2.3.6.7.4 Transfer grills, whether protected by fusible link operated dampers or not, shall not be used in these walls or doors.

10–2.3.6.7.5 Firestopping. Each exterior wall of frame construction and interior stud partitions shall be firestopped so as to cut off all concealed draft openings, both horizontal and vertical, between any cellar or basement and the first floor. Such firestopping shall consist of wood at least 2 inches (nominal) thick, or of suitable noncombustible material.

10–2.3.7 Smoke Control.

10–2.3.7.1* Every patient sleeping room shall have an outside window

or outside door arranged and located so that it can be opened from the inside without the use of tools or keys to permit the venting of products of combustion and to permit any occupant to have direct access to fresh air in case of emergency. (*See 10–1.1.1.6 and 10–1.1.1.8 for detention screen requirements.*) The maximum allowable sill height shall not exceed 36 inches above the floor.

Exception No. 1: The window sill in special nursing care areas may be 60 inches above the floor.

Exception No. 2: Rooms intended for occupancy of less than 24 hours, such as those housing obstetrical labor beds, recovery beds, observation beds in the emergency department and newborn nurseries, need not comply with this requirement.

Exception No. 3: Buildings designed with an engineered smoke control system in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems (see Appendix B), need not comply with this requirement.

10–2.4 Building Services.

10–2.4.1 Utilities. (*See 7–1.*) Alarms, emergency communication systems and the illumination of generator set locations shall be as described in the Life Safety Branch of the *National Electrical Code*, NFPA 70 (*see Appendix B*).

10–2.4.2 Heating and Air Conditioning.

10–2.4.2.1 Air conditioning, ventilating, heating, and other service equipment shall be in accordance with Chapter 7 and shall be installed in accordance with the manufacturer's specifications.

Exception: As modified in 10–2.4.2.2. and 10–2.4.2.3 following.

10–2.4.2.2* Portable comfort heating devices are prohibited. Any heating device other than a central heating plant shall be so designed and installed that combustible material will not be ignited by it or its appurtenances. If fuel fired, such heating devices shall be chimney or vent connected, shall take air for combustion directly from outside, and shall be so designed and installed to provide for complete separation of the combustion system from the atmosphere of the occupied area. The heating system shall have safety devices to immediately stop the flow of fuel and shut down the equipment in case of either excessive temperatures or ignition failure.

Exception No. 1: Approved suspended unit heaters may be used in locations other than means of egress and patient sleeping areas, provided such heaters are located high enough to be out of the reach of persons using the area and provided they are equipped with the safety devices called for above.

Exception No. 2: Fireplaces may be installed and used only in areas other than patient sleeping areas, provided that these areas are separated from patient sleeping spaces by construction having a 1-hour fire resistance rating and they comply with NFPA 211, Standard for Chimneys, Fireplaces and Vents (see Appendix B). In addition thereto, the fireplace shall be equipped

with a hearth that shall be raised at least 4 inches, and a heat tempered glass fireplace enclosure guaranteed against breakage up to a temperature of 650° F. If, in the opinion of the authority having jurisdiction, special hazards are present, a lock on the enclosure and other safety precautions may be required.

10–2.4.2.3 Combustion and ventilation air for boiler, incinerator or heater rooms shall be taken directly from and discharged directly to the outside air.

10–2.4.3 Elevators. (*See 10–2.2.2.9 and 7–3.*)

10–2.4.4 Rubbish Chutes, Laundry Chutes, and Incinerators.

10–2.4.4.1 Any rubbish chute or linen chute, including pneumatic rubbish and linen systems, shall be provided with automatic extinguishing protection installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems.* (*See Appendix B and 7–4.*)

10–2.4.4.2 Any trash chute shall discharge into a trash collecting room used for no other purpose and protected in accordance with Section 6–5.

10–2.4.4.3 An incinerator shall not be directly flue-fed nor shall any floor charging chute directly connect with the combustion chamber.

10–2.5 Special Provisions.

10–2.5.1 Windowless Buildings. See Section 16–4 for requirements for windowless buildings.

SECTION 10–3 EXISTING HEALTH CARE OCCUPANCIES

10–3.1 General Requirements.

10–3.1.1 General.

10–3.1.1.1 Existing facilities shall comply with the provisions of both Section 10–1 and (this) Section 10–3. (*See Chapter 17 for operating features.*)

10–3.1.1.2 Application. This section establishes life safety requirements for the design of all existing hospitals, nursing homes, and residential-custodial care facilities. Where requirements vary, the specific occupancy, such as hospital, nursing home, nursery, residential-custodial care facilities, home for the aged, or mentally retarded care institution is named in the paragraph pertaining thereto.

10–3.1.1.3 Modification of Retroactive Provisions.

10–3.1.1.3.1 The requirements of this section may be modified if their application clearly would be impractical in the judgment of the authority having jurisdiction and if the resulting arrangement could be considered as presenting minimum hazard to the life safety of the occupants. The requirements may be modified by the authority having jurisdiction to allow alternative arrangements that will secure as nearly equivalent safety to life from fire as practical; but in no case shall the modification afford less safety than compliance with the corresponding provisions contained in the following part of this *Code*.

10–3.1.1.3.2* A limited but reasonable time shall be allowed for compliance with any part of this section, commensurate with the magnitude of expenditure and the disruption of services.

10–3.1.1.3.3 When alternate protection is installed and accepted, the institution shall be considered as conforming for purposes of this *Code*.

10–3.1.2 Special Definitions. (*See 10–1.2.*)

10–3.1.3 Classification of Occupancy. (*See 10–1.3.*)

10–3.1.4 Classification of Hazard of Contents. (*See 10–1.4.*)

10–3.1.5 Occupant Load. (*See 10–1.5.*)

10–3.2 Means of Egress Requirements.

10–3.2.1 General. Every aisle, passageway, corridor, exit discharge, exit location and access shall be in accordance with Chapter 5.

Exception: As modified in the following paragraphs.

10–3.2.2 Types of Exits. Exits shall be restricted to the permissible types described in 10–3.2.2.1 through 10–3.2.2.7.

10–3.2.2.1 Doors Leading Directly Outside the Building. (*See Section 5–2.1.*)

10–3.2.2.2 Class A or B Interior Stairs. (*See Section 5–2.2.*)

Exception: Any existing interior stair not complying with Section 5–2.2 may be continued in use subject to the approval of the authority having jurisdiction.

10–3.2.2.3 Smokeproof Towers. (*See Section 5–2.3.*)

10–3.2.2.4 Outside Stairs. (*See Section 5–2.5.*)

10–3.2.2.5* Horizontal Exits. A horizontal exit shall be in conformance with Section 5–2.4, modified as below:

(a) At least 30 net square feet per occupant in a hospital or nursing home or 15 net square feet per occupant in a residential-custodial care facility shall be provided on each side of the horizontal exit for the total number of occupants in adjoining compartments.

(b) A door in a horizontal exit is not required to swing with exit travel as specified in 5–2.4.2.3.

(c) For institutional occupancies, the total exit capacity of the other exits (stairs, ramps, doors leading outside the building) shall not be reduced below ⅓ that required for the entire area of the building.

10–3.2.2.6 Class A or B Ramps. (*See Section 5–2.6.*) Ramp width shall be as specified in 10–3.2.5.2.

10–3.2.2.7 Exit Passageways. (*See Section 5–2.7.*)

10–3.2.2.8 Revolving Doors. Revolving doors shall not be counted as required exits and shall be installed only as specifically stated in Section 5–2.1.

10–3.2.2.9 Elevators. Elevators constitute a supplementary facility, but shall not be counted as required exits. (*Also see 7–3.*)

10–3.2.2.10 For doors in horizontal exits and smoke partitions, see 5–2.1, 6–6, 10–3.2.2.5 and 10–3.3.6.6.1.

10–3.2.3 Capacity of Means of Egress. (*See also 10–3.2.5.2.*)

10–3.2.3.1 The capacity of any required means of egress shall be based on its width as defined in 5–3.

10–3.2.3.2 The capacity of means of egress providing travel by means of stairs shall be 22 persons per exit unit; and means of egress providing horizontal travel (without stairs) such as doors or horizontal exits, shall be 30 persons per exit unit.

Exception: The capacity of means of egress in health care occupancies equipped throughout with an approved automatic fire extinguishing system may be increased to 35 persons per exit unit for travel by means of stairs, and to 45 persons per exit unit for horizontal travel without stairs.

10–3.2.4 Number of Exits.

10–3.2.4.1 At least 2 exits of the types described in 10–3.2.2.1 thru 10–3.2.2.7, located remote from each other, shall be provided for each floor or fire section of the building.

10–3.2.4.2 At least 1 exit from each floor or fire section shall be a door leading directly outside the building, interior stair, outside stair, smokeproof tower, ramp, or exit passageway.

10–3.2.5 Arrangement of Means of Egress.

10–3.2.5.1 Every patient sleeping room shall have an exit access door leading directly to an exit access corridor.

Exception No. 1: If there is an exit door opening directly from the room at ground level.

Exception No. 2: One adjacent room, such as a sitting room or anteroom, may intervene, if all doors along the means of egress are equipped with non-lockable hardware other than provided in 10–3.2.8, and if the intervening room is not used to serve as an exit access for more than 8 patient sleeping beds.

Exception No. 3: Exception No. 2 above shall apply to special nursing suites permitted in 10–3.2.5.6 without being limited to 8 beds or basinettes.

10–3.2.5.2 Any required aisle, corridor, or ramp shall be not less than 48 inches in clear width when serving as means of egress from patient sleeping rooms. It shall be so arranged as to avoid any obstructions to the convenient removal of nonambulatory persons carried on stretchers or on mattresses serving as stretchers.

10–3.2.5.3 Any room, and any suite of rooms as permitted in 10–3.2.5.1, of more than 1,000 square feet shall have at least 2 exit access doors remote from each other.

10–3.2.5.4 Every corridor shall provide access to at least two approved means of egress from the building in accordance with 5–4 and 5–5 without passing through any intervening rooms or spaces other than corridors or lobbies. Any patient sleeping room which complies with the requirements previously set forth in this section may be subdivided with non-fire rated, noncombustible or limited-combustible partitions provided that the arrangement allows for direct and constant visual supervision by nursing personnel. Rooms which are so subdivided shall not exceed 5,000 square feet.

10–3.2.5.5* Existing dead-end corridors are undesirable and shall be altered wherever possible so that exits will be accessible in at least 2 different directions from all points in aisles, passageways, and corridors.

10–3.2.6 Measurement of Travel Distance to Exits.

10–3.2.6.1 Travel distance shall be measured in accordance with 5–6.

10–3.2.6.2 Travel distance (a) between any room door required as exit access and an exit shall not exceed 100 feet; (b) between any point in a room and an exit shall not exceed 150 feet; (c) between any point in an institutional sleeping room or suite and an exit access door of that room or suite shall not exceed 50 feet.

Exception: The travel distance in (a) *or* (b) *above may be increased by 50 feet in buildings completely equipped with an approved automatic fire extinguishing system.*

10–3.2.7 Discharge from Exits. (*See Section 5–7.*)

10–3.2.7.1 The exit discharge shall be arranged and marked to make clear the direction of egress. Required exit stairs that continue beyond the level of discharge shall be interrupted at the level of discharge by partitions, doors, physical barriers, or other effective means.

10–3.2.8 Doors and Locks.

10–3.2.8.1 Locks installed on patient sleeping room doors shall be so arranged that they can be locked only from the corridor side. All such locks shall be arranged to permit exit from the room by a simple operation without the use of a key.

Exception No. 1: Doors in homes for the aged may be lockable by the occupant, if they can be unlocked from the opposite side and keys are carried by attendants at all times. (Also see 5–2.1.2.1.1 and 5–2.1.2.1.2.)

Exception No. 2: Special door locking arrangements in psychiatric and penal facilities are permitted as discussed in 10–1.1.1.6 and 10–1.1.1.8.

10–3.2.8.2 Doors leading directly to the outside of the building may be subject to locking from the room side.

10–3.2.8.3 Exit access door leafs from hospital, nursing home, and residential custodial sleeping rooms; diagnostic and treatment areas, such as X-ray, surgery, or physical therapy; all door leafs between these spaces and the required exits; and all exit door leafs serving these spaces shall be at least 34 inches wide.

10–3.2.8.4 Any door in an exit enclosure, stair enclosure, horizontal exit, a required enclosure of a hazardous area, or a smoke partition may be held open only by an automatic device which complies with 5–2.1.2.3. The device shall be so arranged that the operation of the following will initiate the self-closing action:

(a) The manual alarm system required in 10–3.3.3 and either (b) or (c) below.

(b) A local device designed to detect smoke on either side of the opening, and

(c) A complete automatic fire extinguishing or complete automatic fire detection system.

10–3.2.8.5 Where doors in a stair enclosure are held open by an electrical device as permitted in 10–3.2.8.4, initiation of a door closing action on any level shall cause all doors at all levels in the stair enclosure to close.

10–3.2.9 Illumination of Means of Egress.

10–3.2.9.1 Each health care facility shall be provided with illumination of means of egress in accordance with 5–8.

10–3.2.10 Emergency Lighting.

10–3.2.10.1 Each health care facility shall be provided with emergency lighting in accordance with 5–9.

Exception: Emergency lighting of at least one-hour duration shall be provided.

10–3.2.11 Marking of Means of Egress.

10–3.2.11.1 Each health care facility shall be provided with exit marking in accordance with 5–10.

Exception: Signs may be omitted in one story buildings with an occupancy of less than 30 persons.

10–3.3 Protection.

10–3.3.1 Protection of Vertical Openings.

10–3.3.1.1 Any stairway, ramp, elevator hoistway, light or ventilation shaft, chute, and other vertical opening between stories shall be enclosed in accordance with 6–1.1.1, 6–1.1.3 and 6–1.1.4 with construction having a 1-hour fire resistance rating.

Exception No. 1: Where a full enclosure of a stairway which is not a required exit is impracticable, the required enclosure may be limited to that necessary to prevent a fire originating in any story from spreading to any other story.

Exception No. 2: Stairs that do not connect to a corridor, do not connect more than two levels, and do not serve as a means of egress need not comply with these regulations.

10–3.3.1.2 A door in a stair enclosure shall be self-closing, shall normally be kept in a closed position and shall be marked in accordance with 5–10.4.2.

Exception: Doors in stair enclosures may be held open under the conditions specified by 10–3.2.8.4.

10–3.3.2* Interior Finish. Interior finish of walls, ceilings and floors in means of egress and of any room shall be Class A or Class B, in accordance with Section 6–2.

Exception: In buildings equipped with a complete approved automatic fire extinguishing system, interior finish may be continued in use as follows:

(a) Class C: On all surfaces within rooms separated from the means of egress.

(b) No flame spread restrictions shall apply to floor surfaces.

10–3.3.3 Detection, Alarm, and Communication Systems.

10–3.3.3.1 Other than as noted below, required fire detection and signalling devices or systems shall be in accordance with Section 6–3.

10–3.3.3.2 Every building shall have a manually operated fire alarm system, in accordance with Section 6–3.

10–3.3.3.3* Operation of any fire alarm activating device shall automatically, without delay, accomplish general alarm indication and control functions. Zoned, coded systems shall be permitted to be used.

10–3.3.3.4* The fire alarm system shall be arranged to transmit an alarm automatically to the fire department legally committed to serve the area in

which the health care facility is located, by the most direct and reliable method approved by local regulations.

10–3.3.3.5 Internal audible alarm devices shall be provided and shall be installed in accordance with Section 6–3.

Exception: Where visual alarm devices have been installed in patient sleeping areas, they may be accepted by the authority having jurisdiction.

10–3.3.3.6 Any fire detection device or system required by this section shall be electrically interconnected with the fire alarm system.

10–3.3.4 Extinguishment Systems.

10–3.3.4.1* Complete, approved automatic fire extinguishing protection shall be provided throughout all health care facilities. (*See 10–3.3.6 for construction types permitted.*)

Exception: Buildings of fire-resistive construction of any height or protected noncombustible construction not over 1 story in height.

10–3.3.4.2 Where exceptions are stated in the provisions of this *Code* for health care occupancies equipped throughout with an approved automatic extinguishing system, and where such systems are required, the systems shall be in complete accordance with Section 6–4 for systems in light hazard occupancies and shall be electrically interconnected with the fire alarm system.

10–3.3.4.3 The main sprinkler control valve(s) shall be electrically supervised so that at least a local alarm will sound at a constantly attended location when the valve is closed.

10–3.3.4.4 The sprinkler piping, serving no more than 6 sprinklers for any isolated hazardous area, may be connected directly to a domestic water supply system having a capacity sufficient to provide 0.15 gallons per minute per square foot of floor area throughout the entire enclosed area. An indicating shutoff valve shall be installed in an accessible location between the sprinklers and the connection to the domestic water supply. (*For sprinkler requirements for hazardous areas see 10–3.4.4.*)

10–3.3.4.5 Portable fire extinguishers shall be provided in all health care occupancies in accordance with 6–4.4.1.

10–3.3.5 Protection from Hazards.

10–3.3.5.1 Any hazardous area shall be safeguarded in accordance with Section 6–5. Hazardous areas include, but are not restricted to the following:

Boiler and heater rooms
Laundries
Kitchens
Repair shops
Handicraft shops
Employee locker rooms
Soiled linen rooms
Paint shops

Rooms or spaces, including repair shops, used for storage of combustible supplies and equipment in quantities deemed hazardous by the authority having jurisdiction	Trash collection rooms Gift shops

10–3.3.5.2 Laboratories shall be protected in accordance with NFPA 56C, *Laboratories in Health-Related Institutions.* (*See Appendix B.*)

10–3.3.5.3 Cooking facilities shall be protected in accordance with 7–2.3.

10–3.3.6* Minimum Construction Requirements for Existing Facilities.

10–3.3.6.1 For the purpose of 10–3.3.6, stories shall be counted starting at the lowest level of exit discharge.

10–3.3.6.2 Health care buildings of one story in height only may be of any type of construction. (*See 10–3.3.4 for automatic extinguishment requirements.*)

10–3.3.6.3 Health care buildings up to and including two stories in height may be constructed of fire-resistive construction, protected noncombustible construction, protected ordinary construction, protected wood frame construction, heavy timber construction, or unprotected noncombustible construction. (*See 10–3.3.4 for automatic extinguishment requirements.*)

10–3.3.6.4 Health care buildings three stories or more in height shall be of fire-resistive construction.

Exception: Health care buildings up to and including three stories in height may be of protected noncombustible construction if equipped throughout with an automatic extinguishing system.

10–3.3.6.5 All interior walls and partitions in buildings of fire-resistive and noncombustible construction shall be of noncombustible or limited combustible materials.

Exception: Listed fire retardant treated wood studs may be used within non-load bearing one-hour fire rated partitions.

10–3.3.6.6 Subdivision of Building Spaces.

10–3.3.6.6.1 Smoke partitions shall be provided, regardless of building construction, as follows:

(a) To divide every story, used for sleeping rooms for more than 30 health care occupants, into at least two compartments, *and*

(b) To limit on any story the maximum area of each smoke compartment to no more than 22,500 square feet, of which both length and width shall be no more than 150 feet.

Exception: Protection may be accomplished in conjunction with the provision of horizontal exits.

10–3.3.6.6.2 Smoke partitions shall be provided on stories which are usable but unoccupied.

10–3.3.6.6.3 Any required smoke partition shall be constructed in accordance with 6–6 and shall have a fire resistance rating of at least one-half hour.

10–3.3.6.6.4 Space shall be provided on both sides of the smoke partition(s) or in each area of refuge for the total number of health care occupants served.

10–3.3.6.6.5 Openings in smoke partitions shall be protected by wired glass panels in steel frames, by doors of 20-minute fire protection rating, or by 1¾ inch solid bonded wood core doors as a minimum.

10–3.3.6.6.6 Doors in smoke partitions shall comply with 6–6.2.2 and shall be self-closing. Such doors in smoke partitions shall not be required to swing with exit travel.

Exception: Doors may be held open only if they meet the requirements of 10–3.2.8.4.

10–3.3.6.6.7 An approved damper designed to resist the passage of smoke shall be provided at each point a duct penetrates a smoke partition required by 10–3.3.6.6.1. The damper shall close upon detection of smoke by an approved smoke detector, located within the duct. (*Also see 6–6.*)

Exception: Buildings designed with a smoke control system in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems (see Appendix B), need not comply with this requirement.

10–3.3.6.7 Construction of Corridor Walls.

10–3.3.6.7.1* Corridors shall be separated from all other areas by partitions. Such partitions shall be continuous from the floor slab to the underside of the roof or floor slab above, through any concealed spaces such as those above the suspended ceilings, and through interstitial structural and mechanical spaces, and shall have a fire resistance rating of at least 20 minutes.

Exception No. 1: In health care occupancies equipped throughout with an approved automatic extinguishing system, a corridor may be separated from all other areas by nonfire-rated partitions and, where suspended ceilings are provided, the partitions may be terminated at the suspended ceiling.

Exception No. 2: Corridor partitions may terminate at ceilings which are not an integral part of a floor construction if there exists five feet or more of

space between the top of the ceiling subsystem and the bottom of the floor or roof above, provided:

(a) The ceiling meets the conditions of acceptance for ceiling construction specified in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251 (see Appendix B), for a test period of 1 hour or more, and

(b) Corridor partitions form smoke-tight joints with the ceilings (joint filler, if used, shall be noncombustible), and

(c) Each compartment of interstitial space which constitutes a separate smoke area is vented, in case of smoke emergency, to the outside by mechanical means having sufficient capacity to provide at least two air changes per hour, but in no case having a capacity less than 5,000 cfm, and

(d) The interstitial space shall not be used for storage, and

(e) The space shall not be used as a plenum for supply, exhaust or return air except as noted in Paragraph (c).

