

VIRGINIA
PUBLIC BUILDING SAFETY REGULATIONS

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FOR USE AS PART OF THE
VIRGINIA STATEWIDE FIRE PREVENTION CODE/1990



Department of Housing and Community Development

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ARTICLE 1

GENERAL APPLICATION AND ADMINISTRATION

SECTION 100 SCOPE

100-1 Short Title

These regulations, formerly known as the "Virginia Public Safety Regulations" were made a part of the Statewide Fire Prevention Code by the 1988 Legislature. They include the State Fire and Public Building regulation in effect on March 31, 1986. As used in these Regulations "Law" shall mean the Statewide Fire Prevention Code Act; "Code" shall mean Statewide Fire Prevention Code. "Board" shall mean the Board of Housing and Community Development.

100-2 Application

These Regulations shall apply to all public buildings, constructed and/or occupied before the effective date of the Uniform Statewide Building Code, which are defined and include any buildings or structure, permanent or temporary, which is used or occupied, by ten or more persons who are employed, lodged, housed, assembled, served, entertained or instructed therein, and without limiting the foregoing, includes hotels, schools and colleges, hospitals of all kinds, asylums, mercantile establishments, office buildings and structures of the same or similar character or the same or similar use, including buildings owned and occupied by the Commonwealth or by any of its political subdivisions. "Public building" shall also mean all homes for adults licensed or subject to licensure pursuant to Chapter 9 (§63.1-172 et seq.) of Title 63.1 of the Code of Virginia and all residential care facilities operated by any state agency.

SECTION 101 ENFORCEMENT

101-1 General

These Regulations shall be enforced in accordance with Article 1 of the Virginia Statewide Fire Prevention Code and Title 27, Article 3, Chapter 9 of the Code of Virginia.

SECTION 102 MODIFICATION

102-1 When Regulations May be Modified

Where the purpose of any provision of these Regulations, as it pertains to safety to life and property from fire, can be fulfilled by other means in the case of a specific building, the fire official having jurisdiction may modify the provision to permit certain specified alternatives.

ARTICLE 2

DEFINITIONS

SECTION 200. DEFINITIONS

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- (a) Unless otherwise expressly stated, the following terms shall have the meanings indicated in this Section.
- (b) Words used in the present tense include the future; words in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural the singular.
- (c) Where terms are not defined in this Section they shall have their ordinarily accepted meanings or such as the context may imply.

"ALLEY" means any public space or thoroughfare twenty feet or less in width which has been dedicated or deeded for public use.

"ALTERATION", as applied to a building or structure, means a change or rearrangement in the structural parts or in the exit facilities; or an enlargement, whether by extending on a side or by increasing in height; or the moving from one location or position to another. The term **"ALTER"**, in its various moods and tenses and its participial forms, refers to the making of an alteration.

"APARTMENT" means a room, or a suite of two or more rooms, in a Group C building occupied as the home or residence of an individual, family or household.

"APARTMENT HOUSE" means a building in which three or more apartments are located. Rooming houses are considered to be apartment houses.

"APPROVED", as applied to a material, device, mode of construction or as otherwise used in these Regulations means approved by the fire official having jurisdiction.

(Note: Equipment listed as satisfactory for specific purposes by nationally recognized testing laboratories (such as the Underwriters' Laboratories, Inc., the Factory Mutual Laboratories, and the American Gas Association), when installed and used for the purposes intended, will be accepted as approved, unless specifically prohibited elsewhere in these Regulations.)

"APPROVED MASONRY" means masonry constructed of brick, stone, concrete, hollow block, solid block, or other material, or a combination of these materials as approved by the fire official having jurisdiction (See Section 500 or 1500).

"AREA", as applied to the dimensions of a building, means the maximum horizontal projected area of the building at grade.

"AUTOMATIC", as applied to a fire door or other opening protective, means normally held in an open position and automatically closed by a releasing device that is actuated by abnormal high temperature, by a predetermined rate of rise in temperature, or by the presence of smoke.

"BALCONY", as applied to a theatre or auditorium, means the seating tier next above the main floor.

"BASEMENT" means that story of a building the floor of which is not less than two feet below grade and the ceiling of which is not less than four feet and six inches, but not more than seven feet and six inches, above grade.

"BUILDING" means a public building as defined in Paragraph 100-2(a). The term "Building" shall be construed as if followed by the words "or part thereof". When a building is divided by a Fire Wall or Fire Walls into two or more sections, each section shall be regarded as a separate building.

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"CELLAR" means that story of a building the ceiling of which is entirely below or less than four feet and six inches above grade.

"CONCRETE" means a mixture of portland cement, aggregate and water, of such materials, proportions, and manipulation as to give specified results.

"ELEVATOR" means a device within or in connection with a building used for carrying persons or things upward or downward; and includes dumbwaiter and similar devices, but does not include moving stairways.

"EXISTING" means heretofore erected or installed.

"EXIT DOORWAY" means a doorway leading into an Exitway or to a street or to an open place giving safe access to a street.

"EXIT FACILITY" - See Subsection 401-1.

"EXITWAY" means the necessary combination of "Exit Facilities" through which persons may proceed safely in case of emergency from any floor of a building to the main entrance floor or to a street or an open space which provides safe access to a street; provided that Exitways from the main entrance floor shall discharge directly to a street or an open space which gives safe access to a street.

"FIRE DIVISION" A building is considered to be located in a fire division when, due to segregation by open space, Fire Walls or other means of protection, a fire therein, under normal conditions, would burn itself out without spreading to buildings or combustible materials outside the fire division, and in which a fire originating in buildings or combustible materials outside such fire division would burn itself out without spreading to a building in the fire division.

"FIRE DOOR" means a door and its assembly, so constructed and assembled in place as to give the specified protection against the passage of fire.

"FIRE OFFICIAL HAVING JURISDICTION" means the fire official appointed by the local government in accordance with §27-98 Code of Virginia and F-102,1 of the Statewide Fire Prevention Code or the State Chief Fire Marshal in those jurisdiction who have not chosen to enforce the Statewide Fire Prevention Code.

"FIRE PARTITION" - See Section 502 or 1502.

"FIRE RESISTANCE RATING" means the time in hours that the material or construction will withstand the standard fire exposure as determined by a fire test made in conformity with the "Standard Methods of Fire Tests of Building Construction and Materials" of the American Standards Association, or any rating accepted by the fire official having jurisdiction for a type of construction. Fire resistance ratings for materials or constructions which are set forth in any of the Codes or Standards recognized by Section 500 will be accepted by the fire official having jurisdiction. Materials or construction rated as "combustible" shall not be acceptable for specified rating of over one hour.

"FIRE WALL" means a wall constructed in accordance with Section 501 or 1501, for the purpose of subdividing a building or separating buildings to restrict the spread of fire and which starts at the foundation and extends continuously through all stories.

"FIREPROOF CONSTRUCTION" - See Subsection 301-1.

"FLAMMABLE LIQUID" means a liquid having a flash point not greater than two hundred degrees, Fahrenheit.

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"FLAMEPROOF" as applied to decorations, curtains, draperies, scenery, tents, woodwork or other normally combustible materials means treated so it will not propagate flame.

"FLOOR AREA" means a floor space enclosed by walls or partitions, provided that where the building has any side open the floor line shall determine the limit of that side. In the case of structures such as stadiums which are neither enclosed nor roofed over, the floor area shall be considered as the projected area on a horizontal plane.

"FRAME CONSTRUCTION" - See Subsection 301-1.

"GALLERY" means any seating tier above the balcony in a Place of Assembly.

"GARAGE" means a building in which a motor vehicle containing flammable liquid or flammable gas in its fuel storage tank is stored, housed or kept.

"GRADE", with reference to a building, means, when the curb level has been established, the mean elevation of the curb level opposite those walls that are located on, or parallel with and within fifteen feet of, street lines; or, when the curb level has not been established, or all the walls of the building are more than fifteen feet from street lines, "grade" means the mean elevation of the first ground surface adjoining the building along such wall.

"GROUP A BUILDING" - See Section 300.

"GROUP B BUILDING" - See Section 300

"GROUP C BUILDING" - See Section 300

"GROUP D BUILDING" - See Section 300

"GROUP E BUILDING" - See Section 300

"HALLWAY" means an enclosed area within a building devoted to the horizontal movement of persons or goods.

"HEAVY-TIMBER CONSTRUCTION" - See Subsection 301-1.

"HEIGHT", as applied to a building, means the vertical distance from grade to the highest finished roof surface in the case of flat roofs or to a point at the average height of roofs having a pitch of more than one foot in four and one-half feet; "height" of a building in stories does not include basement and cellar stories.

"HEIGHT", as applied to a court, means the vertical distance from the level of the floor of the lowest story served by that court to the level under consideration.

"HEIGHT", as applied to a story, means the vertical distance from top to top of two successive tiers of floor beams or finished floor surfaces.

"HEIGHT", as applied to a wall, means the vertical distance to the top measured from the foundation wall, or from a girder or other immediate support of such wall.

"HEREAFTER", as used in connection with any provision of these Regulations, present or future, means after April 12, 1949 and before the effective date of the Uniform Statewide Building Code.

"HERETOFORE", as used in connection with any provision of these Regulations, present or future, means before April 12, 1949.

"HOTEL" means a building in which rooms are rented for temporary occupancy for lodging purposes and includes commercial hotels, resort hotels, tourist courts, lodging houses and buildings similarly occupied.

"LODGING HOUSE" - See "Hotel".

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"LOT" means a portion or parcel of land considered as a unit, devoted to a certain use or occupied by a building or a group of buildings that are united by a common interest or use, and the customary accessories and open spaces belonging to the same.

