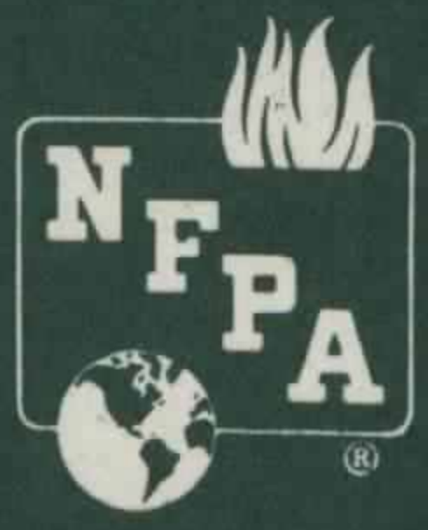
NFPA No.

101

AIA File No. 40-B-7

LIFE SAFETY CODE 1970



$2.00

NATIONAL FIRE PROTECTION ASSOCIATION
International
60 Batterymarch Street, Boston, Mass. 02110

25M-12-70-FP-SC
Printed in U.S.A.

Official NFPA Definitions

Adopted Jan. 23, 1964: Revised Dec. 9, 1969. Where variances to these definitions are found, efforts to eliminate such conflicts are in process.

SHALL is intended to indicate requirements.

SHOULD is intended to indicate recommendations or that which is advised but not required.

APPROVED means acceptable to the authority having jurisdiction. The National Fire Protection Association does not approve, inspect or certify any installations, procedures, equipment or materials nor does it approve or evaluate testing laboratories. In determining the acceptability of installations or procedures, equipment or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure or use. The authority having jurisdiction may also refer to the listings or labeling practices of nationally recognized testing laboratories,* i.e., laboratories qualified and equipped to conduct the necessary tests, in a position to determine compliance with appropriate standards for the current production of listed items, and the satisfactory performance of such equipment or materials in actual usage.

*Among the laboratories nationally recognized by the authorities having jurisdiction in the United States and Canada are the Underwriters' Laboratories, Inc., the Factory Mutual Research Corp., the American Gas Association Laboratories, the Underwriters' Laboratories of Canada, the Canadian Standards Association Testing Laboratories, and the Canadian Gas Association Approvals Division.

LISTED: Equipment or materials included in a list published by a nationally recognized testing laboratory that maintains periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets nationally recognized standards or has been tested and found suitable for use in a specified manner.

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AUTHORITY HAVING JURISDICTION: The organization, office or individual responsible for "approving" equipment, an installation, or a procedure.

Statement on NFPA Procedures

This material has been developed in the interest of safety to life and property under the published procedures of the National Fire Protection Association. These procedures are designed to assure the appointment of technically competent Committees having balanced representation from those vitally interested and active in the areas with which the Committees are concerned. These procedures provide that all Committee recommendations shall be published prior to action on them by the Association itself and that following this publication these recommendations shall be presented for adoption to the Annual Meeting of the Association where anyone in attendance, member or not, may present his views. While these procedures assure the highest degree of care neither the National Fire Protection Association, its members, nor those participating in its activities accepts any liability resulting from compliance or noncompliance with the provisions given herein, for any restrictions imposed on materials or processes, or for the completeness of the text.

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CODE FOR LIFE SAFETY FROM FIRE IN BUILDINGS AND STRUCTURES

NFPA No. 101 — 1970

The 1970 Edition of the Life Safety Code

This 1970 edition of the Life Safety Code supersedes the 1967 edition and was adopted by the National Fire Protection Association on May 21, 1970.

The NFPA, at its Annual Meeting on May 21, 1970, voted to require early warning detection and automatic sprinklers in all new and existing nursing homes, regardless of construction type. The Board of Directors has authorized the publication of this 1970 Edition of the Code without the amendment and has directed the Safety to Life Committee to implement its statement that it "recognizes the merits of early warning detection and automatic extinguishing devices as essential parts of a life safety system and has directed the Sectional Committee on Institutional Occupancies to study the methodology, alternatives and technical aspects of incorporating provisions for such devices in the 1973 Edition of the Life Safety Code."

Changes from the 1967 edition include: a complete revision of Chapter 3 including deleting the words "basement" and "grade"; extensive amendments to Chapter 5; amendments to Section 6–2 and Section 6–6; complete revision of Section 6–3; amendment of 7–114; amendments to Chapter 8 including new material on stages and a new section on projection booths; new material on open plan and flexible plan schools in Chapter 9; extensive amendments to Chapter 10; amendments to Chapters 11, 12 (including a new section on malls), 13, 14, 15 and 16; and amendments to Chapter 17 including a revised Section 17–4 on institutional occupancies.

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SCOPE: This Committee deals with life safety from fire and like emergencies. Covers construction, protection, and occupancy features to minimize danger to life from fire, smoke, fumes or panic before buildings are vacated. 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.

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Origin and Development of No. 101

The Life Safety Code (formerly the Building Exits 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 has 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 under this title 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 on recommendation of the Committee.

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 in

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 which had not previously been covered in order to produce a complete document. Preliminary work on the complete re-editing and enlargement of the Code was carried on concurrently with certain necessary current revisions which appeared in 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, Nos. 101B and 101C were published on Nursing Homes and Interior Finish respectively. No. 101C was revised in 1956. These publications have since been withdrawn.

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 have been discussed and adopted in the annual meetings of the NFPA. Records of the discussions and action taken by the NFPA will be found in the Technical Committee Reports and the NFPA Fire Journal.

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.

In 1963 the Safety to Life Committee was reconstructed. The Committee was decreased in size and includes 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.

A new edition of the Code was adopted in 1967 and the Code was placed on a three-year revision schedule.

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. 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, 60 Batterymarch Street, Boston, Massachusetts 02110, 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. When applications involve actual field situations they shall so state and all parties involved shall be named.

114. Committee Handling of Requests for Official Interpretations. No Committee shall be under any obligation to process requests for Official Interpretations in any specific time period nor to issue Official Interpretations except at its own convenience.

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NOTICE

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

Code for Safety to Life from Fire in Buildings and Structures

NFPA No. 101 — 1970

CHAPTER 1. ADMINISTRATION

SECTION 1–1. TITLE

1–1111. 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

1–2111. The purpose of this Code is to specify measures which will provide that degree of public safety from fire which can be reasonably required. 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

1–3111. This Code deals with life safety from fire and like emergencies. It covers construction, protection, and occupancy features to minimize danger to life from fire, smoke, fumes, or panic before buildings are vacated. It 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.

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.

1–3112. 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.

1–3113. 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.

1–3114. Exits from vehicles, vessels, or other mobile structures are not covered by this Code except that when in fixed locations and occupied as buildings they are treated as buildings in regard to exit requirements.

1–3115. 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.

1–3116. The Life Safety 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 exit, 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.

1–3117. 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 except that when any requirements of Chapters 8 through 17 are more restrictive than corresponding requirements in other Chapters, the more restrictive requirements of Chapter 8 through 17 shall be the minimum.

1–3118. Nothing in this Code is intended to prevent the use of new methods or new devices providing sufficient 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.

SECTION 1–4. APPLICATION

1–4111. 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.

1–4112. Existing buildings and structures shall not be occupied or used in violation of the provisions of this Code applicable thereto.

1–4113. a. The authority having jurisdiction may modify the general rule of 1–4112, above, under two conditions:

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

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

b. 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.

c. 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 be less restrictive or afford less safety to life than compliance with the corresponding provisions contained in this Code for existing buildings.

SECTION 1–5. ALTERATIONS AND CONVERSIONS

1–5111. No change or alteration shall be made to any building or structure, whether new or existing, except in conformity with the provisions of this Code, and no change of occupancy, whether necessitating a physical alteration or not, shall be made in any building or structure, unless such building or structure conforms with the requirements of this Code applying to new buildings of the proposed new use.

SECTION 1–6. DISCRETIONARY POWERS OF AUTHORITY HAVING JURISDICTION

1–6111. The authority having jurisdiction shall determine the adequacy of exits and other measures for life safety from fire in accordance with the provisions of the Life Safety 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.

CHAPTER 2. GENERAL

SECTION 2–1. FUNDAMENTAL REQUIREMENTS

2–1111. 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.

2–1112. 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.

2–1113. 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.

2–1114. 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 to prevent free escape from the inside of any building shall be installed except in mental, penal, or corrective institutions where supervisory personnel is continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

2–1115. 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, and each path of escape, in its entirety, shall be so arranged or marked that the way to a place of safety outside 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.

2–1116. In every building or structure equipped for artificial illumination, adequate and reliable illumination shall be provided for all exit facilities.

2–1117. 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.

2–1118. 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.

2–1119. 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.

2–1120.* 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.

SECTION 2–2. CONSTRUCTION AND REPAIR OPERATIONS

2–211. New Construction

2–2111. 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.

2–2112. 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.

2–212. Repairs or Alterations

2–2121.* No existing building shall be occupied during repairs or alterations unless all existing exits and any existing fire protection are continuously maintained, or in lieu thereof other measures are taken which provide equivalent safety.

2–2122. No flammable or explosive substances or equipment for repairs or alterations shall be introduced in a building of normally low or ordinary hazard classification while the building is occupied, unless 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.

SECTION 2–3. MAINTENANCE

2–3111. Every required exit, way of approach thereto, and way of travel from the exit into the street or open space, shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

2–3112.* 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.

2–3113. Any equipment requiring test or periodic operation to assure its maintenance shall be tested or operated as is specified elsewhere in this Code or as may be directed by the authority having jurisdiction.

CHAPTER 3. DEFINITIONS

Unless expressly stated otherwise, the following terms shall, for the purpose of the Life Safety Code, have the meanings indicated in this section.

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.

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

Apartment Building: See 11–0001.

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.

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

Automatic: As applied to fire-protection devices, a device or system providing an emergency function without the necessity of human intervention.

Building: A structure in which persons may be present. The term building shall be construed as if followed by the words "or portion thereof." (See Structure.)

Combustible: Capable of undergoing combustion.

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

Court: An open, uncovered and unoccupied space, unobstructed to the sky, bounded on three or more sides by exterior building walls. An enclosed court is a court bounded on all sides by the exterior walls of a building or exterior walls and lot lines on which walls are allowable.

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

Exit: See 5–1121.

Exit Access: See 5–1121.

Exit Discharge: See 5–1121.

Fire Resistance Rating: The time, in 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. (See Appendix B for list of Standards.)

Fire Window: A window assembly, including frame, wired glass and hardware, which under the standard test method listed in Appendix B meets the fire protective requirements for the location in which it is to be used.

Flame Spread: See Section 6–2.

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.

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

Handrail: A bar or 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.

Horizontal Exit: See Section 5–5.

Hospital: See 10–0001.

Means of Egress: See 5–1121.

Noncombustible: As applied to building construction, material means material which, in the form in which it is used, falls in one of the following groups (a) through (c) shall be accepted as noncombustible. No material shall be classed as noncombustible which is subject to increase in combustibility or flame spread rating beyond the limits herein established, through the effects of age, moisture, or other atmospheric condition. Flame spread rating as used herein refers to ratings obtained according to the Standard Test Method listed in Appendix B.

a. Materials no part of which will ignite and burn when subjected to fire.

b. Materials having a structural base of noncombustible material as defined in (a), with a surfacing not over ⅛ inch thick which has a flame spread rating not higher than 50.

c. Materials, other than as described in (a) or (b), having a surface flame spread rating not higher than 25 without evidence of continued progressive combustion and of such composition that surfaces that would be exposed by cutting through the material in any way would not have a flame spread rating higher than 25 without evidence of continued progressive combustion.

Nursing Homes: See 10–0001.

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.

Outside Stairs: Outside stairs include stairs in which at least one side is open to the outer air. See Section 5–4.

Platform, Enclosed: See 8–1511.

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.

Residential-Custodial Care Facility: See 10–0001.

Rooming Houses: See 11–0001.

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

Stage: See 8–1511.

Story: That portion of a building between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building between the upper surface of the topmost floor and the upper surface of the roof 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 pedestrial traffic are not considered as streets for the purposes of the Life Safety 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 Life Safety 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: An assembly of materials forming a construction for occupancy or use including among others, buildings, stadiums, public assembly tents, reviewing stands, platforms, stagings, observation towers, radio towers, water tanks, trestles, piers, wharves, open sheds, coal bins, shelters, fences, and display signs. The term structure shall be construed as if followed by the words "or portion thereof." See Building.

Unit of Exit Width: See 5–1152.

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 Life Safety 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

4–111.* 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.

4–112.* 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 of 100 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
Mortuary chapels

Occupancy of any room or space for assembly purposes by less than 100 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.

4–113.* 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

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

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

4–114. Institutional (for requirements see Chapter 10)

Institutional buildings 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; and for penal or corrective purposes. Institutional buildings 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.

Institutional buildings 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

c. Residential-restrained care
   - Penal institutions
   - Reformatories
   - Jails

4–115. Residential (for requirements see Chapter 11)

A residential building is one in which sleeping accommodations are provided for normal residential purposes, and includes all buildings designed to provide sleeping accommodations except those classified under Institutional.

Residential buildings 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

4–116.* 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.

4–117.* Office (for requirements see Chapter 13)

Office buildings 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

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.

4–118. 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, repairing, and similar operations, including, among others, the following:

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

4–119.* 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 other occupancy shall be treated as part of the other occupancy.

4–120. Miscellaneous

This occupancy class includes 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.

4–121. Mixed Occupancies

In case two or more classes of occupancy occur in the same building or structure so intermingled that separate safeguards are impracticable, the exit facilities shall be sufficient to meet exit requirements for each individual room or section, and for the maximum occupant load of the entire building. Construction, protection, and other safeguards shall meet requirements of the most hazardous occupancy unless otherwise specified in Chapters 8 through 16.

SECTION 4–2. HAZARD OF CONTENTS

4–2111. 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.

4–2112.* 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, provided, however, that 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.

4–2113.* 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, except in as far as hazardous areas are segregated or protected as specified in Section 6–5 and the applicable sections of Chapters 8 through 16.

4–212. Classification of Hazard of Contents

4–2121. The hazard of contents of any building or structure shall be classified as ordinary, high, or low in accordance with 4–2122, 4–2123 and 4–2124.

4–2122.* 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.

4–2123.* 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.

4–2124.* Ordinary hazard contents shall be classified as those which are liable to burn with moderate rapidity and to give off a considerable volume of smoke, but from which neither poisonous fumes nor explosions are to be feared in case of fire.

4–213. Special Provisions for High Hazard Contents

4–2131.* 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 5–119.

4–2132. Capacity of exits provided in accordance with 4–2131 shall be as specified in the applicable section of Chapters 8 through 16, but not less than such as to provide 1 unit for each 30 persons where exit is by inside or outside stairs, or 1 unit for each 50 persons where exit is by doors at grade level, by horizontal exits or by Class A ramps.

CHAPTER 5. MEANS OF EGRESS

SECTION 5–1. GENERAL PROVISIONS

5–111. Application

5–1111. Means of egress for both new and existing buildings shall comply with this Chapter except as may be modified for individual occupancies by Chapters 8 through 16.

5–1112. Any alteration or addition that would reduce means of egress below the requirements for new buildings is prohibited.

5–1113. Any change of occupancy that would reduce means of egress below the requirements for new buildings is prohibited.

5–112.* Definitions

5–1121. 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.

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

b. 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.

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

5–113.* Permissible Exit Components

5–1131. An exit shall consist only of the approved components that are described, regulated, and limited as to use by Sections 5–2 through 5–11. Exit components shall be constructed as an integral part of the building or shall be permanently affixed thereto.

5–114. Protective Enclosure of Exits

5–1141. 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 floor of discharge. It shall be constructed of noncombustible 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.

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

5–115. Width and Capacity of Means of Egress

5–1151.* Except as further modified for individual occupancies by Chapters 8 through 16, the capacity in number of persons per unit of exit width for approved components of means of egress shall be as follows:

Level Egress Components (including Class A Ramps) 100
Inclined Egress Components (including Class B Ramps) 60

5–1152.* Means of egress shall be measured in units of exit width of 22 inches. Fractions of a unit shall not be counted, except that 12 inches added to one or more full units shall be counted as one-half a unit of exit width.

5–1153.* Units of exit width shall be measured in the clear at the narrowest point of the means of egress except that a handrail may project inside the measured width on each side not more than 3½ inches and a stringer may project inside the measured width not more than 1½ inches. An exit 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 the minimum widths hereafter specified.

5–116. Egress Capacity and Occupant Load

5–1161.* The capacity of means of egress for any floor, balcony, tier, or other occupied space shall be sufficient for the occupant load thereof. 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 exit facilities shall be based on the larger occupant load figure.

5–1162. 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. 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.

5–117. Arrangement of Exits

5–1171.* When more than 1 exit is required from a story, at least 2 of the exits shall be remote from each other and so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency condition.

5–118.* Exit Distance and Dead-End Limits

5–1181. 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. 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.

5–119. Measurement of Travel Distance to Exits

5–1191.* 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.

5–1192. In the case of open areas, distance to exits shall be measured from the most remote point subject to occupancy. 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.

5–1193. 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.

5–1194. Where any part of an exterior way of exit access is within 15 feet horizontal distance of any unprotected building opening, as permitted by 5–4121 for outside stairs, the distance to the exit shall include the length of travel to ground level.

5–120. Access to Exits

5–1201. Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times. Where exits are not immediately accessible from an open floor area, safe and continuous passageways, aisles, or corridors leading directly to every exit and so arranged as to provide convenient access for each occupant to at least 2 exits by separate ways of travel, except as a single exit or limited dead ends are permitted by other provisions of this Code, shall be maintained.

5–1202. A door from a room to an exit or to a way of exit access shall be of the side-hinged, swinging type. It shall swing with exit travel when the room is occupied by more than 50 persons or used for a high hazard occupancy. Such access doors shall conform to the appropriate requirements of Section 5–2, Exit Doors.

5–1203. In no case shall access to an exit be through a bathroom, bedroom, or other room subject to locking, except 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.

5–1204.* Ways of exit access and the doors to exits to which they lead shall be so designed and arranged as to be clearly recognizable as such. Hangings or draperies shall not be placed over exit doors or othe wise 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.

5–1205. 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, unless the path of travel is effectively shielded from the high hazard location by suitable partitions or other physical barriers.

5–1206. 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. 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.

5–121. Exterior Ways of Exit Access

5–1211. Access to an exit may be by means of any exterior balcony, porch, gallery, or roof that conforms to the requirements of this Chapter.

5–1212. 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 5–316.

5–1213. Where accumulation of snow or ice is likely because of the climate, the exterior way of exit access shall be protected by a roof, unless it serves as the sole normal means of access to the rooms or spaces served, in which case it may be assumed that snow and ice will be regularly removed in the course of normal occupancy.

5–1214. A permanent, reasonably straight path of travel shall be maintained over the required exterior way of exit access. 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.

5–1215.* An exterior way of exit access shall be so arranged that there are no dead ends in excess of 20 feet. Any unenclosed exit served by an exterior way of exit access shall be so located that no part of the exit extends past a vertical plane 20 feet and one-half the required width of the exit from the end of and at right angles to the way of exit access.

5–1216. 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. The materials of construction may be as permitted for the building served.

5–122. Discharge from Exits

5–1221.* All exits shall discharge directly to the street, or to a yard, court, or other open space that gives safe access to a public way. The

streets to which the exits discharge shall be of width adequate to accommodate all persons leaving the building. Yards, courts, or other open spaces to which exits discharge shall also be of adequate width and size to provide all persons leaving the building with ready access to the street.

5–1222. Where permitted for individual occupancies by Chapter 8 through 16, a maximum of 50 percent of the exits may discharge through areas on the floor 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 of discharge into which the exit discharges 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 5–114).

Exception: If the discharge area is a vestibule or foyer with no dimension exceeding 10 feet and separated from the remainder of the floor of discharge by construction providing protection at least the equivalent of wired glass in steel frames and serving only for means of egress including exits directly to the outside the requirements of 5–1222(b) may be waived.

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

5–1223. 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.

5–1224. 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.

5–1225. Subject to the approval of the authority having jurisdiction, exits may be accepted where discharging to roofs or other sections of the building or adjoining buildings, where the roof has a fire resistance rating at least the equivalent of that required for the exit enclosure, where there is a continuous and safe means of egress from the roof, and all other reasonable requirements for life safety are maintained.

5–123. Headroom

5–1231. Means of egress shall be so designed and maintained as to provide adequate headroom as provided in other sections of this

Code 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.

5–124. Changes in Elevation

5–1241. Where a means of egress is not substantially level, such differences in elevation shall be negotiated by stairs or ramps conforming to the requirements of this Chapter for stairs and ramps.

5–125. Interior Finish in Exits

5–1251. Except where further limited for individual occupancies by Chapters 8 through 16, the flame spread of interior finish shall not exceed Class B in vertical exits.

5–126. Maintenance and Workmanship

5–1261. 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.

5–1262. Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

5–1263. Any device or alarm installed to restrict the improper use of an exit shall be so designed and installed that it cannot, even in case of failure, impede or prevent emergency use of such exit.

SECTION 5–2. DOORS

5–211. Application

5–2111. 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 or exit door.

5–2112. Every exit doorway 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 5–316.

5–212. Swing and Force to Open

5–2121.* Any door used in an exit, and unless exempt by 5–2122 or other provisions of this Code, shall be so designed and installed

that when pressure 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 5–2141.

5–2122. Any door in a means of egress shall swing in the direction of exit travel when serving a high hazard area or an occupant load of more than 50.

5–2123. 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 and in no case in new buildings shall any door at any point in its swing 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.

5–2124. The force required to fully open doors shall not exceed 50 pounds applied to the latch stile.

5–213. Locks, Latches, Alarm Devices

5–2131.* An exit 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.

5–2132.* A latch or other fastening device on an exit 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.

5–2133. 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 provided with a reliable self-closing mechanism, and shall not at any time be secured in the open position except as permitted by 5–2134 below. An exit door designed to be kept normally closed shall bear a sign reading substantially as follows:

FIRE EXIT
Please keep door closed

5–2134. In any building of low or moderate hazard contents, as defined in 4-2122 and 4-2124, 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 en-

dangered thereby, stairway doors, smokestop doors, and doors on horizontal exits may be normally open, where

a. Upon release, the door becomes self-closing, and

b. An approved release device is provided, so arranged that upon interruption of electric current, the door will be released, and

c. The electric current will be positively interrupted 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 or other products of combustion on either side of the door opening.

d. 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, and

e. The release device is so designed that it may be instantly released manually, by some simple and readily obvious operation.

5–214. Units of Exit Width

5–2141. In determining the units of exit width for an exit 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.

5–2142. Where an exit door has 2 or more leaves separated by mullions, the allowable units of exit width for the entire exit door shall be the sum of the units of exit width calculated separately for each individual leaf in the opening.

5–215. Width and Floor Level

5–2151.* No single leaf in an exit door shall be less than 28 inches wide.