Exception No. 3: Waiting areas may be open to the corridor, provided:

(a) Each area does not exceed 600 square feet, and

(b) The area is located to permit direct supervision by the facility staff, and

(c) The area is arranged not to obstruct any access to required exits, and

(d) The area is equipped with an electrically supervised, automatic smoke detection system installed in accordance with 10–3.3.3.

Exception No. 4: Space for doctors' and nurses' charting, communications, and related clerical areas may be open to the corridor.

10–3.3.6.7.2 Fixed wired glass vision panels shall be permitted in corridor walls provided they do not exceed 1,296 square inches in area and are mounted in approved steel frames.

Exception: There shall be no restrictions in area and fire resistance of glass in buildings fully protected by an approved automatic extinguishing system.

10–3.3.6.7.3 Doors of 20-minute fire protection rating or 1¾ inch solid bonded core wood or equivalent construction shall be used on openings other than those serving exits or required enclosures of hazardous areas, in which case see Chapter 5 or Section 6–6.3.2.

Exception: In buildings equipped with complete approved automatic sprinkler protection, doors and frames shall be so constructed to resist the passage of smoke. Doors shall be equipped with latches for keeping the doors tightly closed, but may be provided with glass vision panels without restriction.

10–3.3.6.7.4 Transfer grills, whether protected by fusible link operated dampers or not, shall not be used in these walls or doors.

10–3.3.6.7.5 Firestopping. Each exterior wall of frame construction and interior stud partitions shall be firestopped so as to cut off all concealed draft openings, both horizontal and vertical, between any cellar or basement and the first floor. Such firestopping shall consist of wood at least 2 inches (nominal) thick, or of suitable noncombustible material.

10–3.3.7 Smoke Control.

10–3.3.7.1 Every patient sleeping room shall have an outside window or outside door arranged and located to permit the venting of products of combustion and to permit any occupant to have access to fresh air in case of emergency. *(See 10–1.1.1.6 and 10–1.1.1.8 for detention screen requirements.)*

Exception No. 1: Rooms intended for occupancy of less than 24 hours, such as those housing obstetrical labor beds, recovery beds, observation beds in the emergency department and newborn nurseries, need not comply with this requirement.

Exception No. 2: Buildings designed with an engineered smoke control system in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems (see Appendix B), need not comply with this requirement.

10–3.4 . Building Services.

10–3.4.1 Utilities. *(See 7–1.)*

10–3.4.2 Heating/Air Conditioning.

10–3.4.2.1 Air conditioning, ventilating, heating, and other service equipment shall be in accordance with Chapter 7, and shall be installed in accordance with the manufacturer's specifications.

Exception: As modified in 10–3.4.2.2 and 10–3.4.2.3 following.

10–3.4.2.2* Portable comfort heating devices are prohibited. Any heating device, other than a central heating plant, shall be so designed and installed that combustible material will not be ignited by it or its appurtenances. If fuel fired, such heating devices shall be chimney or vent connected, shall take air for combustion directly from the outside, and shall be so designed and installed to provide for complete separation of the combustion system from the atmosphere of the occupied area. The heating system shall have safety devices to immediately stop the flow of fuel and shut down the equipment in case of either excessive temperature or ignition failure.

Exception No. 1: Approved suspended unit heaters may be used in locations other than means of egress and patient sleeping areas, provided such heaters are located high enough to be out of the reach of persons using the area and provided they are equipped with the safety devices called for above.

Exception No. 2: Fireplaces may be installed and used only in areas other than patient sleeping areas, provided that these areas are separated from patient

sleeping spaces by construction having a 1-hour fire resistance rating and they comply with NFPA 211, Standard for Chimneys, Fireplaces and Vents (see Appendix B). In addition thereto, the fireplace shall be equipped with a heat tempered glass fireplace enclosure guaranteed against breakage up to a temperature of 650° Fahrenheit. If, in the opinion of the authority having jurisdiction, special hazards are present, a lock on the enclosure and other safety precautions may be required.

10–3.4.2.3 Combustion and ventilation air for boiler, incinerator, or heater rooms shall be taken directly from and discharged directly to the outside air.

10–3.4.3 Elevators. (*See 10–3.2.2.9 and 7–3.*)

10–3.4.4 Rubbish Chutes, Laundry Chutes and Incinerators.

10–3.4.4.1 Any existing linen and trash chute, including pneumatic rubbish and linen systems, which opens directly onto any corridor shall be sealed by fire-resistive construction to prevent further use or shall be provided with a fire door assembly suitable for a Class B location and having a fire protection rating of 1½ hours. All new chutes shall comply with 7–4.

10–3.4.4.2 Any rubbish chute or linen chute, including pneumatic rubbish and linen systems, shall be provided with automatic extinguishing protection installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems.* (*See Appendix B and 7–4.*)

10–3.4.4.3 Any trash chute shall discharge into a trash collecting room used for no other purpose and protected in accordance with Section 6–5.

10–3.4.4.4 Existing flue-fed incinerators shall be sealed by fire-resistive construction to prevent further use.

10–3.5 Special Provisions.

10–3.5.1 Windowless Buildings. See Section 16–4 for requirements for windowless buildings.

SECTION 10–4 PENAL OCCUPANCIES

10–4.1 General Requirements.

10–4.1.1 General.

10–4.1.1.1 Penal occupancies shall comply with the provisions of both Section 10–1 and (this) Section 10–4. (*See Section 17–4 for operating features.*)

10–4.1.1.2 Application. This section establishes life safety requirements for residential-restrained care facilities such as jails, penal institutions, reformatories, prisons, and houses of correction.

10–4.1.2 Special Definitions. (*See 10–1.2.*)

10–4.1.3 Classification of Occupancy.

10–4.1.3.1 Penal facilities are a complex of structures with each serving a definite and usually different purpose. For instance, in all probability there will be represented in most penal institutions an example of all, or most all, of the occupancy type classifications found in this *Code*. Exits and other features shall be governed by the type of occupancy classification and the hazard of occupancy.

10–4.1.3.2 All buildings and structures shall be classified, using both Section 10–1.3 and Section 4–1.1 as a guide, subject to the ruling of the authority having jurisdiction in case of question as to the proper classification of any individual building or structure. Exit features shall comply with the applicable section of the *Code* with the exceptions noted below.

10–4.1.3.3 Custody classification of the institution, as well as individual areas within the complex, shall always be considered by the authority having jurisdiction.

10–4.1.4 Classification of Hazard of Contents. (*See 10–1.4.*)

10–4.1.5 Occupant Load. (*See 10–1.5.*)

10–4.2 Means of Egress Requirements.

10–4.2.1 General.

10–4.2.1.1 Every aisle, passageway, corridor, exit discharge, exit location, and access shall be in accordance with Chapter 5.

Exception: As modified by the occupancy chapter (see Chapters 8–16) applicable to the building in question.

10–4.2.1.2 Reliable means shall be provided to permit the prompt release of inmates confined in locked sections, spaces, or rooms in the event of fire or other emergency, regardless of the type of occupancy.

10–4.2.1.3 Prompt release shall be guaranteed by adequate correctional personnel that are continuously on duty (24 hour) and keys which shall be readily accessible.

10–4.2.1.4 Any emergency entrance which is locked may be classified as an exit provided that keys are readily available to guards or attendants.

10–4.2.2 Types of Exits. Exits shall be restricted to the permissible types described in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.2.3 Capacity of Means of Egress. The capacity of any required means of egress shall be based on its width as defined in 5–3.

Exception: As further modified in the occupancy chapter (see Chapters 8–16) applicable to the building in question.

10–4.2.4 Number of Exits. The number of exits shall be based on the requirements of the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.2.5 Arrangement of Means of Egress. The arrangement of means of egress shall be as required in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question. (*Also see 10–4.2.1.2, 10–4.2.1.3, and 10–4.2.1.4.*)

10–4.2.6 Measurement of Travel Distance to Exits. Travel distance shall be measured in accordance with 5–6.2.

Exception: As further modified in the occupancy chapter (see Chapters 8–16) applicable to the building in question.

10–4.2.7 Discharge from Exits. Discharge from exits shall be arranged as required in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.2.8 Doors, Locks. Doors and locks shall be installed and arranged as required in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question. (*Also see 10–4.2.1.2, 10–4.2.1.3, and 10–4.2.1.4.*)

10–4.2.9 Illumination of Means of Egress. Illumination of means of egress shall be arranged as required in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.2.10 Emergency Lighting. Emergency lighting shall be provided in all buildings where inmates are housed overnight. Further, emergency lighting shall be arranged as required in the occupancy chapter (*see Chapters 8–16*) applicable to any other building in question.

10–4.2.11 Marking of Means of Egress. Each building in a penal occupancy shall be provided with exit markings as described in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3 Protection.

10–4.3.1 Protection of Vertical Openings. Protection of vertical openings shall be provided as required in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3.2 Interior Finish. Interior finish shall be limited to those types described in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3.3 Detection, Alarm and Communication Systems.

10–4.3.3.1 Every building in a penal facility shall have a detection, alarm, and/or communication system where required by the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3.3.2 Where such systems are required, they shall be installed in accordance with the requirements of the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3.4 Extinguishment Systems.

10–4.3.4.1 Every building in a penal facility shall be equipped with an extinguishing system where required by the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3.4.2 Where such systems are required, they shall be installed in accordance with the requirements of the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3.5 Protection from Hazards. Every hazardous area shall be protected in accordance with 10–2.3.5.1 of this *Code*.

10–4.3.6 Minimum Construction Requirements. Minimum construction requirements shall be as described in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.3.7 Smoke Control. Smoke control shall be arranged as required in the occupancy chapter (*see Chapters 8–16*) applicable to the building in question.

10–4.4 Building Services. Utilities, air conditioning equipment, ventilating equipment, heating equipment, portable comfort heating devices, boilers, incinerators, rubbish chutes, laundry chutes, other building service equipment and the rooms that house or contain them shall be arranged as required in the occupancy chapter (*see Chapters 8–16*) applicable to the building or space in question.

10–4.5 Special Provisions. See Section 16–4 for requirements for windowless buildings.

CHAPTER 11 RESIDENTIAL OCCUPANCIES

SECTION 11–1 GENERAL REQUIREMENTS

11–1.1 Application.

11–1.1.1 This chapter has differing requirements for the several types of residential occupancies, thus the chapter is organized by sections, 11–1 general requirements, 11–2 through 11–6 type of residence.

11–1.1.2 These requirements unless specifically excepted apply to all residential occupancies.

11–1.1.3 The requirements of this chapter are applicable to new buildings, and to existing or modified buildings according to the provisions of Section 1–4 of this standard.

11–1.2 Definitions.

11–1.2.1 Terms applicable to this chapter are defined in Chapter 3 of this standard; where necessary, other terms will be defined in the text as they may occur.

11–1.3 Classification of Occupancy.

11–1.3.1 Residential occupancies shall include all occupancies so classified in 4–1.6. They shall be classified in the following groups, subject to determination by the authority having jurisdiction.

(a) Hotels. Includes buildings or groups of buildings under the same management in which there are more than 15 sleeping accommodations for hire, primarily used by transients who are lodged with or without meals, whether designated as a hotel, inn, club, motel, or by any other name. So-called apartment hotels shall be classified as hotels because they are potentially subject to transient occupancy like that of hotels.

(b) Apartment Buildings. Includes buildings containing 3 or more living units with independent cooking and bathroom facilities, whether designated as apartment house, tenement, garden apartment, or by any other name.

(c) Dormitories. Includes buildings or spaces in buildings where group sleeping accommodations are provided for persons not members of the same family group in one room or in a series of closely associated rooms under joint occupancy and single management, as in college dormitories, fraternity houses, military barracks, ski lodges; with or without meals, but without individual cooking facilities.

(d) Lodging or Rooming Houses. Includes buildings in which separate sleeping rooms are rented providing sleeping accommodations for a total of 15 or less persons, on either a transient or permanent basis; with or with-

out meals, but without separate cooking facilities for individual occupants, except as provided in (e).

(e) 1- and 2-Family Dwellings. Includes dwellings in which each living unit is occupied by members of a single family, with rooms rented to outsiders, if any, not accommodating more than 3 persons.

11–1.3.2 Where another type of occupancy occurs in the same building as a residential occupancy, the requirements of Paragraph 1–4.1.5 of this standard shall be applicable.

11–1.4 Classification of Hazard of Contents.

11–1.4.1* Building contents shall be classified according to the provisions of Section 4–2.1 of this standard. For design of sprinkler systems, the classification of contents in NFPA 13 shall apply.

11–1.5 Occupant Load.

11–1.5.1* The occupant load of residential occupancies in numbers of persons for whom exits are to be provided except in 1- and 2-family dwellings shall be determined on the basis of 1 person per 200 square feet gross floor area, or the maximum probable population of any room or section under consideration, whichever is greater. The occupant load of any open mezzanine or balcony shall be added to the occupant load of the floor below for the purpose of determining exit capacity.

11–1.6 Capacity of Exits.

11–1.6.1 Exits, arranged as specified elsewhere in this section of the *Code*, shall be sufficient to provide for the occupant load in numbers of persons as determined in accordance with 11–1.5.1, on the following basis:

(a) Doors, including those 3 risers or 24 inches above or below ground level, Class A ramps and horizontal exits — 100 persons per unit of exit width.

(b) Stairs and other types of exits not included in (a) above — 75 persons per unit of exit width.

11–1.7 Maintenance of Exits.

11–1.7.1 No door in any means of egress shall be locked against egress when the building is occupied.

SECTION 11–2 HOTELS

11–2.1 General Requirements.

11–2.1.1 Applicability, definitions, mixed occupancies, and occupant load, as described in Section 11–1 of this chapter, are pertinent to and a part of this section.

11–2.1.2 Public Assembly Occupancies.

11–2.1.2.1 Any ballroom, assembly or exhibition hall, and other space used for purposes of public assembly shall be in accordance with Chapter 8. Dining areas having a capacity of 50 or more persons shall be treated as places of assembly.

11–2.2 Means of Egress Requirements.

11–2.2.1 Exit Details.

11–2.2.1.1 Any room having a capacity of less than 50 persons with an outside door at street or ground level may have such outside door as a single exit provided that no part of the room or area is more than 50 feet from the door measured along the natural path of travel.

11–2.2.1.2 Any floor below the level of exit discharge occupied for public purposes shall have exits arranged in accordance with 11–2.2.4.1 and 11–2.2.6.1, with access thereto in accordance with 5–5.

11–2.2.1.3 Any floor below the level of exit discharge not open to the public and used only for mechanical equipment, storage, and service operations (other than kitchens which are considered part of the hotel occupancy) shall have exits appropriate to its actual occupancy in accordance with other applicable sections of this *Code*.

11–2.2.1.4* The same stairway or other exit required to serve any one upper floor may also serve other upper floors.

Exception: No inside open stairway, escalator, or ramp may serve as a required egress from more than one floor.

11–2.2.2 Types of Exits.

11–2.2.2.1 Exits, or exit components, arranged in accordance with Chapter 5, shall be of one or more of the following types:

(a) Doors to outside at ground level, as per 5–2.1.

(b) Revolving doors, as per 5–2.1 (not at foot of stairs).

(c) Doors to subways, only if the subway meets the requirements of exit passageways or tunnels as specified in 5–2.7.

(d) Interior stairs, Class A or Class B, in accordance with 5–2.2.

(e) Outside stairs, in accordance with 5–2.5.

(f) Smokeproof towers in accordance with 5–2.3.

(g) Ramps, Class A or Class B, in accordance with 5–2.6.

(h) Escalators, in accordance with 5–2.8.

(i) Horizontal exits, in accordance with 5–2.4.

(j) Exit passageways, in accordance with 5–2.7.

11–2.2.2.2 Any existing interior stair or fire escape not complying with 5–2.2 or 5–2.9 may be continued in use subject to the approval of the authority having jurisdiction.

11–2.2.3 Capacity of Means of Egress.

11–2.2.3.1 Street floor exits shall provide units of exit width, as follows, occupant load being determined in accordance with 11–1.5.1.

(a) One unit for each 100 persons street floor capacity for doors and other level exits, including those 24 inches or 3 risers above or below ground level.

(b) One unit for each 75 persons street floor capacity for stair or other exit requiring descent to ground level.

(c) One and one-half exit units for each 2-unit required stair from upper floors discharging through the street floor.

(d) One and one-half exit units for each 2-unit required stair from floors below the street floor discharging through the street floor.

11–2.2.3.2 Every floor below the level of exit discharge shall have exits sufficient to provide for the occupant load of that floor as determined in accordance with 11–1.5.1 as the basis of 100 persons per exit unit for travel on the same level, 75 persons for upward travel, as up stairs.

11–2.2.3.3 Upper floor exits shall provide numbers of units of exit width sufficient to meet the requirements of 11–1.6.1.

11–2.2.4 Number of Exits.

11–2.2.4.1 Not less than 2 exits shall be accessible from every floor, including floors below the level of exit discharge and occupied for public purposes.

Exception: A single exit may be provided under the conditions described in 11–2.2.1.1.

11–2.2.5 Arrangement of Exits.

11–2.2.5.1 Access to all required exits shall be in accordance with 5–5, shall be unobstructed, and shall not be blocked from open view by ornamentation, curtain, or other appurtenance.

11–2.2.5.2 Exits shall be so arranged that, from any corridor room door, exits will be accessible in at least 2 different directions.

Exception: Up to the first 35 feet of exit travel from a corridor room door may be along a corridor with exit access only in one direction (dead-end), and in open areas a single path of travel may be permitted for the first 35 feet.

11–2.2.6 Measurement of Travel Distance to Exits.

11–2.2.6.1 Any exit as indicated in 11–2.2.4.1 shall be such that it will not be necessary to travel more than 100 feet from the door of any room to reach the nearest exit. Travel distance to exits shall be measured in accordance with 5–6.

Exception No. 1: Travel distance to exits may be increased to 200 feet for exterior ways of exit access arranged in accordance with 5–5.4.

Exception No. 2: Travel distance to exits may be increased to 150 feet if the exit access and any portion of the building which is tributory to the exit access are equipped with automatic sprinkler protection. In addition, the portion of the building in which the 150-foot travel distance is permitted shall be separated from the remainder of the building by construction having a fire resistance rating of not less than 1 hour for buildings up to 4 stories in height, and 2 hours for buildings 4 or more stories in height.

11–2.2.6.2 Travel distance from the door of a room in a suite or apartment to a corridor door shall not exceed 50 feet.

Exception: One-hundred feet travel is allowed in buildings provided with automatic sprinkler protection in accordance with Section 6–4.

11–2.2.7 Discharge from Exits.

11–2.2.7.1 At least half of the required number of units of exit width from upper floors, exclusive of horizontal exits, shall lead directly to the street or through a yard, court, or passageway with protected openings and separated from all parts of the interior of the building.

11–2.2.7.2 A maximum of 50 percent of the exits may discharge through areas on the floor of exit discharge provided:

(a) Such exits discharge to a free and unobstructed way to the exterior of the building, which way is readily visible and identifiable from the point of discharge from the exit, and

(b) The level of discharge into which the exits discharge is provided with automatic sprinkler protection and any other portion of the level of discharge with access to the discharge area is provided with automatic sprinkler protection or separated from it in accordance with the requirements for the enclosure of exits (*see 5–1.3*).

Exception: The requirements of 11–2.2.7.2 (b) may be waived if the discharge area is a vestibule or foyer meeting all of the following:

1. The depth from the exterior of the building is not greater than 10 feet and the length is not greater than 20 feet.

2. The foyer is separated from the remainder of the level of discharge by construction providing protection at least the equivalent of wired glass in steel frames.

3. The foyer serves only for means of egress including exits directly to the outside.

(c) The entire area on the level of discharge is separated from areas below by construction having a minimum of 2-hour fire resistance rating.

11–2.2.8 Doors.

11–2.2.8.1 Doors between guest rooms and corridors shall be self-closing, and shall meet the requirements of 11–2.3.6.2.

11–2.2.9 Illumination of Means of Egress.

11–2.2.9.1 Each public space, hallway, stairway, or other means of egress shall have illumination in accordance with Section 5–8. Access to exits shall be continuously illuminated at all times.

11–2.2.10 Emergency Lighting.

11–2.2.10.1 Any hotel with over 25 rooms shall have emergency lighting in accordance with 5–9.

Exception: Where each guest room has a direct exit to the outside of the building at ground level (as in motels), no emergency lighting shall be required.

11–2.2.11 Marking of Means of Egress.

11–2.2.11.1 Every exit access door from public hallways or from corridors on floors with sleeping accommodations shall have an illuminated sign in accordance with 5–10. Where exits are not visible in a hallway or corridor, illuminated directional signs shall be provided to indicate the direction to exits.

11–2.3 Protection.

11–2.3.1 Protection of Vertical Openings.

11–2.3.1.1 Every stairway, elevator shaft and other vertical opening shall be enclosed or protected in accordance with Section 6–1.

Exception No. 1: Unprotected vertical openings connecting not more than 3 floors used for hotel occupancy only may be permitted in accordance with the conditions of 6–1.1.2.