"LOT LINE" means a line dividing one lot from another, or from a street or other public space.

"MASONRY" - See "Approved Masonry".

"MEZZANINE" means a partial floor.

"MULTIFAMILY HOUSE" means a building occupied as the home or residence of individuals, families or households living independently of each other, of which 4 or more are doing cooking within their apartments; including tenement house, apartment house, flat. A row of 4 or more single family houses not separated by Fire Walls is considered to be a multifamily house.

"OCCUPIED", as applied to a building, shall be construed as though followed by the words "or intended, arranged or designed to be occupied."

"3/4-HOUR FIRE RESISTING PARTITION" - See Section 503 or 1503.

"ORDINARY CONSTRUCTION" - See Subsection 301-1.

"PENTHOUSE" means an enclosed structure other than a roof structure, located on the roof, extending not more than twelve feet above the roof.

"PLACE OF ASSEMBLY" means a room or space in which one hundred or more persons are congregated for religious, recreational, educational, political, social or amusement purposes or for the consumption of food or drink. Such room or space shall include any occupied appurtenant rooms or space.

"PROSCENIUM WALL" means the wall which separates the stage section of a building from the auditorium.

"PUBLIC BUILDING" - See Paragraph 100-2(a).

"REPAIR" means the replacement of existing work with the same kind of material used in the existing work, not including additional work that would affect the structural safety of the building, or that would affect or change required exit facilities, or that would affect a vital element of an elevator, gas piping, wiring or heating installation, or that would be in violation of a provision of these Regulations.

"REQUIRED" means required by some provision of these Regulations.

"ROOF STRUCTURE" means a structure above the roof of any part of a building enclosing a stairway, tank, elevator machinery or ventilating apparatus, or such part of a shaft as extends above the roof.

"ROOMING HOUSE" - See "Apartment House."

"SELF-CLOSING", as applied to a fire door or other opening protective, means normally closed and equipped with an approved device which will insure closing after having been opened for use.

"SEMI-FIREPROOF CONSTRUCTION" - See Subsection 301-1.

"SHAFTWAY" means the space formed by the vertical projection between unpierced floors or roof of an opening

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in any intermediate floor or floors.

"SOLID BLOCK" means a building unit of burnt clay, concrete, or other approved incombustible material the gross cubic content of which is not less than fifty per cent greater than the standard size of brick, and in which there are no cellular spaces, not including the scoring of the face, exceeding in the aggregate twenty-five per cent of the gross cubic content of the unit.

"SPRINKLERED" means equipped with an approved automatic sprinkler system, properly maintained.

"STAIRWAY" means one or more flights of stairs and the necessary landings and platforms connecting them, to form a continuous and uninterrupted passage from one story to another in a building or structure.

"STANDARD FIRE TEST" means the fire test formulated under the procedure of the American Standards Association as "American Standard" and designed as American Standard A2.1-1942.

"STORAGE BUILDING" - See Subsection 300-1.

"STORY" means that part of a building between a floor and the floor or roof next above; provided that such space above a mezzanine, the area of which is 25 per cent or less of the area of the floor below, is not considered as a separate story. Basements and cellars are stories for all purposes of these Regulations except the computation of "height" in stories.

"STREET" means any public thoroughfare (street, avenue, boulevard, park) or space more than twenty feet in width which has been dedicated or deeded for public use.

"STREET LINE" means a lot line dividing a lot from a street.

"UNPROTECTED METAL CONSTRUCTION" - See Subsection 301-1.

"VERTICAL OPENING" means a communicating opening between two stories of a building.

"WALLS"

"Bearing Wall" means a wall which supports any vertical load in addition to its own weight.

"Curtain Wall" means a non-bearing wall between columns or piers and which is not supported by girders or beams.

"Foundation Wall" means a wall below the first floor extending below the adjacent ground level and serving as support for a wall, pier, column or other structural part of a building.

"Non-bearing Wall" means a wall which supports no load other than its own weight.

"Panel wall" means a non-bearing wall in skeleton construction, built between columns or piers and wholly supported at each story.

"Party wall" means a wall used or adapted for joint service between two buildings.

ARTICLE 3

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CLASSIFICATION AND RESTRICTIONS

SECTION 300. CLASSIFICATION OF OCCUPANCIES

300-1 Classes Designated

- (a) For the purpose of these Regulations, buildings are classified, with respect to occupancy and use, as Group A, Group B, Group C, Group D and Group E.
- (b) "GROUP A BUILDINGS" means a building in which persons congregate for civic, political educational, religious, social or recreational purposes; including among others,

armories	court houses	museums
assembly halls	dance halls	passenger stations
auditoriums	exhibition buildings	recreation piers
bath houses	grandstands	restaurants
bowling alleys	gymnasiums	schools
churches	lecture halls	skating rinks
city halls	libraries	stadiums
club rooms	lodge rooms	theatres
colleges	motion picture theatres	

- (c) "GROUP B BUILDING" means a building in which persons are harbored to receive medical, charitable or other care or treatment, or in which persons are held or detained by reason of public or civic duty, or for correctional purposes; including among other,

asylums	jails	school, orphanage, and other
homes for the aged	nurseries	dormitories for children of
hospitals	penal institutions	high school age or older
houses of correction	reformatories	
infirmaries	sanitariums	

- (d) "GROUP C BUILDING", Except when classed as a Group B building, means a building in which sleeping accommodations are provided; including among others,

apartments	hotels	school, orphanage, and other
club houses	lodging houses	dormitories for children of
convents	multifamily houses	high school age or older
	tenements	

- (e) "GROUP D BUILDING" means a building occupied for the transaction of business, for the rendering of professional services, for the display or sale of goods, wares or merchandise, or for the performance of work or labor; including among others,

bakeries	laboratories	stores
banks	laundries	telephone exchanges
factories	markets	workshops
ice plants	office buildings	

- (f) "GROUP E BUILDING" means a building for the housing, except for purely display purposes, of airplanes, automobiles, railway cars or other vehicles of transportation, for the sheltering of horses, live stock or other animals, or exclusively for the storage of goods, wares or merchandise, not excluding in any case offices incidental to such uses; including among others,

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freight depots
garages

grain elevators
hangars

storage warehouses

300-2. Mixed Occupancy

In case a building is occupied for two or more purposes not included in one class, the provisions of these Regulations applying to each class of occupancy shall apply to such parts of the building as come within that class; and if there should be conflicting provisions, the requirements securing the greater safety shall apply.

300-3. Doubtful Classification

In case a building is not specifically provided for, or where there is any uncertainty as to its classification, its status shall be fixed by the fire official having authority, giving due regard to safety.

SECTION 301. CLASSIFICATION OF CONSTRUCTION

301-1. Types Designated

- (a) For the purposes of these Regulations, construction as used in buildings shall be classified as follows. The order of classification is from most restrictive to least restrictive.
- (1) Fireproof
 - (2) Semi-fireproof
 - (3) Heavy Timber
 - (4) Ordinary
 - (5) Noncombustible
 - (6) Frame
 - (7) Unprotected Metal
- (b) **"FIREPROOF"** construction, as applied to a building, means that in which the structural members, including interior and exterior bearing walls and exterior non-bearing walls, are of approved incombustible construction having the necessary strength and stability and having a fire resistance rating of not less than shown in Table 1. A combustible roof may be used when it is protected by an approved automatic sprinkler system and the ceiling of the top story is of Fireproof construction.
- (c) **"SEMI-FIREPROOF"** construction, as applied to a building, means that in which the structural members, including interior and exterior bearing walls and exterior non-bearing walls, are of approved incombustible construction having the necessary strength and stability and having a fire resistance rating of not less than shown in Table 1. A combustible roof may be used when it is protected by an approved automatic sprinkler system and the ceiling of the top story is of semi-fireproof construction.
- (d) **"HEAVY TIMBER"** construction, as applied to a building, means that in which the exterior walls and bearing walls are of an approved masonry or reinforced concrete and in which the interior structural elements, including columns, floors, and roof construction, consist of an approved assembly of heavy timbers with smooth flat surfaces assembled to avoid thin sections, sharp projections and concealed or inaccessible spaces, or are of incombustible materials protected to have a fire resistance rating of not less than 3/4 hour, and in which all structural members which support masonry walls shall have a fire resistance rating of not less than three hours.
- (e) **"ORDINARY"** construction, as applied to a building, means that in which exterior walls and bearing walls are

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of approved masonry or reinforced concrete and in which the structural elements are wholly or partly of wood of smaller dimensions than required for Heavy Timber construction, or of other materials not protected as required for Heavy Timber construction.

- (f) **"NONCOMBUSTIBLE"** construction, as applied to a building, means that in which all structural members including walls, floors, roofs and their supports, are of steel, iron, concrete, or of other incombustible materials, and in which the exterior walls have not less than a two-hour fire resistance rating as tested for an interior and an exterior fire.
- (g) **"FRAME"** construction, as applied to a building, means that in which walls and interior construction are wholly or partly of wood.
- (h) **"UNPROTECTED METAL"** construction, as applied to a building, means that in which the structural supports are unprotected metal and in which the roofing and walls or other enclosures are of sheet metal, or of other incombustible materials, or of masonry deficient in thickness or otherwise not conforming to approved masonry.

301-2. Partial Compliance

Nothing in these Regulations shall require full compliance with a type of construction, if, under these Regulations, a less restrictive type of construction is permitted; but no building shall be deemed of a given type of construction unless it conforms with all specific provisions of these Regulations applying to that type.