5–2152. No single leaf in an exit door shall exceed 48 inches in width.

5–2153. The floor on both sides of an exit 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 leaf of the door. When the exit door discharges to the outside or to a balcony or other exterior exit or exit access, the floor level outside the door may be one step lower than inside, but not more than 7½ inches lower.

5–216. Panic Hardware

5–2161.* When an exit door is required to be equipped with panic hardware (fire exit bolts) by some other provision of this Code, the panic hardware shall cause the door latch to release when pressure of not to exceed 15 pounds is applied to the releasing devices in the direction of exit travel.

Such releasing devices shall be bars or panels extending not less than two-thirds of the width of the door and placed at heights suitable for the service required, not less than 30 nor more than 44 inches above the floor.

Only approved panic hardware shall be used on an exit door.

5–2162. 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.

5–217. Maintenance

5–2171. 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.

5–218. Power-Operated Doors

5–2181. 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 manually opened to permit exit travel or closed where necessary to safeguard means of egress.

5–2182. No power-operated door shall be counted as a required exit unless it swings with the exit travel by mechanical or manual means.

5–219. Screen and Storm Doors

5–2191.* 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.

5–220. Revolving Doors

5–2201. A revolving door shall not be used as an exit door except where specifically permitted by some individual occupancy chapter

of this Code for an exit from the floor of discharge directly to the outside. It shall not be used at the foot or top of stairs at the floor of discharge. Where permitted, the revolving exit door or doors shall not be given credit for more than 50 percent of the required units of exit width except as provided in 5–2203, following.

5–2202.* Each revolving door may receive credit as constituting ½ unit of exit width.

Except as provided in 5–2203, below, 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.

5–2203. 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.

5–2204.* Revolving doors shall be equipped with means to prevent their rotation at too rapid a rate to permit orderly egress.

5–221. Turnstiles

5–2211.* 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, except that approved turnstiles not over 3 feet high, which turn freely in the direction of exit travel, may be used in any occupancy where revolving doors are permitted. Turnstiles over 3 feet high shall be subject to the requirements for revolving doors.

5–2212. Turnstiles in or furnishing access to required exits shall be of such design as to provide 22 inches clear width as the turnstile rotates.

5–2213. No turnstile shall be placed in any required exit, or barring the way of access thereto or travel therefrom, unless immediately adjacent or within 20 feet there is a swinging door or gate opening freely in the direction of exit travel, or an open passage serving the same general path of travel as the turnstile.

5–2214. Turnstiles shall be rated the same as revolving doors as regards units of exit width and rates of travel.

5–222. Doors in Folding Partitions

5–2221. 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, except that 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.

SECTION 5–3. INTERIOR STAIRS AND SMOKEPROOF TOWERS

5–311. General

5–3111. All stairs serving as required means of egress shall be of permanent fixed construction.

5–312. Classes of Stairs

5–3121. Stairs shall be of Class A or Class B types 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	44 in.	44 in.; 36 in. where total occupancy of all floors served by stairway 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	9 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

5–313. Treads and Risers

5–3131. 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.

5–3132. The minimum number of risers in any one flight of stairs shall be 3.

5–314. Enclosures

5–3141. All interior stairways shall be enclosed in accordance with the provisions of Section 6–1 of this Code, except in so far as open stairways are permitted by 6–1112.

5–315. Stair Details

5–3151. Each new stair and platform, landing, etc., used in connection therewith in buildings 4 stories or more in height, and in all new buildings, required by this Code to be of fire-resistive construction, shall be of noncombustible material throughout except that handrails are exempted from this requirement. Treads of stairs and landing floors shall be solid.

5–3152. Each stair, platform, landing, balcony, and stair hallway floor shall be designed to carry a load of 100 pounds per square foot, or a concentrated load of 300 pounds so located as to produce maximum stress conditions.

5–3153. There shall be no variation exceeding $\frac{3}{16}$ inch in the width of treads or in heights of risers in any flight, except as permitted by 5–3181 for monumental stairs.

5–3154. Every tread less than 10 inches wide shall have a nosing or an effective projection of approximately 1 inch over the level immediately below.

5–3155. Where material of stair treads and landings is such as to involve danger of slipping, nonslip material shall be provided on tread surface.

5–3156. 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.

5–3157. No arrangement of treads known as winders shall be permitted in new stairways, except as permitted by 5–3181 for curved monumental stairways.

5–3158. Stairways and intermediate landings shall continue with no decrease in width along the direction of exit travel.

5–316. Guards and Handrails

5–3161. Each new stair, stair landing, and balcony appurtenant thereto for all exits and all aisles located along the edge of open-sided floors, service stairs and stairs leading from mezzanines which form part of a path of travel to such exits, shall be guarded against falls over the open edge and shall have handrails on both sides, except that handrails shall not be required on level landings or balconies.

5–3162. Required guards and handrails shall continue for the full length of each flight of stairs.

5–3163. 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.

5–3164. *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, except that 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. 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.

c. Handrails shall be so designed as to permit continuous sliding of hands on them.

d. Every stairway required to be more than 88 inches in width shall have intermediate handrails dividing the stairway into portions not more than 88 inches in width, except that on monumental outside stairs 2 handrails may be permitted.

5–3165. *Guard Details.*

a. The height of guards required by 5–3161 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. No guards shall be required for inside stairs which reverse

direction at intermediate landings, where the horizontal distance between successive flights is not more than 1 foot.

c. 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.

d. 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 5–3165a.

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

(3.) Areas filled wholly or partially by panels of solid wire mesh or 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.

e. Enclosure walls and guards consisting of masonry, railings, or other construction shall either be designed for loads transmitted by attached handrails or shall be designed to resist a horizontal thrust 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 thrust shall be applied at a height of 42 inches above the floor or tread.

f. Intermediate rails, balusters, and panel fillers shall be designed for a uniform load over the gross area of the guard (including the area of any openings in the guard) of which they are a part of not less than 25 pounds per square foot. Reactions due to this loading need not be added to the loading specified by 5–3165e in designing the main supporting members of guards.

5–317. Smokeproof Towers

5–3171. 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.

5–3172. Stairs, enclosure walls, vestibules, balconies and other components of smokeproof towers shall be of noncombustible materials, and all other requirements hereinbefore specified for inside stairs shall apply to stairs in smokeproof towers.

5–3173. 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 not subject to severe fire exposure hazard from the same or nearby buildings.

5–3174. 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. 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 shall be directly open 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 and shall conform with 5–3165d. Wall openings exposing balconies or vestibules shall be protected in accordance with 5–4121.

5–3175.* 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.

5–3176. The level of a vestibule or balcony floor shall be placed approximately 7½ 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.

5–318. Monumental Stairs

5–3181. Monumental stairs, either inside or outside, may be accepted as required exits if all requirements for exit stairs are complied with, including required enclosures and minimum width of treads, except that curved stairs may be accepted with a radius of 25 feet or more at the inner edges.

SECTION 5–4. OUTSIDE STAIRS

5–411. General

5–4111. Any permanently installed stair outside of the building served is acceptable as a required exit under the same condition as an inside stair, provided that such stairs comply with all the requirements hereinbefore stated for inside stairs, except as modified by the following paragraphs of this Section.

5–4112. Outside stairs, serving as required exits, 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.

5–4113. 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.

5–412. Enclosures

5–4121. 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. Such protection shall not be required where the stairs are located on the side of the balcony or corridor away from the building if separated from the building by the full required width of the balcony or corridor, if 3 stories or less in height. 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 except where there is only 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.

5–4122. 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, all openings below shall be protected.

5–4123. Outside stairs in climates subject to snow and ice shall be protected to prevent accumulation of snow or ice, except in the case of main entrance stairs providing the principal access to a building where it may be assumed that normal use of the building will require removal of snow and ice as a necessary condition for the entrance of occupants. 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, not to exceed 7½ inches below the level of the inside floor.

5–413. Stair Details

5–4131. For outside stairs of monumental type, constructed of stone or concrete, the requirement for a nosing may be waived if treads are at least 11 inches wide.

5–4132. Treads shall be solid.

5–4133. Risers shall be solid except that the skirt type having 1 inch space for drainage may be permitted.

5–4134. Except where embedded in masonry or concrete or where a suitable fire-resistive and waterproof covering is provided, no structural metal member shall be employed the entire surface of which is not capable of being inspected and painted.

5–4135. 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.

5–4136. Balcony and stair enclosures and railings shall be designed to resist horizontal thrust of 50 pounds per lineal foot of railing or enclosure applied at the top of the railing or to the enclosure 42 inches above the floor or tread.

SECTION 5–5. HORIZONTAL EXITS

5–511. Application

5–5111.* 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 fire wall or fire 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 escape and areas communicating therewith.

5–5112.* 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.

Exception: 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.

5–512. Egress from Area of Refuge

5–5121. 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.

5–5122. 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.

This requirement is complied with where the entire areas from each side of the horizontal exit to the stairways or other standard means of egress are occupied by the same tenant; or where there are public corridors or other continuously available passageways leading from each side of the exit to stairways or other standard means of egress leading to outside the building.

5–5123. Whenever either side of the horizontal exit is occupied, the doors used in connection with the horizontal exit shall be unlocked.

5–5124. 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.

5–513. Bridges and Balconies

5–5131. 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 con-

formity with the requirements of Section 5–3 for stairs and smokeproof towers.

5–5132. 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.

5–5133. 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.

5–5134. 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.

5–5135. 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, unless 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 or 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.

5–5136. The bridge or balcony floor shall be level with the building, except that where there is a possibility of blocking doors by snow or ice the bridge or balcony floor shall be approximately 7½ inches below the building floor level.

5–5137.* Where there is a difference in level between connected buildings or floor areas, ramps shall be employed. 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.

5–5138. All wall openings, in both of the connected buildings or fire areas, any part of which are 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; provided, however, that where bridges have solid sides not less than 6 feet in height, such protection of wall openings may be omitted.

5–514. Openings through Walls for Horizontal Exits

5–5141. Walls or partitions separating areas between which there are horizontal exits shall be of noncombustible material having a 2-hour fire resistance rating. They shall provide a separation continuous to ground except that fire partitions may be omitted on the street floor in accordance with 5–515 when they are supported on

other construction having at least a 2-hour fire resistance rating continuous to the ground.

5–5142.* 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 therefrom.

5–5143.* 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.

5–5144.* Sliding fire doors shall not be used on a horizontal exit except where the doorway is protected by a fire door on each side of the wall in which it occurs. In this case, one fire door shall be of the swinging type as provided in 5–5143 and the other may be an automatic sliding fire door that shall be kept open whenever the building is occupied.

5–515. Omission of Fire Partition on Certain Floors

5–5151. Where a fire partition is used to provide a horizontal exit in any story of a building it 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.

5–5152. Where a fire partition is used to provide a horizontal exit for any story below the discharge level, it may be omitted at the level of 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.

SECTION 5–6. RAMPS

5–61. INSIDE RAMPS

5–611. Application

5–6111. A ramp 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, it is designated as either a ramp or an exit ramp.

5–612. Classification

5–6121. A ramp shall be designated as Class A or Class B in accordance with the following table:

	Class A	*Class B*
Width	44 in. and greater	30 to 44 in.
Slope	1 to 1 3/16 in 12	1 3/16 to 2 in 12
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	60	45
Up	45	45

5–613. Protective Enclosure

5–6131. 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 5–114.

5–6132. Fixed wired glass panels in steel sash may be installed in such a separation in a fully sprinklered building.

5–6133.* 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.

5–614. Other Details

5–6141. A ramp and the platforms and landings associated therewith shall be designed for not less than 100 pounds per square foot live load.

5–6142. 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.

5–6143. An exit ramp 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 noncombustible construction. The ramp floor and landings shall be solid and without perforations.

5–6144. A ramp shall have a nonslip surface.

5–6145. Guards and handrails complying with 5–316 shall be provided in comparable situations for ramps except that handrails are not required on Class A ramps.

5–62. OUTSIDE RAMPS

5–621. General

5–6211. Any ramp permanently installed on the outside of the building served may 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 except as modified by the following provisions of 5–62.

5–6212.* 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.

5–622. Enclosures

5–6221. 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. Such protection shall not be required where the ramp is located on the side of the outside balcony or corridor away from the building if separated from the building by the full required width of balcony or corridor, if 3 stories or less in height. 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 except where there is only 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.

5–6222. Where a ramp exit is located in a court the least dimension of which is less than ⅓ its height, or in an alcove having a width less than ⅓ its height and a depth greater than ¼ of its height, all openings below shall be protected.

5–6223. Outside ramps in climates subject to snow and ice shall be protected to prevent accumulation of snow or ice, except in the case of main entrance ramps providing the principal access to a building where it may be assumed that normal use of the building will require removal of snow and ice as a necessary condition for the entrance of occupants. 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, not to exceed 7½ inches below the level of the inside floor.

5–623. Ramp Details

5–6231. Except where embedded in masonry or concrete or where a suitable fire-resistive and waterproof covering is provided, no structural metal member shall be employed the entire surface of which is not capable of being inspected and painted.

5–6232. 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 they shall be securely fastened to the framework of the building. Where metal members pass through walls, they shall be protected effectively against corrosion.

5–6233. Balcony and ramp enclosures and railings shall be designed to resist a horizontal thrust of 50 pounds per running foot of railing or enclosure applied at the top of the railing or to the enclosure 42 inches above the floor.

SECTION 5–7. EXIT PASSAGEWAYS

5–711.* Application

5–7111. Any hallway, corridor, passage, tunnel, underfloor passageway, or overhead passageway may be designated as an exit passageway and used as an exit or exit component as provided in 5–1121 and 5–1131 when conforming to all other requirements of Section 5–1 as modified by the provisions of this Section.

5–712. Protective Enclosure and Arrangement

5–7121. An exit passageway shall be protected by separation from other parts of the building as specified in 5–114.

5–7122. Fixed wired glass panels in steel sash may be installed in such a separation in a fully sprinklered building.

5–713. Width

5–7131. The width of an exit passageway shall be adequate to accommodate the aggregate capacity of all exits discharging through it.

5–714. Floor

5–7141. The floor shall be solid and without perforations.

SECTION 5–8. ESCALATORS AND MOVING WALKS

5–811. Application

5–8111.* 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 Section. As such, the escalator is designated as an exit escalator and the moving walk as a moving walk exit.

5–8112.* A sign indicating the direction of the nearest approved exit shall be placed at the point of entrance to any escalator or moving walk that does not conform to or serve as a means of egress.

5–812. Escalators

5–8121.* An exit escalator shall comply with the applicable requirements for exit stairs of Section 5–3 except as modified in this Section.

5–8122. No escalator capable of being operated in the direction contrary to normal exit travel shall be used in a means of egress.

5–8123. An exit escalator shall be of the horizontal tread type and shall be of noncombustible construction throughout except for the step tread surfaces, handrails and step wheels.

5–8124. 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.

5–8125. 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.

5–8126. No single exit escalator shall have an uninterrupted vertical travel of more than 1 story.

5–8127.* An exit escalator shall be designed and operated according to generally accepted standards of safe engineering practice.

5–813. Moving Walks

5–8131. Except as modified by this Section, an inclined moving walk exit shall comply with the applicable requirements of Section 5–6 for ramps, and a level moving walk exit shall comply with the applicable requirements of Section 5–7 for exit passageways.

5–8132. No moving walk capable of being operated in the direction contrary to normal exit travel shall be used in a means of egress.

5–8133.* A moving walk exit shall be designed and operated according to generally accepted standards of safe engineering practice.

SECTION 5–9. FIRE ESCAPE STAIRS, LADDERS AND SLIDE ESCAPES

5–91. FIRE ESCAPE STAIRS

5–911. General

5–9111.* Fire escape stairs may be used as required means of exit only in existing buildings, subject to the provisions of the occupancy chapter applying. Fire escape stairs shall not constitute more than 50 percent of the required exit capacity in any case. Fire escape stairs shall not be accepted as constituting any part of the required exits for new buildings.

5–9112. 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 exit way 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.

5–912. Types

5–9121. The following types of fire escape stairs are recognized by this Code:

Return platform type, superimposed runs

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

Either of these 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.

5–913. Stair Details

5–9131.* Fire escape stairs, depending upon the requirements of Chapters 8 through 16 of this Code, shall be in accordance with the following table and subsequent paragraphs.

	Existing Stairs	*Existing Stairs for 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

	Existing Stairs	*Existing Stairs for Very Small Buildings*
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 5-1152 for counting fractions of a unit for stairs more than 1 unit wide.

5–914. Arrangement and Protection of Openings

5–9141. 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. This provision does not apply to a platform or walkway leading from the same floor to the escape proper. Protection need not extend around a right angle corner (outside angle 270 degrees) of the building except where stairs are close to 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.

5–9142. 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.

5–9143. The provisions of 5–9141 and 5–9142 may be waived or modified by the authority having jurisdiction in consideration of automatic sprinkler protection, low hazard occupancy or other special conditions.

5–915. Access

5–9151.* Access to fire escape stairs shall be provided in accordance with 5-9131 and the general provisions of 5–120. 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.

5–9152. Fire escape stairs shall extend to the roof in all cases where the roof is subject to occupancy, or is so constructed and arranged as 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 5–92, except that such ladders are not required in the case of roofs with pitch steeper than 2 inches to the foot.

5–9153. 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, not to exceed 7½ inches, below the level of the inside floor.

5–9154. 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.

5–916. Materials and Strength

5–9161. Iron, steel, or concrete or other approved noncombustible material, shall be used for the construction of fire escape stairs, balconies, railings, and other features appurtenant thereto.

5–9162. Balconies and stairs shall be designed to carry a load of 100 pounds per square foot, or a concentrated load of 300 pounds so located as to produce maximum stress conditions.

5–9163. Except where embedded in masonry or concrete or where a suitable fire-resistive and waterproof covering is provided, no structural metal member shall be employed the entire surface of which is not capable of being inspected and painted.

5–9164. 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.

5–9165. Balcony and stair enclosures and railings shall be designed to withstand a horizontal pressure of 50 pounds per running foot of railing or enclosure without serious deflection, and support at walls for such railings or enclosures shall be in the manner specified in 5–9162 for tension members, except as provided in 5–9166.

5–9166. Notwithstanding the provisions of 5–9162 and 5–9165, 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.

5–917. Guards and Handrails

5–9171. All fire escapes shall have walls or guards on both sides, in accordance with 5–3161 and 5–3165, except for height, which shall be 42 inches, and 36 inches for fire escapes for very small buildings, the height being measured vertically from a point on the stair tread one inch back from the leading edge, or vertically above any landing or balcony floor level.

5–9172. 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, 5–3161 through 5–3164.

5–9173. Handrails and guards shall be so constructed as to withstand a force of 200 pounds applied downward or horizontally at any point.

5–918. Swinging Stairs

5–9181. Swinging stair sections shall not be used for fire escape stairs except where termination over sidewalks, alleys, or driveways makes it impracticable to build stairs permanently to the ground. Where used, swinging stairs shall comply with 5–9182–5–9189.

5–9182. Swinging section of stairs shall not be located over doors, over the path of travel from any other exit, nor be in any location where there are or are likely to be obstructions.

5–9183. Width of swinging section of stairs shall be at least equal to that of the stairs above.

5–9184. Pitch shall not be steeper than that of the stairs above.

5–9185. 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.

5–9186. If distance from lowest platform to ground exceeds 12 feet, an intermediate balcony not more than 12 feet from the ground nor 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.

5–9187. 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, except that 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.

5–9188. Pivot for swinging stairs shall either have a bronze bushing or have sufficient clearance to prevent sticking on account of corrosion.

5–9189.* No latch to lock swinging stair section in up position shall be installed.

5–92. FIRE ESCAPE LADDERS

5–921. Use

5–9211. No form of ladder shall be used as a fire escape under the provisions of this Code, except that ladders conforming to the following specifications may be used to provide access to unoccupied roof spaces as permitted by 5–9152, to provide a means of escape from boiler rooms, grain elevators and towers as permitted by Chapters 15 and 16, elevated platforms around machinery or similar spaces subject to occupancy only by able-bodied adults, not more than three in number. Existing ladders may also 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 5–9131.

5–922. Installation

5–9221.* All ladders shall be permanently installed in fixed position, supported by rigid connection to the building or structure at intervals not exceeding 10 feet.

5–9222. Where ladders provide access to roofs or elevated platforms, rails shall extend not less than 45 inches above roof line 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.

5–9223. 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.

5–9224. Ladders shall be vertical, or may be positively inclined. No negative incline (ladder sloping out over head of person using it) shall be permitted.

5–923. Construction

5–9231. Ladders shall be constructed of iron or steel, or of other metal in design having equivalent strength and resistance to corrosion.

5–9232. Rails of iron or steel ladders shall be not less than ½ inch x 2 inches in section, not less than 16 inches apart.

5–9233. 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.

5–9234. The lowest rung of any ladder shall be not more than 12 inches above the level of the ground or balcony floor beneath it.

5–93. SLIDE ESCAPES

5–931. Use and Capacity Rating

5–9311. A slide escape may be used as a required exit where specifically authorized by Chapters 8 through 16.

5–9312. Slide escapes, where permitted as required exits, shall be rated at one exit unit per slide, with rated travel capacity of 60 persons.

5–9313. Slide escapes, except as permitted for high hazard manufacturing buildings or structures, 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.

5–9314. 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.

5–932. Types

5–9321. Each slide escape shall be of an approved type.

SECTION 5–10. ILLUMINATION OF MEANS OF EGRESS

5–1011. General

5–10111.* Illumination of means of egress shall be provided for every building and structure as provided by Chapters 8 through 16.

5–10112. Such illumination 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.

5–10113.* 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.

5–10114. 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.

5–10115. The same equipment or units installed to meet the requirements of Section 5–11 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.

5–1012. Sources of Illumination

5–10121. Illumination of means of egress shall be from a source of reasonably assured reliability, such as public utility electric service.

5–10122.* Where electricity is used as a source of illumination of means of egress the installation shall be properly made in accordance with recognized good practice.

5–10123. 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, 5–1021.

5–10124.* No luminescent or fluorescent or reflective material may be used as a substitute for any of the required illumination herein specified.

5–1021. Emergency Lighting

5–10211.* In occupancies as specified in Chapters 8 through 16, emergency lighting facilities shall be provided for means of egress so arranged that they will be maintained in the event of failure of the normal lighting of the building.

5–10212.* Emergency lighting facilities shall be arranged to maintain the specified degree of illumination in the event of failure of the normal lighting for a period of at least ½ hour, and for a period of at least 1 hour in hospitals and institutions.

5–10213.* Type 1, 2, or 3 emergency lighting shall be provided as specified in Chapters 8 through 16, subject to the approval of the authority having jurisdiction as to the suitability of the equipment for its intended use and the conditions in the individual premises.

5–10214.* Electric battery operated emergency lights shall use only reliable types of storage batteries, except as permitted by 5–10223c, suitable for their intended use, and shall be provided with suitable facilities for maintenance in properly charged condition.