Exception No. 2: In any existing building provided with a complete automatic sprinkler system in accordance with Section 6–4, and where exits and required ways of travel thereto are adequately safeguarded against fire and smoke within the building or where every individual room has direct access to an exterior exit without passing through any public corridor, the protection of vertical openings not part of required exits may be waived by the authority having jurisdiction to such extent as such openings do not endanger required means of egress.

11–2.3.1.2* Any required exit stair which is so located that it is necessary to pass through the lobby or other open space to reach the outside of the building shall be continuously enclosed down to the lobby level.

11–2.3.1.3 No floor below the level of exit discharge, used for only storage, heating equipment, or other purposes other than hotel occupancy open to guests or the public, shall have unprotected openings to floors used for hotel purposes.

11–2.3.2 Interior Finish.

11–2.3.2.1 Interior finish, in accordance with Section 6–2 and subject to the limitations and modifications therein specified, shall be as follows:

For new or existing construction for ceilings, walls and floors:

(a) Exits [*see 5–1.2.1(b)*] — Class A or B.

Exception: Where wood construction is allowed for stairs and floors, wood flooring over ½-inch thick may be permitted.

(b) Exit access, including floors [*see 5–1.2.1(a)*] — Class A or B.

Exception: Where wood construction is allowed for stairs and floors, wood flooring over ½-inch thick may be permitted.

(c) Lobbies, corridors that are not exit access — Class A or B.

Exception No. 1: No requirement for floors.

Exception No. 2: In existing buildings interior finish may be Class A, B, or C.

(d) Places of assembly (*see 8–3.2*).

Exception: Existing places of assembly (*see 8–3.2*).

(e) Individual guest rooms and other rooms — Class A, B, or C.

Exception: No requirement for floors.

11–2.3.3 Detection, Alarm and Communication Systems.

11–2.3.3.1 An alarm system, in accordance with 6–3, shall be provided for any hotel having accommodations for 15 or more guests.

Exception: Where each guest room has a direct exit to the outside of the building and the building is 3 or less stories in height.

11–2.3.3.2 Every sounding device shall be of such character and so located as to alert all occupants of the building or section thereof endangered by fire.

11–2.3.3.3 New buildings shall have a corridor smoke detection system (6–3.8) connected to the alarm initiation system.

Exception No. 1: Where each guest room has direct exit to the outside of the building and the building is not over 3 stories in height.

Exception No. 2: Buildings with complete automatic sprinkler protection.

Exception No. 3: Existing buildings.

11–2.3.3.4 A manual fire alarm station shall be provided at the hotel desk or other convenient central control point under continuous supervision of responsible employees. Additional manual alarms (as specified in 6–3.6) may be waived where there are other effective means (such as complete automatic sprinkler or automatic fire detection systems) for notification of fire as required in 11–2.3.3.2.

11–2.3.3.5 Facilities shall be provided for immediate notification of the public fire department or private fire brigade, where there is no public fire department, in case of fire.

11–2.3.4 Extinguishment Requirements.

11–2.3.4.1 Where an automatic sprinkler system is installed, either for total or partial building coverage, the system shall be in accordance with the requirements of NFPA 13, *Standard for the Installation of Sprinkler Systems.* (*See Appendix B.*)

Exception: Sprinkler installation may be omitted in small compartmented areas such as closets not over 24 sq. ft. and bathrooms not over 55 sq. ft.

11–2.3.4.2 Hand portable fire extinguishers shall be provided in hazardous areas. When provided hand portable fire extinguishers shall be installed and maintained as specified in NFPA 10, *Standard for the Installation of Portable Fire Extinguishers.* (*See Appendix B.*)

11–2.3.5 Protection from Hazards.

11–2.3.5.1 Any room containing high pressure boilers, refrigerating machinery, transformers, or other service equipment subject to possible explosion shall not be located directly under or directly adjacent to exits. All such rooms shall be effectively cut off from other parts of the building as specified in Section 6–5.

11–2.3.5.2 Every hazardous area shall be separated from other parts of the building by construction having a fire resistance rating of at least 1 hour and communicating openings shall be protected by approved automatic or self-closing fire doors, or such area shall be equipped with automatic fire protection. Hazardous areas include, but are not limited to:

Boiler and heater rooms
Laundries
Repair shops
Rooms or spaces used for storage of combustible supplies and equipment in quantities deemed hazardous by the authority having jurisdiction.

11–2.3.6 Minimum Protection Requirements of Guest Rooms.

11–2.3.6.1 In any new building every corridor shall be separated from guest rooms by partitions having at least a 1-hour fire resistance rating.

Exception: Buildings equipped with a complete automatic sprinkler system may have partitions having a ½-hour fire resistance rating.

11–2.3.6.2 Each guest room shall be provided with a door and frame, each having a fire protection rating of at least 20 minutes.

Exception: In existing buildings, previously approved 1¾-inch solid bonded wood core doors and frames may remain in use.

11–2.3.6.3 Unprotected openings other than door openings shall be prohibited in partitions of corridors serving as exit access from guest rooms.

11–2.3.7 Smoke Control.

11–2.3.7.1 Smoke proof towers shall be provided in accordance with 5–2.3 in buildings 7 or more stories in height.

Exception No. 1: Buildings with total sprinkler system.

Exception No. 2: Existing buildings 7 or more stories in height, without smoke proof towers may be continued in use.

11–2.3.7.2 No transom shall be installed in partitions of sleeping rooms in new buildings. In existing buildings transoms shall be fixed in the closed position and shall be covered or otherwise protected to provide a fire resistance rating at least equivalent to that of the wall in which they are installed.

11–2.4 Building Services.

11–2.4.1 Utilities.

11–2.4.1.1 Building service equipment shall be installed in accordance with 7–1.

11–2.4.2 Heating/Air Conditioning.

11–2.4.2.1 Heating equipment, and equipment for air conditioning and ventilation when provided, shall meet the requirements of 7–2, except as otherwise required in this chapter.

11–2.4.3 Elevators.

11–2.4.3.1 Elevator installations shall be made in accordance with the requirements of 7–3.

SECTION 11–3* APARTMENT BUILDINGS

11–3.1 General Requirements.

11–3.1.1 All buildings classified as apartment buildings by 11–1.3.1, *in addition to conforming to the provisions of 11–3.1 through 11–3.4*, shall meet the requirements of *one* of the following subsections: 11–3.5, Buildings without fire suppression or detection systems; 11–3.6, Buildings provided with an automatic fire detection system; 11–3.7, Buildings provided with automatic sprinkler protection in corridors only; 11–3.8, Buildings with total automatic sprinkler protection conforming to the requirements of 11–3.3.4.1. (*See Table 11–3.*)

11–3.1.2 Applicability, definitions, mixed occupancies, and occupant load, as described in 11–1 of this chapter, are pertinent to and a part of this section.

11–3.1.3 Every individual living unit covered by this section shall at least comply with the minimum provisions of 11–6, one- and two-family dwellings.

Exception: The requirement of 11–6.2.2.1 for means of window egress shall be applicable to buildings of 6 stories or less.

11–3.2 Means of Egress Requirements.

11–3.2.1 General.

11–3.2.1.1 Exits of the same arrangement, types and capacities as required by 11–2.2 shall be provided, except as modified by the provisions of this section.

11–3.2.2 Types of Exits.

11–3.2.2.1 Types of exits shall be of one or more of the types listed in 11–2.2.2.1.

11–3.2.3 Capacity of Means of Egress.

11–3.2.3.1 Capacity of means of egress shall be determined in accordance with the provisions of 11–2.2.3.

11–3.2.4 Number of Exits.

11–3.2.4.1 Every living unit shall have access to at least 2 separate exits; remote from each other as required by 5–5.1.

Exception No. 1: Any living unit, which has an exit directly to the street or yard at ground level or by way of an outside stairway or an enclosed stairway with fire resistance rating of 1 hour or more serving that apartment only and not communicating with any floor below the level of exit discharge or other area not a part of the apartment served, may have a single exit.

Exception No. 2: A building of any height with not more than 4 living units per floor with a smoke proof tower or outside stair in accordance with the requirements of 5–2.3 as the exit, immediately accessible to all apartments served thereby, may have a single exit. ("Immediately accessible" means a travel distance of 20 feet maximum from the door of an apartment to the door of an open-air vestibule or balcony leading to a smoke proof tower.)

Exception No. 3: Any building 3 stories or less in height with no floor below the level of exit discharge or, in case there is such a floor, with the street floor construction of at least 1-hour fire resistance, may have a single exit, under the following conditions:

(a) The stairway is completely enclosed with a partition having a fire resistance rating of at least 1 hour with self-closing ¾-hour fire protection rated doors protecting all openings between the stairway enclosure and the building.

(b) The stairway does not serve any floor below the level of exit discharge.

(c) All corridors serving as access to exits have at least a 1-hour fire resistance rating.

(d) There is not more than 20 feet of travel distance to reach an exit from the entrance door of any living unit.

TABLE 11-3

Requirements for Apartment Buildings According to Protection Provided

	Normal (no suppression or detection system) #1	*Auto Detectors #2*	*Sprink. Prot. in Select. Areas #3*	*Auto Ext. NFPA 13 (with exceptions) #4*
Max. Gross Area per Story Between Horizontal Exits				
1–3 Stories	NL	NL	NL	NL
4–6	20,000 sq. ft.	20,000	NL	NL
>6	10,000	15,000	20,000	NL
Exit Access				
Travel Distance	100 ft.	150	150	150
Req. Smoke Barrier for Stair Spacing	>50 ft.	>100	>100	NR
Max. Single Path Corridor Distance	20*	20*	20*	35
Fire Resistance				
Walls	1 hr.	¾	¾	½
Doors (Fire Protection Rating)	⅓	⅓	⅓	⅓
Flame Spread				
Walls & Ceiling	A or B	A or B	A, B, or C	A, B, or C
Floors	A, B, or C	A, B, or C	NR	NR
Exits — Vertical				
Fire Resistance Walls				
1–3 Stories	1 hr.	1	1	¾
>3 Stories	2 hr.	2	2	1
Smoke Proof Towers				
1–6 Stories	NR	NR	NR	NR
>6 Stories	Req.	Req.	Req.	NR

NL = No Limit.

NR = No Requirements.

NA = Not Applicable.

*In existing buildings, 35 ft.

**Exception to 11-3332 in Interim Amendment, *Life Safety Code* (NFPA 101). 1973 Edition, deleted.

TABLE 11–3 (cont.)

Requirements for Apartment Buildings According to Protection Provided

	Normal (no suppression or detection system) #1	*Auto Detectors #2*	*Sprink. Prot. in Select. Areas #3*	*Auto Ext. NFPA 13 (with exceptions) #4*
Exits — Vertical (cont.)				
Doors				
1–3 Stories	¾	¾	¾	¾
>3 Stories	1½	1½	1½	¾
Flame Spread (Walls, Ceilings, Stairs)	A or B	A or B	A or B	A, B, or C
Bedroom Window, 1- to 6-Story Bldg. Ref. 11-6.2.2.1(b)	Req.	Req.	Req.	Req.
Exits — Horizontal				
Fire Resistance				
Walls	2	2	2	NA
Doors	1½	1½	1½	NA
Habitable Spaces				
Max. Distance from any Room Door to Corridor	50	75	50	100
Flame Spread	A, B, or C	A, B, or C	A, B, or C	A, B, or C
Smoke Detector, Indiv. in Unit	Req.	Req.	Req.	Req.**
Door to Corridor — Self-closing	Req.	Req.	Req.	Req.
Alarm System				
4–6 Stories or 12 Units	manual	manual & auto	manual & auto	manual & auto
>6 Stories	manual	manual & auto	manual & auto	manual & auto
(With Annunciator Panel)	voice communication		voice communication	
HVAC				
>6 Stories Pressurized Corridor, 0.01 in. Water, min.	Req.	Req.	NR	NR
Elevator — ANSI	A 17.1	A 17.1	A 17.1	A 17.1

11–3.2.5 Means of Egress within Living Units.

11–3.2.5.1 Within any individual living unit stairs more than 1 story above or below the entrance floor level of the apartment unit shall not be permitted.

11–3.2.5.2 Travel Distance within Living Units. (*See 11–3.5; 11–3.6; 11–3.7; 11–3.8.*)

11–3.2.6 Measurement of Travel Distance to Exits.

11–3.2.6.1 Maximum Travel Distance in One Direction Allowed in Corridor Exit Access to Exits. (*See 11–3.5; 11–3.6; 11–3.7; 11–3.8.*)

11–3.2.6.2 Distance from Apartment Entrance Door to Nearest Exit. (*See 11–3.5; 11–3.6; 11–3.7; 11–3.8.*)

11–3.2.7 Discharge from Exits.

11–3.2.7.1 Discharge from exits shall be the same as required for hotels, 11–2.2.7.

11–3.2.8 Doors.

11–3.2.8.1 Doors between apartments and corridors shall be self-closing.

11–3.2.8.2* The fire protection rating of apartment/corridor doors and door frames shall be 20 minutes.

Exception: In existing buildings, previously approved 1¾-inch solid bonded wood core doors and frames may continue in use.

11–3.2.9 Illumination of Means of Egress.

11–3.2.9.1 Every public space, hallway, stairway, and other means of egress shall have illumination in accordance with 5–8.

11–3.2.10 Emergency Lighting.

11–3.2.10.1 Any apartment building with 26 or more living units shall have emergency lighting in accordance with 5–9.

11–3.2.11 Marking of Means of Egress.

11–3.2.11.1 Signs in accordance with 5–10 shall be provided in all apartment buildings requiring more than one exit.

11–3.3 Protection.

11–3.3.1 Protection of Means of Egress.

11–3.3.1.1 Protection of vertical openings shall be the same as required for hotels, 11–2.3.1.1 through 11–2.3.1.3.

Exception No. 1: The reference in 11–2.3.1.1 to Section 6–1 is amended so that the fire resistance requirements of 6–1.1.4 are superseded by the requirements of 11–3.5.3.1; 11–3.6.3.1; 11–3.7.3.1; 11–3.8.3.1.

Exception No. 2: There shall be no unprotected vertical opening in any building or fire section with only one exit.

11–3.3.2 Interior Finish.

11–3.3.2.1 Interior finish, in accordance with 6–2, omitting 6–2.3, and subject to the limitations and modifications therein specified, shall be as required in 11–3.5.3; 11–3.6.3; 11–3.7.3; 11–3.8.3.

11–3.3.3 Detection, Alarm and Communication Systems.

11–3.3.3.1* An approved single station smoke detector, powered by the house electrical service, shall be installed in an approved manner in every living unit within the apartment building. When activated, the detector shall initiate an alarm which is audible in the sleeping rooms of that unit. This individual unit detector shall be in addition to any sprinkler system or other detection system that may be installed in the building. For location of single station detectors, see Appendix A, Chapter 11.

11–3.3.3.2 Every apartment building of 4 or more stories in height or 12 or more apartment units shall have a manual fire alarm system in accordance with 6–3.

11–3.3.3.3 Buildings 7 or more stories in height shall have an annunciator panel connected with the alarm system to visually indicate the floor of fire involvement. The location of the annunciator panel shall be approved by the authority having jurisdiction.

11–3.3.3.4 For further requirements for alarm and detection systems, see 11–3.5; 11–3.6; 11–3.7; and 11–3.8.

11–3.3.4 Extinguishment Requirements.

11–3.3.4.1 For automatic sprinkler installations, see 11–3.7.3.4 for systems with sprinklers in corridors only, and 11–3.8.3.4 for systems of total building coverage.

11–3.3.4.2 Hand portable fire extinguishers shall be provided in hazardous areas. When provided, hand portable fire extinguishers shall be installed and maintained as specified in 6–4 and NFPA 10, *Standard for the Installation of Portable Fire Extinguishers.* (*See Appendix B.*)

11–3.3.4.3 Standpipe and hose systems shall meet the requirements of 6–4 and NFPA 14, *Standard for the Installation of Standpipes and Hose Systems.* (*See Appendix B.*)

11–3.3.5 Protection from Hazards.

11–3.3.5.1 Hazardous areas, including but not limited to boiler and heater rooms, laundries, repair shops, and rooms or spaces used for storage of combustible supplies and equipment deemed hazardous by the authority having jurisdiction, shall be protected as required in 11–3.5.3.5.1; 11–3.6.3.5.1; 11–3.7.3.5.1; 11–3.8.3.5.1.

11–3.3.6 Building Compartmentation Requirements.

11–3.3.6.1 The maximum gross area per story between horizontal exits shall be as specified in 11–3.5.3.6.1; 11–3.6.3.6.1; 11–3.7.3.6.1; 11–3.8.3.6.1.

11–3.3.7 Smoke Control.

11–3.3.7.1 Smoke partition in exit access corridors shall be provided as required in 11–3.5.3.7.1; 11–3.6.3.7.1; 11–3.7.2.7.1; 11–3.8.3.7.1.

11–3.3.7.2 Exit access corridors in buildings 7 or more stories shall be continuously pressurized as specified in 11–3.5.3.7.2; 11–3.6.3.7.2.

11–3.4 Building Services.

11–3.4.1 Utilities.

11–3.4.1.1 Building service equipment shall be installed in accordance with 7–1.

11–3.4.2 Heating/Air Conditioning.

11–3.4.2.1 Heating equipment, and equipment for air conditioning and ventilation when provided, shall meet the requirements of 7–2.

11–3.4.3 Elevators.

11–3.4.3.1 Elevator installations shall be made in accordance with the requirements of 7–3.

11–3.4.4 Rubbish Chutes, Laundry Chutes, Incinerators.

11–3.4.4.1 Chutes for rubbish and laundry and flue fed incinerators shall be installed in accordance with the requirements of 7–4.

11–3.5 Provisions for Buildings Without Fire Suppression or Detection Systems.

11–3.5.1 General Requirements. (*See 11–3.1.*)

11–3.5.2 Means of Egress Requirements.

11–3.5.2.1 General. (*See 11–3.2.1.*)

11–3.5.2.2 Types of Exits. (*See 11–3.2.2.*)

11–3.5.2.3 Egress Capacity. (*See 11–3.2.3.*)

11–3.5.2.4 Number of Exits. (*See 11–3.2.4.*)

11–3.5.2.5 Means of Egress within Living Units.

11–3.5.2.5.1 Stairs within Unit. (*See 11–3.2.5.1.*)

11–3.5.2.5.2 Travel distance from the door of a room in a suite or apartment to a corridor door shall not exceed 50 feet.

11–3.5.2.6 Measurement of Travel Distance to Exits.

11–3.5.2.6.1 Maximum single path corridor length of 20 ft. permitted.

Exception: In existing buildings a single path of 35 ft. is permitted.

11–3.5.2.6.2 The travel distance from an apartment entrance door to the nearest exit shall not exceed 100 ft.

11–3.5.2.7 Discharge from Exits. (*See 11–2.2.7.*)

11–3.5.2.8 Doors. (*See 11–3.2.8.*)

11–3.5.2.9 Illumination of Means of Egress. (*See 11–3.2.9.*)

11–3.5.2.10 Emergency Lighting. (*See 11–3.2.10.*)

11–3.5.2.11 Marking of Means of Egress. (*See 11–3.2.11.*)

11–3.5.3 Protection.

11–3.5.3.1 Protection of Means of Egress. (*See 11–3.3.1.*)

11–3.5.3.1.1 Vertical exits shall be protected as follows:
Fire resistance of walls in buildings of 1 to 3 stories shall be 1 hr; 4 or more stories, 2 hrs.
Fire protection rating of doors in buildings of 1 to 3 stories shall be ¾ hr; 4 or more stories, 1½ hrs.

11–3.5.3.1.2 Protection of horizontal exits shall be as follows:
Fire resistance of walls, 2 hrs; fire protection rating of doors, 1½ hrs.

11–3.5.3.1.3 Exit access corridors shall be protected as follows:
Fire resistance of corridor walls shall be 1 hr; fire protection rating of doors from living units to corridor, 20 minutes.

Exception No. 1: In existing buildings, previously approved 1¾-inch solid bonded wood core doors and frames may remain in use.

Exception No. 2: In existing buildings, corridor walls with a fire resistance rating of 30 minutes are permitted.

11–3.5.3.2 Interior Finish. (*See 11–3.3.2.*)

11–3.5.3.2.1 For vertical exits, the flame spread rating of walls, ceilings, stairs shall be Class A or B.

Exit access corridors shall have flame spread ratings as follows:
Walls and ceilings, Class A or B.
Floors, Class A or B.

Exception: Where wood construction is allowed for stairs and floors, wood flooring over ½-inch thick may be permitted.

11–3.5.3.2.3 All habitable spaces shall have a maximum flame spread rating of Class A, B, or C.

11–3.5.3.3 Detection, Alarm and Communication Systems. (*See 11–3.3.3.*)

11–3.5.3.3.1 In buildings 7 or more stories, in addition to a manual fire alarm system, an approved means of voice communication between an accessible central point approved by the authority having jurisdiction and the corridors, elevators, elevator lobbies and exits shall be provided.

Exception: Existing buildings.

11–3.5.3.4 Extinguishment Requirements. (*See 11–3.3.4.2.*)

11–3.5.3.5 Protection from Hazards. (*See 11–3.3.5.*)

11–3.5.3.5.1 Every hazardous area shall be separated from other parts of the building by construction having a fire resistance rating of at least 1 hour. Communicating openings shall be protected by approved automatic or self-closing fire doors with a fire protection rating of ¾ hours.

Exception: Heat activated automatic closing devices shall not be used.

11–3.5.3.6 Compartmentation Requirements.