**TABLE 1
REQUIRED FIRE RESISTANCE RATINGS OF STRUCTURAL ELEMENTS IN HOURS**

STRUCTURAL ELEMENT	TYPE OF CONSTRUCTION	
	Fire-proof	Semi-Fire-proof
EXTERIOR BEARING WALLS	4	3
EXTERIOR NON-BEARING WALLS , when having the following distance to a lot line or to another structure, whichever is nearer, except that measurements may be taken from opposite sides of streets.	Less than 6 ft.	3
	6 ft. or more, but less than 11 ft.	2
	11 ft. of more, but less than 21 ft.	1 1/2
	21 ft. or more, but less than 30 ft.	1 1/2
30 ft. or more	0	0
INTERIOR BEARING WALLS & PARTITIONS	4	3
COLUMNS, GIRDERS, BEAMS, TRUSSES and similar members other than Roof Trusses.	Supporting masonry or bearing walls	2*
	Supporting one floor	2
	Supporting more than one floor	3
FLOOR CONSTRUCTION	3	2

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ROOF CONSTRUCTION AND ROOF TRUSSES AND FRAMING, when height to lower chord from highest floor, balcony or mezzanine is:	15 ft. or less	2	1 1/2
	More than 15 ft., but less than 20 ft.	3/4	3/4
	20 ft. or more	0	0

* But not less than the required fire resistance of the wall supported.

**SECTION 302.
RESTRICTIONS ON TYPES OF CONSTRUCTION**

302-1. General

- (a) Buildings constructed between April 12, 1949 and the effective date of the Uniform Statewide Building Code which exceed the height limitations fixed in these Regulations for Semi-fireproof construction shall be of Fireproof construction.
- (b) When a change of occupancy occurred before September 1973 which resulted in a violation of the height limitation listed in Table 2, the fire official having jurisdiction may authorize continued use of occupancy when it involved a move from a more hazardous building and the original building is not used for any purpose in violation of the height limitation for a building listed in Table 2. Any changes of occupancy after the effective date of the Uniform Statewide Building Code shall conform to the requirements of the Uniform Statewide Building Code in effect at that time.

302-2. Special Occupancies

- A. Requirements applicable to special occupancy buildings constructed and/or occupied between April 12, 1949 and the effective date of the Uniform Statewide Building Code.
 - (1) The following Group A buildings shall be of Fireproof or Semi-fireproof construction, except that portions of such buildings not over one story or over 45 feet in height may have combustible roof construction if protected by Fire Retardant Ceilings. In schools this provision applies only to the portion of the building (including appurtenant rooms) which contains one of the following occupancies.
 - (a) Theatres, motion picture theatres, or auditoriums having provisions for the vertical movement of scenery.
 - (b) Theatres, motion picture theatres, or auditoriums having seating facilities on more than one tier above the main floor.
 - (c) Theatres, motion picture theatres, or auditoriums whose capacities exceed 800 persons.
 - (d) Buildings housing theatres, motion picture theatres, dance halls, roof gardens, night clubs, skating rinks, lodge halls, lecture halls, auditoriums, or gymnasiums with a capacity in excess of 600, located on any floor other than the main entrance floor.
 - (2) No theatre or motion picture theatre with a capacity in excess of 200 shall be located in a building of Frame or Unprotected Metal construction.
 - (3) Any Group B building shall be of Fireproof or Semi-fireproof construction except as follows:

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- (a) Such buildings where occupants are involuntarily detained or bed-ridden may be of other types of construction provided they do not exceed one story in height and all structural members, including columns, floors, walls and partitions, are of incombustible material and have a fire resistance rating of not less than 3/4 hour.
 - (b) Such buildings where the occupants are not involuntarily detained or bed-ridden may be of other types of construction provided they do not exceed two stories in height and the floors and partitions have a fire resistance rating of not less than 3/4 hour with Fire Retardant ceilings under roof and further provided that Frame construction shall not exceed one story in height.
- B. Requirements applicable to special occupancy buildings constructed prior to April 12, 1949 or converted to a special occupancy after April 12, 1949 and prior to the effective date of the Uniform Statewide Building Code.
- (1) Any building used or converted to use as a Place of Assembly which does not comply with Section 302-2(a) and (b), and which is of Ordinary, Non Combustible or Heavy Timber construction, and has seats or capacity for less than 300 persons on tier or tiers above the main floor, may be continued in use provided:
 - (a) All other applicable provisions of these Regulations for existing buildings are met, and
 - (b) No stage therein is equipped for the vertical shifting of scenery, and
 - (c) All remaining scenery, stage curtains and stage drapes are maintained flameproof.
 - (2) Any other building used or converted to use as a Group A or Group B building shall comply with section 302-2, or shall be altered by direction of the fire authority having jurisdiction to the minimum extent necessary to provide reasonable safety to life. Such alterations may include:
 - (a) Reduction in size or capacity.
 - (b) Elimination of hazardous features.
 - (c) Reduction in amount of combustible contents.
 - (d) Provision of additional means of egress
 - (e) Other measures deemed necessary by the fire authority having jurisdiction.

SECTION 303. HEIGHT RESTRICTIONS

303-1. General

Buildings constructed or altered between April 12, 1949 and the effective date of the Uniform Statewide Building Code shall conform to the following height restrictions.

- (a) No building shall exceed in height the limits fixed in this section unless approved by the fire official.
- (b) No building shall be altered so as to exceed the limits of height fixed by this section.
- (c) Maximum building height limits shall be as shown in Table 2.

(Note: See Section 302-2 for height limits for certain special occupancies. See Section 601 and 1601 for sprinkler requirements based on height and occupancy. See subsection 303-4 for general exceptions.)

303-2. Exceptions

- (a) For the purpose of this Section, the following appurtenances shall not be deemed parts of buildings: churchspires, tanks and their supports, roof structures, chimneys, signs attached to the building, radio masts, water cooling towers for air conditioning or other apparatus, and parapets that do not extend more than four feet above the roof surface at their point of contact.
- (b) Structures of Unprotected Metal construction used in connection with water tanks and industrial processes shall not be limited as to height.
- (c) One story wings of Noncombustible or Unprotected Metal construction, without basements or cellars, may be attached to Fireproof or Semifireproof buildings. This exception does not apply to Group B buildings where the occupants are bedridden or involuntarily detained.

SECTION 304. ADDITIONS

304-1. General Requirements for Additions

Additions to buildings between April 12, 1949, and the effective date of the Uniform Statewide Building Code shall comply with the applicable requirements of Part A and B of these regulations.

304-2. When Additions are Prohibited and Fire Walls are Required

- (a) No addition shall be made to a building when the building being added to exceeds the height limits established in Table 2 unless the addition is protected therefrom by a fire wall.
- (b) No addition shall be made that exceeds the height limits established in Table 2 for the occupancy classification of the building being added to unless the latter is protected from the addition by a fire wall.

(Note: See Section 501 for construction of Fire Walls.)

304-3. Exits from Additions

Additions shall have means of egress conforming to Article 4.

(Note 1: See Section 402-4(b) for an exception to this rule for school and Group B buildings.)

(Note 2: Under this rule it would be permissible for an addition to make use of surplus exit capacity in the older building if the older Exitways meet all the requirements of Article 4 as to location, enclosure, etc.)

304-4 When Additions Must be Protected by Fire Partitions

When a three-story or higher addition has been made, prior to the effective date of the Uniform Statewide Building Code, to a building which is three-story or higher, the addition shall be separated by a Fire Partition unless all vertical openings are protected by material having a 3/4 hour fire resistance rating and installed so as to prevent a fire originating on any floor from spreading to any other floor.

(Note 1: See Section 502 for construction of Fire Partitions.)

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(Note 2: See Section 503 for construction of 3/4-hour Fire Resisting Partitions.)

**PART B
FIRE SAFETY REQUIREMENTS APPLICABLE TO BUILDINGS CONSTRUCTED OR OCCUPIED BETWEEN
APRIL 12, 1949 AND SEPTEMBER 1, 1973**

ARTICLE 4

MEANS OF EGRESS

SECTION 400. APPLICATION OF ARTICLE

400-1 Application

Buildings constructed or altered between April 12, 1949 and the effective date of the Uniform Statewide Building Code shall be provided with means of egress in accordance with the requirement of this Article.

400-2 Alterations

Any building altered between April 12, 1949 and the effective date of the USBC shall be so arranged as not to reduce the number or capacity of Exitways to less than required for buildings of similar construction and number of occupants.

SECTION 401. GENERAL

401-1. Composition of Exitways

- (a) "Exitway" means the necessary combination of "Exit Facilities" through which persons may proceed safely in case of emergency from any floor of a building to the main entrance floor or to a street or an open space which provides safe access to a street; provided that Exitways from the main entrance floor shall discharge directly to a street or an open space which gives safe access to a street. An Exitway must be readily and easily accessible from all points of the floor which it serves.

(Note: See Section 401-2(a) for modification of this rule.)

- (b) Exitways shall be composed only of an appropriate combination of such Exit Facilities as are permitted by this Article.
- (c) Exit Facilities permitted for use in Exitways are:

- | | |
|-----------------------------|---------------|
| (1) Interior Exit Stairways | (Section 404) |
| (2) Fire Towers | (Section 405) |
| (3) Horizontal Exits | (Section 406) |
| (4) Exterior Exit Stairways | (Section 407) |
| (5) Exit Ramps | (Section 408) |
| (6) Slide Type Fire Escapes | (Section 409) |
| (7) Exit Hallways | (Section 410) |
| (8) Exit Doorways | (Section 411) |

Such Exit Facilities shall conform to the appropriate provisions of this Article, and each shall be limited as

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to use in Exitways as specified in the individual Section governing it.