5–10215.* Required emergency lighting facilities shall be automatic, not requiring any manual action to put them into operation after failure of normal lighting.

5–10216. Where maintenance of illumination depends upon changing from one energy source to another, there shall be no appreciable interruption of illumination during the change-over except that in hospitals where emergency lighting is provided by a prime mover operated electric generator, a delay of not to exceed 10 seconds may be permitted.

5–1022. Type 1 Emergency Lighting

5–10221. Type 1 emergency lighting shall be so arranged as to provide the required illumination automatically in the event of any failure of normal lighting in the circuits serving areas requiring temporary lighting due to any failure of public utility or other outside electric power supply, or any single manual act such as accidental opening of a switch controlling normal lighting facilities.

5–10222. Type 1 emergency lighting shall be either continuously in operation, or shall be capable of repeated automatic operation without manual intervention.

5–10223. Type 1 emergency lighting, subject to the approval of the authority having jurisdiction, may be provided by any method or combination of methods which will produce the desired results, such as:

a. Two separate electric lighting systems, with independent wiring, each adequate alone to provide the specified exit lighting, one supplied from an outside source such as a public utility service and the other from an electric generator on the premises driven by an independent source of power, both sources of illumination being in regular simultaneous operation whenever the building is occupied during periods of darkness.

b. An electric circuit or circuits used only for means of egress illumination, with 2 independent electric sources so arranged that on the failure of one the other will come automatically and immediately into operation. One such source shall be a connection from a public utility or similar outside power source and the other an approved storage battery with suitable provision to keep it automatically charged. Such battery shall also be so provided with automatic controls that after the battery comes into operation due to failure of the primary power source, or due to turning off the primary electric source for the exit lights, it will be shut off after its specified period of operation and will be automatically recharged and ready for further service when the primary current source is again turned on.

c. Unit devices with individual batteries providing for the same functions as specified in item b. above, except that the battery supplied light may be operated on a separate circuit at a voltage different from that of the primary light. Dry cell batteries may be used in unit equipment subject to specific approval by the authority having jurisdiction (see 5–10214).

d. Two separate sources of illumination, one electric and the other of the incandescent gas mantle type, supplied by city gas, propane or gasoline vapor, utilizing only approved gas lighting devices and with reliable arrangements acceptable to the authority having

jurisdiction to assure that both gas and electric lighting sources will be in regular continuous operation during occupancy of the building in periods of darkness. Such gas lighting devices shall be so installed as not themselves to create a fire or explosion hazard within the building.

5–1023. Type 2 Emergency Lighting

5–10231.* Type 2 emergency lighting shall be so arranged as to provide the required illumination automatically in the event of any failure of normal lighting due to any fault within the building, such as opening of a circuit breaker or melting of a fuse due to short circuit due to fire or other cause or due to overloading.

5–10232. Type 2 emergency lighting shall be either continuously in operation or shall be capable of repeated automatic operation without manual intervention.

5–10233.* Type 2 emergency lighting may be provided by any method or combination of methods that will produce the desired results, subject to the approval of the authority having jurisdiction, such as an arrangement whereby means of egress illumination are on a separate electric circuit or circuits, used for no purpose other than lights and signs in means of egress, such circuit or circuits being connected to the electric service wires ahead of any circuit breakers or fuses controlling the normal electric supply to the building.

5–1024. Type 3 Emergency Lighting

5–10241.* Type 3 emergency lighting shall be such as to maintain the required means of egress illumination automatically in the event of failure of public utility electric service or other outside source of energy.

5–10242. Type 3 emergency lighting shall either be continuously in operation while the building is occupied, or shall come into operation automatically and, where automatic, shall be capable of repeated operation without manual intervention.

5–10243.* Type 3 emergency lighting may be provided by any method or combination of methods that will produce the desired results.

SECTION 5–11. EXIT MARKING

5–1111. Signs

5–11111.* Where required by the provisions of Chapters 8 through 16 exits shall be marked by a readily visible sign. 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.

5–11112.* 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.

5–11113.* Every required sign designating an exit or way of exit access shall be so located and of such size, color, and design as to be readily visible. 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 that it may not be noticed.

5–11114.* Every exit sign shall be distinctive in color and shall provide contrast with decorations, interior finish, or other signs.

5–11115. 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.

5–1112. Illumination of Signs

5–11121. Every exit 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 5–10, Illumination of Means of Egress, and where emergency lighting facilities are required, exit signs shall be illuminated from the same source. Artificial lights giving illumination to exit signs other than the internally illuminated types shall have screens, discs, or lenses of not less than 25 square inches area made of translucent material to show red or other specified designating color on the side of the approach.

5–11122. Each internally illuminated exit sign shall be provided in all occupancies where reduction of normal illumination is permitted, as in motion-picture theaters, and may be used in any occupancy.

5–1113. Size of Signs

5–11131. Every exit sign shall have the word ("EXIT") in plainly legible letters not less than 6 inches high, with the principal strokes of letters not less than ¾ inch wide.

CHAPTER 6. FEATURES OF FIRE PROTECTION

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

6–1111. 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, except as unenclosed openings are specifically permitted by 6–1112 or by other sections of this Code by reason of automatic sprinkler protection or other special features.

6–1112. In any building other than educational or institutional, with low hazard occupancy, or with ordinary hazard occupancy with automatic sprinkler protection, where necessary to effective utilization of building site with sloping grade or otherwise essential to the functional design of the building, not to exceed 3 communicating floor levels may be permitted without enclosure or protection between such areas, 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.

6–1113. Each floor opening, as specified in 6–1111, shall be enclosed by substantial walls having fire resistance not less than re-

quired for stairways, 6–1114, 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.

6–1114.* 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 5–3, 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:

New buildings 4 stories or more in height, 2 hours, noncombustible construction

other new buildings, 1 hour

existing buildings, ½ hour unless a greater resistance is required by the authority having jurisdiction in consideration of the hazard of the individual building.

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.

6–1115.* In a building where enclosure of vertical openings is required, any openings not serving as required exits may be protected by single fire doors of appropriate fire resistance, provided that when the opening pierces more than 1 floor, additional doors may be required by the authority having jurisdiction.

6–12. SPECIAL PROVISIONS FOR ESCALATOR OPENINGS

6–1211. Any escalator serving as a required exit shall be enclosed in the same manner as exit stairs. An escalator not constituting an exit shall have its floor opening enclosed or protected as required for other vertical openings, provided that in lieu of such protection escalator openings 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 following methods as described in 6–1221 through 6–1252.

6–122. Sprinkler-Vent Method

6–1221. Under the conditions specified in 6–1211, 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.

6–1222.* The exhaust system shall be of such capacity as to create a downdraft, through the moving stairway floor opening, having an average velocity of not less than 300 feet per minute under normal conditions for a period of not less than 30 minutes.

6–1223. 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 — either 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.

6–1224.* Electric power supply to all parts of the exhaust system and its control devices shall be designed and installed for maximum reliability.

6–1225.* 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.

6–1226. Periodic tests, not less frequently than quarterly, shall be made of the automatic exhaust system to maintain the system and the various control devices in good working condition.

6–1227. 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.

6–1228. 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 moving stairway opening.

6–1229. Every automatic exhaust system, including all motors and controls and automatic water curtain system, shall be supervised in an approved manner, similar to that specified for automatic sprinkler system supervision.

6–123. Spray Nozzle Method

6–1231. Under the conditions specified in 6–1211, 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.

6–1232. 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 moving stairway opening between the top of the wellway housing and the treadway will be completely filled with dense spray on operation of the system.

6–1233. 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.

6–1234. 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 moving stairway; 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.

6–1235.* 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 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.

6–1236. Control valves shall be readily accessible to minimize water damage.

6–1237. A noncombustible 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 moving stairway floor opening. When necessary, spray nozzles shall be protected against mechanical injury or tampering that might interfere with proper discharge.

6–1238.* 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 moving stairway opening. Supervised smoke detection located in or near the moving stairway opening may be used to sound an alarm. The spray nozzle system shall also be provided with manual means of operation.

6–1239. 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.

6–124. Rolling Shutter Method

6–1241.* Under the conditions specified in 6–1211, escalator openings above the street floor only may be protected by the rolling shutter method, consisting of an automatic self-closing rolling shutter which will completely enclose the top of each moving stairway, meeting the following requirements, and of a design meeting the approval of the authority having jurisdiction.

6–1242. 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 moving stairway, and, in addition, there shall be provided a manual means of operating and testing the operation of the shutter.

6–1243. 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.

6–1244. The shutter shall operate at a speed of not greater than 30 feet per minute and shall be equipped with a sensitive leading edge. The leading edge 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.

6–1245. 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.

6–1246 * 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.

6–1247. Rolling shutters shall be operated at least once a week in order to make sure that they remain in proper operating condition.

6–125. Partial Enclosure Method

6–1251. Under the conditions specified in 6–1211, 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.

6–1252. 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, provided, however, that the mechanism shall be such as to return the door to its closed position upon any interruption of electric current supply, and provided further that the adjustment is such that the pressure of smoke will not cause opening of the door.

6–13. FIRESTOPPING — CONCEALED SPACES

6–1311. 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 as provided below, with approved materials, unless 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.

6–1312. In every existing building, firestopping shall be provided as required by the provisions of Chapters 8 through 16.

SECTION 6–2. INTERIOR FINISH

6–2111.* 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 Section 17–12.

6–2112. A finish floor or floor covering 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.

6–2113. The classification of interior finish materials specified in 6–2114 shall be that of the basic material used, without regard to subsequently applied paint or wallpaper, except that 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 characteristics.

6–2114. Interior finish materials shall be grouped in the following classes, in accordance with their flame spread:

Class A Interior Finish. Flame Spread 0-25
Includes any material classified at 25 or less on the test scale described in 6–2115; and any element thereof when so tested shall not continue to propagate fire.

Class B Interior Finish. Flame Spread 26-75
Includes any material classified at more than 25 but not more than 75 on the test scale described in 6–2115.

Class C Interior Finish. Flame Spread 76-200
Includes any material classified at more than 75 but not more than 200 on the test scale described in 6–2115.

Class D Interior Finish. Flame Spread 201-500
Includes any material classified at more than 200 but not more than 500 on the test scale described in 6–2115.

Class E Interior Finish. Flame Spread over 500
Includes any material classified at over 500 on the test scale described in 6–2115.

6–2115.* Interior finish materials as specified in 6–2114 shall be classified in accordance with the Method of Test of Surface Burning Characteristics of Building Materials (see Appendix B for list of Standards).

6–2116.* Any material shown by test to have a life hazard greater than that indicated by the flame spread classification owing to the amount or character of smoke generated shall be included in the group shown in 6–2114 appropriate to its actual hazard as determined by the authority having jurisdiction.

6–2117. 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.

6–212. Fire Retardant Paints

6–2121. In existing buildings the required flame spread 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.

6–2122. Fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary fire retardant properties.

6–213. Automatic Sprinklers

6–2131. Where a complete standard system of automatic sprinklers is installed, interior finish with flame spread rating not over Class C may be used in any location where Class B is normally specified, and with rating of Class B in any location where Class A is normally specified, unless specifically prohibited elsewhere in this Code.

6–214. Trim and Incidental Finish

6–2141. 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 lower flame spread rating is required.

6–215. Use of Interior Finishes

6–2151.* Interior finish material shall be used in accordance with

requirements for individual classes of occupancy specified elsewhere in the Code. Wherever the use of any class of interior finish is specified, the use of a class of lower flame spread rating shall be permitted; e.g., where Class B is specified, Class A may be used.

6–2152. In all new buildings other than private residences Class A or Class B interior finish shall be used in all basements or other underground spaces from which there is no direct exit to the outside of the building if subject to occupancy for any purpose other than storage or service facilities.

6–2153. Interior finish of Class E shall not be used in any room or space subject to human occupancy, except to such extent as may be specifically permitted by the authority having jurisdiction on the basis of a finding that such use does not significantly increase the life hazard, provided, however, that such use of Class E interior finish shall not in any case exceed 10 percent of the aggregate interior surface of the walls and ceiling of the room or space in which such Class E material is located.

SECTION 6–3. PROTECTIVE SIGNALING SYSTEMS

6–31. GENERAL

6–3111.* 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.

6–312. Initiation of Signal Indication

6–3121. 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 initiation of conditions which would prevent operation of an extinguishing system.

g. Voice communication alarm initiation.

6–313. System Types

6–3131. 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.

6–3132.* These types are noncode systems, common coded systems, selective coded systems and dual coded systems.

6–3133. 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.

6–314. Signal Indicating Devices

6–3141. 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.

6–3142. Audible alarm indication shall produce signals which are distinctive from audible signaling indicating devices used for other purposes in the same area.

6–3143.* Audible fire alarm devices as required by Chapters 8 through 16 other than voice communication shall be used only for fire alarm system purposes.

6–3144.* Visual alarm indicating devices may be used in lieu of audible devices where permitted by Chapters 8 through 16.

6–3145. Except as provided in sentence two, 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. 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.

6–32. COMMON REQUIREMENTS

6–3211. Protective signaling systems and their component devices or equipment shall be approved for the purpose for which installed.

6–3212.* 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.

6–3213. Systems shall be tested periodically as specified by the pro-

visions of Chapters 8 through 17, or as specified by the authority having jurisdiction.

6–3214. 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.

6–3215. 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.

6–3216. 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 of 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.

6–33. MANUAL ALARM INITIATION

6–3311. Manual fire alarm boxes shall be used only for fire protective signaling purposes.

6–3312. 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.

6–3313. 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.

6–3314. Manual fire alarm boxes shall be arranged such that there will be no difference between the sounding of actual alarms and drill signals.

6–3315. Each manual fire alarm box on a system shall be of the same general type.

6–3316. Manual fire alarm boxes shall be tested periodically as specified by the provisions of Chapters 8 through 17 or as specified by the authority having jurisdiction.

6–34. AUTOMATIC DETECTION AND ALARM INITIATION

6–3411.* 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 or on the side walls near the ceiling, or at other appropriate locations after an engineering survey has been made.

6–3412. Automatic fire detection alarm initiating devices shall be approved for the particular application, spacings and locations.

6–3413.* Automatic fire detection alarm initiation devices shall be tested periodically as specified by the provisions of Chapters 8 through 17, or as specified by the authority having jurisdiction.

6–3414. 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.

6–35. AUTOMATIC SMOKE DETECTION AND ALARM INITIATION

6–3511. 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 in any part of the protected area.

6–3512. Automatic smoke detection devices shall be approved for the particular application, spacing, and locations.

6–3513. 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.

6–3514. 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.

6–36. EXTINGUISHING SYSTEM ALARM INITIATION

6–3611. 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.

6–3612. Extinguishing system alarm initiating devices shall be installed on systems as required by the provisions of Chapters 8 through 16.

6–3613. Extinguishing system alarm initiating devices shall be approved for the particular application and location.

6–3614. 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.

6–3615. 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.

6–37. EXTINGUISHING SYSTEM SUPERVISORY SIGNAL INITIATION

6–3711. 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.

6–3712. 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.

6–3713. Installation of a supervisory signal initiating device shall not interfere with the normal operation of any part of the extinguishing system.

6–3714. 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.

6–3715. 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.

6–38. MUNICIPAL FIRE DEPARTMENT NOTIFICATION

6–3811.* 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.

6–3812. 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.

SECTION 6–4. AUTOMATIC SPRINKLERS AND OTHER EXTINGUISHING EQUIPMENT

6–4111.* Each automatic sprinkler system shall be of a standard approved type, so installed and maintained as to provide complete coverage for all portions of the premises protected, except in so far as partial protection is specified by the requirements of this Code.

6–4112.* Every automatic sprinkler system shall be provided with a water-flow alarm device to give warning of the operation of the sprinklers due to fire, and where such alarm facilities meet the provisions of Section 6–3 for Automatic Fire Detection may be used in lieu of automatic fire detection facilities required in this Code.

6–4113.* 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.

6–412. Water Supplies

6–4121.* Each automatic sprinkler system required by this Code shall be provided with adequate and reliable water supplies subject to the approval of the authority having jurisdiction. At least one source of supply shall be provided under continuous and automatic pressure such as from a public water system, a gravity tank or a pressure tank; supplementary sources may be provided where necessary in the interest of greater reliability or adequate volume.

6–413. Maintenance and Supervision

6–4131.* Each automatic sprinkler system 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.

6–4132.* Where supervised automatic sprinkler protection is specified in this Code the automatic sprinkler system shall be provided with approved facilities to assure that it is in proper operative condition, such as by electrical connections to a continuously manned central station or fire department headquarters to give automatic notice of any closed water supply valve or other condition that might interfere with the operation of the system; also notice of any flow of water in the system due to fire or other cause. Such facilities shall include provision for immediate alarm to the fire department in case of fire or suspected fire, and appropriate immediate action to restore the sprinkler system to operative condition in case of any derangement.

6–42. OTHER EXTINGUISHING EQUIPMENT

6–421. Automatic

6–4211.* 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, or water spray, a standard extinguishing system of other type may be installed in lieu of an automatic sprinkler system subject to the approval of the authority having jurisdiction.

6–422. Manual

6–4221.* Any fire extinguisher, where provided, shall be of an approved type.

6–4222.* Each standpipe and hose system, where provided, shall be of an approved type.

SECTION 6–5. SEGREGATION AND PROTECTION OF HAZARDS

6–5111. Any operation or storage having a degree of hazard greater than that normal to the general occupancy of the building or structure under consideration shall be enclosed with construction having at least a 1-hour fire resistance rating, or provided with automatic fire protection, or both as specified in Chapters 8 through 16. Where a hazard is severe both the fire-rated construction and automatic fire protection shall be used.

6–5112. Except where otherwise required by the provisions of Chapters 8 through 16, all construction enclosing hazardous operations or storage shall have not less than 1-hour fire resistance, and all openings between the balance of the building and rooms or enclosures for hazardous operations or processes shall be protected with self-closing or automatic fire doors.

6–5113.* Where hazardous processes or storage are of such a character as to involve an explosion hazard, explosion venting to outside the building shall be provided by thin glass windows or other approved vents.

6–5114. Where automatic protection is required, such protection shall be by automatic sprinklers in accordance with Section 6–4, or other approved extinguishing system appropriate to extinguish fires in the hazardous materials stored or handled.

6–5115. In an existing building, to such extent as permitted by the applicable provisions of Chapters 8 through 16, an automatic fire detection system in accordance with Section 6–3 may be substituted for an automatic sprinkler system, provided, however, that where automatic fire detection is used, the hazardous operations or storage shall be segregated by walls, floors, and ceilings of solid construction, with self-closing doors on all openings between hazardous areas and the balance of the building.

6–5116. Notwithstanding the foregoing provisions, any hazardous operation or process may be conducted in a detached structure sufficiently remote from the main building to avoid any danger to occupants, without protection except as may be necessary for the safety of any occupants of the detached structure.

SECTION 6–6. FIRE DOORS AND SMOKESTOP DOORS

6–6111.* Smokestop doors, where installed to meet the requirements of this Code, shall be at least the equivalent of metal, metal covered, 1¾-inch solid bonded core wood or approved treated wood construction, with clear wired glass panels. Such doors shall be self-closing, and shall be either single or in pairs. They shall close the opening completely with only such clearance as is reasonably necessary for proper operation.

6–6112.* Any fire door, installed in accordance with the requirements of this Code shall be of an approved type. The fire protection rating of any fire door shall be as measured in accordance with the appropriate standard listed in Appendix B. Each fire door shall be appropriate for the location in which it is installed.

6–6113. Any swinging fire door and any door in stair enclosure walls designed to prevent the spread of fire shall be provided with approved positive latching means to hold it in the closed position against the pressure of expanding fire gases. Such latching means shall not be required for smokestop doors or for any other doors not designed to prevent the spread of fire.

CHAPTER 7. BUILDING SERVICE EQUIPMENT

7–1111. Air conditioning, ventilating, heating, cooking, incinerating, or other building service equipment shall be installed in accordance with the applicable standards listed in Appendix B.

7–112. Smoke Venting

7–1121. Smoke venting facilities where required for safe use of exits in windowless buildings, underground structures and large area factories shall be designed and installed in accordance with the applicable standard listed in Appendix B.

7–1122.* Natural draft smoke venting shall utilize roof vents or vents in walls at or near the ceiling level, such vents to be normally open or if closed shall be designed for automatic opening by approved means in case of fire.

7–1123.* Where smoke venting facilities are installed for purposes of exit safety in accordance with the requirements of this Code they shall be adequate to prevent dangerous accumulations of smoke during the period of time necessary to evacuate the area served, using available exit facilities with a margin of safety to allow for unforeseen contingencies.

7–1124. The discharge apertures of all natural draft smoke vents shall be so arranged as to be readily susceptible to opening by fire departments working from the exterior.

7–1125. A power-operated smoke exhausting system may be substituted for required natural draft vents only by specific permission of the authority having jurisdiction.

7–113. Rubbish Chutes, Laundry Chutes, and Flue-Fed Incinerators

7–1131. Every chute and incinerator flue shall be enclosed in accordance with 6–1111, and the openings therein shall be protected in accordance with 6–1113. No such chutes or incinerator flues shall, in new construction, open directly on any exit, or corridor to an exit, but shall be in a separate room or closet, separated from the exit (or from the corridor) by an approved self-closing fire door, except that this requirement shall not apply to private dwellings and that in apartment houses, automatic sprinkler protection may be provided in lieu of the self-closing fire door.

7–1132.* Every incinerator flue, rubbish chute, and laundry chute shall be of a standard type properly designed and maintained for fire safety.

7–1133.* In new construction, any chute other than an incinerator flue shall be provided with automatic sprinkler protection installed in accordance with the applicable standard listed in Appendix B.

7–114. Automatic Elevators

7–1141.* In any building having 5 or more stories above or below the floor of exit discharge served by elevators, unless exempt by the provisions of Chapters 8 through 16, the elevators shall be arranged for use by firemen.

CHAPTER 8. PLACES OF ASSEMBLY

(See also Chapter 17)

SECTION 8–1. GENERAL REQUIREMENTS

8–11. LOCATION, OCCUPANCY, AND OCCUPANT LOAD

8–111. Location of Places of Assembly

8–1111. In a fire-resistive building a place of assembly may be located at any height except any Class A or Class B place of assembly below the level of exit discharge shall be equipped with automatic sprinklers in accordance with Section 6–4.

8–1112. In a nonfire-resistive building a place of assembly shall be so located that its principal floor will not be more than 28 feet or 2 stories above the level of exit discharge and those below the level of exit discharge shall have automatic sprinkler protection as indicated hereinbefore.

8–1113. The level of exit discharge shall be measured at the point of principal entrance to the building.

8–1114. Where the principal entrance to a place of assembly is via a terrace with an area at least 10 percent of the ground area of the building, the level of the terrace shall be considered the level of exit discharge for the purpose of 8–1111 and 8–1112 above.