11–3.5.3.6.1 The gross area per story between horizontal exits shall not be limited for the purposes of this *Code* for buildings 3 stories or less and shall be a maximum of 20,000 sq. ft., for buildings 4 to 6 stories in height, and 10,000 sq. ft. for buildings 7 or more stories in height.

Exception: Existing buildings.

11–3.5.3.7 Smoke Control.

11–3.5.3.7.1 Smoke partitions (6–6) are required in exit access corridors if exit stairs are spaced at greater than 50 ft. apart.

Exception No. 1: Existing buildings.

Exception No. 2: Protection may be accomplished in conjunction with the provisions for horizontal exits.

11–3.5.3.7.2 Exit access corridors in buildings 7 or more stories in height shall be continuously pressurized to a minimum of 0.01 in. water, measured at any living unit door.

Exception: Existing buildings.

11–3.5.3.7.3* Smokeproof towers shall be provided in accordance with 5–2.3 in buildings 7 or more stories in height.

11–3.5.4 Building Services.

11–3.5.4.1 Utilities. (*See 11–3.4.1.*)

11–3.5.4.2 Heating/Air Conditioning. (*See 11–3.4.2.*)

11–3.5.4.3 Elevators. (*See 11–3.4.3.*)

11–3.5.4.4 Rubbish Chutes, Laundry Chutes, Incinerators. (*See 11–3.4.4.*)

11–3.6 Provisions for Buildings with Automatic Fire Detection or Smoke Detection Systems.

11–3.6.1 General Requirements. (*See 11–3.1.*)

11–3.6.2 Means of Egress Requirements.

11–3.6.2.2 Types of Exits. (*See 11–3.2.2.*)

11–3.6.2.3 Egress Capacity. (*See 11–3.2.3.*)

11–3.6.2.4 Number of Exits. (*See 11–3.2.4.*)

11–3.6.2.5 Means of Egress within Living Units.

11–3.6.2.5.1 Stairs within Unit. (*See 11–3.2.5.1.*)

11–3.6.2.5.2 Maximum distance from any room door in a suite or apartment to a corridor door shall not exceed 75 feet.

11–3.6.2.6 Measurement of Travel Distance to Exits.

11–3.6.2.6.1 Maximum single path corridor length of 20 ft. permitted.

Exception: In existing buildings a single path of 35 ft. is permitted.

11–3.6.2.6.2 The travel distance from an apartment entrance door to the nearest exit shall not exceed 150 ft.

11–3.6.2.7 Discharge from Exits. (*See 11–2.2.7.*)

11–3.6.2.8 Doors. (*See 11–3.2.8.*)

11–3.6.2.9 Illumination of Means of Egress. (*See 11–3.2.9.*)

11–3.6.2.10 Emergency Lighting. (*See 11–3.2.10.*)

11–3.6.2.11 Marking of Means of Egress. (*See 11–3.2.11.*)

11–3.6.3 Protection.

11–3.6.3.1 Protection of Means of Egress. (*See 11–3.3.1.*)

11–3.6.3.1.1 Vertical exits shall be protected as follows:

Fire resistance of walls in buildings of 1 to 3 stories shall be 1 hr; 4 or more stories, 2 hrs.

Fire protection rating of doors in buildings of 1 to 3 stories shall be ¾ hr; 4 or more stories, 1½ hrs.

11–3.6.3.1.2 Protection of horizontal exits shall be as follows:

Fire resistance of walls 2 hrs; fire protection rating of doors 1½ hrs.

11–3.6.3.1.3 Exit access corridors shall be protected as follows:

Fire resistance of corridor walls shall be ¾ hr; fire protection rating of doors from living unit to corridor, 20 min.

11–3.6.3.2 Interior Finish. (*See 11–3.3.2.*)

11–3.6.3.2.1 For vertical exits, the flame spread rating of walls, ceilings, stairs shall be Class A or B.

11–3.6.3.2.2 Exit access corridors shall have flame spread ratings as follows:

Walls and ceilings, Class A or B.
Floors, Class A, B, or C.

11–3.6.3.2.3 All habitable spaces shall have a flame spread rating of Class A, B, or C.

11–3.6.3.3 Detection, Alarm and Communication Systems. (*See 11–3.3.3.*)

11–3.6.3.3.1 In buildings 4 stories or more in height, or with 12 or more units, the alarm system shall be initiated by the automatic fire or smoke detection system, as well as being capable of manual initiation.

11–3.6.3.4 Extinguishment Requirements. (*See 11–3.3.4.*)

11–3.6.3.5 Protection from Hazards. (*See 11–3.3.5.*)

11–3.6.3.5.1 Every hazardous area shall be separated from other parts of the building by construction having a fire resistance rating of at least 1 hour. Communicating openings shall be protected by approved automatic or self-closing fire doors.

11–3.6.3.6 Building Compartmentation Requirements.

11–3.6.3.6.1 The gross area per story between horizontal exits shall not be limited for the purposes of this *Code* for buildings 3 stories or less, and shall be a maximum of 20,000 sq. ft. for buildings 4 to 6 stories in height, and 15,000 sq. ft. for 7 or more stories.

11–3.6.3.7 Smoke Control.

11–3.6.3.7.1 Smoke partitions (6–6) are required in exit access corridors if exit stairs are spaced at greater than 100 ft. apart.

11–3.6.3.7.2 Exit access corridors in buildings 7 or more stories in height shall be continuously pressurized to a minimum of 0.01 in. water, measured at any living unit door.

11–3.6.3.7.3 Smoke proof towers shall be provided in accordance with 5–2.3 in buildings 7 or more stories in height.

11–3.6.4 Building Services.

11–3.6.4.1 Utilities. (*See 11–3.4.1.*)

11–3.6.4.2 Heating/Air Conditioning. (*See 11–3.4.2.*)

11–3.6.4.3 Elevators. (*See 11–3.4.3.*)

11–3.6.4.4 Rubbish Chutes, Laundry Chutes, Incinerators. (*See 11–3.4.4.*)

11–3.7 Provisions for Buildings with Automatic Sprinkler Protection in Selected Locations.

11–3.7.1 General Requirements. (*See 11–3.1.*)

11–3.7.2 Means of Egress Requirements.

11–3.7.2.1 General. (*See 11–3.2.1.*)

11–3.7.2.2 Types of Exits. (*See 11–3.2.2.*)

11–3.7.2.3 Egress Capacity. (*See 11–3.2.3.*)

11–3.7.2.4 Number of Exits. (*See 11–3.2.4.*)

11–3.7.2.5 Means of Egress within Living Units.

11–3.7.2.5.1 Stairs within Unit. (*See 11–3.2.5.1.*)

11–3.7.2.5.2 Travel distance from the door of a room in a suite or apartment to a corridor door shall not exceed 50 feet.

11–3.7.2.6 Measurement of Travel Distance to Exits.

11–3.7.2.6.1 Maximum single path corridor length of 20 ft. permitted.

Exception: In existing buildings a single path of 35 ft. is permitted.

11–3.7.2.6.2 The travel distance from an apartment entrance door to the nearest exit shall not exceed 150 ft.

11–3.7.2.7. Discharge from Exits. (*See 11–2.2.7.*)

11–3.7.2.8 Doors. (*See 11–3.2.8.*)

11–3.7.2.9 Illumination of Means of Egress. (*See 11–3.2.9.*)

11–3.7.2.10 Emergency Lighting. (*See 11–3.2.10.*)

11–3.7.2.11 Marking of Means of Egress. (*See 11–3.2.11.*)

11–3.7.3 Protection.

11–3.7.3.1 Protection of Means of Egress. (*See 11–3.3.1.*)

11–3.7.3.1.1 Vertical exits shall be protected as follows:

Fire resistance of walls in buildings of 1 to 3 stories shall be 1 hr; 4 or more stories, 2 hrs.

Fire protection rating of doors in buildings of 1 to 3 stories shall be ¾ hr; 4 or more stories, 1½ hrs.

11–3.7.3.1.2 Protection of horizontal exits shall be as follows:

Fire resistance of walls 2 hrs; fire protection rating of doors 1½ hrs.

11–3.7.3.1.3 Exit access corridors shall be protected as follows:

Fire resistance of corridor walls shall be ¾ hr; fire protection rating of doors from living unit to corridor, 20 min.

11–3.7.3.2 Interior Finish. (*See 11–3.3.2.*)

11–3.7.3.2.1 For vertical exits, the flame spread rating of walls, ceilings, stairs shall be Class A or B.

11–3.7.3.2.2 Exit access corridors shall have flame spread ratings as follows:

Walls and ceilings, Class A, B, or C.

Floors, no requirement.

11–3.7.3.2.3 All habitable spaces shall have a flame spread rating of Class A, B, or C.

11–3.7.3.3 Detection, Alarm and Communication Systems. (*See 11–3.3.3.*)

11–3.7.3.3.1 In buildings 7 or more stories, in addition to a manual fire alarm system, an approved means of voice communication between an accessible central point approved by the authority having jurisdiction and the corridors, elevators, elevator lobbies and exits shall be provided.

Exception: Existing buildings.

11–3.7.3.3.2 The audible alarm shall be activated upon operation of the sprinkler system as well as manually.

11–3.7.3.4 Extinguishment Requirements. (*See 11–3.3.4.*)

11–3.7.3.4.1 Automatic sprinklers shall be installed in corridors along the corridor ceiling, and one sprinkler head shall be opposite the center of and inside any living unit door opening onto the corridor.

11–3.7.3.4.2 The sprinkler installation shall meet the requirements of 6–4 and NFPA 13 in terms of workmanship and materials. (*See Appendix B.*)

11–3.7.3.4.3 The installation of the corridor sprinklers shall meet the spacing and protection area requirements of NFPA 13, *Standard for the Installation of Sprinkler Systems.* (*See Appendix B.*)

11–3.7.3.5 Protection from Hazards. (*See 11–3.3.5.*)

11–3.7.3.5.1 Every hazardous area shall be separated from other parts of the building by construction having a fire resistance rating of at least 1 hour. Communicating openings shall be protected by approved automatic or self-closing fire doors with a fire protection rating of ¾-hours.

Exception: Heat activated automatic closing devices shall not be used.

11–3.7.3.6 Building Compartmentation Requirements.

11–3.7.3.6.1 The gross area per story between horizontal exits shall not be limited for buildings 6 stories or less, and shall be a maximum of 20,000 sq. ft. for buildings 7 or more stories in height.

11–3.7.3.7 Smoke Control.

11–3.7.3.7.1 Smoke partitions (6–6) are required in exit access corridors if exit stairs are spaced at greater than 100 ft. apart.

11–3.7.3.7.2 Smoke proof towers shall be provided in accordance with 5–2.3 in buildings 7 or more stories in height.

11–3.7.4 Building Services.

11–3.7.4.1 Utilities. (*See 11–3.4.1.*)

11–3.7.4.2 Heating/Air Conditioning. (*See 11–3.4.2.*)

11–3.7.4.3 Elevators. (*See 11–3.4.3.*)

11–3.7.4.4 Rubbish Chutes, Laundry Chutes, Incinerators. (*See 11–3.4.4.*)

11–3.8 Provisions for Buildings with Total Automatic Sprinkler Protection.

11–3.8.1 General Requirements. (*See 11–3.1.*)

11–3.8.2 Means of Egress Requirements.

11–3.8.2.1 General. (*See 11–3.2.1.*)

11–3.8.2.2 Types of Exits. (*See 11–3.2.2.*)

11–3.8.2.3 Egress Capacity. (*See 11–3.2.3.*)

11–3.8.2.4 Number of Exits. (*See 11–3.2.4.*)

11–3.8.2.5 Means of Egress within Living Units.

11–3.8.2.5.1 Stairs within Unit. (*See 11–3.2.5.1.*)

11–3.8.2.5.2 Travel distance from the door of a room in a suite or apartment to a corridor door shall not exceed 100 feet.

11–3.8.2.6 Measurement of Travel Distance to Exits.

11–3.8.2.6.1 Maximum single path corridor length of 35 ft. permitted.

11–3.8.2.6.2 The travel distance from an apartment entrance door to the nearest exit shall not exceed 150 ft.

11–3.8.2.7 Discharge from Exits. (*See 11–3.2.7.*)

11–3.8.2.8 Doors. (*See 11–3.2.8.*)

11–3.8.2.9 Illumination of Means of Egress. (*See 11–3.2.9.*)

11–3.8.2.10 Emergency Lighting. (*See 11–3.2.10.*)

11–3.8.2.11 Marking of Means of Egress. (*See 11–3.2.11.*)

11–3.8.3 Protection.

11–3.8.3.1 Protection of Means of Egress (*See 11–3.3.1.*)

11–3.8.3.1.1 Vertical exits shall be protected as follows:

Fire resistance of walls in buildings of 1 to 3 stories shall be ¾ hr; 4 or more stories, 1 hr.

Fire protection rating of doors in buildings of any height shall be ¾ hr.

11–3.8.3.1.2 Exit access corridors shall be protected as follows:

Fire resistance of corridor walls shall be ½ hr; fire protection rating of doors from living unit to corridor, ⅓ hr.

11–3.8.3.2 Interior Finish. (*See 11–3.3.2.*)

11–3.8.3.2.1 For vertical exits, the flame spread rating of walls, ceilings, stairs shall be Class A, B, or C.

11–3.8.3.2.2 Exit access corridors shall have flame spread ratings as follows:

Walls and ceilings, Class A, B, or C.

Floors, no requirement.

11–3.8.3.2.3 All habitable spaces shall have a flame spread rating of Class A, B, or C.

11–3.8.3.3 Detection, Alarm and Communication Systems. (*See 11–3.3.3.*)

11–3.8.3.3.1 In buildings 4 stories or more in height, or with 12 or more units, the alarm system shall be activated upon operation of the automatic sprinkler system as well as being capable of manual initiation.

11–3.8.3.4 Extinguishment Requirements. (*See 11–3.3.4.*)

11–3.8.3.4.1 Automatic sprinkler system installations shall meet the requirements of 6–4 and NFPA 13, *Standard for the Installation of Sprinkler Systems.* (*See Appendix B.*)

Exception: Sprinkler installation may be omitted in small compartmented areas such as closets not over 24 sq. ft. and bathrooms not over 55 sq. ft.

11–3.8.3.5 Protection from Hazards. (*See 11–3.3.5.*)

11–3.8.3.5.1 Separation enclosures for hazardous areas not required with total automatic sprinkler protection.

11–3.8.3.6 Building Compartmentation Requirements.

11–3.8.3.6.1 The gross area per story shall not be limited for buildings with total automatic sprinkler protection as specified in 11–3.8.3.4.1.

11–3.8.3.7 Smoke Control.

11–3.8.3.7.1 Smoke partitions (6–6) are not required in exit access corridors of buildings with total automatic sprinkler protection.

11–3.8.4 Building Services.

11–3.8.4.1 Utilities. (*See 11–3.4.1.*)

11–3.8.4.2 Heating/Air Conditioning. (*See 11–3.4.2.*)

11–3.8.4.3 Elevators. (*See 11–3.4.3.*)

11–3.8.4.4 Rubbish Chutes, Laundry Chutes, Incinerators. (*See 11–3.4.4.*)

SECTION 11–4 DORMITORIES

11–4.1 General Requirements.

11–4.1.1 Applicability, definitions, mixed occupancies, and occupant load, as described in Section 11–1 of this chapter, are pertinent to and a part of this section.

11–4.1.2 Dormitory Requirements.

11–4.1.2.1 Dormitories shall comply with the requirements for hotels, except as modified in the following paragraphs.

Exception: Any dormitory divided into suites of rooms, with 1 or more bedrooms opening into a living room or study which has a door opening into a common corridor serving a number of suites, shall be classified as an apartment building.

11–4.2 Means of Egress Requirements.

11–4.2.1 Types and Capacities of Exits.

11–4.2.1.1 Exits of the same types and capacities as required for hotels (*see 11–2.2.2 and 11.2.2.3*) shall be provided.

Exception: Each street floor door shall be sufficient to provide 1 unit of exit width for each 50 persons capacity of the street floor, plus 1 unit for each unit of required stairway width discharging through the street floor.

11–4.2.2 Arrangement of Means of Egress.

11–4.2.2.1 In any dormitory having sleeping rooms or areas containing more than four occupants, there shall be access to two separate and distinct exits in different directions from the room door, with no common path of travel.

Exception: One exit may be accepted where the room or space is subject to occupancy by not more than 10 persons and has a door opening directly to the outside of the building at street or ground level or to an outside stairway.

11–4.2.3 Measurement of Travel Distance to Exits.

11–4.2.3.1 Exits shall be so arranged that it will not be necessary to travel more than 100 feet from any point or 150 feet in a building protected by automatic sprinklers in accordance with 6–4 to reach the nearest outside door or exit, nor to traverse more than a 1-story flight of inside, unenclosed stairs.

11–4.3 Protection.

11–4.3.1 Protection of Vertical Openings.

11–4.3.1.1 Every exit stair and other vertical openings shall be enclosed or protected in accordance with 6–1.

Exception No. 1: In existing buildings not more than two stories in height of any type of construction, unprotected openings may be permitted by the authority having jurisdiction if the building is protected by automatic sprinklers in accordance with 6–4.

Exception No. 2: If every sleeping room or area has direct access to an outside exit without the necessity of passing through any corridor or other space exposed to any unprotected vertical opening and the building is equipped with an automatic fire detection system in accordance with 6–3, unprotected openings may be permitted by the authority having jurisdiction.

11–4.3.3 Alarm System.

11–4.3.3.1 Every dormitory shall have a manual fire alarm system in accordance with 6–3.

Exception No. 1: Buildings equipped with an automatic sprinkler system in accordance with 6–4.

Exception No. 2: Buildings equipped with an automatic fire detection system in accordance with 6–3.

11–4.4 Building Services.

11–4.4.1 Utilities.

11–4.4.1.1 Building service equipment shall be installed in accordance with 7–1.

11–4.4.2 Heating/Air Conditioning.

11–4.4.2.1 Heating equipment and air conditioning shall meet the requirements of 7–2.

SECTION 11–5 LODGING OR ROOMING HOUSES

11–5.1 General Requirements.

11–5.1.1 This section applies only to lodging or rooming houses providing sleeping accommodations for 15 or less persons, as specified in 11–1.3.1.

11–5.1.2 In addition to the following provisions, every lodging or rooming house shall comply with the minimum requirements for one- and two-family dwellings.

11–5.2 Means of Egress Requirements.

11–5.2.1 Number and Types of Exits.

11–5.2.1.1 Every sleeping room above the street floor shall have access to 2 separate means of exit, at least one of which shall consist of an enclosed interior stairway, an exterior stairway, a fire escape or a horizontal exit.

11–5.2.2 Arrangement of Means of Egress.

11–5.2.2.1 Exits shall be located to provide a safe path of travel to the outside of the building without traversing any corridor or space exposed to an unprotected vertical opening.

Exception: Unprotected vertical openings may be permitted in sprinklered buildings 3 stories or less in height.

11–5.2.2.2 Any sleeping room below the street floor shall have direct access to the outside of the building.

11–5.3 Protection.

11–5.3.1 Alarm System.

11–5.3.1.1 A manual fire alarm system shall be provided in accordance with 6–3.

11–5.3.2 Detection System.

11–5.3.2.1 Approved smoke detectors, powered by the house electrical service, shall be installed in an approved manner on each floor level. When activated, the detectors shall initiate an alarm which shall be audible in all sleeping areas.

11–5.4 Building Services. (*No special requirements.*)

SECTION 11–6 ONE- AND TWO-FAMILY DWELLINGS

11–6.1 General Requirements.

11–6.1.1 This section covers one- and two-family private dwellings as specified in 11–1.3.1.

11–6.2* Means of Escape Requirements.

11–6.2.1 Number of Exits.

11–6.2.1.1 In any dwelling of more than two rooms, every bedroom and living room area shall have at least two means of escape, at least one of which shall be a door or stairway providing a means of unobstructed travel to the outside of the building at street or ground level. No bedroom or living room area shall be accessible by only a ladder or folding stairs, or through a trap door.

11–6.2.2 Type of Second Means of Escape.

11–6.2.2.1 The second means of escape shall be either:

(a) A door or stairway providing a means of unobstructed travel to the outside of the building at street or ground level, or

(b) An outside window openable from the inside without the use of tools and providing a clear opening of not less than 20 in. in width, 24 in. in height, and 5.7 sq. ft. in area. The bottom of the opening shall not be more than 44 in. above the floor.

Exception: If the room has a door leading directly outside of the building to grade, a second means of escape shall not be required.

11–6.2.3 Arrangement of Means of Egress.

11–6.2.3.1 No required path of travel to the outside from any room shall be through another room or apartment not under the immediate

control of the occupant of the first room or his family, nor through a bathroom or other space subject to locking.

11–6.2.4 Doors.

11–6.2.4.1 No door in the path of travel of a means of escape shall be less than 28 inches wide.

Exception: Bathroom doors may be 24 in. wide.

11–6.2.4.2 Every closet door latch shall be such that children can open the door from inside the closet.

11–6.2.4.3 Every bathroom door lock shall be designed to permit the opening of the locked door from the outside in an emergency.

11–6.2.4.4 Exterior doors may be swinging or sliding.

11–6.2.5 Vertical Means of Escape, Stairs.

11–6.2.5.1 The width, risers, and treads of every stair shall comply at least with the minimum requirements for Class B stairs, as described in 5–2.2.

11–6.3 Protection.

11–6.3.1 Interior Finish.

11–6.3.1.1 Interior finish or occupied spaces shall be Class A, B, or C as defined in 6–2.