SECTION 402. NUMBER OF EXITWAYS

401-2. Arrangement of Exitways

- (a) All Exitways from Group A and B buildings shall discharge directly to a street or an open space which gives safe access to a street, and when two or more Exitways are required from Group C, D, and E buildings, at least one shall discharge directly to a street or an open space which gives safe access to a street.
- (b) Two or more separate Exitways may lead through a common Exit Hallway on the ground floor provided the Exit Hallway discharges to the outside.
- (c) When a lobby, foyer or waiting room discharges directly to the outside, and the fire official having authority is satisfied that only a negligible amount of combustibles will be introduced therein, it may permit Exitways to utilize such a room as an Exit Facility when:
 - (1) The room is otherwise constructed as an Exit Hallway, or
 - (2) The adjoining rooms are sprinklered, or
 - (3) The adjoining rooms are cut off therefrom by 3/4-hour Fire Resisting Partitions.

401-3. Number of Occupants

- (a) The dimensions and capacity of Exitways shall be proportioned to the number of persons to be accommodated from each floor, and only the population of the floor in question need to be considered when computing exit capacity; provided that Exitways shall not be decreased in width in the direction of normal exit travel.
- (b) When the number of persons to be accommodated by the Exitway is not ascertainable, it shall be decided on the basis of the gross area of the space devoted to a particular purpose and shall be assumed to be as follows:

Occupancy	Gross area per person
Dance hall, lodge room, or Place of Assembly	15 Sq. Ft.
Store-street floor and sale basement.	30 Sq. Ft.
Other floors.	60 Sq. Ft.
School auditoriums and gymnasiums.	6 Sq. Ft.
School cafeterias.	10 Sq. Ft.
School libraries.	25 Sq. Ft.

Space used for occupancies not listed above:

Group A.....	40 Sq. Ft.
Group B.....	150 Sq. Ft.
Group C.....	125 Sq. Ft.
Group D.....	100 Sq. Ft.
Group E.....	300 Sq. Ft.

402-1. From Stories

- (a) Every story shall have at least one Exitway and every story that exceeds 4,000 square feet in area shall have at least two separate Exitways.

(b) Exception: In apartment houses and multifamily houses any story more than 4,000 square feet in area but not more than 5,000 square feet in area may have a single Exitway under the following conditions:

- (1) There shall be no more than 4 apartments per floor.
- (2) Buildings of Fireproof or Semi-fireproof construction shall be limited to 3 stories in height and a single basement or cellar. Buildings of Heavy Timber, Ordinary and Noncombustible construction shall be limited to 2 stories in height and a single basement or cellar. Buildings of other classifications of construction are not eligible for this exception.
- (3) The interior Exit Stairway shall be enclosed with Fire Partitions.

(Note: See Section 502 for construction of Fire Partitions.)

- (4) Interior finish for walls and ceilings in the Interior Exit Stairway enclosure and all blocking and furring to which interior finish is attached shall have a flamespread rating of not more than 25 as classified in accordance with the Method of Test of Surface Burning Characteristics of Building Materials, American Society for Testing and Materials No. E-84. Interior finish not in excess of 10 per cent of the aggregate wall and ceiling areas in the stair enclosure may have a flamespread rating of not more than 200 when used for trim, handrails and other incidental finish.
- (5) The stair enclosure and the stairs shall be of noncombustible materials except for minor amounts of combustible trim and incidental finish as permitted in Item (4) above.
- (6) Every sleeping room shall have a window, door or other opening directly to the outside which can be opened from the inside without the use of tools to provide a clear opening of not less than 16 inches in least dimension and 400 square inches in area, with the bottom of the opening not more than 38 inches above the floor, unless the sleeping room has 2 doors providing separate ways of escape to a room having such window, door or other opening.

402-2. Places of Assembly

- (a) Every room, gallery, balcony, tier, or other space having a capacity of 100 or more persons shall be provided with at least two doorways, and where the capacity is more than 600 persons, at least three doorways, and where the capacity is more than 1,000 persons, at least four doorways. Such doorways shall be located a reasonable distance apart so that if one becomes blocked, the others will be available. The doorways shall conform to the design requirements of Section 411 for Exit Doorways and shall be marked and lighted as required for Exit Doorways in Section 412. They shall be so located that the Exitways from the floor are readily and easily accessible therefrom.
- (b) Every room, gallery, balcony, tier, or other space having capacity of more than 200 persons shall have access to at least two Exitways, and where the capacity is more than 600 persons, at least three Exitways, and where the capacity is more than 1,000 persons, at least four Exitways.

402-3. Residence Occupancy Located Above a Business Occupancy

Residence occupancies located above a business occupancy shall be provided with an Exitway in addition to any extending through the business area.

402-4. School Buildings and Group B Buildings

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- (a) Every story of school buildings and of Group B buildings shall have at least two separate Exitways, except that neither this requirement nor any other requirement for multiple Exits shall apply to buildings occupied by persons under legal restraint.

(Note: The term, "persons under legal restraint" applies only to persons who are of sound mind and are not bed-ridden.)

- (b) When an addition not exceeding 4,000 square feet in area is made to a school building or Group B building prior to the effective date of the USBC and is completely separated therefrom by a Fire Wall or a Fire Partition, an opening in the Fire Wall or Fire Partition may be accepted as one of the required Exitways from the addition. The other required Exitway must be in the addition.

(Note 1: See Section 501 for construction of Fire Walls.)

(Note 2: See Section 502 for construction of Fire Partitions.)

SECTION 403. LOCATION OF EXITWAYS

403-1. How Exitways are to be Located

- (a) Exitways shall be so located that no point in a floor area, room or space served by them is more than 100 feet distant from an Exitway measured along the line of travel; except that when a floor area is subdivided into smaller areas, such as rooms in hotels, multifamily houses, and office buildings, the distance from the door of any room along an un-obstructed hallway, to an Exitway shall be not more than 100 feet in Group C buildings and not more than 125 feet in other occupancies except that hallways above the first story shall not extend beyond an Exitway as a dead end more than 50 feet. Where the building is of Fireproof construction or Semi-fireproof construction, or the building is sprinklered, the above distances may be increased 50 per cent. For single story industrial and Class E buildings the distance to the nearest Exitway from any point may be 150 feet for unsprinklered buildings and 250 feet for sprinklered buildings.
- (b) Exitways shall be located with proper regard to safety of the occupants and ease of exit. The size and shape of the room or space, the accessibility of streets and open spaces, the ability to use Horizontal Exits, and the desirability of good separation of Exitways shall be considered.

SECTION 404. INTERIOR EXIT STAIRWAYS

404-1. Construction and Arrangement of Interior Exit Stairways

- (a) Interior Exit Stairways shall be constructed of incombustible materials throughout, except in buildings of Frame construction, and in buildings of Ordinary construction not exceeding 30 feet to the floor of the topmost story and occupied by not more than 75 persons above, or 40 persons below, the first story above grade. All such stairways shall have risers securely fastened in place, and, except in industrial and Class E buildings, risers shall be solid.
- (b) When treads or landings are of slate, marble, stone or composition, they shall be substantially supported for their entire length and width.
- (c) Treads and landings shall be constructed and maintained in a manner to prevent persons from slipping thereon.

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- (d) The continuity of all stairs which may be used for exit purposes shall be interrupted at street level by partitions or doors, or other means shall be used to indicate the main floor level and make clear the direction of egress to the street.

404-2. Enclosure

- (a) All interior stairways connecting two or more stories, whether used as Interior Exit Stairways or not, shall be enclosed, except as otherwise provided in Paragraph (d) below.
- (b) Interior stairways shall be enclosed with Fire Partitions in unsprinklered buildings 4 stories or more in height.

(Note: See Section 502 for construction of Fire Partitions.)

- (c) In other buildings interior stairways shall be enclosed in partitions having a fire resistance rating of not less than 3/4 hour.

- (d) An enclosure shall not be required for:

- (1) A flight of stairs from any floor to the floor next above when such stairs are not a part of an Exitway and are enclosed at the upper floor and connect only the two floors.
- (2) A flight of stairs in a building of Fireproof construction, Semi-fireproof construction, or a sprinklered building of Heavy Timber construction or Ordinary construction, or noncombustible construction, when such stairs connect only one story with one other story immediately above or below it and are not a part of an Exitway. In such case the upper end of the stairway shall not connect to an Exit Hallway except through a fire door.
- (3) A flight of stairs from a balcony or mezzanine having an area not exceeding 25% of that of the story immediately below, except that stairs from the first floor to the first balcony or mezzanine need not be enclosed in Places of Assembly.

- (4) Stairways in Group A and D buildings under the following conditions:

The building must not exceed two stories in height.

The stairway must connect only one story with one other story immediately above or below it.

Not less than two well separated Exitways shall be provided from each occupied floor.

Interior Exit Stairways shall discharge directly to the outside at ground level in such a manner that it shall not be necessary for persons using the stair to pass through any corridor, lobby or other space outside the normal confines of the stairway area.

Interior Exit Stairways from basements and cellars shall be fully enclosed.

Other stairways from basements and cellars shall be enclosed at head or foot unless the basement is sprinklered.

- (5) Stairways in buildings occupied by persons under legal restraint.

(Note: The term, "persons under legal restraint" applies only to persons who are of sound mind and are not bed-ridden.)

- (e) No openings except the necessary Exit and entrance doorways, and windows opening to the exterior of the building, will be permitted in a required stairway enclosure. Such doorways shall be equipped with approved selfclosing fire doors, except that when Fire Partitions are not required for the enclosures, substantial self-closing metal or metal covered doors or solid wooden doors of the flush type of nominal thickness not less than 1 3/4 inches may be used. In school buildings, doors on openings in stairway enclosures may have wired glass panels; the area of such glass in any one door shall not exceed 720 square inches. Doors protecting openings in required enclosures of stairways which are frequently used for other than emergency purposes and doors protecting openings in required enclosures of stairways in sprinklered buildings may be arranged to close automatically in case of fire. Fastening devices may be omitted on doors protecting openings in stairway enclosures, except when enclosures are required to be Fire Partitions. Door closers shall be of an approved type.