8–112. Special Provisions for Places of Assembly in Buildings of Other Occupancy

8–1121.* Any place of assembly and its access to exits in buildings of other occupancy, such as ballrooms in hotels, restaurants in stores, 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.

8–113. Occupancy and Occupant Load

8–1131. *Definition of Places of Assembly.* A place of assembly shall include all buildings or portions of buildings used for gathering together of 100 or more persons for such purposes as deliberation, worship, entertainment, amusement, drinking, dining, or awaiting transportation.

Occupancy of any room or space for assembly purposes by less than 100 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.

8–1132. *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 100 to 300 persons.

8–1133. *Occupant Load.* 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.

8–1134. 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.

8–1135. The occupant load permitted in a building or portion thereof may be increased above that specified in 8–1133 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.

8–1136. Every room without fixed seats having an occupant load of 100 or more 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.

8–12. EXIT DETAILS

8–121. Capacity of Exits

8–1211.* 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 8–1133 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, or Class A ramps or horizontal exits: 100 persons per exit unit adjusted according to location of exits as required in 8–123.

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

8–122. Minimum Number of Exits

8–1221. Every Class A place of assembly (capacity 1,000 persons or more) shall have at least 4 separate exits as remote from each other as practicable.

8–1222. Every Class B place of assembly (capacity 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.

8–1223.* Every Class C place of assembly (capacity 100 to 300 persons) shall have at least 2 means of exit, consisting of separate exits or doors leading to a corridor or other spaces giving access to 2 separate and independent exits in different directions.

8–123. Location of Exits

8–1231. *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 connect to a stairway or ramp leading to a street.

a. 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.

8–1232. *Other Exits.* Each level of an assembly occupancy shall have access to the main exit and in addition shall be provided with exits of sufficient width to accommodate two-thirds of the total occupant load served by that level. Such exits shall open 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.

8–124. Travel Distance to Exits

8–1241. 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 for unsprinklered spaces and 200 feet in areas protected by automatic sprinklers.

8–125.* Types of Exits

8–1251. 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:

Doors of the swinging type leading directly outside or through a lobby or passageway leading to the outside of the building

Horizontal exits (see Section 5–5)

Smokeproof towers (see Section 5–3)

Stairs, Class A for all new places of assembly (see Section 5–3)

Outside stairs. Same requirements as for stairs, including intermediate handrails on monumental stairs serving main entrance doors (see Section 5–4)

Ramps, Class A for all new Class A places of assembly; Class B for Class B and Class C places of assembly (see Section 5–6)

Escalators (see Section 5–8)

8–1252. *Turnstiles.* No turnstiles 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.)

8–126. Panic Hardware

8–1261. An exit door from an assembly occupancy having an occupant load of more than 100 shall not be provided with a latch or lock unless it is panic hardware.

8–127. Seating, Aisles, and Railings

8–1271. *Seating*

a. The spacing of rows of seats from back to back shall be not less than 33 inches, nor less than 27 inches plus the sum of the thickness of the back and inclination of the back. There shall be a space of not less than 12 inches between the back of one seat and the front of the seat immediately behind it as measured between plumb lines.

b. (1.) Rows of seats between aisles shall have not more than 14 seats.

(2.) Rows of seats opening on to an aisle at one end only shall have not more than 7 seats.

(3.) Seats without dividing arms shall have their capacity determined by allowing 18 inches per person.

c. 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 seat-down 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.

8–1272. *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. The length of travel to an exit door by any aisle shall be not greater than 150 feet.

f. With Continental seating as set forth in 8–1271c(1), side aisles shall be not less than 44 inches in width.

g. 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 except that in balconies or galleries the rise and tread may conform with Class B stairs.

h. The gradient of sloping aisles shall not exceed 1 foot of rise in 8 feet of run.

8–1273. *Railings*

a. The fasciae of boxes, balconies, and galleries shall have substantial railings not less than 26 inches high above the floor.

b. The railings at the ends of aisles extending to the fascia shall be not less than 30 inches high for the width of the aisle, or 36 inches high if at foot of steps.

c. Cross aisles, except where the backs of seats on the front of the aisle project 24 inches or more above the floor of the aisle, shall be provided with railings not less than 26 inches high.

8–128. Lighting and Signs

8–1281. All places of assembly shall have exit lighting in accordance with Section 5–10 and signs in accordance with Section 5–11. All Class A places of assembly (1,000 or more) shall be provided with Type 1 emergency exit illumination; Class B places of assembly, Types 1, 2, or 3 emergency exit illumination, provided that churches of Class B or Class C, used exclusively for religious worship, shall not be required to have emergency lighting.

8–1282. 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 $^1/_5$ foot-candle.

8–131. Waiting Spaces

8–1311. 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.

8–141. Exits Common to Other Occupancies

8–1411. 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.

8–1412.* Exits shall be sufficient for simultaneous occupancy of both the place of assembly and other parts of the building, unless the authority having jurisdiction determines that the conditions are such that simultaneous occupancy will not occur, such as in certain schools as per Chapter 9.

8–151. Stage and Enclosed Platform

8–1511. *Definitions*

a. 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.

b. 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.

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

d. 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.

e. 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.

8–1512. 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.

8–1513. 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.

8–1514. 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.

8–1515. In lieu of the protection required by 8–1514, 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 curtain 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 annuciator 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.

8–1516. 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.

8–1517. 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 8–1512.

d. No workshop involving the use of combustible or flammable paint, liquids, or gases, or their storage shall open directly upon a stage.

8–1518. 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.

8–1519. Each stage shall be equipped with a 2½-inch standpipe and hose on each side of the stage, installed in accordance with the appropriate Standard listed in Appendix B.

8–161. Projection Booth

8–1611.* 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 8–1612 and Section 8–6. Where cellulose nitrate film is used the projection room shall comply with the applicable standard listed in Appendix B.

8–1612. 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."

8–17. PROTECTION

8–171. Protection of Exits and Vertical Openings

8–1711.* All interior stairways and other vertical openings shall be enclosed and protected as provided in Section 6–1 except that stairs may be open between balconies and main assembly floors in theaters, churches, or auditoriums.

8–172. Interior Finish

8–1721. The interior finish requirements of this Section shall be in accordance with Section 6–2 of this Code and subject to modifications specified therein.

8–1722. Interior finish in all means of egress in all places of assembly shall be Class A.

8–1723.* Interior finish in general assembly areas shall be as follows:

In Class A and Class B places of assembly: Class A or Class B interior finish.

In all Class C places of assembly; Class A, B, or C interior finish. See 6–2152 and 6–2153.

In any place of assembly, exposed portions of structural members complying with the requirements for heavy timber construction may be permitted.

8–1724. Screens on which pictures are projected shall comply with requirements of Class A or Class B interior finish.

8–173. Hazardous Areas

8–1731. *Service Equipment, Hazardous Alterations or Processes, and Storage Facilities*

a. 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.

b. 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.

c.* All rooms or areas used for storage of any combustible materials or equipment, or for painting, refinishing, repair, or similar purposes shall be effectively cut off from assembly areas in accordance with Section 6–5 or protected with a system of automatic sprinklers. Where the hazard is severe, both the separation required in Section 6–5 and automatic sprinklers shall be provided.

8–18. BUILDING SERVICE EQUIPMENT

8–181. Elevators

8–1811. Elevators shall not constitute required means of exit. When places of assembly are more than 3 stories high or more than 3 stories above grade and equipped with automatic elevators, one or more elevators shall be designed and equipped for fire emergency use by fire fighters as specified in 7–114. Key operation shall transfer automatic elevator operation to manual and bring elevator to ground or first floor for use of fire service. The elevator shall be situated so as to be readily accessible by the fire department.

8–182. Air Conditioning

8–1821. All air conditioning, heating, and ventilation installations shall comply with Chapter 7 of this Code.

8–183. Special Provisions for Food Service Establishments

8–1831. All devices in connection with the preparation of food shall be so installed and operated as to avoid hazard to the safety of occupants.

8–1832.* All devices in connection with the preparation of food shall be of an approved type and shall be installed in an approved manner.

SECTION 8–2. OUTDOOR ASSEMBLY

8–2111. All grandstands, tents, and other places of outdoor assembly shall comply with the requirements of the appropriate Standard listed in Appendix B.

8–2112. Grandstand and bleacher type seating may be used as indoor type seating when it meets with the requirements of the appropriate Standard listed in Appendix B.

SECTION 8–3. UNDERGROUND STRUCTURES AND WINDOWLESS BUILDINGS

8–3111. The requirements of places of assembly shall be in accordance with this Chapter and Section 16–4 of this Code.

SECTION 8–4. SPECIAL PROVISIONS FOR EXHIBITION HALLS

8–4111. 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.

8–4112.* 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.

SECTION 8–5. EXISTING PLACES OF ASSEMBLY

8–511. Capacity Limitations

8–5111. In existing places of assembly the authority having jurisdiction may permit occupancy by number of persons not to exceed that for which the existing exits are adequate, provided that measures are established satisfactory to the authority having jurisdiction to prevent occupancy by any greater number of persons.

8–512. Height Limitations

8–5121. Existing places of assembly may be permitted at greater heights than specified in 8–111 in buildings provided with automatic sprinkler protection in accordance with Section 6–4.

8–513. Interior Finish

8–5131. 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 6–2121, 6–2122 and 6–2131 as alternate requirements where applicable.

SECTION 8–6. PROJECTION ROOMS FOR SAFETY FILM

8–6111. 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.

8–6112. 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.

8–6113. 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.

8–6114. 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.

8–6115. 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, nor 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.

8–6116.

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.

CHAPTER 9. EDUCATIONAL OCCUPANCIES

(See also Chapter 17)

SECTION 9–1. GENERAL REQUIREMENTS

9–11. OCCUPANCY AND OCCUPANT LOAD

9–111. Definition of Educational Occupancies

9–1111. 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.

9–1112. Educational occupancy includes part-day, nursery schools, kindergartens, and other schools whose purpose is primarily educational even though the children are of preschool age.

9–1113. 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 4–113.

9–1114.* In cases where instruction is incidental to some other occupancy, the section of this Code governing such other occupancy shall apply.

9–112. Occupant Load

9–1121. The occupant load of educational buildings or any individual story or section thereof for the purpose of determining exits shall be the maximum load 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.

9–1122. 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.

9–1123. The occupant load of an educational occupancy or portion thereof may be increased over that specified above if the necessary aisles and exits are provided. An approved aisle or seating diagram may be required by the authority having jurisdiction to substantiate such increase in occupant load.

9–1124. The occupant load of individual lecture rooms, gymnasiums, or cafeterias used for assembly purposes of more than 100 persons, shall be determined in accordance with 8–113 of this Code.

9–12. EXIT DETAILS

9–121. Additional Exit Details

9–1211.* The provisions of this Section are based on occupancy by normal individuals. Educational buildings used by persons with physical or mental handicaps shall have additional features as may be required by the enforcing authority, to ensure safe use of such exits in an emergency.

9–122. Capacity of Exits

9–1221.* 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:

Any door, in accordance with Section 5–2, 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.

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.

Stairs, outside stairs, or smokeproof towers, in accordance with Sections 5–3 and 5–4. . . . 60 persons per unit of exit width.

Ramps, in accordance with Section 5–6

Class A . . . 100 persons per unit of exit width

Class B . . . 60 persons per unit of exit width.

Horizontal exits, in accordance with Section 5–5. . . . 100 persons per unit of exit width.

9–1222.* 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.

9–123. Minimum Number of Exits

9–1231. 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.

9–124. Travel Distance to Exits

9–1241. Except in open plan and flexible plan buildings, travel distance to an exit from any point in a building without a complete automatic fire extinguishing system shall not exceed 150 feet, and shall not exceed 200 feet in any building. See Section 9–2 for limitations for open plan and flexible plan buildings.

9–125. Access to Exits

9–1251. Every aisle, corridor, balcony, and other means of access to exits, and discharge from exits, shall be in accordance with Section 5–1.

9–1252. Any corridor shall be not less than 6 feet wide in the clear.

9–1253. 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.

9–1254. Drinking fountains or other equipment, fixed or movable, shall not be so placed as to obstruct the required minimum 6-foot corridor width.

9–126. Exterior Corridors or Balconies

9–1261.* 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.

9–1262. 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 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.

9–127. Exit Arrangement

9–1271.* 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.

9–1272. 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.

9–13. DOORS

9–131. Door Closure

9–1311. All exit doors designed to be kept normally closed shall conform with 5–2133.

9–132. Door Swing

9–1321. 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.

9–133. Panic Hardware

9–1331. Any exterior door and any room door subject to use by 100 or more persons shall be operated by bars or other panic hardware device, in accordance with 5–216, except that a door leading directly to the outside from a classroom occupied by less than 100 persons may be equipped with the same knob-operated schoolhouse type lock as is used on classroom doors leading to corridor, with no provision whatsoever for locking against egress from the classroom.

9–141. Lighting and Signs

9–1411. All educational buildings shall have adequate exit illumination in accordance with Section 5–10. Flexible plan and open plan buildings and buildings designed for night occupancy and portions of buildings having interior and windowless rooms, areas, and corridors, shall have Type 1 emergency exit illumination.

9–1412. All educational buildings shall have signs designating the location of exits or the path of travel to reach them, in accordance with Section 5–11.

9–1413. 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.

9–151. Windows for Rescue and Ventilation

9–1511.* Except in buildings with complete sprinkler protection in accordance with Section 6–4, every room or space used for classroom or other educational purposes or normally subject to student occupancy, unless it has a door leading directly to the outside of building, shall have at least one outside window which can readily be used for emergency rescue or ventilation purposes, and which meets all of the following provisions:

a. Is readily openable from the inside without the use of tools.

b. Provides a clear opening with a minimum dimension of approximately 22 inches and is approximately 5 square feet in area.

c. Bottom of window opening is not more than 32 inches above the floor.

d. Where storm windows, screens, or burglar guards are used, these shall be provided with quick opening devices so that they may be readily opened from the inside for emergency egress, and shall be so arranged that when opened they will not drop to the ground.

9–16. PROTECTION

9–161. Protection of Vertical Openings

9–1611. Any interior stairway and other vertical opening in educational buildings shall be enclosed and protected in accordance with Section 6–1.

9–1612. In educational buildings, 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.

9–162. Interior Corridors

9–1621. Every interior corridor shall be of construction having not

less than a 1-hour fire resistance rating, and all openings therein protected accordingly. Room doors may be 1¾-inch solid bonded core wood doors or the equivalent. 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 9–126.

9–1622. Any interior corridor more than 300 feet in length shall be divided into sections not to exceed 300 feet in length by smoke barriers, consisting of partitions with smokestop doors therein. Such partitions shall be continuous through any concealed space such as between the hung ceiling and the floor or roof above. Doors in smoke barriers shall comply with 6–6111.

9–163. Interior Finish

9–1631. 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.

9–164. Fire Alarm System

9–1641. Approved manually operated fire alarm facilities in accordance with Section 6–3 shall be provided in every educational building.

9–1642. In buildings provided with automatic sprinkler protection, the operation of the sprinkler system shall automatically actuate electrical school fire alarm systems.

9–165. Automatic Sprinkler Protection

9–1651. 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.

9–166. Hazardous Areas

9–1661. An area used for general storage, boiler or furnace rooms, fuel storage, janitors 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.

9–17. BUILDING SERVICE EQUIPMENT

9–171. Elevators

9–1711. An elevator shall not constitute required means of exit. When an educational occupancy is more than 3 stories high or more than 3 stories above grade and equipped with automatic elevators, one or more elevators shall be designed and equipped for fire emergency use by fire fighters as specified in 7–114. Key operation shall transfer automatic elevator operation to manual and bring elevator to ground or first floor for use of fire service. The elevator shall be situated so as to be readily accessible by the fire department.

9–172. Air Conditioning

9–1721. Every air-conditioning, heating, and ventilating installation shall comply with Chapter 7 of this Code.

9–173. Electrical Wiring and Equipment

9–1731. Electrical wiring and equipment shall be in accordance with the appropriate Standard listed in Appendix B, and all cooking and heating equipment, incinerating and other building service equipment shall be installed in accordance with Chapter 7.

SECTION 9–2. SPECIAL PROVISIONS FOR FLEXIBLE PLAN AND OPEN PLAN BUILDINGS

9–211. Definitions

9–2111. Flexible plan and open plan educational buildings include every building or portion of a building not having corridors which comply with 9–1621 and are designed for multiple teaching stations.

9–2112. Flexible plan buildings have movable corridor walls and movable partitions of full height construction, with doors leading from rooms to corridors.

9–2113. 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.

9–212. Area Limitations and Separations

9–2121. Flexible plan and open plan buildings shall not exceed 30,000 square feet in undivided area. A solid wall or smokestop

partition (9–1622) shall be provided at maximum intervals of 300 feet. Such wall or partition shall have smokestop doors complying with 6–6111.

9–2122. Vertical openings shall be enclosed as required by 9–161.

9–2123. Stages in places of assembly shall be separated from school areas by construction of noncombustible materials having at least a 2-hour fire resistance rating and shall comply with 8–151.

9–2124. 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.

9–213. Travel Distance to Exits

9–2131. Travel distance to an exit from any point in an open plan building without a complete automatic extinguishing system shall not exceed 100 feet and shall not exceed 150 feet in any open plan building.

Travel distance to an exit from any point in a flexible plan building without a complete automatic extinguishing system shall not exceed 150 feet and shall not exceed 200 feet in any flexible plan building.

9–214. Doors in Flexible Plan Building

9–2141. Doors in room dividers and in corridor walls and partitions in flexible plan buildings shall be 1¾-inch solid bonded core wood or the equivalent.

9–215. Interior Finish

9–2151.* Interior finish in flexible plan and open plan buildings shall be as follows:

a. Corridors in flexible plan buildings — Class A, on rigid material which will not deform at temperature below 450°F. Smoke emissions shall be minimum as approved by the authority having jurisdiction (see 6–2116).

b. Other than corridor walls — Class A or Class B throughout except that fixtures and low height partitions may be Class C. In 1-story buildings the exposed portions of structural members complying with the requirements for heavy timber construction may be permitted. See also 6–2116, 6–2152 and 6–2153.

9–216. Variable Plans

9–2161. Flexible plan schools may have walls and partitions rearranged periodically, only after revised plans or diagrams have been approved by the authority having jurisdiction.

9–2162. 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 9–1252.

9–217. Automatic Fire Extinguishing Systems

9–2171. Any flexible plan building in which the travel distance to exits exceeds 150 feet, or any open plan building in which the travel distance to exits exceeds 100 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.

9–2172. Automatic fire extinguishing systems shall be modified to conform with partition changes. Modification plans shall have prior approval of the authority having jurisdiction.

SECTION 9–3. SPECIAL PROVISIONS FOR KINDERGARTENS, ETC.

9–3111. 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.

SECTION 9–4. UNDERGROUND AND WINDOWLESS EDUCATIONAL BUILDINGS

9–4111. In addition to the requirements of this Section for Underground and Windowless Educational Buildings, the provisions of Section 16–4 of this Code shall apply and such buildings shall be provided with complete automatic sprinkler protection.

SECTION 9–5. SPECIAL PROVISIONS FOR COMBINED OCCUPANCIES

9–511. Assembly and Educational

9–5111. 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 Pro-

visions 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, except in 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) in which case the same exit capacity may serve both sections.

9–512. Dormitory and Classrooms

9–5121. 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.

9–513. Other Combined Occupancies

9–5131. Any other combinations of occupancy not covered in 9–511 and 9–512 shall comply with all applicable Chapters of this Code, with exits adequate to serve all occupancies simultaneously.

9–5132. Each room having an occupant load of more than 100 shall be located at the floor of exit discharge, except in buildings of fire resistive construction.

SECTION 9–6. EXISTING EDUCATIONAL BUILDINGS

9–611. General

9–6111. 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.

9–612. Additional Protection

9–6121. Additional means of egress, the installation of automatic sprinkler protection, area separations, emergency lighting, and other alternate means of protection may be used to provide reasonable life safety from fire and panic.

9–613. Exits

9–6131. Exit deficiency may be corrected by adding additional exits, preferably those which will provide direct exit to the outside from classroom or student-occupied areas.

9–6132. In lieu of direct exits to the outside from classrooms additional life safety may be afforded by the provision of communicating doors between classrooms or student-occupied areas to provide access to at least one exit or exit stair without passing through interior corridors.

9–614. Interior Finish

9–6141. In existing educational buildings which have interior finish that does not comply with the requirements for new buildings, the provisions of 6–2122 and 6–2123 shall be acceptable as alternate requirements.

9–615. Fire Alarm Systems

9–6151. 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.

CHAPTER 10. INSTITUTIONAL OCCUPANCIES

10–0001. Institutional buildings 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; and for penal or corrective purposes. Institutional buildings 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.

Buildings or sections of buildings which house, or in which care is rendered to mental patients who are capable of average judgment in taking action for self-preservation under emergency conditions, in the opinion of competent medical authority approved by the state agency having jurisdiction, may come under other sections of this Code instead of Section 10–1.

Sections of institutional buildings may come under other occupancy classifications regarding exit requirements if these areas are not used to house institutional occupants, or are not areas in which these persons are treated or to which they have normal access, or which serve as a means of egress for them.

Institutional buildings comprise three groups; groups a. and b. are treated together in Chapter 10 and group c. is considered separately:

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 10–3.

10–0002. Institutional occupancies shall include all buildings or parts thereof with occupancy as described in 10–0001.

10–0003. All institutional buildings 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 institutional buildings 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. Provisions for detection, alarm, and extinguishment; and
c. Fire prevention and the planning, training, and drilling in programs for the isolation of fire and transfer of occupants to areas of refuge or evacuation of the building.

10–0004. It is recognized that in buildings housing various types of psychiatric patients, or used as penal institutions, it may be necessary to lock doors and bar windows that are equipped to confine and protect building inhabitants. Other sections of this Code requiring the keeping of exits unlocked may be waived by the authority having jurisdiction. It is also recognized that some psychiatric patients are not capable of seeking safety without guidance. 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 carried by attendants.

SECTION 10–1. NEW HOSPITALS, NURSING HOMES AND RESIDENTIAL-CUSTODIAL CARE OCCUPANCIES

10–111. Application

10–1111. This Section establishes life safety requirements for hospitals, nursing homes, and residential-custodial care institutions. Where requirements vary, the specific occupancy, such as Hospital, Nursing Home, Nursery, Residential-Custodial Care Institution, Home for the Aged, or Mentally Retarded Care Institution, is named in the paragraph pertaining thereto. See Chapter 17 for Operating Features.

10–112. Definitions

10–1121. *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.

10–1122. *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 and infirmaries of homes for the aged.

10–1123. *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.

10–113. New Construction, Additions, Conversions

10–1131. Any addition shall be separated from any existing nonconforming structure by a noncombustible fire partition having at least a 2-hour fire resistance rating. Communicating openings in such dividing fire partition shall occur only in corridors and shall be protected by an approved self-closing fire door. Except where provisions meeting the requirements of 5–2134 and 10–1245 are made for such doors, they are intended normally to be kept closed. Unless these doors are required exits, they are not required to swing with exit travel as specified in 5–2121.