11–6.3.2 Detection and Alarm.

11–6.3.2.1* At least one approved smoke detector powered by the house electric service shall be installed in an approved manner in every dwelling unit. When activated, the detector shall initiate an alarm which is audible in the sleeping rooms. For location of single station detectors, see Appendix A, Chapter 11.

Exception: In existing construction approved smoke detectors powered by batteries may be used.

11–6.4 Building Services.

11–6.4.1 Heating Equipment.

11–6.4.1.1 No stove or combustion heater shall be so located as to block escape in case of fire arising from malfunctioning of the stove or heater.

CHAPTER 12 MERCANTILE OCCUPANCIES

SECTION 12–1 GENERAL REQUIREMENTS

12–1.1 General. This chapter covers both new and existing construction. In various sections of the chapter there are specific provisions for existing structures differing from those for new construction.

Where there are no specific provisions in this chapter for existing structures, the requirements for new construction shall apply.

12–1.2 Classification of Occupancy.

12–1.2.1 Mercantile occupancies shall include all buildings and structures or parts thereof with occupancy as described in 4–1.7.

12–1.2.2 Subclassification of Occupancy.

12–1.2.2.1 Mercantile occupancies shall be classified as follows:

(a) Class A. All stores having aggregate gross area of 30,000 square feet or more, or utilizing more than 3 floor levels for sales purposes.

(b) Class B. All stores of less than 30,000 square feet aggregate gross area, but over 3,000 square feet, or utilizing any balconies, mezzanines (*see 12–1.2.2.3*), or floors above or below the street floor level for sales purposes.

Exception: If more than 3 floors are utilized, the store shall be Class A, regardless of area.

(c) Class C. All stores of 3,000 square feet or less gross area used for sales purposes on the street floor only. (*Balcony permitted, see 12–1.2.2.3.*)

12–1.2.2.2 For the purpose of the classification in 12–1.2.2.1, the aggregate gross area shall be the total gross area of all floors used for mercantile purposes and, where a store is divided into sections by fire walls, shall include the area of all sections used for sales purposes. Areas of floors not used for sales purposes, such as a floor below the street floor used only for storage and not open to the public, shall not be counted for the purposes of the above classifications, but exits shall be provided for such nonsales areas in accordance with their occupancy, as specified by other chapters of this *Code*.

12–1.2.2.3* A balcony or mezzanine floor having an area less than one-half of the floor below shall not be counted as a floor level for the purpose of applying the classification of 12–1.2.2.1, but if there are 2 balcony or mezzanine floors, 1 shall be counted.

12–1.2.2.4 Where a number of stores under different management are located in the same building or in adjoining buildings with no fire wall or other standard fire separations between, the aggregate gross area of all such stores shall be used in determining classification per 12–1.2.2.1.

12–1.2.3 Mixed Occupancies.

12–1.2.3.1 Combined Mercantile and Residential Occupancies.

12–1.2.3.1.1 No dwelling unit shall have its sole means of egress through any mercantile occupancy in the same building.

12–1.2.3.1.2 No multiple dwelling occupancy shall be located above a mercantile occupancy.

Exception No. 1: Where the dwelling occupancy and exits therefrom are separated from the mercantile occupancy by construction having a fire resistance of at least 1 hour.

Exception No. 2: Where the mercantile occupancy is protected by automatic sprinklers in accordance with Section 6–4.

Exception No. 3: Where an existing building with not more than 2 dwelling units above the mercantile occupancy is protected by an automatic fire detection system in accordance with Section 6–3.

12–1.3* Classification of Hazard of Contents. Mercantile occupancies contents shall be classed as ordinary hazard in accordance with Section 4–2.

Exception: Mercantile occupancies shall be classified as high hazard if high hazard commodities are displayed or handled without protective wrappings or containers, in which case the following additional provisions shall apply:

(a) Exits shall be located that not more than 75 feet of travel from any point is required to reach the nearest exit.

(b) From every point there shall be at least 2 exits accessible by travel in different directions (no common path of travel).

(c) All vertical openings shall be enclosed.

12–1.4 Occupant Load.

12–1.4.1* For purposes of determining required exits, the occupant load of mercantile buildings or parts of buildings used for mercantile purposes shall be not less than the following:

(a) Street floor, 1 person for each 30 square feet gross floor area of sales space. In stores with no street floor as defined in Chapter 3, but with access directly from the street by stairs or escalators, the principal floor at the point of entrance to the store shall be considered the street floor. In stores where, due to differences in grade of streets on different sides, there are 2 or more floors directly accessible from streets (not including alleys or similar back streets), each such floor shall be considered a street floor for the purpose of determining occupant load.

(b) Sales floors below the street floor — same as street floor.

(c) Upper floors, used for sales — 1 person for each 60 square feet gross floor area of sales space.

(d) Floors or portions of floors used only for offices — 1 person for each 100 square feet gross floor area of office space.

(e) Floors or portions of floors used only for storage, receiving, shipping and not open to the general public — 1 person per each 300 square feet gross area of storage, receiving, or shipping space.

(f) Floors or portions of floors used for assembly purposes — occupant load determined in accordance with Chapter 8 for such places of assembly.

(g) Covered malls — 1 person for each 30 square feet gross floor area for street level and below, and 1 person for each 60 square feet gross floor area for upper floors.

Exception: The covered mall when considered as a pedestrian way shall not be assessed an occupant load. (See Exception to 12–5.4.2.)

12–1.4.2 In case of mezzanines or balconies open to the floor below or other unprotected vertical openings between floors as permitted by 12–3.1.2, the occupant load (or area) of the mezzanine or other subsidiary floor level shall be added to that of the street floor for the purpose of determining required exits, provided, however, that in no case shall the total number of exit units be less than would be required if all vertical openings were enclosed.

SECTION 12–2 MEANS OF EGRESS REQUIREMENTS

12–2.1 General.

12–2.1.1 All means of egress shall be in accordance with Chapter 5 and this chapter. Only types of exits specified in 12–2.2 shall be used as required exit facilities in any mercantile occupancy.

12–2.1.2* Where a stairway, escalator, outside stair, or ramp serves 2 or more upper floors, the same stairway or other exit required to serve any 1 upper floor may also serve other upper floors.

Exception: No inside open stairway, escalator, or ramp may serve as a required egress facility from more than 1 floor.

12–2.1.3 Where there are 2 or more floors below the street floor, the same stairway or other exit may serve all floors (same principle as stated in 12–2.1.2 for upper floors), but all required exits from such areas shall be independent of any open stairways between street floor and the floor below it.

12–2.1.4 Where a level outside exit from upper floors is possible owing to hills, such outside exits may serve instead of horizontal exits. If, however, such outside exits from the upper floor also serve as an entrance from a principal street, the upper floor shall be classed as a street floor in accordance with the definition in Chapter 3, and is subject to the requirements of this section for street floors.

12–2.1.5 For special considerations with contents of high hazard, see 12–1.3.

12–2.2 Types of Exits.

12–2.2.1* Exits shall be restricted to the following permissible types:

(a) Doors (*see 5–2.1*).

(b) Interior stairs, Class A or B (*see 5–2.2*).

(c) Smokeproof towers (*see 5–2.3*).

(d) Outside stairs (*see 5–2.5*).

(e) Horizontal exits (*see 5–2.4*).

(f) Ramps (*see 5–2.6*).

(g) Exit passageway (*see 5–2.7*).

(h) Escalators (*see 5–2.8*).

12–2.2.2 An existing interior stair or fire escape not complying with 5–2.2 or 5–2.5 may be continued in use, subject to the approval of the authority having jurisdiction.

12–2.3 Capacity of Means of Egress.

12–2.3.1 The capacity of a unit of exit width shall be as follows:

(a) Doors including those leading to outside the building at the ground level or 3 risers above or below the ground level — 100 persons per unit of exit width.

(b) Class A or Class B interior stairs, smokeproof towers, or outside stairs — 60 persons per unit of exit width.

(c) Escalators — same as stairs if qualifying as required exits.

(d) Horizontal exits — 100 persons per unit of exit width.

12–2.3.2 In Class A and Class B stores, street floor exit doors or horizontal exit doors, located as required by 12–2.5 and 12–2.6 shall be sufficient to provide the following numbers of units of exit width:

(a) One unit for each 100 persons capacity of street floor, plus

(b) One and one-half units for each 2 units of required stairways discharging through the street floor from floors below, plus

(c) One and one-half units for each 2 units of required stairways discharging through the street floor, plus

(d) One and one-half units for each 2 units of escalator width discharging through the street floor where escalators qualify as required exits or as means of access to required exits.

(e) If ramps are used instead of stairways, street floor doors shall be provided on the same basis as for stairways, with door width appropriate to the rated discharge of ramps, per 5–2.6.

12–2.4 Number of Exits.

12–2.4.1 In Class A and Class B stores at least 2 separate exits shall be accessible from every part of every floor, including floors below the street floor.

12–2.4.2 In Class C stores, at least 2 separate exits shall be provided as specified by 12–2.4.1.

Exception: Where no part of the Class C store is more than 50 feet from the street door, measured in accordance with 5–6.2, a single exit shall be permitted.

12–2.5 Arrangement of Means of Egress.

12–2.5.1* Exits shall be remote from each other and shall be arranged to minimize the possibility that both may be blocked by any emergency.

Exception: A common path may be permitted for the first 50 feet from any point. (See 12–1.3, if high hazard contents.)

12–2.5.2 The aggregate width of all aisles leading to each exit shall be equal to at least the required width of the exit.

12–2.5.3 In no case shall any aisle be less than 28 inches in clear width.

12–2.5.4 In Class A stores, at least one aisle of five feet minimum width shall lead directly to an exit.

12–2.5.5 If the only means of customer entrance is through 1 exterior wall of the building, two-thirds of the required exit width shall be located in this wall.

12–2.5.6 At least one-half of the required exits shall be so located as to be reached without going through check-out stands. In no case shall check-out stands or associated railings or barriers obstruct exits or required aisles or approaches thereto.

12–2.6 Measurement of Travel Distance to Exits. Travel distance to exits, measured in accordance with 5–6.2, shall be no more than 100 feet.

Exception: An increase in the above travel distance to 150 feet shall be permitted in a building completely protected by an automatic sprinkler system in accordance with Section 6–4.

12–2.7* Discharge from Exits. In buildings with automatic sprinkler protection in accordance with Section 6–4, one-half of rated number of exit units of stairways, escalators or ramps serving as required exits from floors above or below the street floor may discharge through the main street floor area, instead of directly to the street, or through a fire-resistive passage to the street, provided that:

(a) Not more than one-half of the required exit units from any single floor considered separately discharge through the street floor area.

(b) The exits are enclosed in accordance with Section 6–1 to the street floor.

(c) The distance of travel from the termination of the enclosure to an outside street door is not more than 50 feet.

(d) The street floor doors provide sufficient units of exit width to serve exits discharging through the street floor in addition to the street floor itself, per 12–2.3.2.

12–2.8 Doors.

12–2.8.1 Every street floor door shall be in accordance with 5–2.1, and a horizontal exit door, if used, in accordance with 5–2.4.

Exception: In existing Class C mercantile occupancies, doors may swing inward where such doors serve only the street floor area.

12–2.8.2* Where revolving doors are used to provide part of the required number of units of street floor exit width, such doors shall be used in accordance with the provisions of Section 5–2.

12–2.8.3 All doors at the foot of stairs from upper floors or at the head of stairs leading to floors below the street floor shall swing with the exit travel.

12–2.9 Illumination of Means of Egress. Every mercantile occupancy shall have exit illumination and signs in accordance with Section 5–8.

12–2.10 Emergency Lighting. Every Class A and Class B store shall have emergency lighting facilities conforming to Section 5–9.

12–2.11 Marking of Means of Egress. Every mercantile occupancy shall have exit signs in accordance with Section 5–10.

Exception: Where an exit is immediately apparent from all portions of the sales area, the exit marking may be omitted.

SECTION 12–3 PROTECTION

12–3.1* Protection of Vertical Openings. Each stairway, elevator shaft, escalator opening or other vertical opening shall be enclosed or protected in accordance with Section 6–1.

Exception No. 1: As permitted in Class A stores where:

(a) Openings may be unprotected between any 2 floors, such as open stairs or escalators between street floor and the floor below, or open stairs to second floor or balconies or mezzanines above the street floor level.

(b) In stores protected by automatic sprinklers in accordance with Section 6–4, openings may be unprotected both to the floor below and to the floor above the street floor, or to balconies or mezzanines above the street floor.

(c) In stores protected by automatic sprinklers in accordance with Section 6–4, openings may be unprotected under the conditions permitted by 6–1 or between the street floor and the floor below the street floor and between street floor and second floor or, if no openings to the floor below the

street floor, between street floor, street floor balcony, or mezzanine, and second floor, but not between more than 3 floor levels.

(d) In existing stores only, 1 floor above those otherwise permitted may be open if such floor is not used for sales purposes and the entire building is sprinklered.

Exception No. 2: As permitted in Class B stores where:

(a) Openings may be unprotected between any 2 floors, such as open stairs or escalators between street floor and the floor below, or between street floor and mezzanine or second floor.

(b) In stores protected by automatic sprinklers in accordance with Section 6–4, openings may be unprotected both to the floor below and to the floor above the street floor, or to balconies or mezzanines above the street floor.

(c) In stores protected by automatic sprinklers in accordance with Section 6–4, openings may be unprotected under the conditions permitted in 6–1 or between the floor below the street floor and street floor and between street floor and balcony or mezzanine and second floor.

(d) In existing stores only, all floors permitted under Class B may have unprotected openings if the entire building is completely sprinklered in accordance with Section 6–4.

Exception No. 3: As permitted in Class C stores where:

(a) In any store, openings may be unprotected between street floor and balcony.

(b) In existing stores only, openings may be unprotected between street floor and the floor below or second floor not used for sales purposes.

12–3.2 Interior Finish. Interior finish in all stores shall be Class A or B, in accordance with Section 6–2. *(See Table A–6–2.5.1.)*

Exception No. 1: With automatic sprinkler protection, Class C interior finish shall be permitted.

Exception No. 2: Existing Class C interior finish shall be permitted as follows:

(a) Walls of existing stores.

(b) Throughout existing Class C stores.

Exception No. 3: In any mercantile occupancy, exposed portions of structural members complying with the requirements for heavy timber construction may be permitted. Laminated wood shall not delaminate under the influence of heat.

12–3.3 Alarm Systems. Class A and Class B stores shall be provided with a manual fire alarm system in accordance with Section 6–3.

Exception No. 1: Stores provided with automatic fire detection in accordance with Section 6–3.

Exception No. 2: Stores provided with automatic sprinklers in accordance with Section 6–4.

12–3.4 Extinguishment Requirements. Approved automatic sprinkler protection shall be installed in accordance with Section 6–4 in all mercantile occupancies as follows:

(a) In all buildings with a story over 15,000 square feet in area.

(b) In all buildings exceeding 30,000 square feet in gross area.

(c) Throughout stories below the floor of exit discharge when such stories have an area exceeding 2,500 square feet when used for the sale, storage, or handling of combustible goods and merchandise.

12–3.5 Protection from Hazards.

12–3.5.1 An area used for general storage, boiler or furnace rooms, fuel storage, janitor closets, maintenance shops including woodworking and painting areas, and kitchens shall be separated from other parts of the building by (an) assembly(ies) having a fire resistance rating of not less than 1 hour, and all openings shall be protected with self-closing fire doors.

Exception: Areas protected by an automatic extinguishing system.

12–3.5.2 Areas with high hazard contents as defined in Section 4–2, shall be provided with both fire-resistive separation and automatic sprinkler protection.

12–3.6 Minimum Construction Requirements. (*No requirements.*)

12–3.7 Smoke Control. (*See NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems* [*see Appendix B*].)

SECTION 12–4 BUILDING SERVICES

12–4.1 Utilities.

12–4.2 Air conditioning, ventilating, heating, commercial cooking, and other service equipment shall be in accordance with Chapter 7.

12–4.3 Elevators. (*See Section 7–3.*)

12–4.3.1 An elevator shall not constitute required means of exit.

12–4.3.2 When mercantile occupancies are more than 3 stories high or more than 3 stories above the street floor and equipped with automatic elevators, one or more elevators shall be designed and equipped for fire emergency use by fire fighters as specified in Chapter 7. Key operation shall transfer automatic elevator operation to manual and bring elevator to the street floor for use of fire service. The elevator shall be situated so as to be readily accessible by the fire department.

12–4.4 Rubbish Chutes, Incinerators and Laundry Chutes. All rubbish chutes, incinerators and laundry chutes shall be in accordance with 7–4.

SECTION 12–5 SPECIAL PROVISIONS

12–5.1 Windowless or Subterranean Buildings. (*See Section 16–4.*)

12–5.2 Self-Service Stores.

12–5.2.1 In any self-service store, no check-out stand or associated railings or barriers shall obstruct exits or required aisles or approaches thereto.

12–5.2.2 In every self-service store where wheeled carts or buggies are used by customers, adequate provision shall be made for the transit and parking of such carts to minimize the possibility that they may obstruct exits.

12–5.3 Open-Air Mercantile Operations.

12–5.3.1 Open-air mercantile operations, such as open-air markets, gasoline filling stations, roadside stands for the sale of farm produce, and other outdoor mercantile operations shall be so arranged and conducted as to maintain free and unobstructed ways of travel at all times to permit prompt escape from any point of danger in case of fire or other emergency, with no dead ends in which persons might be trapped due to display stands, adjoining buildings, fences, vehicles, or other obstructions.

12–5.3.2 If mercantile operations are conducted in roof-over areas, they shall be treated as mercantile buildings, provided that canopies over individual small stands to protect merchandise from the weather shall not be construed to constitute buildings for the purpose of this *Code*.

12–5.4 Covered Malls.

12–5.4.1 Definition of Covered Mall. A covered or roofed interior area used as a pedestrian way and connecting building(s) or portions of a building housing single and/or multiple tenants.

12–5.4.2 The covered mall and all buildings connected thereto shall be treated as a single building for the purposes of calculation of means of egress and shall be subject to the requirements for appropriate occupancies. The covered mall shall be at least of sufficient clear width to accommodate egress requirements as set forth in other sections of this *Code*.

Exception: The covered mall may be considered to be a pedestrian way, in which case the distance of travel within a store to an exit or to the covered mall shall be a maximum of 150 feet (see Exception to 12–2.6) or shall be the maximum for the appropriate occupancy; plus an additional 200 feet shall be permitted for travel through the covered mall space if all the following requirements are met:

(a) The covered mall shall be at least of sufficient clear width to accommodate egress requirements as set forth in other sections of this chapter, but in no case less than 20 feet wide in its narrowest dimension.

(b) The covered mall shall be provided with an unobstructed exit access on each side of the mall floor area of not less than 10 feet in clear width, parallel to and adjacent to the mall store front. Such exit access shall lead to an exit having a minimum of 3 units of exit width. (See 12–5.4.3.1.)

(c) The covered mall and all buildings connected thereto shall be provided throughout with an electrically supervised automatic sprinkler system in accordance with Section 6–4.

(d) Walls dividing stores from each other shall extend from the floor to the underside of the roof deck or floor deck above. No separation is required between a store and the covered mall.

(e) The covered mall shall be provided with smoke control in accordance with 12–3.7.

12–5.4.3 Exit Details.

12–5.4.3.1 Every floor of a covered mall shall have no less than two exits located remote from each other.

12–5.4.3.2 No less than one-half the required exit widths for each Class A or Class B store connected to a covered mall shall lead directly outside without passage through the mall.

12–5.4.3.3 Every covered mall shall be provided with unobstructed exit access, parallel to and adjacent to the connected buildings. This exit access shall extend to each mall exit.

12–5.4.3.4 Exits from a covered mall shall be arranged so that the length of exit travel from any mall store entrance to an exit shall not exceed 200 feet.

CHAPTER 13 BUSINESS OCCUPANCIES

SECTION 13–1 GENERAL REQUIREMENTS

13–1.1 General. This chapter covers both new and existing construction. In various sections of the chapter there are specific provisions for existing structures differing from those for new construction.

Where there are no specific provisions in this chapter for existing structures, the requirements for new construction shall apply.

13–1.2 Classification of Occupancy.

13–1.2.1 Business occupancies shall include all buildings and structures or parts thereof with occupancy described in 4–1.8.

13–1.2.2 Mixed Occupancies.

13–1.2.2.1 Combined Business and Mercantile Occupancy.

13–1.2.2.1.1 In any building occupied for both business and mercantile purposes, the entire building shall have exits in accordance with 1–4.1.5.

Exception: If mercantile occupancy sections are effectively segregated from business sections, exit facilities may be treated separately.

13–1.3 Classification of Hazard of Contents.

13–1.3.1 The contents of business occupancies shall be classified as ordinary hazard in accordance with Section 4–2.

13–1.3.2 For purposes of the design of an automatic sprinkler system, a business occupancy shall be classified as "light hazard occupancy," as identified by *Standard for the Installation of Sprinkler Systems*, NFPA 13. (*See Appendix B.*)

13–1.4 Occupant Load.

13–1.4.1 For purposes of determining required exits, the occupant load of business buildings or parts of buildings used for business purposes shall be no less than 1 person per 100 square feet of gross floor area.

13–1.4.2 In the case of a mezzanine or balcony open to the floor below or other unprotected vertical openings between floors as permitted by 13–3.1.1, the occupant load of the mezzanine or other subsidiary floor level shall be added to that of the street floor for the purpose of determining required exits. However, in no case shall the total number of exit units be less than would be required if all vertical openings were enclosed.