404-3. Moving Stairways

- (a) Moving stairways moving in the direction opposite to that of egress which are equipped at the head of each flight with a device for stopping all flights simultaneously, and moving stairways moving in the direction of egress, may be considered as Exit Facilities, provided they conform in all respects to requirements of this Section for protection of required interior stairways, except the requirement for minimum width which shall be not less than 24 inches.
- (b) In sprinklered buildings moving stairways which are not considered as required Exit Facilities need not be enclosed as required for interior stairways, if enclosed in each story at the upper floor landing by an incombustible enclosure equipped with an approved double acting selfclosing or automatic door or doors of metal and wired glass. Wired glass in metal framework may be used for the enclosure provided no pane of glass has a length or width greater than 48 inches. The enclosure shall include a landing at each floor which is of sufficient length beyond the handrail and having a width not less than that of the floor opening.
- (c) In lieu of the enclosure requirements of Paragraph 404-3(b), above, the fire official having authority may, upon application, approve automatic water spray or other protection devices which it believes will accomplish the same results respecting safety to life.

404-4. Width

- (a) Except as provided in Paragraph 404-4(b), below, the required exit width of an Interior Exit Stairway shall be not less than 44 inches; provided that in multifamily houses and Group E buildings, and in other buildings occupied by a single tenant and limited in occupancy to 40 persons, such width may be 36 inches.
- (b) Interior Exit Stairways from boiler rooms, service rooms, chemical process rooms, projection booths, elevator machinery rooms and similar rooms or spaces which are normally occupied by 10 or less people, and are not open to the general public, shall be of sufficient width to adequately serve their purpose in case of emergency. Where the room or space is normally unoccupied, ladders or other approved exit devices may be substituted for stairways as Exit Facilities.
- (c) The net clear width of an Interior Exit Stairway (i.e., the least distance between any combination of enclosure walls, balustrades, handrails, newels, etc.) shall not be less than the required exit width, except:
 - (1) When a handrail is attached to an enclosure wall of an Interior Exit Stairway, and projects not more than 3 1/2 inches from the wall, the handrail may be disregarded in measuring the net clear width.
- (d) The unit of stairway width used as a measure of exit capacity shall be 22 inches. Fractions of a unit shall not be included except that an allowance of 1/2 unit may be made for 12 or more inches of additional stairway width.

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(e) The aggregate width of Exit Stairway serving any story shall be in accordance with the following table and shall be based on the number of occupants of that story as determined by Subsection 401-3.

	<u>Number of persons per Unit of Exit Width</u>	
	Unsprinklered Buildings	Sprinklered Buildings
Places of Assembly on ground or street floor.....	100	150
Occupancies other than listed above:		
Group A.....	60	90
Group B.....	30	45
Group C.....	30	45
Group D.....	60	90
Group E.....	60	90

Example of Stairway Width Calculation

Assume an unsprinklered 4-story apartment building (Group C occupancy) with a Place of Assembly (Group A occupancy) in the basement, with the gross floor areas below. Each story above the basement exceeds 4000 sq. ft. in area and, therefore, must have not less than two 44-inch stairs. The Place of Assembly in the basement accommodates over 200 persons (3300 sq. ft. 15 sq. ft./person) so it must also have two 44-inch stairs as a minimum.

4th floor	7,875 Sq. Ft.
3rd floor	18,000 Sq. Ft.
2nd floor	18,000 Sq. Ft.
1st floor	18,000 Sq. Ft.
Basement	3,300 Sq. Ft.

The aggregate required Exit Stair Width would be:

(a) from 4th floor

$$\frac{7875 \text{ sq. ft.}}{125 \text{ sq. ft./person} \times 30 \text{ persons/unit}} = 2.1 \text{ stair units}$$

hence, two 44-inch stairs would be adequate.

(b) from 2nd and 3rd floors

$$\frac{18000 \text{ sq. ft.}}{125 \text{ sq. ft./person} \times 30 \text{ persons/unit}} = 4.8 \text{ stair units}$$

hence, one 44-inch stairway plus one 56-inch stairway, or three 44-inch stairways, would be necessary.

(c) from Basement

$$\frac{3300 \text{ sq. ft.}}{15 \text{ sq. ft./person} \times 60 \text{ persons/unit}} = 3.7 \text{ stair units}$$

hence, two 44-inch stairs would be adequate.

Note: If a basement stairway is a continuation of a stair from the second story, and both discharge at the same point, it is necessary to add the capacity of both flights in order to arrive at the required units of Exit Door Width.

Example: Suppose one of the 44-inch stairs from the basement joins a 56-inch stair from the 2nd story.

Capacity of 44-inch stairway is:

$$2 \frac{1}{2} \text{ units} \times 30 \text{ persons/unit} = 75 \text{ persons. Therefore Total Capacity} = 195 \text{ persons.}$$

Thus, the doors leading to the outside would have to be designed to accommodate 195 persons. (Population of first floor need not be considered in this calculation).

404-5. Treads and Risers

- (a) Threads and risers of Interior Exit Stairways shall be proportioned for ease of exit. The risers shall not exceed 7 3/4 inches in height, and treads, exclusive of nosing, shall be not less than 9 inches wide. Threads and risers shall be of uniform width and height in any one story. The sum of two risers plus one tread shall be not less than 23-1/2 nor more than 25 inches. (b) The use of winders is prohibited in Exit Stairways.

404-6. Landings

- (a) No flight of stairs in an Interior Exit Stairway shall have a vertical rise of more than 12 feet between floors or landings; except that in Interior Exit Stairways in Group A buildings such vertical rise shall not exceed 10 feet. No single flight of stairs shall have less than 3 risers.
- (b) The length and width of landings shall be not less than the width of stairways in which they occur and the doors of Exit Doorways shall be so hung and arranged that when fully opened they will not in any way diminish or obstruct the required width of hallway, stair or other Exit Facility.

404-7 Handrails

- (a) Stairs in Interior Exit Stairways shall have walls or well secured balustrades or guards on both sides.
- (b) Such stairs, when less than 44 inches in width, shall have handrails on at least one side.
- (c) Such stairs, when required to be 44 inches or more in width, shall have handrails on both sides.
- (d) When the required width of a flight of stairs exceeds 88 inches, an intermediate handrail with a maximum lateral spacing of 66 inches, continuous between landings, securely supported and terminating at the upper end in newels or standards, shall be provided.

SECTION 405. FIRE TOWERS

405-1. How Constructed

- (a) Except as specified below, Fire Towers, when installed, shall conform to the requirements of this Article for Interior Exit Stairways.
- (b) The enclosing walls shall be of approved masonry or reinforced concrete and there shall be no openings in such walls, except for the necessary doors or windows. The Fire Tower shall have a roof of Fireproof construction.
- (c) Access to the Fire Tower at each story served thereby shall be by vestibules or outside balconies having floors of incombustible materials and provided with substantial guard railings at least 4 feet high, without any openings greater than 8 inches in width; except that for industrial and Group E buildings, triple guard rails equally spaced, with top rail not less than 3 1/2 feet high may be used. Such balconies or vestibules shall adjoin either a street or a court not less than 10 feet wide nor less than 150 square feet in area, and the permissible doors and windows in the enclosing walls shall open on such street or court. The balconies or vestibules shall be level with the floors of the building and the stair landings of the Fire Tower. The clear width of such connecting balconies and vestibules shall be not less than that required for Exit Hallways. Self-closing fire doors, swinging in the direction of travel from the building to the Fire Tower, shall be provided at both building and Fire Tower ends of such balcony or vestibules.

SECTION 406. HORIZONTAL EXITS

406-1. Composition

Horizontal Exits shall consist of vestibules, open air balconies, bridges, or doorways through or around Fire Walls or Fire Partitions, connecting two floor areas. In buildings of other than Fireproof or Semi-fireproof construction, such Fire Partitions shall be continuous throughout all stories from the foundation to the roof.

406-2. Connecting Floor Areas

- (a) When a Horizontal Exit is required as an Exitway from the floor area on both sides of the Horizontal Exit, the floor area on either side shall be sufficient to hold the occupants of both floor areas.
- (b) When a Horizontal Exit is required as an Exitway from only the floor area on one side of the Horizontal Exit, there is no requirement as to the floor area on that side; but the floor area on the other side of the Horizontal Exit shall be sufficient to hold the occupants of both floor areas.
- (c) In determining the required floor area there shall be allowed not less than three square feet of clear floor space per person.

406-3. Arrangement

Where a Horizontal Exit is used there shall be at least one Exitway conforming to the requirements of this Article on each side of the Horizontal Exit. The capacity of such Exitway shall be adequate for the number of persons normally using the space on that side of the Horizontal Exit, less the capacity of the Horizontal Exit itself. In determining the number of such Exitways as required by the distance rule of Section 403, the Horizontal Exit may be treated as if it were also an Exitway.

406-4. Vestibules and Balconies

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When vestibules or open air balconies are used, they shall conform to the requirements for vestibules or open air balconies of Fire Towers.

406-5. Bridges

When bridges are used they shall be constructed of incombustible material. The clear width of such bridges shall be not less than required for Exit Hallways.

406-6. Openings

All doorways or windows opening on, under or within 10 feet of such vestibules, balconies, or bridges shall be equipped with self-closing fire doors or approved fire windows.