10–1132. Any building converted to these occupancies shall comply with all requirements for new facilities.

10–1133. See Section 2–2 for life safety provisions during construction.

10–114. Occupancy and Occupant Load

10–1141. Any occupancy housed in these facilities shall be restricted to those under the control of and incidental to the operation of the institution.

Exception: Educational facilities for medical, nursing and related personnel.

10–1142. Sections of institutional buildings may be classified as other occupancies if they meet all of the following conditions:

a. They are not intended to serve institutional occupants for purposes of housing, treatment, customary access, or means of egress.

b. They are adequately separated from areas of institutional occupancies by construction having a 2-hour fire resistance rating.

10–1143.* Auditoriums, chapels, staff residential areas, garages or similar occupancies provided in connection with institutions shall have exits provided in accordance with other applicable sections of this Code.

10–1144. The occupant load for which means of egress shall be provided for any floor shall be the maximum number of persons in-

tended to occupy that floor but not less than 1 person for each 120 square feet gross floor area in institutional sleeping departments and not less than 1 person for each 240 square feet of gross floor area of inpatient institutional treatment departments. Gross floor areas shall be measured within the exterior building walls with no deductions. (See Chapter 3.)

10–12. EXIT DETAILS

10–121. Number and Types

10–1211.* Exits shall be restricted to the following permissible types:

a. Doors leading directly outside the building (see 10–124)
b. Stairs and smokeproof towers (see 10–125)
c. Ramps (see 10–127)
d. Horizontal exits (see 10–126)
e. Outside stairs (see Section 5–4)
f. Exit Passageways (see Section 5–7)

10–1212. At least 2 exits of the above types, remote from each other, shall be provided for each floor or fire section of the building. At least 1 exit in each floor or fire section shall be as indicated in 10–1211 a, b, e, or f.

10–1213. Revolving doors shall not be counted as required exits, and shall not be installed except as specifically stated in Section 5–2. Elevators constitute a supplementary facility, but are not counted as required exits.

10–122. Capacity of Exits

10–1221.* The capacity of any required exit shall be based on its width in units of 22 inches as defined in 5–115. The capacity of exits providing travel by means of stairs shall be 22 persons per exit unit; and exits providing travel without stairs, such as doors or horizontal exits, shall be 30 persons per exit unit.

10–123. Access to Exit

10–1231. Every aisle, passageway, corridor, exit discharge, exit location and access shall be in accordance with Section 5–1, except as modified in the following paragraphs.

10–1232. 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 an institutional sleeping room or suite and an exit access door of that room or suite shall not exceed 50 feet. The travel distances in (a) or (b) above may be increased by 50 feet in build-

ings completely equipped with an automatic fire extinguishing system. Travel distance shall be measured in accordance with 5–119.

10–1233. Every institutional sleeping room, unless it has a door opening to the ground, shall have an exit access door leading directly to a corridor which leads to an exit. One adjacent room such as a sitting or anteroom may intervene if all doors along the path of exit travel are equipped with nonlockable hardware, except as provided in 10–1242, and this intervening room is not intended to serve more than 8 institutional sleeping beds.

Exception: Special nursing suites permitted in 10–1237 shall not be limited to 8 beds or bassinets.

10–1234. 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 except that 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. Aisles, corridors and ramps required for exit access or exit in a residential-custodial care institution shall be at least 6 feet in clear and unobstructed width.

10–1235. Any room and any suite of rooms, as permitted in 10–1233, of more than 1,000 square feet shall have at least 2 exit access doors remote from each other.

10–1236. Every exit or exit access shall be so arranged that no corridor or aisle has a pocket or dead end exceeding 30 feet.

10–1237. Any institutional sleeping room which complies with the requirements previously set forth in this section may be subdivided with nonfire-rated, noncombustible 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.

10–124. Doors

10–1241. Doors shall be in accordance with Section 5–2, except as modified below. For door requirements in horizontal exits and smokestop partitions see 10–1261 and 10–1314.

10–1242. Locks installed on institutional sleeping room doors shall be so arranged that they can be locked only from the corridor side, except, such doors leading directly to the outside of the building may be subject to locking from the room side. All such locks, except those permitted in 10–0004, shall be arranged to permit exit from the room by a simple operation without the use of a key.

Exception: Doors in homes for the aged may be lockable by the

occupant if they can be unlocked on the corridor side, and keys are carried by attendants at all times.

10–1243. Exit access doors to hospital and nursing home sleeping rooms, diagnostic and treatment rooms or areas such as X-ray, surgery and physical therapy, all doors between these spaces and the required exits, and all exit doors serving these spaces shall be at least 46 inches wide. Doors to residential-custodial sleeping rooms and doors to nursery sleeping rooms and all exit doors serving these spaces shall be at least 36 inches wide.

Exception: Exit doors which are so located as not to be subject to use by any institutional occupant may be not less than 28 inches wide.

10–1244. Any door in a fire separation, horizontal exit or a smoke-stop partition may be held open only by an electrical device which complies with 5–2134. The device shall be so arranged that the operation of any one of the following will initiate the self-closing action:

a. The manual alarm system required in 10–1366.

b. A local device designed to detect smoke or other products of combustion other than heat on either side of the opening.

c. A required and approved automatic fire extinguishing system or automatic fire detection system.

10–1245. Any door in a stairway enclosure or in walls surrounding hazardous areas shall not be equipped with hold-open devices.

10–125. Stairs, Smokeproof Towers

10–1251. Every stair and smokeproof tower shall be in accordance with Section 5–3, shall be Class A, and shall be constructed as described in 10–1323.

Exception: 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.

10–126. Horizontal Exits

10–1261.* A horizontal exit shall be in conformance with Section 5–5 except as modified 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 institution 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 46 inches wide for a hospital or nursing

home or at least 36 inches wide for residential-custodial care institutions. The swing shall be in the direction of exit travel.

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, each leaf to be a minimum of 44 inches wide and swinging in the opposite direction from the other.

d. A horizontal exit in a residential-custodial care institution 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, each leaf to be a minimum of 32 inches wide and swinging in the opposite direction from the other.

e. An approved vision panel is required in each horizontal exit door. Center mullions are prohibited.

10–127. Ramps

10–1271. Ramps shall be in accordance with Section 5–6, and shall be Class A and shall not exceed 6 feet in vertical dimension between top and bottom floor elevations; a Class B ramp may be used where the height of the ramp is 1 foot or less. Ramp width shall be as specified in 10–1234.

10–128. Emergency Lighting, Exit Markings, Alarms and Communication Systems

10–1281.* Each hospital shall be provided with emergency lighting as described in Section 5–10 and exit markings as described in Section 5–11. Such emergency lighting and the illumination of required exits and directional signs shall be supplied by the Life Safety Branch of the hospital electrical system as described in Chapter 3, NFPA No. 76A — 1970, Standard for Essential Electrical Systems for Hospitals. The Life Safety Branch shall also serve alarms, emergency communication systems and the illumination of generator set locations as described in paragraphs (c), (d) and (e), Section 312 of the same reference.

10–1282. Each nursing home shall be provided with Type 1 emergency lighting as described in 5–10223.a.

10–1283. Each residential-custodial care facility shall have Type 3 emergency lighting in accordance with Section 5–10.

10–1284. Exit signs shall be in accordance with Section 5–11.

10–13. PROTECTION

10–131. Subdivision of Building Spaces

10–1311.* Each floor used for institutional sleeping rooms, unless

provided with a horizontal exit, shall be divided into at least 2 compartments by a smokestop partition.

10–1312. Corridor length between smokestop partitions, horizontal exits, or from either, to the end of the corridor on any institutional sleeping floor shall not exceed 150 feet.

10–1313. Any smokestop partition shall have a fire resistance rating of at least 1 hour. Such a partition shall be continuous from outside wall to outside wall and from floor slab to the underside of the slab above, through any concealed spaces such as between the hung ceiling and the floor or roof above. Such a partition shall have openings only in a public room or corridor. At least 30 net square feet per institutional occupant for the total number of institutional occupants in adjoining compartments shall be provided on each side of the smokestop partition.

10–1314. Any corridor opening in smokestop partitions in hospitals and nursing homes shall be protected by a pair of swinging doors, each leaf to be a minimum of 44 inches wide and swinging in opposite directions from each other. Any opening in smokestop partitions in residential-custodial institutions shall be protected by a pair of swinging doors, each leaf a minimum of 32 inches and swinging in the opposite direction from the other. In addition, any smokestop door shall conform to the following minimum standards:

a. Smokestop doors shall be at least 1¾-inch solid core wood doors designed to close the opening completely with only such clearance as is reasonably necessary for proper operation. Rabbets, bevels, or astragals are required at the meeting edges and stops are required on the head and sides. Positive latching hardware is not required. Center mullions are prohibited.

b. Smokestop doors shall be self-closing and may be held in an open position only if they meet the requirements of 10–1244.

c. Vision panels are required in all doors in smokestop partitions. They shall be wired glass in approved metal frames not exceeding 720 inches.

10–1315. Any building space, other than institutional sleeping spaces, shall be subdivided into sections of not more than 20,000 square feet by walls or partitions constructed to have a fire resistance rating of at least 2 hours. Such walls or partitions shall extend from the floor to the underside of the floor or roof slab next above, including any concealed spaces, and from wall to outside wall or to any intervening walls of equal or greater fire resistance rating and integrity. Where such partitions cross corridors, a horizontal exit shall be provided.

10–1316. An approved automatic fire or smoke detection system shall be installed throughout any floor or fire section subject to

actual occupancy of 100 or more persons from which there is no direct access to outdoors or having no ventilation from windows.

10–132. Minimum Construction Standards

10–1321.* Institutional 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. (See 10–136 for automatic sprinkler requirements.)

10–1322. Institutional buildings 2 stories or more in height shall be constructed of at least fire-resistive construction.

10–1323. The enclosure walls of stairways, ramps, exit passageways, elevator shafts, chutes and other vertical openings between floors shall be of noncombustible materials having a fire resistance rating of at least 2 hours in buildings of any height. For exceptions see 10–1251.

10–1324. Nothing in this Section removes the requirements in 10–1331 for 1-hour corridor walls or 1-hour smokestop partitions called for in 10–1311.

10–1325. All interior walls and partitions in buildings of fire-resistive and noncombustible construction shall be composed of noncombustible materials.

10–1326.* Every institutional 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 10–0004 for detention screen requirements.) The maximum allowable sill height shall not exceed 36 inches above the floor, except that the window sill in special nursing care areas may be 60 inches above the floor.

Exception: Rooms housing obstetrical labor beds, recovery beds, observation beds in the emergency department, or newborn bassinets need not comply with this section.

10–133. Construction of Corridor Walls

10–1331.* Corridors shall be separated from use areas by walls having a fire resistance rating of at least 1-hour construction and without transfer grilles whether or not such grilles are protected by dampers actuated by fusible links.

Exceptions:

a. Doors between all rooms and corridors, other than doors to

hazardous areas, horizontal exits or stair doors, shall be of no less than 1¾-inch solid core wood doors and shall be without undercuts or louvers. The doors shall be provided with latches of a type suitable for keeping the door tightly closed and acceptable to the authority having jurisdiction.

b. Fixed wired glass vision panels may be placed in corridor walls, provided they do not exceed 1,296 square inches in size and are installed in approved steel frames. Fixed wired glass vision panels may be installed in wood doors, provided they do not exceed 720 square inches in size and are installed in approved steel frames.

c. Waiting areas of 250 square feet or less on an institutional sleeping floor may be open to the corridor, provided that they are located to permit direct supervision by the institutional staff. Such areas shall be equipped with an electrically supervised automatic fire detection system actuated by smoke or products of combustion other than heat and installed in accordance with 10–1365. Not more than one such waiting area is permitted in each smoke compartment.

d. Waiting areas of 600 square feet or less on floors other than institutional sleeping floors may be open to the corridor, provided that they are located to permit direct supervision by the institutional staff and so arranged as not to obstruct any access to required exits. Such areas shall be protected by an electrically supervised automatic fire detection system actuated by smoke or other products of combustion other than heat and installed in accordance with 10–1365.

10–134. Protection of Vertical Openings and Firestopping

10–1341. Any stairway, ramp, elevator shaft, light and ventilation shaft, chute and other openings between stories shall be enclosed with noncombustible materials and in accordance with 6–1111, 6–1113 and 6–1114, and 10–1323. A door in a stairway enclosure shall be self-closing, shall normally be kept in closed position and shall be marked in accordance with 5–2133.

10–1342. Firestopping shall be provided in accordance with 6–1311.

10–135. Interior Finish

10–1351. Interior finish in means of egress shall be Class A. Interior finish of any room shall be Class A in accordance with Section 6–2 except that Class B materials may be used in individual rooms of not over 4 persons capacity. The provisions of 6–2131, permitting a lower class finish in buildings with automatic sprinklers do not apply for institutional occupancies.

10–136. Extinguishment and Alarm Systems*

10–1361. Automatic fire extinguishing protection shall be provided throughout all hospitals, nursing homes, and residential-custodial care facilities, except those of fire resistive or protected noncombustible construction. (See 10–132 for construction types permitted.)

10–1362. Required automatic sprinkler systems shall be in accordance with Section 6–4, for systems in light hazard occupancies, and shall be electrically interconnected with the fire alarm system. The main sprinkler control valve shall be electrically supervised so that at least a local alarm will sound when the valve is closed.

10–1363. The sprinkler piping for any isolated hazardous area which can be adequately protected by a single sprinkler may be connected directly to a domestic water supply system having a flow of at least 22 gallons per minute at 15 pounds per square inch residual pressure at the sprinkler. An approved shutoff valve shall be installed between the sprinkler and the connection to the domestic water supply.

10–1364. Sprinkler requirements for hazardous areas are stated in 10–1371 and sprinkler requirements for chutes are given in 7–1131.

10–1365. Wherever a required electrically supervised fire detection device or system is used it shall be electrically interconnected to the manually operated fire alarm system.

10–1366.* Every building shall have an electrically supervised, manually operated fire alarm system, in accordance with Section 6–3, except that pre-signal systems shall not be permitted in institutional occupancies. The fire alarm system shall be installed to transmit an alarm automatically to the fire department that is legally committed to serve the area in which the institution is located, by the most direct and reliable method approved by local regulations.

10–1367. Portable fire extinguishers shall be provided in all institutional occupancies in accordance with 6–422.

10–137. Hazardous Areas

10–1371.* Any hazardous area shall be safeguarded in accordance

*See Page 101–I for Annual Meeting action.

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
Rooms or spaces used for storage, in quantities deemed hazardous by the authority having jurisdiction, of combustible supplies and equipment
Trash collection rooms
Gift shops

10–1372. Laboratories shall be in accordance with the applicable standard listed in Appendix B.

10–14. BUILDING SERVICE EQUIPMENT

10–141. Air-Conditioning, Ventilating, Heating, Cooking, and Other Service Equipment

10–1411. Air-conditioning, ventilating, heating, cooking, and other service equipment shall be in accordance with Chapter 7 except as modified in 10–1412 and 10–1413 below, and shall be installed in accordance with the manufacturer's specifications.

10–1412.*

a. Portable comfort heating devices are prohibited.

b. Any heating device other than a central heating plant shall:

1. Be so designed and installed that combustible material will not be ignited by it or its appurtenances.

2. If fuel fired, be chimney or vent connected, take its air for combustion directly from outside, and be so designed and installed to provide for complete separation of the combustion system from the atmosphere of the occupied area. In addition, it 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.

Exceptions:

a. Approved suspended unit heaters may be used, except in 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 in item b.2. above.

b. 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 re-

sistance rating and they comply with the appropriate standard listed in Appendix B. In addition thereto, the fireplace must 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° 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.

10–1413. Combustion and ventilation air for boiler, incinerator or heater rooms shall be taken directly from and discharged directly to the outside air.

10–1414. Any rubbish chute and linen chute shall be safeguarded in accordance with 7–113. An incinerator shall not be directly flue-fed nor shall any floor charging chute directly connect with the combustion chamber. Any trash chute shall discharge into a trash collecting room used for no other purpose and protected in accordance with Section 6–5.

10–15. WINDOWLESS BUILDINGS

10–1511. See Section 16–4 for requirements for windowless buildings.

SECTION 10–2. EXISTING HOSPITALS, NURSING HOMES, AND RESIDENTIAL-CUSTODIAL CARE OCCUPANCIES

10–211. Application

10–2111. This part of the Life Safety Code covers existing hospitals, nursing homes, and residential-custodial care institutions. The requirements for exits and related features of life safety from fire are similar in these occupancies. All structures, both existing and new, housing occupancies defined in 10–0001 as Types a. and b. shall comply with all the foregoing provisions unless specifically excepted in the following paragraphs. (Some requirements for new institutions are repeated here for ease of reference.) (See Chapter 17 for Operating Features.)

10–212. Modification of Retroactive Provisions

10–2121. The authority having jurisdiction in enforcing the requirements of this section may modify them under the following two conditions:

a. If the building in question was occupied as a hospital, nursing home or residential-custodial care institution prior to 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.

10–2122.* In the application of 10–2121, 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. A reasonable time shall be allowed for compliance with any part of this Section, commensurate with the magnitude of expenditure and the disruption of services. When alternate protection is installed and accepted, the institution shall be considered as conforming for purposes of this Code.

10–213. Conversions

10–2131. No existing building shall be converted to a hospital, nursing home, or residential-custodial care institution unless it complies with all requirements for new institutional buildings.

10–2132. For life safety provisions during the construction of additions, alterations or conversions see Section 2–2.

10–214. Occupancy and Occupant Load

10–2141. Occupancies housed in these facilities shall be restricted to those under the control of and incidental to the operation of the institution. Exceptions are facilities for medical, nursing, and related education.

10–2142.* Sections of institutional buildings may come under other occupancy classifications if they meet all of the following conditions:

a. They are not intended to serve institutional occupants for purposes of housing, treatment, customary access, or means of egress.

b. They are adequately separated from areas of institutional occupancies by construction having a 2-hour fire resistance rating. (See 10–1143.)

10–2143. Auditoriums, chapels, residential areas, garages, or other occupancies in connection with hospitals or nursing homes shall have exits provided in accordance with the other applicable sections of this Code.

10–2144. 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 institutional sleeping departments and not less than 1 person for each 240 square feet of gross floor area of inpatient institutional treatment departments. Gross floor areas shall be measured within the exterior building walls with no deductions.

10–22. EXIT DETAILS

10–221. Number and Types

10–2211. Exits shall be restricted to the following permissible types:

a. Doors leading directly outside the building (see Section 5–2)
b. Stairs and smokeproof towers (see 10–225)
c. Horizontal exits (see 10–226)
d. Ramps (see 10–2252)
e. Outside stairs (see Section 5–4)
f. Exit passageways (see Section 5–7)

10–2212. At least 2 exits of the above types, remote from each other, shall be provided for each floor or fire section of the building. At least 1 exit in each floor or fire section shall be as indicated in 10–2211 a, b, e or f.

10–2213. Revolving doors shall not be counted as required exits, and shall not be installed except as specifically stated in Section 5–2. Elevators constitute a supplementary facility, but are not counted as required exits.

10–222. Capacity of Exits

10–2221. The capacity of any required exit shall be based on its width in units of 22 inches as defined in 5–115. The capacity of (a) exits providing travel by means of stairs shall be 22 persons per exit unit; and (b) exits providing travel without stairs, such as doors or horizontal exits, shall be 30 persons per exit unit.

10–223. Access to Exits

10–2231. Every aisle, passageway, corridor, exit discharge, exit location and access shall be in accordance with Section 5–1, except as modified below.

10–2232. 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 an institutional sleeping room or suite and an exit access door of that room or suite shall not exceed 50 feet. The travel distance in (a) or (b) above may be increased by 50 feet in buildings completely equipped with an automatic fire extinguishing system. Travel distance shall be measured in accordance with 5–119.

10–2233. Every institutional sleeping room, unless it has a door opening to the ground, shall have an exit access door leading directly to a corridor which leads to an exit. One adjacent room such as a sitting or anteroom may intervene if all doors along the

path of exit travel are equipped with nonlockable hardware, except as provided in 10–2242, and this intervening room is not intended to serve more than 8 institutional sleeping beds.

10–2234. Any required aisle, corridor, or ramp shall be not less than 48 inches in clear width when serving as means of egress from institutional sleeping rooms. It shall be of such width and so arranged as to avoid any obstructions to the convenient removal of nonambulatory persons carried on stretchers or on mattresses serving as stretchers.

10–2235. Any room, and any suite of rooms, as permitted in 10–2233, of more than 1,000 square feet shall have at least 2 exit access doors remote from each other.

10–2236. Every corridor shall provide access to at least two approved means of egress from the building in accordance with 5–120, without passing through any intervening rooms or spaces other than corridors or lobbies. 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.

10–224. Doors

10–2241. Every door shall be in accordance with Section 5–2 except as modified below. For doors in horizontal exits and smoke-stop partitions see 10–2261 and 10–2313.

10–2242. Locks installed on institutional sleeping room doors shall be so arranged that they can be locked only from the corridor side, except such doors leading directly to the outside of the building may be subject to locking from the room side. All such locks, except those permitted in 10–0004, shall be arranged to permit exit from the room by a simple operation without the use of a key.

Exception: Doors in homes for the aged may be lockable by the occupant if they can be unlocked on the corridor side, and keys are carried by attendants at all times.

10–2243. Exit access doors to hospital and nursing home sleeping rooms, diagnostic and treatment areas such as, X-ray, surgery, and physical therapy, all doors between these spaces and the required exits, and all exit doors serving these spaces shall be at least 42 inches wide. Doors to residential-custodial sleeping rooms and all exit doors serving these spaces shall be at least 32 inches wide.

Exception: Exit doors which are so located as not to be subject to use by an institutional occupant may be not less than 28 inches in width as defined in 5–2141.

10–2244. Any door in a fire separation, horizontal exit or a smoke-stop partition may be held open only by an electrical device which complies with 5–2134. The device shall be so arranged that the operation of any one of the following will initiate the self-closing action:

a. The manual alarm system required in 10–2344.

b. A local device designed to detect smoke or other products of combustion other than heat on either side of the opening.

c. A required and approved automatic fire extinguishing system or automatic fire detection system.

10–2245. Any door in a stairway enclosure or in a wall separating hazardous areas shall not be equipped with hold-open devices.

10–225. Stairs, Smokeproof Towers, Ramps

10–2251. Every stair and smokeproof tower shall be in accordance with Section 5–3 and shall be Class A or B, except that any existing interior stair not complying with Section 5–3 may be continued in use subject to the approval of the authority having jurisdiction.

10–2252. Every ramp shall be in accordance with Section 5–6, and shall be Class A or Class B. Ramp width shall be as specified in 10–2234.