SECTION 13–2. MEANS OF EGRESS REQUIREMENTS

13–2.1 General.

13–2.1.1 All means of egress shall be in accordance with Chapter 5 and this chapter. However, only types of exits specified in 13–2.2 may be used as required exit facilities in any business occupancy with access thereto and ways of travel therefrom in accordance with Chapter 5.

13–2.1.2 If, owing to differences in grade, any street floor exits are at points above or below the street or ground level, such exits shall comply with the provisions for exits from upper floors or floors below the street floor.

13–2.1.3* Where a stairway, escalator, outside stair, or ramp serves 2 or more upper floors, the same stairway or other exit required to serve any one upper floor may also serve other upper floors.

Exception: No inside open stairway, escalator, or ramp may serve as a required egress facility from more than 1 floor.

13–2.1.4 Where 2 or more floors below the street floor are occupied for business use, the same stairways, escalators or ramps may serve each.

Exception: No inside open stairway, escalators or ramp may serve as a required egress facility from more than 1 floor level.

13–2.1.5 Floor levels below the street floor used only for storage, heating, and other service equipment, and not subject to business occupancy, shall have exits in accordance with Chapter 15.

13–2.2 Types of Exits.

13–2.2.1 Exits shall be restricted to the following permissible types:

(a) Doors (*see 5–2.1*).

(b) Interior stairs, Class A or B (*see 5–2.2*).

(c) Smokeproof towers (*see 5–2.3*).

(d) Outside stairs (*see 5–2.5*).

(e) Horizontal exits (*see 5–2.4*).

(f) Ramps (*see 5–2.6*).

(g) Exit passageways (*see 5–2.7*).

(h) Escalators (*see 5–2.8*).

13–2.2.2 An existing interior stair or fire escape not complying with 5–2.2 or 5–2.5 may be continued in use subject to the approval of the authority having jurisdiction.

13–2.2.3 Slide escapes, elevators or other types of exit facility not specified in 13–2.2.1 shall not be used to provide required exits from any business occupancy.

13–2.3 Capacity of Means of Egress.

13–2.3.1 The minimum width of any corridor or passageway shall be 44 inches in the clear.

13–2.3.2 The capacity of a unit of exit width shall be as follows:

(a) Doors, including those leading outside the building at the ground level or 3 risers above or below the ground level — one unit for 100 persons.

(b) Class A or Class B stairs, outside stairs or smokeproof towers — one unit for 60 persons.

(c) Ramps: Class A — one unit for 100 persons.
Class B — one unit for 60 persons.

(d) Escalators — one unit for 60 persons.

(e) Horizontal exits — one unit for 100 persons, but no more than 50 percent of the required exit capacity.

13–2.3.3 Any street floor exit, arranged as required by 13–2.4 and 13–2.6, shall be sufficient to provide the following numbers of units of exit width:

(a) One unit for each 100 persons capacity of the street floor, plus

(b) One and one-half units for each 2 units of stairway, ramp or escalator from upper floors discharging through the street floor, plus

(c) One and one-half units for each 2 units of stairway, ramp or escalator from floor levels below the street floor.

13–2.4 Number of Exits. Not less than 2 exits shall be accessible from every part of every floor, including floor levels below the street floor occupied for business purposes or uses incidental thereto.

Exception No. 1: For a room or area with a total occupant load of less than 100 persons (or less than 50 if a commercial place of assembly — see Chapter 8), having direct exit to the street or to an open area outside the building at the ground level, with a total travel distance from any point of not over 100 feet, a single exit may be permitted. Such travel shall be on the same floor level or, if the traversing of stairs is required, such stairs shall not be more than 15 feet in height, and they shall be provided with complete enclosures to separate them from any other part of the building, with no door openings therein.

Exception No. 2: Any 3-story business occupancy building not exceeding 3,000 square feet gross floor area per floor may be permitted with a single stairway to the third floor, if the total travel distance to the outside of the building does not exceed 100 feet, if such stairway does not communicate with any other floor, and if it is fully enclosed or is an outside stairway.

13–2.5 Arrangement of Means of Egress.

13–2.5.1* Exits shall be remote from each other and shall be arranged to minimize the possibility that both may be blocked by any emergency.

Exception: A common path may be permitted for the first 50 feet from any point.

13–2.5.2 In new construction where access to exits is limited to corridors, such corridors shall be separated from use areas by partitions having a fire resistance rating of at least one hour.

Exception No. 1: Where exits are available from an open floor area, corridors need not be separated.

Exception No. 2: Corridors need not be separated within a space occupied by a single tenant.

Exception No. 3: Corridors need not be separated within buildings completely equipped with approved automatic sprinkler protection.

13–2.5.2.1 Doors and frames, each with a minimum 20 minute fire protection rating, equipped with a positive latch and closing device, shall be used to protect openings in one-hour partitions separating the corridor from use areas.

13–2.5.2.2 Glass vision panels within one-hour fire rated partitions, or doors therein, shall be limited to fixed wired glass in approved steel frames and shall be 1,296 square inches or less in size per panel.

13–2.6* Measurement of Travel Distance to Exits. Travel distance to exits, measured in accordance with 5–6.2, shall be no more than 200 feet.

Exception: An increase in the above travel distance to 300 feet shall be permitted in a building completely protected by an automatic sprinkler system in accordance with Section 6–4.

13–2.7 Discharge from Exits.

13–2.7.1 At least half of the required number of units of exit width from upper floors, exclusive of horizontal exits, shall lead directly to the street or through a yard, court, or passageway with protected openings and separated from all parts of the interior of the building.

13–2.7.2 A maximum of 50 percent of the exits may discharge through areas on the level of discharge provided:

(a) Such exits discharge to a free and unobstructed way to the exterior of the building, which way is readily visible and identifiable from the point of discharge from the exit.

(b) The floor into which the exit discharges is provided with automatic sprinkler protection and any other area with access to the level of discharge is provided with automatic sprinkler protection or separated from it in accordance with the requirements for the enclosure of exits (*see 5–1.3*).

(c) The entire area on the floor of discharge is separated from areas below by (an) assembly(ies) having a minimum of 2-hour fire resistance rating.

13–2.8 Illumination of Means of Egress. Exit illumination shall be provided in accordance with Section 5–8. For the purposes of this requirement, exit access shall include only designated aisles, corridors, and passageways leading to an exit.

13–2.9 Emergency Lighting.

13–2.9.1 Emergency lighting in accordance with 5–9 shall be required in any business occupancy building where:

(a) The building is 2 or more stories in height above the level of exit discharge, or

(b) The occupancy is subject to 100 or more occupants above or below the level of exit discharge, or

(c) the occupancy is subject to 1,000 or more total occupants.

For the purposes of this requirement, exit access shall include only designated aisles, corridors, and passageways leading to an exit.

13–2.9.2 Emergency lighting in accordance with 5–9 shall be provided for all windowless or underground structures meeting the definition of 16–1.2.

13–2.10 Marking of Means of Egress. Signs designating exits and ways of travel thereto shall be provided in accordance with Section 5–10.

SECTION 13–3 PROTECTION

13–3.1 Protection of Vertical Openings.

13–3.1.1 Every stairway, elevator shaft, escalator opening, and other vertical opening shall be enclosed or protected in accordance with Section 6–1.

Exception No. 1: Unprotected vertical openings connecting not more than 3 floors used for business occupancy only may be permitted in accordance with the conditions of Section 6–1.

Exception No. 2: In existing buildings only, where provided with complete automatic sprinkler protection in accordance with Section 6–4, vertical openings may be unprotected if no unprotected vertical opening serves as any part of any required exit facility and all required exits consist of smoke-proof towers in accordance with 5–2.3, outside stairs in accordance with 5–2.5, or horizontal exits in accordance with 5–2.4.

13–3.1.2 Floors below the street floor used for storage or other than business occupancy shall have no unprotected openings to business occupancy floors.

13–3.2 Interior Finish.

13–3.2.1 Interior finish of exits and of enclosed corridors furnishing access thereto or ways of travel therefrom shall be Class A or Class B in accordance with Section 6–2 or Class C if sprinklered in accordance with Section 6–4.

13–3.2.2 In general office areas, Class A, Class B, or Class C interior finish shall be provided in accordance with Section 6–2.

13–3.3 Alarm and Communication Systems. In any business occupancy building where the exit travel is more than one story above or below the level of exit discharge, or subject to 100 or more occupants above or below the level of exit discharge, or subject to 1,000 or more total occupants, a manual fire alarm system shall be provided in accordance with Section 6–3.

Exception No. 1: In buildings provided with automatic sprinkler protection in accordance with both Sections 6–3 and 6–4.

Exception No. 2: In buildings provided with automatic fire detection in accordance with Section 6–3.

13–3.4 Extinguishment Systems. (*See 13–5.2.*)

13–3.5 Protection from Hazards.

13–3.5.1 Any area used for general storage, boiler or furnace rooms, fuel storage, janitor closets, maintenance shops including woodworking and painting areas, and kitchens shall be separated from other parts of the building by construction having a fire resistance rating of not less than 1 hour, and all openings shall be protected with self-closing fire doors.

Exception: Areas protected by an automatic extinguishing system.

13–3.5.2 High hazard content areas, as defined in Section 4–2, shall be protected by both fire rated construction and automatic extinguishing equipment.

SECTION 13–4 BUILDING SERVICES

13–4.1 Utilities. Air conditioning, ventilation, heating, commercial cooking, and other service equipment shall be in accordance with Chapter 7.

13–4.2 Elevators. (*See Section 7–3.*)

13–4.2.1 An elevator shall not constitute a required exit.

13–4.2.2 When business occupancies are more than 3 stories high or more than 3 stories above the street floor and equipped with automatic elevators, one or more elevators shall be designed and equipped for fire emergency use by fire fighters as specified in Chapter 7. Key operation shall transfer automatic elevator operation to manual and bring elevator to the street floor for use of fire service. The elevator shall be situated so as to be readily accessible by the fire department.

13–4.3 Rubbish Chutes, Incinerators and Laundry Chutes. All rubbish chutes, incinerators, and laundry chutes shall be in accordance with 7–4.

SECTION 13–5 SPECIAL PROVISIONS

13–5.1 Windowless or Subterranean Buildings. (*See Section 16–5.*)

13–5.2* High-Rise Buildings.

13–5.2.1 All business occupancy buildings over 75 feet in height shall be provided throughout with automatic sprinkler protection, fully electrically supervised and designed in accordance with *Standard for Installation of Sprinklers* (NFPA 13–1974 — see especially Chapter 8); or shall be designed with a system that will provide equivalent life safety as permitted by the provisions of 1–3.7, 1–4.2.1 and 1–4.2.2. Building height shall be measured from the lowest level of fire department access to the floor of the highest occupiable story.

13–5.2.2 In addition to the above requirements, all buildings regardless of height shall comply with all other applicable provisions of this chapter.

CHAPTER 14 INDUSTRIAL OCCUPANCIES

SECTION 14–1 GENERAL REQUIREMENTS

14–1.1 General. Industrial occupancies include factories making products of all kinds and properties used for operations such as processing, assembling, mixing, packaging, finishing or decorating, repairing and similar operations.

14–1.2 Special Definitions. None.

14–1.3 Classification of Occupancy. (*See 4–1.9, and for open industrial structures, see Chapter 16.*)

14–1.3.1 General Industrial Occupancy. Ordinary and low hazard manufacturing operations, conducted in buildings of conventional design suitable for various types of manufacture. Included are multistory buildings where floors are rented to different tenants or buildings suitable for such occupancy and, therefore, subject to possible use for types of manufacturing with a high density of employee population.

14–1.3.2 Special Purpose Industrial Occupancy. Includes ordinary and low hazard manufacturing operations in buildings designed for and suitable only for particular types of operations, characterized by a relatively low density of employee population, with much of the area occupied by machinery or equipment.

14–1.3.3* High Hazard Industrial Occupancy. Includes those buildings having high hazard materials, processes or contents. Incidental high hazard operations in low or ordinary occupancies and provided in accordance with Sections 4–2 and 14–3.4 shall not be the basis for overall occupancy classification.

14–1.3.4 Mixed Occupancies. In any building occupied for both industrial and other purposes, exits shall comply with 1–4.1.5.

14–1.4 Classification of hazard of contents shall be as defined in 4–2.

14–1.5* Occupant Load. The occupant load of industrial occupancies for determination of exits shall be one person per 100 square feet of gross floor area.

Exception: In special purpose industrial occupancy, the occupant load shall be the maximum number of persons to occupy the area under any probable conditions.

SECTION 14–2 MEANS OF EGRESS REQUIREMENTS

14–2.1 General.

14–2.1.1 Each required means of egress shall be in accordance with the applicable portions of Chapter 5.

14–2.1.2 Any floor below the street floor used only for storage, heating, and other service equipment, and not subject to industrial occupancy, shall have exits in accordance with Chapter 15.

14–2.2 Types of Exits. Exits shall be restricted to the following permissible types:

Doors (*see 5–2.1*).

Smokeproof Towers (*see 5–2.3*).

Interior Stairs, Class A or B (*see 5–2.2*).

Outside Stairs (*see 5–2.5*).

Horizontal Exits (*see 5–2.4*).

Ramps (*see 5–2.6*).

Exit Passageways (*see 5–2.7*).

Escalators (*see 5–2.8*).

Exception No. 1: Any existing stairway or fire escape not complying with 5–2.2 and 5–2.5 may be continued in use, subject to the approval of the authority having jurisdiction.

Exception No. 2: Approved slide escapes may be used as required exits for both new and existing high hazard industrial occupancies. Slide escapes shall be counted as exits only when regularly used in drills or for normal exit so that occupants are, through practice, familiar with their use.

14–2.3 Capacity of Means of Egress.

14–2.3.1 The capacity of a unit of exit width shall be as follows:

(a) Doors including those leading outside the building at the ground level or 3 risers above or below the ground level — one unit for 100 persons.

(b) Class A or Class B stairs, outside stairs or smokeproof towers — one unit for 60 persons.

(c) Ramps: Class A — one unit for 100 persons.
Class B — one unit for 60 persons.

(d) Escalators — one unit for 60 persons.

(e) Horizontal exits — one unit for 100 persons, but no more than 50 percent of the required exit capacity.

Exception: In special purpose industrial occupancies, means of egress shall be provided at least for the persons actually employed; spaces not subject to human occupancy because of the presence of machinery or equipment may be excluded from consideration.

14–2.3.2* Required means of egress for multistoried buildings may serve floors other than the level where required. For multistory buildings, means of egress shall be designed in accordance with the provisions of 5–3.1.3 and 5–3.1.4.

Exception: No inside open stairway, escalator, or ramp may serve as a required egress facility from more than one floor level.

14–2.4 Number of Exits.

14–2.4.1 No less than two exits shall be provided for every story or section, including stories below the floor of exit discharge used for general industrial purposes or for uses incidental thereto.

Exception: For rooms or areas with a total capacity of less than 25 persons having a direct exit to the street or to an open area outside the building at ground level, with a total travel distance from any point of not over 50 feet, a single exit may be permitted. Such travel shall be on the same floor level or, if the traversing of stairs is required, there shall be a vertical travel of no more than 15 feet and such stairs shall be provided with complete enclosures to separate them from any other part of the building, with no door openings therein. This exception shall not apply to high hazard industrial occupancies.

14–2.4.2 There shall be at least two separate means of egress from every high hazard area regardless of size.

14–2.5 Arrangement of Means of Egress.

14–2.5.1* Measurement of Width of Means of Egress. The minimum width of any corridor or passageway serving as a required exit, exit access, or exit discharge shall be 44 inches in the clear.

14–2.5.2* Where two or more exits are required, they shall be arranged as to be reached by different paths of travel in different directions.

Exception: A common path of travel may be permitted for the first 50 feet from any point; i.e., no dead end may be more than 50 feet deep.

14–2.6 Measurement of Travel Distance to Exits.

14–2.6.1 Travel to exits shall not exceed 100 feet from any point to reach the nearest exit.

Exception No. 1: In a building protected by a complete automatic sprinkler system in accordance with 6–4, travel distance may be increased to 150 feet.

Exception No. 2: As permitted by 14–2.6.2.

Exception No. 3: Travel distance to exits in high hazard industrial occupancies shall not exceed 75 feet.

14–2.6.2 In a building used for low or ordinary hazard, general industrial occupancies or special industrial occupancy requiring undivided floor areas necessitating travel distances exceeding 150 feet, distance to exits shall be satisfied by providing stairs leading to exit tunnels, overhead passage ways or through horizontal exits through firewalls, arranged in accordance with Chapter 5. Where such arrangements are not practicable, the authority having jurisdiction may, by special ruling, permit travel distances up to 400 feet to the nearest exit. Distances shall be based on meeting the following additional provisions in full:

(a) Shall limit application to one story buildings only.

(b) Shall limit interior finish to Class A or B (*see 6–2*).

(c) Shall provide emergency lighting (*see 5–9 and 14–2.9*).

(d) Shall provide automatic sprinkler or other automatic fire extinguishing systems in accordance with Section 6–4. The extinguishing system shall be supervised.

(e) Shall provide smoke and heat venting by engineered means or by building configuration to insure that employees shall not be overtaken by spread of fire or smoke within 6 feet of floor level before they have time to reach exits. Smoke and heating venting shall be in accordance with NFPA 204.

14–2.7 Discharge from Exits. A maximum of 50 percent of the exits may discharge through areas on the level of discharge arranged in accordance with 5–7.2.

14–2.8 Illumination of Means of Egress.

14–2.8.1 Illumination of means of egress shall be provided in accordance with 5–8. For purposes of this requirement, exit access shall include only designated aisles, corridors, and passageways leading to an exit.

Exception: Exit illumination may be eliminated in structures occupied only in daylight hours with skylights or windows arranged to provide, during these hours, the required level of illumination on all portions of the means of egress.

14–2.9 Emergency Lighting.

14–2.9.1 All industrial occupancies shall have emergency lighting in accordance with 5–9. For purposes of this requirement, exit access shall include only designated aisles, corridors, and passageways.

Exception No. 1: Special purpose industrial occupancies do not require emergency lighting when routine human habitation is not the case.

Exception No. 2: Emergency lighting may be eliminated in structures occupied only in daylight hours with skylights or windows arranged to provide, during those hours, the required level of illumination on all portions of the means of egress.

14–2.10 Marking of Means of Egress.

14–2.10.1 Signs designating exits or ways of travel thereto shall be provided in accordance with Section 5–10.

SECTION 14–3 PROTECTION

14–3.1 Protection of Vertical Openings.

14–3.1.1* Every stairway, elevator shaft, escalator opening, and other vertical opening shall be enclosed or protected in accordance with Chapter 5 and 6–1.

Exception No. 1: In existing buildings with low or ordinary hazard contents and complete automatic sprinkler protection in accordance with Sections 6–3 and 6–4, vertical openings may be unprotected providing the vertical opening does not serve as a required exit. All required exits under such conditions shall consist of smokeproof towers in accordance with 5–2.3, outside stairs in accordance with 5–2.5, or horizontal exits in accordance with 5–2.4.

Exception No. 2: In special purpose and high hazard occupancies where unprotected vertical openings are in new or existing buildings and necessary to manufacturing operations, they may be permitted beyond the specified limits, provided every floor level has direct access to one or more enclosed stairways or other exits protected against obstruction by any fire or smoke in the open areas connected by the unprotected vertical openings.

14–3.2 Interior Finish.

Interior finish shall be Class A, B or C in operating areas, and shall be as permitted by Chapter 5 in exits.

14–3.3 Fire Alarm System.

14–3.3.1 Industrial occupancies shall be provided with a manual or automatic fire alarm system in accordance with 6–3. The alarm system shall sound an audible alarm in a continuously manned location for purposes of initiating emergency action.

Exception: If the total capacity of the building is under 100 persons or if less than twenty-five persons are employed above or below the street level.

14–3.3.2 In all high hazard industrial occupancies, the fire alarm system shall automatically initiate an evacuation alarm signal. The alarm shall also sound at a continuously manned location.

14–3.4* Protection from Hazards.

Every high hazard industrial occupancy, operation, or process shall have automatic extinguishing systems or such other protection as may be appropriate to the particular hazard, such as explosion venting or suppression, for any area subject to an explosion hazard, designed to minimize danger to occupants in case of fire or other emergency before they have time to utilize exits to escape.

CHAPTER 15 STORAGE OCCUPANCIES

SECTION 15–1 GENERAL REQUIREMENTS

15–1.1 General. Storage occupancies include all buildings or structures used primarily for the storage or sheltering of goods, merchandise, products, vehicles or animals.

15–1.2 Special Definitions. None.

15–1.3 Classification of Occupancy. Storage occupancies shall include all occupancies defined in 4–1.10. Incidental storage in another occupancy shall not be the basis for overall occupancy classification.

Exception: Storage occupancies or areas of storage occupancies which are used for the purpose of packaging, labeling, sorting, special handling or other operations requiring an occupant load greater than that normally contemplated for storage shall be classified as industrial occupancies (see Chapter 14).

15–1.4* Classification of Hazard of Contents. Contents of storage occupancies shall be classified as high hazard, ordinary hazard, or low hazard in accordance with Section 4–2, depending upon the character of the materials stored, their packaging, and other factors.

15–1.5 Occupant Load. No requirements.

SECTION 15–2 MEANS OF EGRESS REQUIREMENTS

15–2.1 General. Every required means of egress shall be in accordance with the applicable portions of Chapter 5.