406-7. Gradients

Where there is a difference in level between the connecting floor areas, gradients of not more than 1 foot in 8 feet shall be provided. No stairs or steps shall be used in a Horizontal Exit.

SECTION 407. EXTERIOR EXIT STAIRWAYS

407-1. General

- (a) Except for industrial buildings having not more than forty persons above the third story, for Group E buildings, and for sprinklered buildings of any occupancy, permission shall be obtained from the fire official having jurisdiction for the erection of an Exterior Exit Stairway to be used as an Exit Facility serving any story above the third story.
- (b) Exterior Exit Stairways shall be constructed of incombustible materials except on buildings of Frame construction, and on buildings of Ordinary construction not over 3 stories in height. Exterior Exit Stairways shall conform to the requirements for Interior Exit Stairways in Section 404, except that enclosures shall not be required and risers may be open for a height of one inch or less at the bottom.

407-2. Access

Occupants of each story served by an Exterior Exit Stairway shall have direct access to the stairway through an Exit Doorway.

407-3. Openings Protected

Except where wooden stairways are permitted, all doors and windows opening on or within 10 feet of Exterior Exit Stairways shall be protected by approved self-closing fire doors or approved fire windows.

407-4. Guards

Metal mesh or other rigid guards at least 4 feet high without any openings greater than 8 inches in width shall be provided throughout on each unenclosed side of Exterior Exit Stairways; except that for industrial and Group E buildings, triple guard rails equally spaced, with top rail not less than 3 1/2 feet high may be used.

407-5. Enclosures

If Exterior Exit Stairways other than wooden stairways are enclosed on any side such enclosure shall be of

incombustible materials.

407-6. Glass

Glass used in the construction of enclosures shall be wired glass of approved type.

407-7. Strength

Exterior Exit Stairways shall be of sufficient strength to sustain a live load of 100 pounds per square foot or concentrated loads of 300 pounds spaced 3 feet center to center, each occupying an area at least one foot wide by the depth of the tread, whichever will produce the greater stress.

407-8. Details

Except for industrial and Group E buildings, all balcony floors and treads and risers of Exterior Exit Stairways shall be solid except that perforations not exceeding 1/2-inch in diameter may be used for purposes of drainage. Exterior Exit Stairways shall be built permanently to the ground.

SECTION 408. EXIT RAMPS

408-1. How Constructed

Exit Ramps shall be constructed, arranged and enclosed as required for the Interior or Exterior Exit Stairways displaced. Exit Ramps shall have a slope not to exceed 1 foot in 8 feet, except as otherwise provided in Article 7, and shall be provided with nonslip surfaces.

SECTION 409. SLIDE TYPE FIRE ESCAPES

409-1. How Constructed

Slide Type Fire Escapes shall be of approved type and conform to the following:

- (1) They shall not be used to provide means of egress from buildings exceeding 70 feet or 6 stories in height. The pitch and design shall be such that a person using the chute will be discharged without injury. Doors at the entrance to the chute shall have approved panic releases and shall swing with the exit travel and be so installed that they will not obstruct the use of the chute. If doors are installed at the lower end of the chute, they shall be equipped with an approved releasing device on the inside.
- (2) All sheet metal used for the chute shall be corrosion resistant, shall not be painted on the inside and shall be maintained so as to be free from rust. Any part of the chute with which the user may come in contact shall be free from cracks, crevices, or any projection or roughness which may cause injury or reduce the effectiveness of the chute.
- (3) All chutes shall be of sufficient size and ample strength and shall be supported in a substantial manner.
- (4) They shall be arranged and enclosed as required for the Interior or Exterior Stairways displaced.

SECTION 410. EXIT HALLWAYS

410-1. How Constructed

- (a) The clear width of every hallway or corridor used as an Exit Hallway shall be not less than the sum of the width of the Exit Facilities discharging into it and not less than the nominal required width of the Exit Doorways discharging from it in the direction of normal exit travel, but in no case shall it be less than 44 inches; provided that in multifamily houses and in case less than 40 persons are to be accommodated, the latter requirement may be reduced to 36 inches.
- (b) The enclosing walls, floors and ceilings of Exit Hallways connecting an Exit Stairway to the doorway leading to the outside shall have a fire resistance rating of not less than that required for the Exit Stairway which they serve; except that in sprinklered buildings of Fireproof or Semi-fireproof construction the enclosing walls may have panels of wired glass in metal frames. Openings therein shall be protected in the same manner as those in the Exit Stairways served thereby.

SECTION 411. EXIT DOORWAYS

411-1. Width

The aggregate nominal width of doorways serving as Exit Facilities shall be at the rate of one unit of exit width (22 inches) per 100 persons served, but in no case shall any Exit Doorway have a net clear width of less than 28 inches. The net clear width of Exit Doorways shall have the relation to nominal width and to units of exit width as shown in the table below:

Required Nominal Doorway Width	Minimum Permissible Clear Doorway Width	Net No. Units of Exit Width Allowed
22"	28"	1
36"	34"	1/2
44"	40"	2
56"	52"	2 1/2
65"	60"	3
88"	two 40"	4

(Note: Any desired combination of the above clear door widths may be used provided the corresponding allowable number of units is also sufficient. For example: Two 34-inch doors could be used in an Exit Doorway for 300 persons since 3 units would be required and each 34-inch door would give 1 1/2 units.)

411-2. Hanging of Doors

- (a) The doors of Exit Doorways shall be so hung and arranged that when fully opened they will not in any way diminish or obstruct the required width of hallway, stair, or other Exit Facility.
- (b) Exit Doorways serving in an Exitway for more than 50 persons shall have the doors, including the doors of vestibules, so hung as to swing open in the direction of exit travel; but this requirement shall not be constructed to prohibit the use of sliding doors in stables, garages, or shipping and receiving rooms of Group D buildings and Group E buildings.
- (c) All exit doors of rooms occupied by 50 or more persons shall be hung to swing open in the direction of exit travel.
- (d) No Exit Doorway shall open immediately on a flight of stairs, but a landing the length and width of which are not less than the width of the Exit Doorway shall be provided between the Exit Doorway and such stairs.

411-3. Revolving Doors

- (a) Revolving doors, to be acceptable as Exit Doorways, shall have a width equal to that required for an acceptable swinging door, the width in the case of such a door with rigid braces being the width of a single wing, and in the case of such a door in which the wings may be readily released from one another by pressure so they may swing independently being the aggregate clear width of the two openings on each side of the central shaft. All revolving doors in Exitways from Places of Assembly shall be of an approved type which will collapse under pressure, and only the width of one wing shall be considered in figuring exit capacity.
- (b) Revolving doors shall not be used as Exit Doorways in theatres or Group B buildings nor in buildings occupied as stores where more than 75 persons are likely to be congregated, unless there are also Exit Doorways of the swinging type, having an aggregate width of at least 50 percent of required width of Exit Doorways and there is at least one swinging door adjacent to each revolving door. Revolving doors shall not be used in Exitways from school buildings.
- (c) Revolving doors shall not be used in Exitways from Places of Assembly except under one or more of the following conditions:
 - (1) Where the Place of Assembly is in a building of Fireproof or Semi-fireproof construction.
 - (2) Where the Place of Assembly and the remainder of the building are protected by an approved automatic sprinkler system.
 - (3) Where the Place of Assembly has a capacity of not over 200 persons and has an Exit Doorway of the swinging type adjacent to each revolving door.
 - (4) Where a place of refuge is provided for all occupants of the Place of Assembly in portions of the building between the Exit Doorways of the Place of Assembly and the revolving doors, and there is an Exit Doorway of the swinging type adjacent to each revolving door. Such place of refuge may consist of hallways, stairways, or areas separated from the Place of Assembly by Fire Walls or Fire Partitions.
- (d) Revolving doors shall be used in Exitways only at points in the first story above grade.

411-4. Panic Hardware

When fastening devices are installed on the Exit Doors of buildings or spaces in the classifications listed below, they shall be latches (fire exit bolts) which release when pressure of not to exceed 15 pounds is applied to the releasing devices in the direction of exit travel. Such releasing devices may 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 usually not less than 30, nor more than 44 inches above the floor.

Schools having more than 4 classrooms.

Theatres of any capacity.

Places of Assembly having a capacity in excess of 500 persons, except Churches.

Places of Assembly in school buildings having a capacity in excess of 200 persons.

411-5. Other Door Hardware

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- (a) Fastenings on doors serving Exit Doorways shall be such that the doors may be readily opened from the inside without the use of keys during the time when the building is occupied. Latches or other releasing devices to open doors shall be of simple types, the method of operation of which is obvious even in darkness.
- (b) Paragraph (a), above, shall not apply to the doors of rooms or spaces where persons are under legal restraint, but adequate arrangement shall be made to assure prompt evacuation of the occupants in case of fire.

SECTION 412. MAINTENANCE, MARKING AND LIGHTING

412-1. Physical Condition

Exitways shall at all times be maintained in good, safe, usable condition, and shall at all times be kept free and clear of obstructions and shall be readily accessible.

412-2. Exit Signs

- (a) In rooms and stories accommodating more than 100 persons, Exit Doorways shall be plainly marked by approved exit signs, sufficiently illuminated when the floor area is occupied to be readily distinguished.
- (b) Enclosed interior stairways and exterior stairways, which are provided in or for a building in addition to the required stairways and which do not conform to the provisions of this Article for required stairways, shall be marked in a suitable manner to indicate that they are not approved exits, but may be marked to indicate the extent to which they can be used as means of egress.
- (c) When the Exitways are not visible from all locations in public corridors directional signs shall be placed on walls or otherwise displayed in conspicuous locations to direct occupants thereto.