10–226. Horizontal Exits

10–2261.* A door in a horizontal exit shall be at least 46 inches wide and shall be in accordance with Section 5–5, except as modified herein. At least 30 net square feet per institutional occupant shall be provided for the total number of institutional occupants in adjoining compartments. A door in a horizontal exit is not required to swing with exit travel as specified in 5–5143.

10–227. Exit Lighting and Signs

10–2271. Each hospital and nursing home shall be provided with Type 1 emergency lighting as described in 5–10223-a, b, or c.

10–2272. Each residential-custodial care facility shall have Type 3 emergency lighting in accordance with Section 5–10.

10–2273. Exit signs shall be in accordance with Section 5–11, except that signs may be omitted in 1-story buildings with an occupancy of less than 30 persons.

10–23. PROTECTION

10–231. Subdivision of Building Spaces

10–2311. Each floor used for sleeping rooms for more than 30

institutional occupants, unless provided with a horizontal exit, shall be divided into at least 2 compartments by a smoke partition.

10–2312. Corridor length between smokestop partitions, horizontal exits, or from either to the end of the corridor shall not exceed 150 feet on any institutional sleeping floor.

10–2313. Any smokestop partition shall have at least a ½-hour fire resistance rating and shall be continuous from wall to wall and floor to floor or roof arch above. Openings in a smokestop partition shall be protected by fixed wired glass panels in steel frames or by 1¾-inch solid core wood doors as a minimum requirement. Such doors shall be self-closing or may be so installed that they may be kept in an open position provided they meet the requirements of 10–2244. Doors in smokestop partitions are not required to swing with exit travel. Ample space shall be provided on each side of the barrier for the total number of institutional occupants on both sides.

See 10–226 for further requirements applying to such division walls if they are intended for use as horizontal exits. (See 10–1314)

10–2314. Every interior wall and partition in buildings of fire-resistive and noncombustible construction shall be of noncombustible materials.

10–2315. Every institutional 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 10–0004 for detention screen requirements.)

Exception: Rooms housing obstetrical labor beds, recovery, emergency observation beds, and newborn bassinets.

10–232. Protection of Vertical Openings and Firestopping

10–2321. Each stairway between stories shall be enclosed in accordance with 6–1113 and 6–1114 with partitions having a 1-hour fire resistance rating, except that where a full enclosure is impractical the required enclosure may be limited to that necessary to prevent a fire originating in any story from spreading to any other story.

Exception: 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.

10–2322. Any elevator shaft, light and ventilation shaft, chute, and other vertical opening between stories shall be protected as required above for stairways.

10–2323. 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 suitable noncombustible material or of wood at least 2 inches (nominal) thick.

10–2324. Any existing linen and trash chute which opens directly on to 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 7–113.

10–233. Interior Finish

10–2331.* Interior finish shall be Class A or Class B in accordance with Section 6–2. In buildings equipped with a complete automatic fire extinguishing system, Class C interior finish may be continued in use, except in means of egress.

10–234. Extinguishing and Alarm Systems*

10–2341.* Automatic fire extinguishing protection shall be provided throughout all hospitals, nursing homes, and residential-custodial care facilities, except those of fire resistive construction or protected noncombustible construction not over 1 story in height.

10–2342. Any required automatic sprinkler system shall be in accordance with Section 6–4, for systems in light hazard occupancies, and shall be electrically interconnected with the fire alarm system. The main sprinkler control valve shall be electrically supervised so that at least a local alarm will sound when the valve is closed.

10–2343. The sprinkler piping for any isolated hazardous area which can be adequately protected by a single sprinkler may be connected directly to a domestic water supply system having a flow of at least 22 gallons per minute at 15 pounds per square inch residual pressure at the sprinkler. An approved shutoff valve shall be installed between the sprinkler and the connection to the domestic water supply.

10–2344. Every building shall have a manually operated fire-alarm system, in accordance with Section 6–3, except that presignal systems shall not be permitted in institutional occupancies. Audible alarm devices shall be used; however, where visible alarm devices have been installed in patient sleeping areas, they may be accepted by the authority having jurisdiction.

10–2345. Portable fire extinguishers shall be provided in all institutional occupancies in accordance with 6–422.

*See Page 101–I for Annual Meeting action.

10–235. Hazardous Areas

10–2351. 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
Rooms or spaces used for storage, in quantities deemed hazardous by the authority having jurisdiction, of combustible supplies and equipment
Trash collection rooms
Gift shops

10–2352. Laboratories shall be in accordance with the applicable standard listed in Appendix B.

10–24. BUILDING SERVICE EQUIPMENT

10–241. Air-Conditioning, Ventilating, Heating, Cooking, and Other Service Equipment

10–2411. Air-conditioning, ventilating, heating, cooking, and other service equipment shall be in accordance with Chapter 7 except as modified in 10–2412 and 10–2413 below. They shall be installed in accordance with the manufacturer's specifications.

10–2412.* Heating devices shall be as follows:

a. Portable comfort heating devices are prohibited.

b. Any heating device, other than a central heating plan, shall:

1. Be so designed and installed that combustible material will not be ignited by it or its appurtenances.

2. If fuel fired, be chimney or vent connected, take its air for combustion directly from the outside, and be so designed and installed to provide for complete separation of the combustion system from the atmosphere of the occupied area. In addition, it 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.

Exceptions:

a. Approved suspended unit heaters may be used, except in 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 in item b.2. above.

b. Fireplaces may be installed and used only in areas other than patient areas, provided that these areas are separated from patient sleeping spaces by construction having a 1-hour fire resistance rating and they comply with the appropriate standard listed in Appendix B. In addition thereto, the fireplace must 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.

10–2413. Combustion and ventilation air for boiler, incinerator, or heater rooms shall be taken directly from and discharged directly to the outside air.

10–2414. Any rubbish chute and linen chute shall be safeguarded in accordance with 7–113. Existing flue-fed incinerators shall be sealed by fire resistive construction to prevent further use. Any trash chute shall discharge into a trash collecting room used for no other purpose and protected in accordance with Section 6–5.

SECTION 10–3. PENAL INSTITUTIONS

10–311. Application

10–3111. This part of the Life Safety Code covers residential-restrained care institutions such as jails, penal institutions, reformatories, prisons, and houses of correction.

10–312. Definition

10–3121. Residential-Restrained Care Institution: a building, or part thereof, used to house occupants under some degree of restraint or security.

10–313. Occupancy Classification

10–3131. Penal institutions 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. Exits and other features shall be governed by the type of occupancy classification and the hazard of occupancy.

10–3132. All buildings and structures shall be classified, using Chapter 4, Section 4–1, Occupancy Classification, 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.

10–3133. Hazards of contents shall be determined by the authority having jurisdiction using Section 4–2. The foregoing shall be used in so far as applicable and shall be subject to the ruling of the authority having jurisdiction in case of question.

10–3134. Custody classification of the institution as well as individual areas within the complex shall always be considered by the authority having jurisdiction.

10–314. Means of Egress

10–3141. 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.

10–3142. Prompt release will be guaranteed by adequate correctional personnel that are continuously on duty (24 hour) and keys which shall be readily accessible.

10–3143. Any emergency entrance which is locked may be classified as an exit provided that keys are readily available to guards or attendants.

10–315. Hazardous Areas

10–3151. Every hazardous area shall be protected in accordance with Section 10–1371 of this Code.

10–316. Operating Features

10–3161. Each operating feature shall comply with the Institutional Section of Chapter 17, Operating Features.

10–3162. Smoking regulations will depend on management and authorities having jurisdiction within the institution. The Smoking Regulations contained in Chapter 17, Operating Features, shall be used as a guide.

CHAPTER 11. RESIDENTIAL OCCUPANCIES

11–0001. Residential occupancies shall include all occupancies so classified in 4–115. 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 ony 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 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.

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 without 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.

SECTION 11–1. GENERAL REQUIREMENTS

(Applies to all the following Sections, 11–2, 11–3, 11–4 and 11–5.)

11–11. OCCUPANT LOAD AND EXIT CAPACITY

11–111. Occupant Load

11–1111.* 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.

11–112. Capacity of Exits

11–1121. 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 11–1111, on the following basis:

a. Doors discharging outside the building at ground level or not more than 3 risers or 24 inches above or below the ground; or Class A ramps or horizontal exits; 100 persons per unit of exit width.

b. Stairs or other type of exit not indicated in (a) above; 75 persons per exit unit.

11–113. Maintenance of Exits

11–1131. No door and any means of egress shall be locked against exit travel when the building is occupied.

SECTION 11–2. HOTELS

11–2111. This part of this Section shall apply to hotels with accommodations for more than 15 persons, as defined in 11–0001.

11–212. Public Assembly Occupancies

11–2121. Any ballroom, assembly or exhibition hall, and other space used for purposes of public assembly shall be in accordance with Chapter 8. Restaurants having a capacity of 100 or more persons shall be treated as places of assembly.

11–22. EXIT DETAILS

11–221. General

11–2211. Any room having a capacity of less than 100 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.

11–2212. Any floor below the floor of exit discharge occupied for public purposes shall have exits arranged in accordance with 11–2241 and 11–2251, with access thereto in accordance with Section 5–1.

11–2213. Any floor below the floor 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.

11–2214.* The same stairway or other exit required to serve any one upper floor may also serve other upper floors, except that no inside open stairway, escalator, or ramp may serve as a required egress facility from more than one floor.

11–222. Types of Exits

11–2221. Exits, arranged in accordance with Chapter 5 shall be of one or more of the following types:

Doors to outside at ground level

Revolving Doors, as per Section 5–2 (not at foot of stairs)

Doors to subways, only if the subway meets the requirements for exit passageways or tunnels as specified in Section 5–7

Stairs, Class A or Class B, in accordance with Section 5–3

Outside stairs, in accordance with Section 5–4

Smokeproof towers in accordance with Section 5–3

Ramps, Class A or Class B, in accordance with Section 5–6

Escalators, in accordance with Section 5–8

Horizontal Exits, in accordance with Section 5–5.

11–2222. Any existing interior stair or fire escape not complying with Section 5–3 or Section 5–4 may be continued in use subject to the approval of the authority having jurisdiction.

11–223. Capacity of Exits

11–2231. Street floor exits shall provide units of exit width, as follows, occupant load being determined in accordance with 11–1111:

One unit for each 100 persons street floor capacity for door or other level exit discharging at ground level or not more than 24 inches or 3 risers above or below ground level.

One unit for each 75 persons street floor capacity for stair or other exit requiring descent to ground level.

One and one-half door units for each 2-unit required stair from upper floors discharging through the street floor.

One and one-half door units for each 2-unit required stair from floors below the street floor discharging through the street floor.

11–2232. Every floor below the floor of exit discharge shall have exits sufficient to provide for the occupant load of that floor as determined in accordance with 11–1111, as the basis of 100 persons per exit unit for travel on the same level, 75 persons for upward travel, as up stairs.

11–2233. Upper floor exits shall provide numbers of units of exit width sufficient to meet the requirements of 11–1121.

11–224. Number of Exits

11–2241. Not less than 2 exits shall be accessible from every floor, including floors below the floor of exit discharge and occupied for public purposes, except as a single exit is permitted by 11–2211. Exits and ways of access thereto shall be so arranged that from every point in any open area, or from any room door, exits will be accessible in at least 2 different directions, except that not to exceed the first 35 feet of exit travel from a room door may be along a corridor with means of exit only in one direction (dead end), and in open areas a single path of travel may be permitted for the first 35 feet.

11–225. Travel Distance to Exits

11–2251. Any exit as indicated in 11–2241 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.

Exceptions:

a. Travel distance to exits may be increased to 200 feet where the access to the exits is an exterior way of exit access in accordance with 5–121.

b. Travel distance to exits may be increased to 150 feet if the access to exits and any portion of the building which is tributory to the access to exits 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.

11–226. Access to Exits

11–2261. Access to all required exits shall be in accordance with Section 5–1. It shall be unobstructed and shall not be veiled from open view by ornamentation, curtain, or other appurtenance.

11–227. Discharge from Exits.

11–2271. At least half of the required number of units of exit width from upper floors, exclusive of horizontal exits, shall lead to the street directly or through a yard, court, or passageway with protected openings and separated from all parts of the interior of the building.

11–2272. A maximum of 50 percent of the exits may discharge through areas on the floor 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 of discharge into which the exit discharges 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 5–114).

Exception: If the discharge area is a vestibule or foyer with no dimension exceeding 10 feet and separated from the remainder of the floor of discharge by construction providing protection at least the equivalent of wired glass in steel frames, and serving only for means of egress including exits directly to the outside, the requirements of 11–2272(b) may be waived.

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

11–228. Exit Lighting and Signs

11–2281. Each public space, hallway, stairway, or other means of egress shall have illumination in accordance with Section 5–10. Access to exits shall be continuously illuminated at all times. Any hotel with over 500 rooms shall have Type 1 emergency exit lighting; a hotel with 25 to 500 rooms shall have Type 1 or Type 2 emergency exit lighting, provided that where each guest room has a direct exit to the outside of the building at ground level (as in motels) no emergency exit lighting shall be required.

11–2282. Every exit from public hallways or passageways on floors with sleeping accommodations shall have an illuminated sign in accordance with Section 5–10. Where exits are not visible in a hallway or passageway, illuminated signs shall be provided to indicate the direction to exits.

11–23. PROTECTION

11–231. Protection of Vertical Openings

11–2311. Every stairway, elevator shaft and other vertical opening shall be enclosed or protected in accordance with Section 6–1 except as otherwise permitted by 11–2313 and 11–2314.

11–2312.* 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.

11–2313. Unprotected vertical openings connecting not more than 3 floors used for hotel occupancy only may be permitted in accordance with the conditions of 6–1112.

11–2314. 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 exit.

11–2315. A floor below the floor of exit discharge used for only storage, heating equipment, or other purposes other than hotel occupancy open to guests or the public, shall have no unprotected openings to floors used for hotel purposes.

11–232. Protection of Guest Rooms

11–2321. In any new building every corridor shall be separated from guest rooms by construction having at least a 1-hour fire resistance rating. This paragraph does not apply to buildings equipped with a complete automatic sprinkler system.

11–2322. Each guest room shall be provided with a door having at least a fire resistance the equivalent of a 1¾-inch solid bonded core wood door.

11–233. Interior Finish

11–2331. Interior finish in accordance with Section 6–2, and subject to the limitations and modifications therein specified, shall be as follows:

For new construction or new interior finish
- Exitways, Class A or Class B
- Lobbies and corridors, Class A or Class B
- Individual guest rooms, Class A, B, or C
- Other rooms, Class A, B, or C

Existing interior finish
- Exitways, Class A or Class B
- Lobbies and corridors
  - Used as required access to exits, Class A or Class B
  - Not used as required access to exits, Class A, B, or C
- Individual guest room, Class A, B, or C
- Other rooms, Class A, B, or C

11–234. Alarms

11–2341. An alarm system, in accordance with Section 6–3, shall be provided for any hotel having accommodations for 15 or more guests except where each guest room has direct exit to the outside of the building and the building is not over 3 stories in height, as in motels.

11–2342. Every sounding device shall be of such character and so located as to arouse all occupants of the building or section thereof endangered by fire.

11–2343. An alarm sending station shall be provided at the hotel desk or other convenient central control point under continuous supervision of responsible employees. Additional alarm sending stations (as specified in Section 6–3) may be waived where there are other effective means (such as automatic sprinkler or automatic fire detection systems) for notification of fire.

11–2344. Suitable 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.

11–235. Hazardous Areas

11–2351. 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.

11–2552. 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. Where a hazard is severe, both fire-resistive construction and automatic fire protection shall be used. Hazardous areas include:

Boiler and heater rooms
Laundries
Repair shops
Rooms or spaces used for storage, in quantities deemed hazardous by the authority having jurisdiction, of combustible supplies and equipment

11–24. BUILDING SERVICE EQUIPMENT

11–241. Air Conditioning and Ventilation

11–2411. Every air conditioning installation shall comply with Chapter 7.

11–2412. No transom shall be installed in 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.

SECTION 11–3. APARTMENT BUILDINGS

11–3111. Any apartment building which complies with all of the preceding requirements of this Section for hotels may be considered as a hotel and as such the following requirements for apartment buildings will not be applicable.

11–3112. Every individual living unit covered by this Section shall at least comply with the minimum provisions of Section 11–6, 1- and 2-Family Dwellings.

11–32. EXIT DETAILS

11–321. General

11–3211. Exits, arranged in accordance with 11–3221 and 11–3231 shall provide sufficient capacity to accommodate all occupants on the same basis as hotels, and using the same types of exit facilities, all as provided in 11–22 of Section 11–2 except as modified as follows.

11–322. Number of Exits

11–3221. Every living unit shall have access to at least 2 separate exits which are remote from each other and are reached by travel in different directions, except that a common path of travel may be permitted for the first 35 feet (i.e., a dead-end corridor up to 35 feet long may be permitted) provided that a single exit may be permitted under any of the following conditions:

a. Any living unit which has direct exit 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 floor of exit discharge or other area not a part of the apartment served.

b. Any building of any height with not more than 4 living units per floor, with a smokeproof tower or an outside stairway as the exit, immediately accessible to all apartments served thereby.

c. Any building not more than 3 stories in height with no floor below the floor of exit discharge, or, in case there is such a floor, with the street floor construction of at least 1-hour fire resistance, subject to the following conditions:

1. The stairway is completely enclosed with 1-hour fire-resistive construction with self-closing fire doors protecting all openings between the stairway enclosure and the building.

2. The stairway does not serve any floor below the floor of exit discharge.

3. All corridors serving as access to exits have at least a 1-hour fire-resistance rating.

4. There is not more than 20 feet of travel distance to reach an exit from the entrance door of any living unit.

11–323. Access to Exits

11–3231. Exits and means of access thereto shall be so located that:

a. It will not be necessary to travel more than 50 feet within any individual living unit to reach the nearest exit, or to reach an entrance door of the apartment which provides access through a public corridor to an exit on the same floor level.

b. Within any individual living unit it will not be necessary to traverse stairs more than 1 story above and/or below the floor level of the nearest exit or entrance door to the apartment.

c. The entrance door to any apartment is within 100 feet of an exit or within 150 feet in a building protected by automatic sprinklers in accordance with Section 6–4.

11–324. Discharge from Exits

11–3241. Discharge from exits shall be the same as required for hotels, 11–2271 and 11–2272.

11–325. Exit Lighting and Signs

11–3251. Every public space, hallway, stairway, and other means of egress shall have illumination in accordance with Section 5–10. Any apartment building with more than 25 living units shall have Type 1 or Type 2 emergency exit lighting.

11–3252. Exit signs in accordance with Section 5–11 shall be provided in all apartment buildings having more than one exit.

11–33. PROTECTION

11–331. Protection of Vertical Openings

11–3311. Protection of vertical openings shall be the same as required for hotels, 11–2311 through 11–2315 except that there shall be no unprotected vertical opening in any building or fire section with only one exit.

11–332. Interior Finish

11–3321. Interior finish in accordance with Section 6–2, and subject to the limitations and modifications therein specified shall be as follows:

For new construction or new interior finish
- Exitways, Class A or B
- Lobbies, corridors and public spaces, Class A or B
- Individual living units, Class A, B, or C

Existing interior finish
- Exitways, Class A or B
- Other spaces, Class A, B, or C

11–333. Alarm Systems

11–3331. Every apartment building, unless provided with automatic sprinkler protection in accordance with Section 6–4, or automatic fire alarms in accordance with Section 6–3 shall have manual fire alarm facilities in accordance with Section 6–3 if of more than 3 stories in height or more than 12 apartment units.

11–334. Hazardous Areas

11–3341. Every hazardous area shall be separated from other part 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 provided with automatic fire protection. Where the hazard is severe, both fire-resistive construction and automatic fire protection shall be used. Hazardous areas include:

Boiler and heater rooms
Laundries
Repair shops
Rooms or spaces used for storage, in quantities deemed hazardous by the authority having jurisdiction, of combustible supplies and equipment

11–34. BUILDING SERVICE EQUIPMENT

11–341. Air Conditioning and Ventilation

11–3411. Air conditioning and ventilation, when provided, shall be in accordance with Chapter 7.

SECTION 11–4. DORMITORIES

11–4111. Any dormitory complying with all the requirements for hotels may be accepted as such in which case the following provisions of Section 11–4 will not be applicable.

11–4112. 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 classed as an apartment building and shall be subject to all requirements of Section 11–3 in which case the following provisions of Section 11–4 will not be applicable except 11–4331 which shall apply.

11–42. EXIT DETAILS

11–421. Types and Capacity of Exits

11–4211. Exits shall provide sufficient capacity to accommodate all occupants on the same basis as hotels, and using the same types of exit facilities, all as provided in 11–22 of Section 11–2 except as modified in the following paragraphs.

11–4212. Any existing interior stair or fire escape not complying with Section 5–3 or Section 5–4 may be continued in use subject to the approval of the authority having jurisdiction.

11–4213. 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.

11–422. Travel Distance to Exits

11–4221. 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 Section 6–4, to reach the nearest outside door or stair, nor to traverse more than a 1-story flight of inside, unenclosed stairs.

11–423. Access to Exits

11–4231. Any dormitory not otherwise covered under 11–4111 and 11–4112 shall have exits so arranged that from any sleeping room or open dormitory sleeping area there will be access to 2 separate and distinct exits in different directions with no common path of travel unless 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 in which case 1 means of exit may be accepted.

11–424. Exit Lighting and Signs

11–4241. Every dormitory shall have exit lighting in accordance with Section 5–10. Any dormitory, subject to occupancy by more than 100 persons, shall have Type 1 or Type 2 emergency exit lighting and exit signs in accordance with Section 5–11.

11–43. PROTECTION

11–431. Protection of Vertical Openings

11–4311. Every exit stairway and other vertical opening shall be enclosed or protected in accordance with Section 6–1. In existing buildings not more than 2 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 Section 6–4; or 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 Section 6–3.

11–432. Interior Finish

11–4321. All interior finish of dormitories shall be Class A or B in exits, in lobbies and corridors, Class A or Class B, Class C elsewhere, in accordance with Section 6–2.

11–433. Alarm Systems

11–4331. Any dormitory not equipped with an automatic fire detection system in accordance with Section 6–3, or an automatic sprinkler system in accordance with Section 6–4, shall have a manual fire alarm system in accordance with Section 6–3.

11–44. BUILDING SERVICE EQUIPMENT

11–441. Air Conditioning and Ventilation

11–4411. Every air conditioning installation shall comply with Chapter 7.

11–4412. Transoms shall not be installed in 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.

SECTION 11–5. LODGING OR ROOMING HOUSES

11–5111. This part of this Section applies only to lodging or rooming houses providing sleeping accommodations for less than 15 persons as specified in 11–0001.

11–5112. In addition to the following provisions, every lodging or rooming house shall comply with the minimum requirements for 1- and 2-family dwellings.

11–52. EXIT DETAILS

11–521. Number, Type, and Access to Exits

11–5211. 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 or an exterior stairway, or a fire escape or horizontal exit, all so arranged as 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, except that traversing unprotected vertical openings may be permitted in existing sprinklered buildings.