15–2.2 Types of Exits. Exits shall be restricted to the following permissible types:

Doors (*see 5–2.1*).

Smokeproof Towers (*see 5–2.3*).

Interior Stairs, Class A or B (*see 5–2.2*).

Outside Stairs (*see 5–2.5*).

Horizontal Exits (*see 5–2.4*).

Ramps (*see 5–2.6*).

Exit Passageways (*see 5–2.7*).

Fire Escape Stairs (*see 5–2.9*).

Ladders (*see 5–2.10*).

Slide Escapes (*see 5–2.11*).

Exception: Any existing stairway or fire escape not complying with 5–2.2 and 5–2.5 may be continued in use, subject to the approval of the authority having jurisdiction.

15–2.3 Capacity of Means of Egress. The capacity of a means of egress shall be in accordance with Chapter 5.

15–2.4 Number of Exits.

15–2.4.1 Every building or structure used for storage and every section thereof considered separately shall have at least 2 separate means of egress, as remote from each other as practicable.

Exception: One exit may be provided from rooms or enclosures within storage buildings, structures or sections of a storage building not exceeding 10,000 square feet and not occupied normally by more than 10 persons, and not containing high hazard material.

15–2.4.2 Locked units doors are permissible when arranged in accordance with 5–2.1.2.

15–2.5 Arrangement of Means of Egress.

15–2.5.1 Measurement of Width of Means of Egress. The minimum width of any corridor or passageway serving as a required exit or means of travel to or from a required exit shall be 44 inches in the clear.

15–2.5.2 Travel from all locations in a storage occupancy of high hazard contents shall be via at least two separate routes to exits remote from each other.

15–2.6 Measurement of Travel Distance to Exits.

15–2.6.1 Travel to exits shall not exceed 200 feet from any point to reach the nearest exit.

Exception No. 1: In a building protected by a complete automatic sprinkler system in accordance with 6–4, travel distance may be increased to 400 feet.

Exception No. 2: There shall be no limitations on travel to exits for low hazard storage occupancy.

Exception No. 3: Every area used for the storage of high hazard commodities shall have an exit within 75 feet of any point in the area where persons may be present. Travel distance shall be measured in accordance with 5–6.2.

Exception No. 4: In areas used for the storage of high hazard commodities and provided with automatic sprinkler protection in accordance with 6–4, distances to an exit shall be within 100 feet of any point in the area where persons may be present.

15–2.7 Discharge from Exits. A maximum of 50 percent of the exits may discharge through areas on the level of discharge arranged in accordance with 5–7.2.

15–2.8 Illumination of Means of Egress.

15–2.8.1 Illumination of means of egress shall be provided in accordance with 5–8. For purposes of this requirement, exit access shall include only designated aisles, corridors, and passageways leading to an exit.

Exception: In structures occupied only in daylight hours with windows arranged to provide, during daylight hours, the required level of illumination on all portions of the means of egress may be eliminated by special permission of the authority having jurisdiction.

15–2.9 Emergency Lighting.

15–2.9.1 All storage occupancies shall have emergency lighting in accordance with 5–9.

Exception No. 1: Storage occupancies do not require emergency lighting when not normally occupied.

Exception No. 2: In structures occupied only in daylight hours with skylights or windows arranged to provide, during these hours, the required level of illumination on all portions of the means of egress, emergency lighting may be eliminated.

15–2.10 Marking Means of Egress. Signs designating exits or ways of travel thereto shall be provided in accordance with 5–10.

SECTION 15–3 PROTECTION

15–3.1 Protection of Vertical Openings.

15–3.1.1 Every stairway, elevator shaft, escalator opening, manlift opening and other vertical opening shall be enclosed or protected in accordance with 6–1.

Exception: In existing buildings with low and ordinary hazard contents and complete automatic sprinkler protection in accordance with 6–3 and 6–4, vertical openings may be unprotected when they do not serve as required exits. All required exits under such conditions shall consist of smokeproof towers in accordance with 5–2.3, outside stairs in accordance with 5–2.5, or horizontal exits in accordance with 5–2.4.

15–3.2 Interior Finish. Interior finish shall be class A, B, or C, in accordance with 6–2.

15–3.3 Fire Alarm Systems. Occupancies with ordinary or high hazard contents exceeding an aggregate floor area of 100,000 ft. in unsprinklered buildings shall be provided with a manual or automatic fire alarm system in accordance with 6–3. The alarm system shall sound an audible alarm in a continuously manned location for purposes of initiating emergency action.

SECTION 15–4 SPECIAL PROVISIONS

15–4.1 Special Provisions for Garages.

15–4.1.1 General Requirements.

15–4.1.1.1* The following provisions apply to parking garages of closed or open type, above or below ground, but not to mechanical or exclusively attendant parking facilities, which are not occupied by customers and thus require a minimum of exits.

15–4.1.1.2 Where repair operations are conducted, the exits shall comply with Chapter 14, Industrial Occupancies, in addition to compliance with the following paragraphs.

15–4.1.1.3 Where both parking and repair operations are conducted in the same building, the entire building shall comply with Chapter 14.

Exception: If the parking and repair sections are separated by fire-resistive construction, the parking and repair sections may be treated separately.

15–4.1.2 Means of Egress Requirements.

15–4.1.2.1 General. Means of egress shall be in accordance with 15–2.

15–4.1.2.2 Types of Exits. Exits shall be restricted to the following permissible types:

Doors in accordance with 5–2.1.

Interior stairs in accordance with 5–2.2.

Smokeproof towers in accordance with 5–2.3.

Outside stairs in accordance with 5–2.5.

Horizontal exits in accordance with 5–2.4.

Exception No. 1: In a ramp type open garage with open ramps not subject to closure, the ramp may serve in lieu of the second exit from floors above the level of exit discharge, providing the ramp discharges directly outside of the street level.

Exception No. 2: For garages extending only one floor level below the level of exit discharge, a ramp leading directly to the outside may serve in lieu of the second exit, provided no door or shutter is installed therein.

Exception No. 3: An opening for the passage of automobiles may serve as an exit from a street floor, provided no door or shutter is installed therein.

15–4.1.2.3 Number of Exits. Every floor of every garage shall have access to at least 2 separate exits.

15–4.1.2.4 Arrangement of Means of Egress.

15–4.1.2.4.1 Exits shall be so arranged that from any point in the garage the paths of travel to the 2 exits will be in different directions.

Exception: A common path of travel may be permitted for the first 50 feet from any point.

15–4.1.2.4.2* If any gasoline pumps are located within any closed parking garage, exits shall be arranged and located to meet the following:

(a) Travel away from the gasoline pump in any direction will lead to an exit, with no dead end in which occupants might be trapped by fire or explosion at any gasoline pump.

(b) Such exit shall lead to the outside of the building on the same level, or stairs; no upward travel shall be permitted unless direct outside exits are available from that floor.

(c) Any story below that story at which gasoline is being dispensed shall have exits direct to outside via outside stairs or doors at ground level.

15–4.1.2.5 Measurement of Travel Distance to Exit. Exits in garages shall be so arranged that no point in the area will be more than 150 feet (measured in accordance with 5–6.2) from the nearest exit other than a ramp on the same floor level.

Exception No. 1: Travel distance may be increased to 200 feet for open floors of unsprinklered, open garages and 300 feet in sprinklered open garages.

Exception No. 2: Travel distance may be increased to 200 feet for enclosed parking garages completely protected by an automatic fire extinguishing system in accordance with 6–4.

15–4.1.2.6 Discharge from Exits. No special occupancy provisions.

15–4.1.2.7 Illumination of Means of Egress. Every public space, hall, stair enclosure, and other means of egress shall have illumination in accordance with 15–2.8.

15–4.1.2.8 Emergency Lighting. Every public space, hall, stair enclosure, and other means of egress shall have emergency lighting in accordance with 15–2.9.

15–4.1.2.9 Exit Marking. Signs in accordance with 5–2.10 shall be provided for all required exits and exit access.

15–4.2* Special Provisions for Aircraft Hangars.

15–4.2.1 Exits from aircraft storage or servicing areas shall be provided at intervals of not more than 150 feet on all exterior walls. There shall be a minimum of 2 exits serving each aircraft storage or servicing area. Horizontal exits through interior fire walls shall be provided at intervals of not more than 100 feet along the wall.

Exception: Dwarf or "smash" doors in doors accommodating aircraft may be used to comply with these requirements.

15–4.2.2 Exits from mezzanine floors in aircraft storage or servicing areas shall be so arranged that the maximum travel to reach the nearest exit from any point on the mezzanine shall not exceed 75 feet. Such exits shall lead directly to a properly enclosed stairwell discharging directly to the exterior, to a suitable cutoff area, or to outside stairs.

15–4.2.3 Signs. Exit signs shall be provided over doors and exitways in accordance with 5–10.

15–4.3* Special Provisions for Grain or Other Bulk Storage Elevators.

15–4.3.1 There shall be at least 1 exit stair enclosed in a dust-tight noncombustible shaft from stories below the level of exit discharge to the exit discharge and from the top floor of the working house to the exit discharge.

15–4.3.2 Noncombustible doors of the self-closing type shall be provided at each floor landing.

15–4.3.3 An exterior stair or (basket ladder type) fire escape shall be provided from the roof of the working house to ground level or to the roof of an adjoining annex or structure with access from all floors above the level of exit discharge.

15–4.3.4 An exterior stair or (basket ladder type) fire escape shall be provided from the roof of each storage annex to ground level.

CHAPTER 16 OCCUPANCIES IN UNUSUAL STRUCTURES

SECTION 16–1 GENERAL REQUIREMENTS

16–1.1 Unusual structures are those buildings or structures occupied for purposes not regulated by Chapters 8 through 15.

16–1.2 Special Definitions.

16–1.2.1 Tower. Independent structure or portion of a building occupied for observation, signaling or similar limited use and not open to general use.

16–1.2.2 Vehicles and Vessels. Any house trailer, railroad car, street car or bus, ship, barge or vessel or similar conveyance no longer mobile and permanently fixed to a foundation or mooring.

16–1.2.3 Underground Structure. A structure in which there is no direct access to outdoors or to another fire area other than by upward travel.

16–1.2.4 Windowless Structures. A building lacking any means for direct access to the outside or outside openings for light or ventilation through windows.

16–1.2.5 Water Surrounded Structures. A structure fully surrounded by water.

16–1.2.6 Open Structures. Operations conducted in open air and not enclosed within buildings, such as found in oil refining and chemical processing plants. Roofs or canopies providing shelter without enclosing walls may be provided and shall not be considered an enclosure.

16–1.3 Classification of Occupancy. Occupancies in unusual structures, but meeting purposes regulated by Chapters 8 through 15, shall meet requirements of those chapters.

16–1.4 Classification of hazard of contents shall be as defined in 4–2.

16–1.5 Occupant Load. The occupant load of unusual structures shall be as determined by the maximum actual design occupant load.

Exception: Any unusual structure or part of an unusual structure utilized for an occupancy regulated by Chapters 8 through 15 in which case the requirements of the appropriate chapter shall apply.

SECTION 16–2 MEANS OF EGRESS REQUIREMENTS

16–2.1 General. Each required means of egress shall be in accordance with the applicable portions of Chapter 5.

16–2.2 Types of Exits. Exits shall be restricted to the following permissible types:

Doors (*see 5–2.1*).

Smokeproof Towers (*see 5–2.3*).

Interior Stairs Class A or B (*see 5–2.2*).

Outside Stairs (*see 5–2.5*).

Horizontal Exits (*see 5–2.4*).

Ramps (*see 5–2.6*).

Exit Passageways (*see 5–2.7*).

Escalators (*see 5–2.8*).

Exception No. 1: Any existing stairway not complying with 5–2.2 and 5–2.5 may be continued in use, subject to the authority having jurisdiction.

Exception No. 2: Towers, such as a forest fire observation or railroad signal tower designed for occupancy by not more than three persons employed therein may be served by ladder instead of stairs.

16–2.3 Capacity of Means of Egress.

16–2.3.1 The width and capacity of a means of egress shall be in accordance with Chapter 5.

Exception No. 1: The means of egress for towers shall be provided for the persons actually employed. Where towers utilize ladders in accordance with 16–2.2, Exception 2, the ladders shall comply with ANSI A–14.3 "Safety Code for Fixed Ladders." (See Appendix B.)

Exception No. 2: Open industrial structures.

Exception No. 3: Structures fully surrounded by water and arranged in accordance with U.S. Coast Guard regulations.

Exception No. 4: Spaces not subject to human occupancy because of machinery or equipment may be excluded from consideration.

16–2.3.2 Required means of egress for mutlistoried unusual structures may serve other floors than the level where required. However, an interior egress facility shall serve only one floor for purposes of designing means of egress.

Exception: No inside open stairway, escalator or ramp may serve as a required egress facility from more than one floor level.

16–2.4 Number of Exits. No less than two exits shall be provided for every story or section, including stories below the floor of exit discharge.

Exception No. 1: Piers used exclusively to moor cargo vessels and to store materials where provided with proper exit facilities from structures thereon to the pier and a single means of access to the mainland as appropriate with the piers arrangement.

Exception No. 2: Any building or tower surrounded by water, such as a light house, offshore oil platform or vessel mooring point when designed and arranged in accordance with U.S. Coast Guard regulations.

Exception No. 3: The grade level of open air structures which by their very nature contain an infinite number of exits.

Exception No. 4: Towers may be provided with single exits if the following conditions are met: (a) The tower is subject to less than twenty-five persons on any one floor level. (b) The tower is not used for living or sleeping purposes and is subject to occupancy by only able bodied persons. (c) The tower is of fire-resistive, noncombustible or heavy timber construction. (d) The tower interior finish is Class A or B. (e) The tower has no combustible materials in, under, or in the immediate vicinity, except necessary furniture. (f) There are no high hazard occupancies in the tower or immediate vicinity.*

16–2.5 Arrangement of Means of Egress.

16–2.5.1 Measurement of Width of Means of Egress. The minimum width of any corridor or passageway serving as a required exit, or means of travel to or from a required exit, shall be 44 inches in the clear.

Exception: Where ladders are permitted by 16–2.2.

16–2.5.2 Where two or more exits are required, they shall be arranged so as to be reached by different paths of travel in different directions.

Exception: A common path of travel may be permitted for the first 50 feet from any point; i.e., no dead end may be more than 50 feet deep.

16–2.5.3* Piers not meeting requirement of 16–2.4, Exception No. 1, and occupied for other than cargo handling and storage shall have exits arranged in accordance with Chapters 8 through 15. In addition, one of the following measures shall be provided on piers extending over 150 feet from shore to minimize the possibility that fire under or on the pier may block escape of occupants to shore.

16–2.5.3.1 The pier shall be arranged to provide two separate ways of travel to shore as by two well-separated walkways or independent structures.

16–2.5.3.2 The pier deck shall be open and fire resistive on noncombustible supports.

16–2.5.3.3 The pier shall be open and unobstructed and is fifty feet or less in width if less than 500 feet long, or its width is not less than ten percent of its length if over 500 feet long.

16–2.5.3.4 The pier deck shall be provided with automatic sprinkler protection for combustible substructure and all superstructures, if any.

16–2.6 Measurement of Travel Distance to Exits. Travel to exits, when not regulated by Chapters 8 through 15, shall not exceed 100 feet.

Exception No. 1: In a building or structure protected by complete automatic sprinkler system in accordance with Section 6–4, travel distance may be increased to 150 feet.

Exception No. 2: Where ladders are permitted in 16.2.2, Exception Number 2.

Exception No. 3: Structures surrounded by water with exits arranged in accordance with U.S. Coast Guard regulations.

Exception No. 4: Open air structures.

16–2.7 Discharge from Exits. A maximum of fifty percent of the exits may discharge through areas on the level of discharge arranged in accordance with 5–7.2.

Exception: Towers or other structures provided with one exit, as permitted by 16–2.4 and arranged in accordance with 16–2.5, may have 100 percent of the exit discharge through areas on the level of discharge.

16–2.8 Illumination of Means of Egress. Illumination of means of egress shall be provided in accordance with 5–8.

Exception No. 1: Open structures.

Exception No. 2: Towers with ladders for exits as permitted by 16–2.2, Exception No. 2.

Exception No. 3: Structures surrounded by water with exits arranged in accordance with U.S. Coast Guard regulations.

16–2.9 Emergency Lighting. Emergency lighting shall be provided in accordance with 5–9.

Exception No. 1: Open structures.

Exception No. 2: Towers with ladders for exits as permitted by 16–2.2, Exception 2.

Exception No. 3: Structures surrounded by water with exits arranged in accordance with U.S. Coast Guard regulations.

Exception No. 4: Locations not routinely inhabited by humans.

Exception No. 5: Structures occupied only in daylight hours with windows arranged to provide, during daylight hours, the required level of illumination on all portions of the means of egress, upon special approval of the authority having jurisdiction.

16–2.10 Marking of Means of Egress. Signs designating exits or ways of travel thereto shall be provided in accordance with 5–10.

Exception No. 1: Towers with ladders for exits as permitted by 16–2.2.

Exception No. 2: Open structures.

Exception No. 3: Structures surrounded by water with exits arranged in accordance with U.S. Coast Guard regulations.

Exception No. 4: Locations where routine human habitation is not provided.

SECTION 16–3 PROTECTION

16–3.1 Protection of Vertical Openings. Every stairway, elevator shaft, escalator opening, and other vertical opening shall be enclosed or protected in accordance with Chapter 5 and 6–1.

Exception No. 1: In towers where there is no occupancy below the top floor level, stairs may be open with no enclosure required or fire escape stairs may be used when the structure is entirely open.

Exception No. 2: Towers with ladders for exits as permitted by 16–2.2, Exception 2.

Exception No. 3: Open structures.

Exception No. 4: Structures surrounded by water with exits arranged in accordance with U.S. Coast Guard regulations.

16–3.2 Interior Finish. Interior finish shall be Class A, B or C, and as required in Chapter 5 for exits.

16–3.3 Fire Alarm System. A manual or automatic fire alarm system shall be provided in accordance with 6–3. The alarm system shall sound an audible alarm in a continuously manned location for purposes of initiating emergency action.

Exception No. 1: Towers with ladders for exits as permitted by 16–2.2, Exception 2.

Exception No. 2: Open structures.

Exception No. 3: Structures surrounded by water with exits arranged in accordance with U.S. Coast Guard regulations.

16–3.4 Protection from Hazards. Every unusual structure shall have automatic, manual or such other protection as may be appropriate to the particular hazard designed to minimize danger to occupants in case of fire or other emergency before they have time to utilize exits to escape.

SECTION 16–4 SPECIAL PROVISIONS

16–4.1* Special Provisions for Vehicles and Vessels.

16–4.1.1 Any vehicle which is subject to human occupancy and is prevented from being mobile shall comply with the appropriate requirements of this *Code* which are appropriate to buildings of similar occupancy.

16–4.1.2 Any ship, barge or other vessel, permanently moored or aground and occupied for purposes other than navigation, shall be subject to the requirements of this code applicable to buildings of similar occupancy.

16–4.2 Special Provisions for Underground Structures and Windowless Buildings.

16–4.2.1 General.

16–4.2.1.1* Windowless and underground areas occupied by 100 or more persons shall be equipped with complete automatic sprinkler protection in accordance with 6–4.

16–4.2.1.2 Underground or windowless buildings, structures and areas shall be provided with emergency lighting in accordance with 5–9.

16–4.2.2 Underground Structures.

16–4.2.2.1 Where required, exits from underground structures involving upward travel, such as ascending stairs or ramps, shall be cut off from main floor areas per 5–1 and shall be provided with outside smoke venting facilities or other means to prevent the exits from becoming charged with smoke from any fire in the area served by the exits.

Exception: As modified by Chapters 8–15.

16–4.2.2.2 Underground buildings, structures, and areas having combustible contents, interior finish or construction shall have automatic smoke venting facilities in accordance with Chapter 7 in addition to automatic sprinkler protection.

16–4.2.3 Windowless Buildings. Windowless buildings shall be provided with outside access panels on each floor level, designed for fire department access, for purposes of smoke ventilation, and for rescue.

CHAPTER 17 OPERATING FEATURES

SECTION 17–1 GENERAL REQUIREMENTS

(*See also Sections 17–2 through 17–8 for Special Occupancy requirements.*)

17–1.1 Construction, Repair, Improvement Operations.

17–1.1.1 Adequate escape facilities shall be maintained at all times in buildings under construction for the use of construction workers. Escape facilities shall consist of doors, walkways, stairs, ramps, fire escapes, or ladders, arranged in accordance with the general principles of the *Code* insofar as they can reasonably be applied to buildings under construction. (*See also Standard on Building Construction and Demolition Operations, NFPA 241.*)

17–1.1.2 Flammable or explosive substances or equipment for repairs or alterations may be introduced in a building of normally low or ordinary hazard classification while the building is occupied, only if the condition of use and safeguards provided are such as not to create any additional danger or handicap to egress beyond the normally permissible conditions in the building.

17–1.2 Maintenance, Testing.

17–1.2.1 Means of Egress Reliability.

17–1.2.1.1 Every required exit, exit access and exit discharge shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

17–1.2.1.2 Furnishings and Decorations.

17–1.2.1.2.1 No furnishings, decorations, or other objects shall be so placed as to obstruct exits, access thereto, egress therefrom, or visibility thereof.

17–1.2.1.2.2 Hangings or draperies shall not be placed over exit doors or otherwise located as to conceal or obscure any exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit.