412-3. Lighting

- (a) Required Exitways, including exterior open spaces to which they lead which give safe access to a street, shall be kept adequately lighted at all times that the building served thereby is occupied.
- (b) Electrical lighting shall be provided wherever natural lighting is inadequate.
- (c) Adequate lighting shall be provided in Places of Assembly during occupancy, except during a performance requiring dimming or darkness. During the showing of motion pictures, where it is the practice for patrons to proceed to and from seats at any time, such light intensity shall not be less than 1/20 of a foot candle at every point thirty inches above the floor.
- (d) Required lights that are likely to be or become dangerous in any way to occupants shall be protected by suitable wire netting or other efficient means against breakage and other hazards.
- (e) In Group A buildings and Group B buildings the artificial lighting required by this Section shall be by electricity so arranged and supplied that the interruption of service on any other circuit inside the building will not result in interruption of the required lighting.

(Note: This does not necessarily require a second source of electrical energy for the building.)

412-4. Occupancy Prohibited

No part of an Exitway shall be used for any purpose which will interfere with its value as an Exitway.

412-5. Radiators

No coil or radiator or steam riser shall be placed in an Exit Stairway, nor in an aisle of a floor area in which seating accommodation is provided, unless the same be placed in a recess formed in or by walls or partitions.

ARTICLE 5

FIRE SAFETY FEATURES OF CONSTRUCTION

SECTION 500. MASONRY WALLS

500-1. General

Required masonry walls which are not otherwise regulated by this Article shall meet generally recognized minimum standards of safety. Such walls when conforming to the requirements of the current edition of any of the standards or codes listed below shall be accepted.

- (a) National Building Code recommended by American Insurance Association.
- (b) BOCA Basic Building Code recommended by Building Officials and Code Administrators International.
- (c) Southern Building Code recommended by Southern Building Code Congress.
- (d) Uniform Building Code recommended by International Conference of Building Officials.

SECTION 501. FIRE WALLS

501-1. Application

Fire Walls for which credit is claimed under any provision of these Regulations shall conform to the requirements of this Section.

501-2. Construction

Fire Walls shall be of approved masonry or reinforced concrete.

501-3. Fire Resistance

Fire Walls for any combination of occupancy and construction shall have a fire resistance rating adequate to restrict the spread of fire from one side to the other, and shall have a fire resistance rating of at least 4 hours.

(Note: See definition of "Fire Division".)

501-4. Termination at Top

- (a) The Fire Wall shall extend at least three feet above the roof of the building which it is to protect except where the roof is of Fireproof or Semi-fireproof construction; in which case the Fire Wall shall be carried up tightly against the underside of the roof slab.
- (b) Exception. In apartment houses and multifamily houses having not more than 4 apartments per story the Fire Walls that are required to extend above the roof by paragraph (a) above may be terminated not less than 6 inches above the roof provided all roof sheathing, trusses, rafters, joists and other roof supporting construction within 4 feet of the center line of the Fire Wall, on each side of the Fire Wall, are of noncombustible materials, or are of combustible materials that have been treated by pressure impregnation

so as to reduce the flamespread and fuel contribution ratings of the materials to not more than 25 as classified in accordance with the Method of test of Surface Burning Characteristics of Building Materials, American Society for Testing and Materials No. E-84.

501-5. Openings

- (a) Except in sprinklered buildings, no opening in a Fire Wall shall exceed 120 square feet in area, with no dimension greater than 12 feet, and the aggregate width of all openings at any level shall not exceed 25 percent of the length of the wall.
- (b) Every opening in a required Fire Wall shall be protected on each side of the wall with an automatic fire door, approved for such opening, except that when an opening in a Fire Wall serves as a Horizontal Exit, one of the fire doors at each such opening may be replaced by a fire door approved for openings in Fire Partitions. Steel plate security doors may be substituted for approved Fire Doors in applications involving the protection of buildings used or occupied by persons under legal restraint.

(Note: The term, "persons under legal restraint" applies only to persons who are of sound mind and are not bedridden.)

SECTION 502. FIRE PARTITIONS

502-1. Construction

- (a) Fire Partitions shall have a fire resistance rating of at least two hours. They shall be constructed of approved masonry or reinforced concrete, or other approved form of construction of incombustible materials.
- (b) Fire Partitions shall be supported in each story on construction having a fire resistance rating of not less than two hours; provided that when they also are load bearing the supporting construction shall have a fire resistance rating of not less than three hours in case the building is of Fireproof construction.
- (c) The maximum unsupported height of a Fire Partition shall not exceed thirty times its total thickness unless suitably reinforced and anchored at floor and ceiling, or unless substantially secured to vertical supports at intervals of not over thirty times the thickness.
- (d) Fire Partitions shall be deemed continuous, even though the several parts are not directly over one another in successive stories, if the intervening parts of the floors at the levels where offsets occur are unpierced and of Fireproof construction or Semifireproof construction and all parts not supported directly on the foundations are carried on Fireproof construction.
- (e) In buildings of Heavy Timber construction or of Ordinary construction, Fire Partitions, if required in a story as a Horizontal Exit, shall be continuous through all stories from the foundation to the roof. This shall not preclude offsetting of partitions if constructed in accordance with Paragraph 502-1(d), above.
- (f) Chases or recesses that would reduce the thickness below the required minimum shall not be built nor cut in Fire Partitions.

502-2. Openings

- (a) Fire Partitions shall have no openings other than required door openings, or properly protected duct openings.
- (b) Openings in required Fire Partitions shall be equipped with approved automatic-closing or self-closing fire doors. A door listed in the current edition of the Underwriters Laboratories, Inc., "List of Inspected Fire

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Protection Equipment and Materials" as being approved for Class B situations shall be deemed satisfactory.

- (c) Each opening in a Fire Partition serving as an enclosure to an Exitway or as a Horizontal Exit shall be equipped with a door of the self-closing type, except as provided in Paragraph 404-2(e).

SECTION 503. 3/4-HOUR FIRE RESISTING PARTITIONS

503-1. Construction

- (a) 3/4 hour Fire Resisting Partitions shall have a fire resistance rating of at least 3/4 hour. They shall be of approved form of construction.
- (b) Such partitions may be load-bearing only where the construction is approved for that purpose.
- (c) Such partitions shall be well secured.

503-2. Openings

- (a) Required 3/4-hour Fire Resisting Partitions shall have no openings other than required door openings, or properly protected duct openings.
- (b) Openings in required 3/4 hour Fire Resisting Partitions shall be equipped with substantial metal or metal covered doors or solid wooden doors of the flush type of nominal thickness not less than 1 3/4 inches. Doors shall be self-closing except as provided in Paragraph 404-2(e).

SECTION 504.0 FIRE RETARDANT CEILINGS

504-1. Construction

- (a) Fire Retardant Ceilings shall be constructed in accordance with one of the following specifications:
 - (1) Any ceiling assembly described as a "fire retardant ceiling" in a nationally promulgated standard in effect at or after the time of building construction.
 - (2) Not less than 1/2 inch plaster consisting of one part gypsum to not over two parts sand on 3/8 inch perforated gypsum lath, attached to wood supports by nails not smaller than 1 1/8 inches long with 3/8 inch diameter heads, and with three-inch strips of expanded metal lath nailed over all joints in the gypsum lath with nails not smaller than 1 3/4 inches long with 1/2 inch heads.
 - (3) Any combination floor and ceiling construction having a fire resistance rating of 3/4 hour or more.

SECTION 505. MISCELLANEOUS REQUIREMENTS

505-1. Wood Construction Around Fireplaces, Flues and Chimneys

- (a) All wooden beams and joists shall be trimmed away from flues and chimneys. Headers, beams and joists shall be not less than two inches from the outside face of a chimney or from masonry enclosing a flue. Headers supporting trimmer arches or fireplaces shall be not less than six inches from the inside face of the nearest flue.

- (b) No woodwork shall be placed within four inches of the back face of a fireplace; nor shall combustible lathing, furring or studding be placed against a chimney; but this shall not prevent plastering directly on the masonry or on metal lath and furring.
- (c) No wooden mantel or other woodwork shall be hereafter placed within eight inches of either side nor within twelve inches of the top of a fireplace opening.
- (d) All spaces between the masonry or chimneys or flues and wooden joists, beams or headers shall be firestopped by filling with incombustible materials.
- (e) All spaces back of combustible mantels shall be filled with incombustible materials.

505-2. Partitions in Multifamily Houses

In every building occupied as a multifamily house, unless sprinklered, partitions separating apartments, or apartments from public hallways, or apartments from other occupancies shall be 3/4-hour Fire Resisting Partitions.

505-3. Transoms

In buildings containing sleeping quarters, transoms or similar openings shall not be installed in walls or partitions separating public hallways from apartments and sleeping rooms.

505-4. Floors in Multifamily Houses

In every building occupied as a multifamily house, the floor construction immediately above those parts of the building occupied for business purposes shall have a fire resistance rating of not less than 3/4 hour, unless such parts are sprinklered.

505-5. Cellar Ceilings

In buildings of Ordinary construction or Frame construction, except one-story buildings, the ceilings over cellars shall conform to the requirements for Fire Retardant Ceilings.

505-6. Wall and Ceiling Finish

In Group A buildings and Group B buildings, and in all Places of Assembly and Exitways therefrom, no combustible materials shall be used as interior wall or ceiling finish which is of such a nature that flame will spread over its surface more rapidly than over one-inch (nominal) wood boards covered with ordinary paint or varnish.