11–5212. Any sleeping room below the street floor shall have direct access to the outside of the building.

11–53. PROTECTION

11–531. Alarm System

11–5311. A manual fire alarm system in accordance with Section 6–3 shall be provided unless the building is equipped with an automatic fire detection system in accordance with Section 6–3 or an automatic sprinkler system in accordance with Section 6–4.

SECTION 11–6. 1- AND 2-FAMILY DWELLINGS

11–6111. This part of this Section covers 1- and 2-family private dwellings as specified in 11–0001 and where the occupancy is so limited the only requirements applicable are those in 11–6211 through 11–6411.

11–62. EXIT DETAILS

11–621. Number, Type, and Access to Exits

11–6211. In any dwelling of more than 2 rooms, every room used for sleeping, living, or dining purposes shall have at least 2 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.

11–6212.* Every sleeping room, unless it has 2 doors providing separate ways of escape, or has a door leading outside of the building directly, shall have at least 1 outside window which can be opened from the inside without the use of tools to provide a clear opening of not less than 22 inches in least dimension and 5 square feet in area, with the bottom of the opening not more than 4 feet above the floor.

11–6213. 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.

11–6214. No exit access from sleeping rooms to outside shall be less than 3 feet wide.

11–622. Doors

11–6221. Each door providing means of exit shall be not less than 24 inches wide.

11–6222. Every closet door latch shall be such that children can open the door from inside the closet.

11–6223. Every bathroom door lock shall be designed to permit the opening of the locked door from the outside in an emergency.

11–623. Stairs

11–6231. Every stairway shall comply at least with the minimum requirements for Class B stairs, as described in Section 5–3 in respect to width, risers and treads.

11–63. PROTECTION

11–6311. Interior finish of occupied spaces shall be no more hazardous than Class C as defined in Section 6–2; in existing buildings, Class D.

11–64. BUILDING SERVICE EQUIPMENT

11–641. Heating Equipment

11–6411. No stove or combustion heater shall be so located as to block escape in case of malfunctioning of the stove or heater which could result in a fire.

CHAPTER 12. MERCANTILE OCCUPANCIES

SECTION 12–1. GENERAL REQUIREMENTS

12–11. OCCUPANCY AND OCCUPANT LOAD

12–111. Occupancy

12–1111. Mercantile occupancies shall include all buildings and structures or parts thereof with occupancy as described in 4–116.

12–112. Classification of Occupancy

12–1121. Mercantile occupancies shall be classified as follows:

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.

Class B. All stores of less than 30,000 square feet aggregate gross area, but over 3,000 square feet, or utilizing any balconies or mezzanines or any floors above or below the street floor level for sales purposes, except that if more than 3 floors are utilized, the store shall be Class A.

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 12–1123.)

12–1122. For the purpose of the classification in 12–1121, 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, are not 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.

12–1123.* 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 12–1121, but if there are 2 balcony or mezzanine floors, 1 shall be counted.

12–1124. 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 as per 12–1121.

12–113. Occupant Load

12–1131.* The occupant load of mercantile buildings or parts of buildings used for mercantile purposes shall be the maximum load as determined by the authority having jurisdiction, but not less than the following:

a. Street floor, 1 person for each 30 square feet gross floor area. In stores with no street floor, but accessible directly from the street by stairs or escalators, the principal street floor at the point of entrance to the store shall be considered the main 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.

d. Floors or sections used only for offices, storage, shipping and not open to the general public, 1 person for each 100 square feet gross floor area.

e. Floors or sections used for assembly purposes, occupant load determined in accordance with Chapter 8.

12–1132. In case of mezzanines or balconies open to the floor below, or other unprotected vertical openings between floors as permitted by 12–1312, 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.

12–114. Classification of Contents

12–1141.* Mercantile occupancies shall be classed as ordinary hazard in accordance with Section 4–2, except that they 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 so 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.

12–12. EXIT DETAILS

12–121. General

12–1211.* All exit facilities shall be in accordance with Chapter 5 and this Chapter 12, provided, however, only types of exits specified in 12–122 may be used as required exit facilities in any mercantile occupancy.

12–1212.* 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, except that no inside open stairway, escalator, or ramp may serve as a required egress facility from more than 1 floor.

12–1213. 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 12–1212 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.

12–1214. Where a level outside exit from upper floors is possible owing to hills, such outside exits may serve instead of hozitonzal 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.

12–122. Types of Exits

12–1221. Exits shall be restricted to the following permissible types:

Doors (see Section 5–2)

Stairs, Class A or B, or smokeproof towers (see Section 5–3)

Outside stairs (see Section 5–4)

Horizontal exits (see Section 5–5)

Ramps (see Section 5–6)

Escalators (see Section 5–8)

Any existing interior stair or fire escape not complying with Section 5–3 or Section 5–4 may be continued in use subject to the approval of the authority having jurisdiction.

12–123. Capacity of Exits

12–1231. The capacity of a unit of exit width shall be as follows:

Doors leading to outside the building at the ground level or not more than 3 risers above or below the ground level

100 persons per unit of exit width

Class A or B stairs or smokeproof towers or outside stairs

60 persons per unit of exit width

Escalators, same as stairs if qualifying as required exits

Horizontal exits

100 persons per unit of exit width

12–1232. In Class A and Class B stores, street floor exit doors or horizontal exit doors, located as required by 12–1251, 12–1252, and 12–1241 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, as per Section 5–6.

12–124. Number of Exits

12–1241.* In Class A and B stores at least 2 separate exits shall be accessible from every part of every floor including floors below the street floor. Such exits are to be as remote from each other as practicable and so arranged as to be reached by different paths of travel in different directions, except that a common path of travel may be permitted for the first 50 feet from any point.

12–1242. 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.

12–1243. 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.

12–1244. In Class C stores, at least 2 separate exits shall be provided as specified by 12–1241, except that where no part of the store is more than 50 feet from the street door measured along the natural path of travel, a second exit may be waived.

12–125. Location of Exits

12–1251. Exits shall be so located that no portion of any floor area will be more than 100 feet from the nearest exit, or 150 feet in a building protected by a complete automatic sprinkler system in accordance with Section 6–4.

12–1252. Distance to exits shall be measured from the most remote point, along the natural path of travel, except that where floor areas are divided into rooms not used for sales purposes, such as offices, rest rooms or stock rooms, the distance may be measured from the room door, provided the room is of such size and so arranged that the maximum path of travel within the room to reach the room door does not exceed 50 feet.

12–126. Access to Exits

12–1261. At least 1 aisle of 5 feet minimum width shall lead directly to an exit and the aggregate width of this aisle and all other aisles leading to such exit must be at least equal to the required width of the exit.

12–127. Discharge from Exits

12–1271.* 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 direct 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, as per 12–1232.

12–128. Doors

12–1281. Every street floor door shall be in accordance with Section 5–2, and a horizontal exit door, if used, in accordance with Section 5–5, except that in Class C mercantile occupancies doors may swing in where such doors serve only the street floor area; 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.

12–1282.* 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.

12–129. Signs and Lighting

12–1291. Every mercantile occupancy shall have exit illumination and signs in accordance with Sections 5–10 and 5–11.

12–1292. Every Class A store shall have emergency lighting facilities conforming to Type 1 or Type 2 specifications of Section 5–10.

12–1293. Every Class B store shall have emergency lighting facilities conforming to Type 1, 2, or 3 specifications of Section 5–10.

12–13. PROTECTION

12–131. Protection of Vertical Openings

12–1311.* Any stairway, elevator shaft, escalator opening or other vertical opening shall be enclosed or protected in accordance with Section 6–1 except as otherwise permitted by 12–1312, 12–1313, and 12–1314.

12–1312. Exceptions for Class A stores.

a. In any Class A store, 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 (not both to the floor below the street floor and above unless sprinklered).

b. In any Class A store with automatic sprinklers in accordance with Section 6–4, openings may be unprotected under the conditions permitted by 6–1112, 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 more than between 3 floor levels.

c. In existing Class A 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.

12–1313. Exceptions for Class B stores.

a. In any Class B store, 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 (but not to both the floor below the street floor and above unless sprinklered).

b. In any Class B store with automatic sprinklers in accordance with Section 6–4, openings may be unprotected under the conditions permitted in 6–1112, or between the floor below the street floor and street floor and between street floor and balcony or mezzanine and second floor.

c. In any existing Class B store only, all floors permitted under Class B may have unprotected openings if the entire building is completely sprinklered in accordance with Section 6–4.

12–1314. Exceptions for Class C stores.

a. In any Class C store, openings may be unprotected between street floor and balcony.

b. In an existing building only, openings may be unprotected between street floor and the floor below or second floor not used for sales purposes.

12–132. Interior Finish

12–1321. Interior finish of exits of all stores shall be Class A or Class B, in accordance with Section 6–2.

12–1322. In any Class A or Class B store, interior finish of the ceiling shall be Class A or Class B in accordance with Section 6–2 unless completely sprinklered in accordance with Section 6–4, in which case Class C may be used. In any Class A or Class B store, interior finish of the walls shall be Class A, Class B, or Class C in accordance with Section 6–2. 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.

12–1323. In a Class C store, interior finish shall be Class A, B, or C, in accordance with Section 6–2.

12–133. Automatic Sprinklers

12–1331. Approved automatic sprinkler protection shall be in-

stalled in accordance with Section 6–4 in all mercantile occupancies as follows:

a. In all 1-story buildings over 15,000 square feet in area.

b. In all buildings over 1 story in height and exceeding 30,000 square feet in gross area.

c. Throughout floors below the street floor having an area exceeding 2,500 square feet when used for the manufacture, sale, storage, or handling of combustible goods and merchandise.

12–134. Areas Requiring Special Protection

12–1341. 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 construction having a fire resistance rating of not less than 1 hour, 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.

12–135. Alarms

12–1351. In any Class A or Class B building not provided with automatic fire detection in accordance with Section 6–3, or automatic sprinklers in accordance with Section 6–4, a manual fire alarm system shall be provided in accordance with Section 6–3.

12–14. BUILDING SERVICE EQUIPMENT

12–141. Air-Conditioning, Heating, and Cooking

12–1411. Air-Conditioning, Ventilating, Heating, Cooking, and other Service Equipment shall be in accordance with Chapter 7.

12–142. Elevators

12–1421. An elevator shall not constitute required means of exit. 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 7–114. 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.

SECTION 12–2. SPECIAL PROVISIONS FOR SELF-SERVICE STORES

12–2111. In any self-service store, no check-out stand or associated railings or barriers shall obstruct exits or required aisles or approaches thereto.

12–2112. 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.

SECTION 12–3. OPEN-AIR MERCANTILE OPERATIONS

12–3111. 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, but no dead ends in which persons might be trapped due to display stands, adjoining buildings, fences, vehicles, or other obstructions.

12–3112. If mercantile operations are conducted in roofed-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 purposes of this Code.

SECTION 12–4. COMBINED MERCANTILE AND RESIDENTIAL OCCUPANCIES

12–4111. No dwelling unit shall have its sole means of exit through any mercantile occupancy in the same building, except in the case of a single family unit where the family operates the store.

12–4112. No multiple dwelling occupancy shall be located above a mercantile occupancy unless the dwelling occupancy and exits therefrom are separated from the mercantile occupancy by construction having a fire resistance of at least 1 hour, or unless the mercantile occupancy is protected by automatic sprinklers in accordance with Section 6–4, or in the case of existing buildings with not more than 2 dwelling units above the mercantile occupancy, by an automatic fire detection system in accordance with Section 6–3.

SECTION 12–5. SPECIAL PROVISIONS FOR SHOPPING MALLS

12–5111.–Definition

a. *Covered Mall.* A covered or roofed interior area having a minimum horizontal dimension of 30 feet used as a pedestrian public way and connecting buildings and/or a group of buildings housing individual or multiple tenants.

12–512. General Requirements

12–5121. A covered mall and all buildings connected to it shall be treated as a single mercantile building and shall be subject to the requirements for mercantile occupancies.

12–5122. The covered mall portion shall be provided with not less than 12 feet of unobstructed pedestrian travel space parallel and adjacent to the connected buildings and extending to each mall exit.

CHAPTER 13. OFFICE OCCUPANCIES

SECTION 13–1. GENERAL REQUIREMENTS

13–11. OCCUPANCY, CLASSIFICATION, AND OCCUPANT LOAD

13–111. Occupancy

13–1111. Any office occupancy shall include all buildings and structures or parts thereof with occupancy as described in 4–117.

13–112. Classification of Contents

13–1121. An office occupancy shall be classified as ordinary hazard in accordance with Section 4–2.

13–113. Occupant Load

13–1131. For purposes of determining required exits, the occupant load of office buildings, or parts of buildings used for office purposes, shall be the maximum load as determined by the authority having jurisdiction, but not less than 1 person per 100 square feet gross floor area.

13–1132. In the case of a mezzanine or balcony open to the floor below, or other unprotected vertical openings between floors as permitted by 13–1312 and 13–1313, 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, 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.

13–12. EXIT DETAILS

13–121. General

13–1211. All exit facilities shall be in accordance with Chapter 5 and this Chapter, provided, however, only types of exits specified in 13–122 may be used as required exit facilities in any office occupancy with access thereto and ways of travel therefrom in accordance with Section 5–1.

13–1212. 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.

13–1213.* 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, except that no inside open stairway, escalator, or ramp may serve as a required egress facility from more than 1 floor.

13–1214. Where 2 or more floors below the street floor are occupied for office use, the same stairways, escalators or ramps may serve each, except that no inside open stairway, escalators or ramp may serve as a required egress facility from more than 1 floor level.

13–1215. Floor levels below the street floor used only for storage, heating, and other service equipment, and not subject to office occupancy, shall have exits in accordance with Chapter 15.

13–122. Types of Exits

13–1221. Exits shall be restricted to the following permissible types:

Doors (see Section 5–2)

Stairs, Class A or B, or smokeproof towers (see Section 5–3)

Outside stairs (see Section 5–4)

Horizontal exits (see Section 5–5)

Ramps (see Section 5–6)

Escalators (see Section 5–8)

Any existing interior stair or fire escape not complying with Section 5–3 or Section 5–4 may be continued in use subject to the approval of the authority having jurisdiction.

13–1222. No slide escape, elevator or other type of exit facility not specified in 13–1221 shall be used to provide required exits from any office occupancy.

13–123. Measurement of Exit Width

13–1231. 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.

13–124. Capacity of Exits

13–1241. The capacity of a unit of exit width shall be as follows:

Doors leading outside the building at the ground level or not more than 3 risers above or below the ground level

One unit for 100 persons

Class A or Class B stairs, outside stairs or smokeproof towers

One unit for 60 persons

Ramps

Class A, one unit for 100 persons

Class B, one unit for 60 persons

Escalators

One unit for 60 persons

Horizontal exits

One unit for 100 persons, but no more than 50 percent of exit capacity

13–1242. Any street floor exit, arranged as required by 13–125 and 13–126, 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.

13–125. Number of Exits

13–1251. Not less than 2 exits shall be accessible from every part of every floor, including floor levels below the street floor occupied for office purposes or uses incidental thereto, except as 1 exit is permitted by 13–1252 and 13–1253.

13–1252. For a room or area with a total occupant load of less than 100 persons, 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, these shall not be more than 15 feet in height, and such stairs shall be provided with complete enclosures to separate them from any other part of the building, with no door openings therein.

13–1253. Any 3-story office 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 provide any communication with floor below the street floor or the first or second floors, and if it is fully enclosed or is an outside stairway.

13–126. Travel Distance to Exits

13–1261. Exits shall be as remote from each other as practicable,

so arranged that it will not be necessary to travel more than 200 feet from any point in the building to reach the nearest exit, or 300 feet in a building protected by a complete automatic sprinkler system in accordance with Section 6–4.

13–1262.* No corridor shall have any dead end extending more than 50 feet beyond the point where exits are accessible in different directions.

13–127. Discharge of Exits

13–1271. In buildings completely protected by automatic sprinklers in accordance with Section 6–4, one-half of required exits from floors above or below the street may discharge through the open street floor area under the same conditions as permitted for mercantile occupancies, 12–1271.

13–128. Signs and Lighting

13–1281. Signs designating exits or ways of travel thereto shall be provided in accordance with Section 5–11.

13–1282. Exit lighting shall be provided in accordance with Section 5–10.

13–1283. In any office building subject to occupancy by 1,000 or more persons, emergency lighting of Type 1, 2, or 3 shall be provided in accordance with Section 5–10.

13–13. PROTECTION

13–131. Protection of Vertical Openings

13–1311. Every stairway, elevator shaft, escalator opening, and other vertical opening shall be enclosed or protected in accordance with Section 6–1 except as otherwise permitted by 13–1312 and 13–1313.

13–1312. Unprotected vertical openings connecting not more than 3 floors used for office occupancy only may be permitted in accordance with the conditions of 6–1112.

13–1313. 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 smokeproof towers in accordance with Sec-

tion 5–3, outside stairs in accordance with Section 5–4, or horizontal exits in accordance with Section 5–5.

13–1314. Floors below the street floor used for storage or other than office occupancy shall have no unprotected openings to office occupancy floors.

13–132. Interior Finish

13–1321. 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.

13–1322. In general office areas, Class A, Class B, or Class C interior finish shall be provided in accordance with Section 6–2.

13–133. Alarms

13–1331. In any building not provided with automatic fire detection in accordance with Section 6–3, or automatic sprinklers in accordance with Section 6–4, a manual fire alarm system shall be provided in accordance with Section 6–3 if the total capacity of the building is over 1,000 persons, or if more than 200 persons are employed above or below the street floor.

13–14. BUILDING SERVICE EQUIPMENT

13–141. Air Conditioning, Heating, and Cooking

13–1411. Air conditioning, ventilation, heating, cooking, and other service equipment shall be in accordance with Chapter 7.

13–142. Elevators

13–1421. An elevator shall not constitute required means of exit. When office 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 7–114. 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.

SECTION 13–2. COMBINED OFFICE AND MERCANTILE OCCUPANCY

13–2111. In any building occupied both for office and mercantile purposes, the entire building shall have exits in accordance with Chapter 13, unless mercantile occupancy sections are effectively segregated from office occupancy sections in which case exit facilities may be treated separately.

CHAPTER 14. INDUSTRIAL OCCUPANCIES

SECTION 14–1. GENERAL REQUIREMENTS

14–11. OCCUPANCY AND OCCUPANT LOAD

14–111. Occupancy

14–1111. 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. They shall be subdivided for the purposes of this Code into the following groups:

a. General Industrial Occupancy. Includes all manufacturing operations, except high hazard, conducted in buildings of conventional design suitable for various types of manufacture.

This group may include 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 such as in garment factories.

(This covers ordinary and low hazard with moderate and high population density.)

b. Special Purpose Industrial Occupancy. Includes all buildings, except high hazard occupancy, 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.

(This covers ordinary and low hazard with low population density.)

c.* High Hazard Industrial Occupancy. Includes those buildings having contents which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

d. Open Industrial Structures. Includes operations conducted in the open air as distinguished from enclosure within buildings, such as often found in oil refining and chemical processing plants where equipment is in the open with platforms used for necessary access, sometimes with roofs or canopies to provide some shelter, but no walls.

14–112. Occupant Load

14–1121.* The occupant load of industrial occupancies for which

exits are to be provided shall be 1 person per 100 square feet gross floor area provided that in Special Purpose Industrial Occupancy and for Open Structures, the occupant load shall be the maximum number of persons to occupy the area under any probable conditions, and further provided that in existing industrial occupancies, the authority having jurisdiction may waive requirements for additional exits if the existing exits are adequate for the maximum number of persons actually employed.

14–1122. Every auditorium, restaurant, office, garage and medical facility in connection with industrial occupancies has exits provided in accordance with the other applicable sections of this Code.

14–1123. Exit requirements for specific occupancies shall comply with this Chapter except as may be modified by a specific occupancy standard listed in Appendix B.

SECTION 14–2. GENERAL INDUSTRIAL OCCUPANCIES

14–21. EXIT DETAILS

14–211. General

14–2111. Each required exit shall be in accordance with the applicable sections of Chapter 5, with access thereto and ways of travel therefrom in accordance with Section 5–1.

14–2112.* Where any 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, except that no inside open stairway, escalator or ramp may serve as a required egress facility from more than 1 floor.

14–2113. No slide escape or other type of exit facility not specified in 14–2121 shall be used to provide required exits from any ordinary hazard industrial occupancy.

14–2114. Where 2 or more stories below the floor of exit discharge are occupied for industrial use, the same stairways, escalators or ramps may serve each, except that no inside open stairway, escalator or ramp may serve as a required egress facility from more than 1 floor level.

14–2115. 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.

14–212. Types of Exits

14–2121. Exits shall be restricted to the following permissible types:

Doors (see Section 5–2)
Stairs, Class A or B, or smokeproof towers (see Section 5–3)
Outside stairs (see Section 5–4)
Horizontal exits (see Section 5–5)
Ramps (see Section 5–6)
Escalators (see Section 5–7)

Any existing interior stair or fire escape not complying with Section 5–3 or Section 5–4 may be continued in use subject to the approval of the authority having jurisdiction.

14–213. Measurement of Width of Exits

14–2131.* 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.

14–214. Capacity of Exits

14–2141. The capacity of a unit of exit width shall be as follows:

Doors leading outside the building at ground level or not more than 3 risers above or below ground level
One unit for 100 persons

Class A or Class B stairs, outside stairs or smokeproof towers
One unit for 60 persons

Ramps
Class A, one unit for 100 persons
Class B, one unit for 60 persons

Escalators
One unit for 60 persons

Horizontal exits
One unit for 100 persons, but not more than 50 percent of exit capacity

14–2142. Any exit at the floor of exit discharge shall be sufficient to provide the following numbers of units of exit width:

a. One unit for each 100 persons capacity of the floor of exit discharge, plus

b. One and one-half units for each 2 units of stairway, ramp, or escalator from upper floors discharging through the floor of exit discharge, plus

c. One and one-half units for each 2 units of stairway, ramp, or escalator from floors below the floor of exit discharge discharging through the street floor.

14–215. Number of Exits

14–2151. Not less than 2 exits shall be provided for every floor or section, including floors below the floor of exit discharge used for industrial purposes or uses incidental thereto, except as a single exit as permitted by 14–2152.

14–2152. For rooms or areas with a total capacity of less than 25 persons having 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 not be a vertical travel of 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.

14–216. Travel Distance to Exits

14–2161. Exits shall be as remote from each other as practicable, so arranged that it will not be necessary to travel more than 100 feet from any point to reach the nearest exit, or 150 feet in a building protected by a complete automatic sprinkler system in accordance with Section 6–4, except as otherwise permitted by 14–2162.