17–1.2.1.2.3 There shall be no obstruction by railings, barriers, or gates that divide the open space into sections appurtenant to individual rooms, apartments, or other uses. Where the authority having jurisdiction finds the required path of travel to be obstructed by furniture or other movable objects, he may require that they be fastened out of the way or he may require that railings or other permanent barriers be installed to protect the path of travel against encroachment.

17–1.2.2 Equipment Maintenance.

17–1.2.2.1 Every required automatic sprinkler system, fire detection and alarm system, exit lighting, fire door, and other item of equipment required by this *Code* shall be continuously in proper operating condition.

17–1.2.2.2 Any equipment requiring test or periodic operation to assure its maintenance shall be tested or operated as specified elsewhere in this *Code* or as directed by the authority having jurisdiction.

17–1.2.2.3 Systems shall be under the supervision of a responsible person who shall cause proper tests to be made at specified intervals and have general charge of all alterations and additions.

17–1.2.2.4 Systems shall be tested at intervals recommended by the appropriate standards listed in Appendix B.

17–1.2.2.5* Automatic Sprinkler Systems. All automatic sprinkler systems required by this *Code* shall be continuously maintained in reliable operating condition at all times, and such periodic inspections and tests shall be made as are necessary to assure proper maintenance.

17–1.2.2.6 Alarm and Fire Detection Systems Fire alarm signaling equipment shall be restored to service as promptly as possible after each test or alarm and shall be kept in normal condition for operation. Equipment requiring rewinding or replenishing shall be rewound or repleneshed as promptly as possible after each test or alarm.

17–1.3 Furnishings, Decorations, and Treated Finishes. (*See also 17–1.2.*)

17–1.3.1* Flammable furnishings or decorations shall be flame resistant where required by the applicable provisions of this chapter. Furnishings and decorations required herein to be tested in accordance with *Standard Method of Fire Tests for Flame Resistant Textiles and Films*, NFPA 701, (*see Appendix B*), shall comply with both the small and large scale tests.

17–1.3.2* Furnishings or decorations of an explosive or highly flammable character shall not be used.

17–1.3.3 Fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary flame retardant properties.

17–1.4* Fire Exit Drills.

17–1.4.1 Fire exit drills conforming to the provisions of this chapter of the *Code* shall be regularly conducted in occupancies where specified by the provisions of this chapter, or by appropriate action of the enforcing authority having jurisdiction, but with any necessary modifications in detail of procedures to make the drills most effective for their intended purpose in any individual building.

17–1.4.2 Fire exit drills, where required by the authority having jurisdiction, shall be held with sufficient frequency to familiarize all occupants with the drill procedure and to have the conduct of the drill a matter of established routine.

17–1.4.3 Responsibility for the planning and conduct of drills shall be assigned only to competent persons qualified to exercise leadership.

17–1.4.4* In the conduct of drills emphasis shall be placed upon orderly evacuation under proper discipline rather than upon speed as such; no running or horseplay shall be permitted.

17–1.4.5* Drills shall include suitable procedures to make sure that all persons in the building, or all persons subject to the drill, actually participate.

17–1.4.6 Drills shall be held at unexpected times and under varying conditions to simulate the unusual conditions obtaining in case of fire.

SECTION 17–2 PLACES OF ASSEMBLY

17–2.1* **Drills.** The employees or attendants of places of public assembly shall be schooled and drilled in the duties they are to perform in case of fire, panic, or other emergency in order to be of greatest service in effecting orderly exit of assemblages.

17–2.2* **Open Flame Devices.** No open flame lighting devices shall be used in any place of assembly.

Exception No. 1: Where necessary for ceremonial or religious purposes, the authority having jurisdiction may permit open flame lighting under such restrictions as are necessary to avoid danger of ignition of combustible materials or injury to occupants.

Exception No. 2: Open flame devices may be used on stages where a necessary part of theatrical performances, provided adequate precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible materials.

Exception No. 3: Gas lights may be permitted provided adequate precautions, satisfactory to the authority having jurisdiction, are taken to prevent ignition of any combustible materials.

Exception No. 4: As permitted in 17–2.3.

17–2.3 Special Food Service Devices. Portable cooking equipment, not flue-connected, shall be permitted only as follows:

(a) Equipment fueled by small heat sources which can be readily extinguished by water, such as candles or alcohol-burning equipment (including "solid alcohol"), may be used provided adequate precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible materials.

(b) Candles may be used on tables used for food service if securely supported on substantial noncombustible bases, so located as to avoid danger of ignition of combustible materials, and only if approved by the authority having jurisdiction. Candle flames shall be protected.

(c) "Flaming Sword" or other equipment involving open flames and flamed dishes such as cherries jubilee, crepes suzette, etc., may be permitted provided necessary precautions are taken, and subject to the approval of the authority having jurisdiction.

17–2.4 Smoking.

17–2.4.1 Smoking in places of assembly shall be regulated by the authority having jurisdiction.

17–2.4.2 In rooms or areas where smoking is prohibited, plainly visible "NO SMOKING" signs shall be posted.

17–2.4.3 No person shall smoke in prohibited areas which are so posted.

Exception: The authority having jurisdiction may permit smoking on a stage only when it is a necessary and rehearsed part of a performance and only by a regular performing member of the cast.

17–2.4.4 Where smoking is permitted, suitable ash trays or receptacles shall be provided in convenient locations.

17–2.5 Decorations and Stage Scenery.

17–2.5.1 Combustible materials shall be treated with an effective flame retardant material. Stage settings made of combustible materials shall likewise be treated with flame retardant materials. Flame retardant treatments shall be as specified in 17–1.3.

17–2.5.2 Only noncombustible materials, limited-combustible materials, or fire retardant pressure treated wood may be used for stage scenery or props, on the audience side of the proscenium arch.

17–2.5.3 The authority having jurisdiction shall impose controls on the amount and arrangement of combustible contents (including decorations) in places of assembly to provide an adequate level of safety to life from fire.

17–2.6 Seating.

17–2.6.1 Seats in places of assembly accommodating more than 200 persons shall be securely fastened to the floor except when fastened together in groups of not less than 3 nor more than 7 and as permitted by 17–2.6.2. All seats in balconies and galleries shall be securely fastened to the floor, except in churches.

17–2.6.2 Seats not secured to the floor may be permitted in restaurants, night clubs, and other occupancies where the fastening of seats to the floor may be impracticable, provided that in the area used for seating (excluding dance floor, stage, etc.), there shall be not more than 1 seat for each 15 square feet of net floor area and adequate aisles to reach exits shall be maintained at all times.

Exception: Seating diagrams may be submitted for approval of the authority having jurisdiction to allow increase in occupant load per 8–1.5.2.

17–2.6.3 Every room constituting a place of assembly and not having fixed seats shall have the occupant load of the room posted in a conspicuous place, near the main exit from the room. Approved signs shall be maintained in a legible manner by the owner or his authorized agent. Signs shall be durable and shall indicate the number of occupants permitted for each room use.

17–2.7 Projection Room. Unless the projection room is constructed in accordance with the applicable standard listed in Appendix B, there shall be posted on the outside of each projection room door and within the projection room proper, a conspicuous sign with one-inch block letters stating: "*Safety Film Only Permitted in This Room.*"

SECTION 17–3 EDUCATIONAL OCCUPANCIES

17–3.1 Drills.

17–3.1.1* Fire exit drills shall be conducted regularly in accordance with the applicable provisions of the following paragraphs.

17–3.1.2* There shall be at least 8 fire exit drills a year in schools through grade 12. In climates where the weather is severe during the winter months, weekly drills should be held at the beginning of the school term to complete the required number of drills before cold weather so as not to endanger the health of the pupils.

17–3.1.3* Drills shall be executed at different hours of the day or evening; during the changing of classes; when the school is at assembly; during the recess or gymnastic periods; etc., so as to avoid distinction between drills and actual fires. If a drill is called when pupils are going up and down the stairways, as during the time classes are changing, the pupils shall be instructed to form in file and immediately proceed to the nearest available exit in an orderly manner.

17–3.1.4* Every fire exit drill shall be an exercise in school management for principal and teachers, with the chief purpose of every drill complete control of the class so that the teacher will form its ranks quickly and silently, may halt it, turn it, or direct it as desired. Great stress shall be laid upon the execution of each drill in a brisk, quiet, and orderly manner. Running shall be prohibited. In case there are pupils incapable of holding their places in a line moving at a reasonable speed, provisions shall be made to have them taken care of by the more sturdy pupils, moving independently of the regular line of march.

17–3.1.5 Monitors shall be appointed from the more mature pupils to assist in the proper execution of all drills. They shall be instructed to hold open doors in the line of march or to close doors where necessary to prevent spread of fire or smoke, per 5–2.1.2.3. There shall be at least 2 substitutes for each appointment so as to provide for proper performance in case of absence of the regular monitors. The searching of toilet or other rooms shall be the duty of the teachers or other members of the staff. If the teachers are to do the searching, it should be done after they have joined their classes to the preceding lines.

17–3.1.6 As all drills simulate an actual fire condition, pupils shall not be allowed to obtain clothing after the alarm is sounded, even when in home rooms, on account of the confusion which would result in forming the lines and the danger of tripping over dragging apparel.

17–3.1.7 Each class or group shall proceed to a predetermined point outside the building and remain there while a check is made to see that all are accounted for, leaving only when a recall signal is given to return to the building, or when dismissed. Such points shall be sufficiently far away from the building and from each other as to avoid danger from any fire in the building, interference with fire department operations, or confusion between different classes or groups.

17–3.1.8* Where necessary for drill lines to cross roadways, signs reading "STOP! SCHOOL FIRE DRILL" or equivalent, shall be carried by monitors to the traffic intersecting points in order to stop traffic during the period of the drill.

17-3.1.9* Fire exit drills in schools shall not include any fire extinguishing operations.

17–3.2 Signals.

17–3.2.1 All fire exit drill alarms shall be sounded on the fire alarm system and not on the signal system used to dismiss classes.

17–3.2.2 Whenever any of the school authorities determine that an actual fire exists, they shall immediately call the local fire department using the public fire alarm system or such other facilities as are available.

17–3.2.3 In order that pupils will not be returned to a building which is burning, the recall signal shall be one that is separate and distinct from and cannot be mistaken for any other signals. Such signals may be given by distinctive colored flags or banners. If the recall signal is electrical, the push buttons or other controls shall be kept under lock, the key for which shall be in the possession of the principal or some other designated person in order to prevent a recall at a time when there is a fire. Regardless of the method of recall, the means of giving the signal shall be kept under a lock.

17–3.3 Inspection.

17–3.3.1* It shall be the duty of principals and teachers to inspect all exit facilities daily in order to make sure that all stairways, doors, and other exits are in proper condition.

17–3.3.2 Open plan buildings require extra surveillance to ensure that exit paths are maintained clear of obstruction and are obvious.

17–3.4 Day Care Centers.

17–3.4.1 Fire prevention inspections shall be conducted monthly by a trained senior member of the staff. A copy of the latest inspection form shall be posted in a conspicuous place in the day care facility.

17–3.4.2* An approved fire evacuation plan shall be executed not less than once per month.

17–3.4.3 Furnishings and decorations in day care centers shall be in accordance with the provisions of 17–1.3.

17–3.4.4 Flammable and combustible liquids shall be stored in areas accessible only to designated individuals and as recommended in the appropriate standard listed in Appendix B.

17–3.4.5 Wastebaskets and other waste containers shall be made of noncombustible materials.

17–3.4.6 Child-prepared artwork and teaching materials may be attached directly to the walls and shall not exceed 20 percent of the wall area.

17–3.5 Group Day Care Homes. At least one operable flashlight shall be provided for each staff member in a location accessible to the staff for use in the event of a power failure.

17–3.6 Family Day Care Homes. At least one operable flashlight shall be provided in a location accessible to the staff for use in the event of a power failure.

SECTION 17–4* HEALTH CARE AND PENAL OCCUPANCIES

17–4.1 Attendants, Evacuation Plan, Fire Exit Drills.

17–4.1.1 The administration of every hospital nursing home and residential-custodial care institution shall have in effect and available to all supervisory personnel written copies of a plan for the protection of all persons in the event of fire and for their evacuation to areas of refuge and from the building when necessary. All employees shall be instructed and kept informed respecting their duties under the plan. A copy of the plan shall be readily available at all times in the telephone operator's position or at the security center.

The provisions of 17–4.1.3 to 17–4.2.6 inclusive shall apply.

17–4.1.2 Every bed intended for use by health care occupants shall be easily movable under conditions of evacuation and shall be equipped with the type and size casters to allow easy mobility, especially over elements of the structure such as expansion plates and elevator thresholds. The authority having jurisdiction may make exceptions in the equipping of beds intended for use in areas limited to patients such as convalescent, self-care, or psychiatric patients.

17–4.1.3* Fire exit drills in hospitals shall include the transmission of a fire alarm signal and simulation of emergency fire conditions except that the movement of infirm or bed-ridden patients to safe areas or to the exterior of the building is not required. Drills shall be conducted quarterly on each shift to familiarize hospital personnel (nurses, interns, maintenance engineers, and administrative staff) with signals and emergency

action required under varied conditions. At least 12 drills shall be held every year. When drills are conducted between 9:00 P.M. and 6:00 A.M. a coded announcement may be used instead of audible alarms.

17–4.2 Procedure in Case of Fire.

17–4.2.1 Upon discovery of fire, personnel shall immediately take the following action:

(a) If any person is involved in the fire, the discoverer shall go to the aid of that person calling aloud an established code phrase. The use of a code provides for both the immediate aid of any endangered person and the transmission of an alarm. Any person in the area, upon hearing the code called aloud, shall transmit the interior alarm using the nearest manual alarm station.

(b) If a person is not involved in the fire, the discoverer shall transmit the interior alarm using the nearest manual alarm station.

(c) Personnel, upon hearing the alarm signal, shall immediately execute their duties as outlined in the institutional fire safety plan.

17–4.2.2 The institutional telephone operator shall determine the location of the fire as indicated by the audible signal. In a building equipped with an uncoded alarm system, a person on the floor of fire origin shall be responsible for the prompt notification of the fire location to the institutional telephone operator.

17–4.2.3 If the telephone operator receives a telephone alarm reporting a fire from a floor, the operator shall regard that alarm in the same fashion as an alarm over the fire alarm system. The operator shall immediately notify the fire department and alert all institutional personnel of the place of fire and its origin.

17–4.2.4 If the interior alarm system is out of service, any person discovering a fire shall immediately notify the telephone operator by telephone. The operator shall then transmit this to the fire department and alert the building.

17–4.2.5 A written institutional fire safety plan shall provide for:

(a) Use of alarms

(b) Transmission of alarm to fire department

(c) Response to alarms

(d) Isolation of fire

(e) Evacuation of area

(f) Preparing building for evacuation

(g) Fire extinguishment.

17–4.2.6 All institutional personnel shall be instructed in the use of, and response to, fire alarms; and, in addition, they should be instructed in the use of the code phrase to insure transmission of an alarm under the following conditions:

(a) When the discoverer of a fire must immediately go to the aid of an endangered person.

(b) During a malfunction of the interior alarm system.

Personnel hearing the code announced shall first transmit the interior alarm using the nearest manual alarm station and shall then immediately execute their duties as outlined in the institutional fire safety plan.

17–4.3 Maintenance of Exits. Daily inspection and proper maintenance shall be provided to insure the dependability of the method of evacuation selected. Facilities which find it necessary to lock exits shall at all times maintain an adequate staff qualified to release and conduct occupants from the immediate danger area to a place of safety in case of fire or other emergency. Where patient room doors are locked, attendants shall carry keys to these doors.

17–4.4* Smoking. Smoking regulations shall be adopted and shall include the following minimal provisions:

(a) Smoking shall be prohibited in any room, ward, or compartment where flammable liquids, combustible gases, or oxygen are used or stored and in any other hazardous location. Such areas shall be posted with "NO SMOKING" signs.

(b) Smoking by patients classified as not responsible shall be prohibited.

Exception: When the patient is under direct supervision.

(c) Ashtrays of noncombustible material and safe design shall be provided in all areas where smoking is permitted.

(d) Metal containers with self-closing cover devices into which ash trays may be emptied shall be readily available to all areas where smoking is permitted.

17–4.5 Draperies. Window draperies, curtains for decorative and acoustical purposes and cubical curtains shall be noncombustible or rendered and maintained flame resistant as per NFPA No. 701–1975, *Standard Method of Fire Tests for Flame Resistant Textiles and Films.* (*See Appendix B.*)

17–4.6 Furnishings and Decorations.

17–4.6.1 Furnishings and decorations in health care and penal occupancies shall be in accordance with the provisions of 17–1.3.

17–4.6.2* Combustible decorations are prohibited in any health care and penal occupancy unless flame retardant.

17–4.6.3 Waste baskets and other waste containers shall be of noncombustible or other approved materials.

SECTION 17–5 RESIDENTIAL OCCUPANCIES

17–5.1 Hotel Emergency Organization.

17–5.1.1* All employees of hotels shall be instructed and drilled in the duties they are to perform in event of fire, panic, or other emergency.

17–5.1.2* Drills of the emergency organization shall be held at monthly intervals, covering such points as the operation and maintenance of the available first aid fire appliances, the testing of guest alerting devices, and a study of instructions for emergency duties.

17–5.2 Emergency Duties.

17–5.2.1 Upon discovery of fire, some or all of these duties will become immediately imperative, the number and sequence depending upon the exact situation encountered —

Alarms

Notify office.

Notify public fire department.

Notify private fire brigade.

Guests

Warn guests or others who are or may become endangered.

Assist occupants to safety, with special attention to aged, infirm, or otherwise incapacitated persons.

Search rooms to be sure all occupants have escaped.

Man all elevators (including those of automatic type) with competent operators.

Extinguishment

Extinguish or control the fire, using available first aid equipment.

Send messenger to meet public fire department upon arrival in order to direct latter to exact location of fire. (The public fire department is in full command upon arrival.)

Special Equipment

Fire Pumps — stand by for instant operation.

Ventilating Equipment — in case of dense smoke, stand by, operate under proper instructions to clear area affected.

Refrigerating Equipment — if machines are definitely endangered, shut them down and blow refrigerant to sewer or atmosphere to prevent explosion.

Generators and Motors — protect against water damage with tarpaulins — shut down motors not needed — keep generators operating to furnish lights, elevator power, etc.

Boilers — if necessary to abandon boiler room, extinguish or dump fire and lower steam pressure by blowing to sewer or atmosphere to prevent possible explosion.

17–5.3 Dormitories.

17–5.3.1 Drills. Fire exit drills shall be regularly conducted in accordance with 17–1.4.

SECTION 17–6 MERCANTILE OCCUPANCIES

17–6.1 Drills. In every Class A store, employees shall be regularly trained in fire exit drill procedures, in general conformance with 17–1.4.

SECTION 17–7 BUSINESS OCCUPANCIES

17–7.1 Drills. In any building subject to occupancy by more than 500 persons or more than 100 above or below the street level, employees and supervisory personnel shall be instructed in fire exit drill procedures in accordance with 17–1.4 and shall hold practice drills periodically where practicable.

APPENDIX A

The following notes, bearing the same number as the text of the "Life Safety Code" to which they apply, contain useful explanatory material and references to standards.

CHAPTER 1

A-1-5.4 Fatal fires have occurred when a required stairway has been closed for repairs or removed for rebuilding, when a required automatic sprinkler system has been shut off to change piping, etc.

CHAPTER 2

A-2-10 The provisions of this Code will not necessarily provide a building suitable for use by physically handicapped people. Reference is made to the *Specifications for Making Buildings and Facilities Accessible to and Usable by the Physically Handicapped*, ANSI A117.1. (*see Appendix B.*)

CHAPTER 4

A-4-1.1 A detailed breakdown of occupancy classification is available from the National Fire Protection Association (*See NFPA 901, Appendix B*).

A-4-1.2 Such occupancies are characterized by the presence or potential presence of crowds, with attendant panic hazard in case of fire or other emergency. They are generally open to the public, or may on occasions be open to the public, and the occupants, present voluntarily, are not ordinarily subject to discipline or control. Such buildings are ordinarily occupied by able-bodied persons, and are not used for sleeping purposes. The need for alternate exit routes for small commercial places of assembly, such as retaurants, lounges, theaters, etc., with capacities of as few as 50 persons, is specially treated in this method of classification. Special conference rooms, snack areas, etc., incidental to and under the control of the management of other occupancies, such as offices, fall under the 100-person limitation.

A-4-1.3 Educational occupancy is distinguished from assembly in that the same occupants are regularly present and they are subject to discipline and control.

A-4-1.7 Office, storage, and service facilities incidental to the sale of merchandise and located in the same building are included with mercantile occupancy.

A-4-1.8 Doctors' and dentists' offices are included unless of such character as to be classified as hospitals. Service facilities usual to city office buildings such as newsstands, lunch counters serving less than 50 persons, barber shops and beauty parlors are included in this occupancy group.

City halls, town halls, court houses, and libraries are included in this occupancy group insofar as their principal function is the transaction of public business and the keeping of books and records; insofar as used for assembly purposes they are classed as places of assembly.

A-4-1.10 Storage properties are characterized by the presence of relatively small numbers of persons in proportion to the area; any new use which increases the number of occupants to a figure comparable with other classes of occupancy changes the classification of the building to that of the new use.

A-4-2.1.2 Under this provision any violation of the interior finish requirements of Section 6–2 would inherently involve violation of other sections of the *Code*, unless additional exit facilities appropriate for high hazard contents were provided.