14–2162. In any building used for aircraft assembly or other occupancy requiring undivided floor areas so large that the distances from points within the area to the nearest outside walls where exit doors could be provided are in excess of 150 feet, requirements for distance to exits may be satisfied by providing stairs leading to exit tunnels or to overhead passageways in accordance with Section 5–7. In cases where such arrangements are not practicable the authority having jurisdiction may, by special ruling, permit other exit arrangements for 1-story buildings with distances in excess of the maximum distances specified in 14–2161 if complete automatic sprinkler protection is provided and if the height of ceilings, ceiling curtain boards, and roof ventilation is such as to minimize the possibility that employees will be overtaken by the spread of fire or smoke within 6 feet of the floor level before they have time to reach exits, provided, however, that in no case may the distance of travel to reach the nearest exit exceed 400 feet. Where smoke venting is required as a condition for permitting distances of travel to exits in excess of the maximum otherwise allowed, the smoke venting arrangement shall be in accordance with 7–112.

14–2163.* From every point there shall be at least 2 separate exits accessible (except as provided by 14–2152), so arranged as to be reached by different paths of travel in different directions except

that 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.

14–217. Discharge from Exits

14–2171.* A maximum of 50 percent of the exits may discharge through areas on the floor 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 of discharge into which the exit discharges 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 5–114).

Exception: If the discharge area is a vestibule or foyer with no dimension exceeding 10 feet and separated from the remainder of the floor of discharge by construction providing protection at least the equivalent of wired glass in steel frames, and serving only for means of egress including exits directly to the outside, the requirements of 11–2272(b) may be waived.

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

14–218. Signs, Lighting, Alarms

14–2181. Signs designating exits or ways of travel thereto shall be provided in accordance with Section 5–11.

14–2182. Exit lighting shall be provided in accordance with Section 5–10.

14–2183. In any building not provided with automatic fire detection facilities in accordance with Section 6–3, or automatic sprinklers in accordance with Section 6–4, a manual fire alarm system shall be provided in accordance with Section 6–3 if the total capacity of the building is over 100 persons, or if more than 25 persons are employed above or below the street level, except that no manual fire alarm system shall be required in 1-story buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.

14–22. PROTECTION

14–221. Protection of Vertical Openings

14–2211. Every stairway, elevator shaft, escalator opening, and other vertical opening shall be enclosed or protected in accordance with Section 6–1 except as otherwise permitted by 14–2212 and 14–2213.

14–2212. Unprotected vertical openings connecting not more than 3 stories used for industrial occupancy only may be permitted in accordance with the conditions of 6–1112, with automatic sprinkler protection.

14–2213. In any existing building 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 smokeproof towers in accordance with Section 5–3, outside stairs in accordance with Section 5–4, or horizontal exits in accordance with Section 5–5.

14–222. Interior Finish

14–2221. Interior finish shall be Class A, Class B, or Class C unless otherwise permitted by the authority having jurisdiction.

SECTION 14–3. SPECIAL PURPOSE INDUSTRIAL OCCUPANCY

14–3111. Special purpose industrial occupancies, as defined in 14–1111, shall have exits and other features in accordance with the provisions for general industrial occupancy, except as modified in this Section.

14–32. EXIT DETAILS

14–321. Number of Exits

14–3211. Exits need be provided only for the persons actually employed; spaces not subject to human occupancy because of the presence of machinery or equipment may be excluded from consideration.

14–33. PROTECTION

14–331. Protection of Vertical Openings

14–3311. Where unprotected vertical openings are necessary to manufacturing operations they may be permitted beyond the limits specified for General Industrial Occupancy, provided that every floor level has direct access to 1 or more enclosed stairways or other exits protected against obstruction by any fire in the open areas connected by the unprotected vertical openings or smoke therefrom.

SECTION 14–4. HIGH HAZARD INDUSTRIAL OCCUPANCY

14–4111. High hazard industrial occupancy as defined in 14–1111c shall comply with the provisions for General Industrial Occupancy, except as modified by the following paragraphs.

14–42. EXIT DETAILS

14–421. Types of Exits

14–4211. In addition to the types of exits for upper floors specified for General Industrial Occupancy, approved slide escapes may be used as required exits for both new and existing buildings. Slide escapes shall only be counted as exits when regularly used in drills, or for normal exit, so that occupants are, through practice, familiar with their use.

14–422. Number of Exits

14–4221. From every point in every floor area there shall be at least 2 exits accessible in different directions. Where floor areas are divided into rooms, there shall be at least 2 ways of escape from every room, however small, except for toilet rooms so located that the points of access thereto are out of or suitably shielded from areas of high hazard.

14–423. Travel Distance to Exits

14–4231. Exits shall be so located that it will not be necessary to travel more than 75 feet from any point to reach the nearest exit.

14–43. PROTECTION

14–431. Protection of Vertical Openings

14–4311. Every vertical opening in a new or existing building of high hazard occupancy shall be enclosed or protected in accordance with Section 6–1, except that where unprotected openings are necessary to a manufacturing operation they may be permitted by the authority having jurisdiction subject to such restrictions as to occupancy, exits, and other features as the authority having jurisdiction may specify to offset the hazard of the unprotected vertical openings.

14–432. Automatic Sprinklers, Explosion Venting

14–4321. Every high hazard occupancy shall have automatic sprinkler protection or such other protection as may be appropriate to the particular hazard, including explosion venting 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.

SECTION 14–5. OPEN INDUSTRIAL STRUCTURES

14–5111. Open industrial structures, as defined in 14–1111d, shall have exit facilities such as to provide at least 1 means of escape from any point subject to human occupancy, such means of escape affording reasonable safety from any probable fire or smoke therefrom, explosion or release of fumes, all in general conformity with the general provisions of this Chapter of the Code in so far as applicable, with due allowance for the increased safety inherent in any open structure where any heat, smoke, or fumes will not be confined by walls or roofs.

14–5112. Where subject to occupancy by more than 10 persons, at least 1 additional means of escape shall be provided.

CHAPTER 15. STORAGE OCCUPANCIES

SECTION 15–1. GENERAL STORAGE OCCUPANCIES

15–11. OCCUPANCY AND CLASSIFICATION

15–111. Occupancy

15–1111. Storage occupancies shall include all occupancies defined in 4–119. 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 normally contemplated for storage occupancies shall be classified as industrial occupancy.

15–112. Classification of Contents

15–1121.* Storage occupancies shall be classified as ordinary hazard, high hazard, or low hazard in accordance with Section 4–2, depending upon the character of the materials stored, their packaging, and other factors.

15–12. EXIT DETAILS

15–121. Number of Exits

15–1211. Every building or structure used for storage, and every section thereof considered separately, shall have access to at least 1 exit so arranged and located as to provide a suitable means of escape for any persons employed therein, and in any room or space exceeding 15,000 square feet gross area, or where more than 10 persons may be normally present, at least 2 separate means of exit shall be available, as remote from each other as practicable.

15–1212. Every storage area shall have access to at least 1 means of exit which can be readily opened, not subject to locking at any time that any persons are therein, and not dependent on any power-operated doors except power-operated doors complying with 5–218.

15–122. Travel Distance to Exits

15–1221. 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, or 100 feet where automatic sprinkler protection in accordance with Section 6–4 is provided, distances to be measured along the natural path of travel.

SECTION 15–2. SPECIAL PROVISIONS FOR GARAGES

15–2111.* 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 requiring a minimum of exits. Where repair operations are conducted the exits shall comply with Chapter 14, Ordinary Hazard Industrial Occupancy, in addition to compliance with the following paragraphs.

15–2112. Where both parking and repair operations are conducted in the same building, the entire building shall comply with Chapter 14, unless the parking and repair sections are effectively separated by fire-resistive construction in which the parking and repair section may be treated separately.

15–22. EXIT DETAILS

15–221. General

15–2211. On the street floor at least 2 separate exit doors shall be provided in accordance with Section 5–2, except that any opening for the passage of automobiles may serve as a means of exit, provided that no door or shutter is installed thereon. Street floor exits in closed garages shall be so arranged that no point in the area is more than 100 feet from the nearest exit, or 150 feet in the case of garages protected by automatic sprinklers in accordance with Section 6–4, distance being measured along the natural path of travel.

15–2212. On floors above the street at least 2 means of exit shall be provided, one of which shall be an enclosed stairway, smokeproof tower, or outside stair in accordance with Sections 5–3 and 5–4, or a horizontal exit in accordance with Section 5–5. The other means of egress may be a second exit of any of the types permitted by the preceding sentence, or in a ramp-type garage with open ramps not subject to closure, the ramp may serve as the second means of exit.

15–2213. On floors below the floor of exit discharge at least 2 exits shall be provided, not counting any automobile ramps except that for garages extending only 1 floor level below the floor of exit discharge, a ramp leading direct to the outside may constitute 1 required means of exit.

15–2214.* If any gasoline pumps are located within any closed parking garage, exits shall be so located that 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. Such exit shall lead to the outside of the building on the same level, or down stairs; no upward travel permitted unless direct outside exits are available from that floor. Any story below the story at which gasoline is being dispensed shall have exits direct to the outside via outside stairs or doors at ground level.

15–222. Travel Distance to Exits

15–2221. Every floor of every closed parking garage shall have access to at least 2 separate means of exit, so arranged that from any point in the garage the paths of travel to the 2 means of exit will be in different directions except that a common path of travel may be permitted for the first 50 feet from any point.

15–2222. Upper floor exits in closed garages shall be so arranged that no point in the area will be more than 100 feet (measured along the line of travel) from the nearest exit other than a ramp on the same floor level, or 150 feet in the case of garages protected by automatic sprinklers in accordance with Section 6–4.

15–2223. Exits at the floor of discharge in closed garages shall be so arranged that no point in the area is more than 100 feet from the nearest exit, or 150 feet in the case of garages protected by automatic sprinklers in accordance with Section 6–4, distance being measured along the natural path of travel.

15–2224. In garages below the floor of exit discharge, exits shall be so arranged that no part of the area will be more than 100 feet (measured along the line of travel) from the nearest exit stair.

15–223. Signs

15–2231. Exit signs, in accordance with Section 5–11, shall be provided for all required exits, or ways of travel to reach exits, except that ramps and doors for automobiles need not have signs.

SECTION 15–3. SPECIAL PROVISIONS FOR AIRCRAFT HANGARS

15–31. EXIT DETAILS

15–311. General

15–3111.* Exits from aircraft storage or servicing areas shall be provided at intervals of not more than 150 feet on all exterior walls of aircraft hangars. 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. Dwarf or "smash" doors in doors accommodating aircraft may be used to comply with these requirements. All doors designated as exits shall be kept unlocked in the direction of exit travel while area is occupied.

15–3112. 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 or to a suitably cutoff area or to outside stairs.

15–312. Signs

15–3121. Exit signs shall be provided over doors and exitways in accordance with Section 5–11.

SECTION 15–4. SPECIAL PROVISIONS FOR GRAIN ELEVATORS

15–4111.* In grain elevators, there shall be at least 1 stair tower from stories below the floor of exit discharge to the floor of exit discharge and from the floor of exit discharge to the top floor of the working house enclosed in a dust-tight noncombustible shaft.

15–4112. Noncombustible doors of the self-closing type shall be provided at each floor landing.

15–4113. 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 with access from all floors above the floor of exit discharge.

15–4114. An exterior stair or basket ladder type fire escape shall be provided from the roof of each storage annex to ground level.

CHAPTER 16. MISCELLANEOUS STRUCTURES

16–0001. Any building or structure occupied for purposes not covered by Chapters 8 through 16 shall have exits and related safeguards in accordance with the fundamental principles of this Code as stated in Chapter 2, and shall comply with the following provisions where applicable.

SECTION 16–1. TOWERS

16–1111.* Any tower occupied for purposes such as observation, signaling, either an independent structure or on top of a building, shall be permitted with a single stairway or ramp exit if all of the following conditions are met:

a. The tower is of such size as not to be subject to occupancy by more than 25 persons on any one floor level.

b. The tower is subject only to occupancy by able-bodied persons and is not used for living or sleeping purposes.

c. The construction is fire-resistive, noncombustible or heavy timber. The interior finish, if any, is Class A or Class B (see Section 6–2), and there are no combustible materials in, under, or in the immediate vicinity of the tower except necessary furniture such as chairs or benches.

16–1112. In each tower where there is no occupancy below the top floor level and the conditions of 16–1111 are met, stairs may be open with no enclosure required, or where the structure is entirely open, fire-escape type stairs may be used.

16–1113. Stairs shall be Class B for new construction, but may be outside stairs or fire-escape type stairs for existing towers.

16–1114. A tower such as a forest fire observation tower and a railroad signal tower designed for occupancy only by not more than 3 persons employed therein may be of any type of construction, and may be served by ladders instead of stairs, provided, however,

that if used for living or sleeping purposes it shall at least comply with exit requirements for private dwellings, Section 11–6.

SECTION 16–2. PIERS AND WATER-SURROUNDED STRUCTURES

16–2111. Every pier occupied as a place of amusement, passenger terminal, or used for any purpose other than for the mooring of vessels and handling of cargo shall be provided with means of exit from any structures thereon and to the mainland appropriate to the character of occupancy of the pier in general accordance with the applicable sections of Chapters 8 through 16.

16–2112.* Any pier, occupied as per 16–2111, extending more than 150 feet from the shore shall be so arranged as to minimize the possibility that fire in or under the pier may block escape of occupants to shore, by one or more of the following measures:

a. Pier so arranged as to provide 2 separate ways of travel to shore, as by 2 well-separated walkways or independent structures.

b. Open, fire-resistive pier deck on noncombustible supports.

c. Pier deck provided with automatic sprinkler protection for combustible substructure and for superstructure, if any.

d. Pier is completely open and unobstructed and is 50 feet or more in width if less than 500 feet long or its width is not less than 10 percent of its length if over 500 feet long.

e. Any other arrangement providing equivalent safety, as approved by the authority having jurisdiction.

16–2113. Any building or structure surrounded by water, such as a lighthouse or "Texas tower," shall have sufficient outside area of ground as on an island, or fire-resistive platform, to provide an adequate area of refuge from any fire in the structure. Means shall be available for transportation of occupants away from such structures to the mainland or other places of safety, such as by boat or helicopter, in case of fire or other emergency, within a reasonable period of time.

SECTION 16–3. VEHICLES AND VESSELS

16–3111.* Any house trailer or similar vehicle, railroad car, street car, truck or bus from which the wheels have been removed, a

permanent-type foundation provided, or otherwise fixed so that it is not mobile shall be considered as a building and shall be subject to the requirements of this Code which are applicable to buildings of similar occupancy.

16–3112. Any ship, barge, or other vessel which is permanently moored or aground and is occupied for purposes other than navigation shall be subject to the requirements of this Code applicable to buildings of similar occupancy.

SECTION 16–4. UNDERGROUND STRUCTURES AND WINDOWLESS BUILDINGS

16–41. GENERAL

16–4111.* Any fire area subject to occupancy by 100 or more persons, from which there is no direct access to outdoors or to another fire area, and no outside light or ventilation through windows, shall be equipped with complete automatic sprinkler protection in accordance with Section 6–4.

16–4112. Any underground structure, building, or floor area lacking direct outside access or windows and having combustible contents, interior finish, or construction, if subject to occupancy by more than 1,000 persons shall have automatic smoke venting facilities in accordance with Chapter 7 in addition to automatic sprinkler protection.

16–4113. Any underground structure, or windowless building for which no natural lighting is provided, subject to occupancy by more than 100 persons in any room or fire area, shall be provided with Type 1, 2, or 3 emergency exit lighting in accordance with Section 5–9, provided that where the occupancy is such as to require a specific type of emergency lighting such requirements shall govern.

16–42. UNDERGROUND STRUCTURES

16–4211. Where required exits from underground structures involve upward travel, such as ascending stairs or ramps, such upward exits shall be cut off from main floor areas and shall be pro-

vided with outside smoke venting facilities or other means to prevent the exits serving as flues for smoke from any fire in the area served by the exits, thereby making the exits impassable.

16–43. WINDOWLESS BUILDINGS

16–4311. Every windowless building shall be provided with outside access panels on each floor level, designed for fire department access from ladders for purposes of ventilation and rescue of trapped occupants.

CHAPTER 17. OPERATING FEATURES

SECTION 17–1. GENERAL

17–11. FIRE EXIT DRILLS

17–1111.* Fire exit drills conforming to the provisions of this Chapter of the Code shall be regularly conducted in schools through grade 12 and in other occupancies where specified by the provisions of Chapters 8 through 16, 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.

17–1112. Fire exit drills, where required, 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.

17–1113.* Drills shall be held at unexpected times and under varying conditions to simulate the unusual conditions obtaining in case of fire.

17–1114. Responsibility for the planning and conduct of drills shall be assigned only to competent persons qualified to exercise leadership.

17–1115. 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.

17–1116.* Drills shall include suitable procedures to make sure that all persons in the building, or all persons subject to the drill, actually participate.

17–1117. Fire alarm facilities, where available, shall be regularly used in the conduct of fire exit drills.

17–1118.* Fire exit drills in schools shall not include any fire extinguishing operations.

17–12. FURNISHINGS AND DECORATIONS

17–1211. No furnishings, decorations, or other objects shall be so placed as to obstruct exits, access thereto, egress therefrom, or visibility thereof.

17–1212.* Flammable furnishings or decorations shall be flame retardant where required by the applicable provisions of this Chapter.

17–1213.* No furnishings or decorations of an explosive or highly flammable character shall be used in any place of assembly or other occupancy except private dwellings.

17–13. AUTOMATIC SPRINKLER SYSTEMS

17–1311.* 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.

17–14. ALARM AND FIRE DETECTION SYSTEMS

17–1411. 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.

17–1412. Systems shall be tested at not less than weekly intervals, except as otherwise specified by the applicable provisions of Chapters 8 through 16.

17–1413. 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 replenished as promptly as possible after each test or alarm.

17–15. FIRE RETARDANT PAINTS

17–1511. Fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary flame retardant properties.

17–16. RECOGNITION OF MEANS OF EGRESS

17–1611. 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.

SECTION 17–2. PLACES OF ASSEMBLY

17–211. Drills

17–2111.* The employees or attendants of places of public assembly shall be schooled or 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.

17–212. Open Flame Devices

17–2121.* No open flame lighting devices shall be used in any place of assembly except:

a. 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.

b. 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.

c. Gas lights may be permitted provided adequate precautions satisfactory to the authority having jurisdiction are taken to prevent ignition of any combustible materials.

d. As permitted in 17–213.

17–213. Special Food Service Devices

17–2131. 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.

17–214. Smoking

17–2141. Smoking in places of assembly may be regulated by the authority having jurisdiction.

17–2142. In rooms or areas where smoking is prohibited, plainly visible "NO SMOKING" signs shall be posted.

17–2143. No person shall smoke in prohibited areas which are so posted. 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.

17–2144. Where smoking is permitted, suitable ash trays or receptacles should be provided in convenient locations.

17–215. Decorations and Stage Scenery

17–2151. 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 17–12.

17–2152. Only noncombustible materials or fire retardant pressure treated wood may be used for stage scenery or props, on the audience side of the proscenium arch.

17–216. Seating

17–2161. a. 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 17–2161b. All seats in balconies and galleries shall be securely fastened to the floor, except in churches.

b. 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 as per 8–1135.

SECTION 17–3. EDUCATIONAL OCCUPANCIES

17–311. Drills

17–3111.* Fire exit drills shall be conducted regularly in accordance with the applicable provisions of the following paragraphs.

17–3112.* 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.

17–3113.* 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.

17–3114.* 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.

17–3115. 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, as per 5–2134. 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.

17–3116. 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.

17–3117. 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, any interference with fire department operations, or any confusion between different classes or groups.

17–3118.* 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.

17–312. Signals

17–3121. All fire exit drill alarms shall be sounded on the fire alarm system and not on the signal system used to dismiss classes.

17–3122. 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.

17–3123. 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.

17–313. Inspection

17–3131.* 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.

17–3132. Open plan buildings require extra surveillance to ensure that exit paths are maintained clear of obstruction and are obvious.

SECTION 17–4.* INSTITUTIONAL OCCUPANCIES

17–411. Attendants, Evacuation Plan, Fire Exit Drills

17–4111. 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 17–4113 to 17–4127 inclusive shall apply and fire exit drills shall be held at reasonable intervals.

17–4112. Every bed intended for use by institutional 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.

17–4113.* 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 at irregular intervals during day and night 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.

17–412. Procedure in Case of Fire

17–4121. Any person discovering fire shall immediately transmit the interior alarm. Institutional personnel hearing the audible signal shall proceed to immediately execute their duties as outlined in the institutional fire safety plan.

17–4122. 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.

17–4123. 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.

17–4124. 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.

17–4125. 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.

17–4126. A written institutional fire safety plan shall provide for:

1. Use of alarms
2. Transmission of alarm to fire department
3. Response to alarms
4. Isolation of fire
5. Evacuation of area
6. Preparing building for evacuation
7. Fire extinguishment.

17–4127. 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:

1. When the discoverer of a fire must immediately go to the aid of an endangered person.
2. During a malfunction of the interior alarm system.

Institutional personnel hearing the code announced shall regard

that announcement in the same fashion as they would an audible alarm signal, and immediately execute their duties as outlined in the institutional fire safety plan.

17–413. Maintenance of Exits

17–4131. Daily inspection and proper maintenance shall be provided to insure the dependability of the method of evacuation selected. Institutions 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.

17–414. Smoking

17–4141.* 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, except 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 shall be readily available to all areas where smoking is permitted.

17–415. Draperies

17–4151.* Window draperies and curtains for decorative and acoustical purposes shall be flame retardant.

17–4152.* Cubicle curtains shall be noncombustible or rendered and maintained flame retardant.

17–416. Furnishing and Decorations

17–4161. Furnishings and decorations in institutional occupancies shall be in accordance with the provisions of 17–12.

17–4162.* Combustible decorations are prohibited in any institutional occupancy unless flame retardant.

SECTION 17–5. RESIDENTIAL OCCUPANCIES

17–51. HOTEL EMERGENCY ORGANIZATION

17–5111.* All employees of hotels shall be instructed and drilled in the duties they are to perform in event of fire, panic, or other emergency.

17–5112.* 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.

17–512. Emergency Duties

17–5121. 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.

17–52. DORMITORIES

17–521. Drills

17–5211. Fire exit drills shall be regularly conducted in accordance with 17–11.

SECTION 17–6. MERCANTILE OCCUPANCIES

17–611. Drills

17–6111. In every Class A store, employees shall be regularly trained in fire exit drill procedures, in general conformance with 17–11.

SECTION 17–7. OFFICE OCCUPANCIES

17–711. Drills

17–7111. 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 17–11 and shall hold practice drills periodically where practicable.

SECTION 17–8. GENERAL INDUSTRIAL OCCUPANCY

17–811. Drills

17–8111. In any building subject to occupancy by more than 500 persons or more than 100 persons above or below the street level, employees and supervisory personnel shall be instructed in fire exit drill procedures in accordance with Section 17–11 and shall hold practice drills periodically where practicable.