505-7. Boiler, Fuel and Janitor's Work Rooms in School Buildings

Walls and ceilings of rooms in school buildings containing heating plants, including fuel storage rooms and janitor's work rooms, if they are located adjoining or under pupil occupied spaces, shall have a fire resistance rating of not less than two hours. All doors connecting such rooms with other parts of the building shall be protected with approved selfclosing fire doors. The room containing the heating plant shall have an outside entrance.

(Note: A door listed in the current edition of the Underwriters' Laboratories, Inc. List of Fire Protection Equipment and Materials as being approved for Class B situations shall be deemed satisfactory.)

SECTION 506. FIRESTOPPING

506-1. General

Firestopping shall be provided in buildings or Ordinary and Frame construction to cut off all concealed draft openings and form effectual fire barriers. Such firestopping shall be of wood two inches in nominal thickness, or of approved incombustible materials.

506-2. Furred Walls

When the walls are furred, the furred space shall be firestopped at floors, ceilings and roofs.

506-3. Partitions

- (a) Interior stud partitions shall be firestopped at the floors and ceilings of each story by a two-inch, nominal dimension, plate, the width of the stud, or the equivalent.
- (b) When sliding doors are pocketed in partitions, such pockets shall be completely firestopped at the top, bottom and ends.

506-4. Exterior Walls

Exterior walls of frame construction shall be properly firestopped at each floor level, at the top story ceiling level, at the roof level in the case of flat roofs, and at the foot of roof rafters in the case of sloping roofs.

506-5. Wainscoting and Paneling

Combustible wainscoting or paneling attached to plastered walls and partitions shall be firestopped at floor and ceiling, or at top and bottom.

506-6. Pipes, Shafting, Belts, Conveyors and Ducts

- (a) All openings around conduits, pipes or ducts shall be filled with approved incombustible material or shall be closed off by close fitting incombustible material at the ceiling and floor or line on each side of the wall.
- (b) All openings for belts, chutes and conveyors shall be provided with approved slotted doors, or be otherwise suitably protected.

SECTION 507.

PROTECTION OF OPENINGS IN EXTERIOR WALLS

507-1. Buildings Affected

- (a) Openings in exterior walls of buildings listed below shall be protected as required by this Section:
 - (1) Buildings over 70 feet in height to the floor of the highest story, or
 - (2) Buildings over one story in height whose occupants are bedridden, or under legal restraint, or who, because of age or mental or physical infirmities, would ordinarily be unable to make quick exit in case of emergency, or
 - (3) Portions of buildings used as Places of Assembly.

- (b) Exceptions: Churches, Group E buildings and buildings of Frame and Unprotected Metal construction are exempt from the requirements of this section.

507-2. Openings Affected

- (a) Approved fire windows or other approved protectives shall be installed in openings in exterior walls of buildings required to be protected when:
- (1) They are less than 30 feet in a direct line from an opening in the wall of a building of Fireproof, Semi-fireproof, Heavy Timber Ordinary or Noncombustible construction.
 - (2) They are less than 30 feet in a direct line from a building of Frame, or Unprotected Metal construction, or
 - (3) They are less than 30 feet distant from a roof of combustible construction or from an opening in a roof of any construction.
- (b) Exceptions: Such protection is not required when:
- (1) The opening in question and the opening against which it is to be protected are in walls in the same plane and are facing in the same direction, or
 - (2) The opening in question is a show window which does not extend above the first full story above grade.
- (c) For the purposes of this Section, any space within thirty feet devoted to use as a lumber yard or for the storage of comparable quantities of combustible material shall be considered as an exposing building.

507-3. Fire Shutters

When equipped with fire shutters, at least one in every three openings facing a street in each story shall have such shutters arranged to be readily opened from the outside. Distinguishing marks shall be provided on these shutters.

507-4. Exit Openings

When fire doors or fire shutters are used on openings to Exitways they shall be so arranged as not to obstruct such Exitways.

507-5. Wired Glass

For the glazing of fire doors, when permitted, or of fire windows, only wired glass shall be used which shall be not less than onequarter inch thick.

507-6. Closing of Protectives

Non-automatic fire doors, fire shutters and fire windows on exterior openings, when not required to be open, shall be kept closed by the occupant or occupants of the building having the use or control of them.

507-7. Installation and Approval

Fire doors, fire windows, fire shutters, window sprinklers and other protectives required by this section shall be of approved types and installed in an approved manner. Devices enumerated in the "Fire Protection Equipment Directory" issued by Underwriters' Laboratories, Inc., as revised from time to time, and listed for the purposes

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intended, if installed in accordance with the provisions of the Standard of the National Fire Protection Association (N.F.P.A.-80 Standard For Fire Doors and Windows) shall be deemed to be approved within the meaning of this Section.

SECTION 508. PROTECTION OF SHAFTWAYS

508-1. Application

The provisions of this Subsection shall apply to all shaftways hereafter constructed which are used for ventilation, light, elevator, pipes, or other purposes; provided that the provisions of this Subsection shall not apply to shaftways used for stairways, moving stairways, ducts, flues, incinerator chutes and shaftways in Frame buildings and in Group C buildings of Ordinary construction extending from the ceiling of the top story to and above the roof.

508-2. Protection Required

- (a) All interior shaftways regulated by this Section shall be enclosed in the same manner as required by the provisions of Sub-section 404-2 for interior stairways which are not required as means of egress, except that where there are no openings in the floors other than for the actual passage of pipes, and the space between such pipes and floor construction is sealed with incombustible material in accordance with Section 506-6(a), no enclosure shall be required.

(Note: Hoist-way doors may be considered self-closing when the elevator cab cannot be moved from the opening in question unless the doors are closed.)

- (b) Shaftway enclosures shall have no openings other than those necessary for the purpose of the shaftway; provided that in shaftways for elevators there shall be at least one doorway in every thirty feet of the height of such shaftway. This shall not be construed as prohibiting window openings to the exterior of the building.
- (c) Every shaftway extending through the roof, which is not open to the air at the top, shall be covered at the top with a skylight of at least 10 per cent of the area of the shaft in the top story and glazed with plain glass (preferably not greater than one-eighth inch in thickness); provided that the skylight herein required may be replaced by a window of plain glass, or an automatic vent, of equivalent area in the side of the shaft if the sill of such window or vent is not less than two feet above the roof.
- (d) A shaftway that does not extend through the roof shall have the top enclosed with a form of construction equal to the requirements for the walls of the shaftway in fire resistance rating.
- (e) A shaftway that does not extend to the bottom of the building shall be enclosed at its lowest point with a floor construction of the same type as that required for the lowest floor to or thorough which it passes; provided that, in any case, it shall have a fire resistance rating of not less than 3/4 hour.
- (f) Not more than three elevators shall be placed in one shaftway enclosure.

SECTION 509. PROTECTION OF DUCTS

509-1. Standard Systems Using Ducts

Ductwork used in air conditioning, warm air heating, air cooling and ventilating systems that conform to generally accepted minimum standards of safety shall be enclosed to the extent specified in such standards when passing between two or more stories; provided that such enclosures need not have a fire resistance rating in excess of 3/4

hour.

(Note: The Standards of the National Fire Protection Association (NFPA No. 90A) for the Installation of Air Conditioning and Ventilating Systems shall be deemed to conform to generally accepted minimum standards of safety.)

509-2. Non-standard Systems Using Ducts

Ductwork connecting two or more stories in air conditioning, warm air heating, air cooling and ventilating systems that do not conform to generally accepted minimum standards of safety shall be enclosed in the same manner and to the same extent as required by the provisions of Subsection 404-2 for interior stairways which are not required as means of egress.

ARTICLE 6

FIRE PROTECTION EQUIPMENT

SECTION 600. GENERAL

600-1. Design and Installation

All fire extinguishing equipment required by these Regulations, or for which credit is claimed under some provision of these Regulations, shall be designed and installed in accordance with good engineering practice. Compliance with the appropriate portions of the following Standards of the National Fire Protection Association shall be deemed prima facie evidence of compliance with this Article, in so far as they apply. Applicable Standards of the National Fire Protection Association, include:

"Sprinkler Systems, Installation" (NFPA No. 13)

"Standpipe and Hose Systems" (NFPA No. 14)

"Local Protective, Auxiliary Signaling, Remote Station, Proprietary Signaling Systems" (NFPA No. 72)

600-2. Materials

Materials, appliances, fittings and devices here after installed in fire extinguishing equipment required by this Article shall be of approved type and quality. Such materials, appliances, fittings and devices when currently approved by the Underwriter's Laboratories, Inc., and listed for the purposes intended shall be accepted as conforming to the requirements of this Section.

SECTION 601. SPRINKLER EQUIPMENTS

601-1. When Required

Approved automatic sprinkler equipments shall be installed and maintained as follows:

- (1) Buildings over two stories in height used for the manufacture or sale of combustible goods or merchandise and exceeding in area ten thousand square feet when of Fireproof or Semifireproof construction or seven thousand five hundred square feet when of other types of construction, shall be equipped with approved automatic sprinkler equipments or other approved automatic detection and extinguishing devices, when

occupied or used on any one floor by 150 or more persons.

- (2) Basements and other stories with the floor located below grade and having floor areas exceeding five thousand square feet, when used for the manufacture or sale of combustible goods or merchandise, shall be equipped with approved automatic sprinkler equipments or other approved automatic detection and extinguishing devices, when occupied or used by 75 or more persons.
- (3) Buildings and other structures which, because of their location, construction and contained hazards present unusual hazard to life may, on the written order of the Chief Administrative Officer, in those localities enforcing the Statewide Fire Prevention Code; or the Director of the Department of Housing and Community Development in other areas, be required to be equipped with an approved system of automatic detection and extinguishing devices.

Note: This section applies to buildings or structures constructed between April 12, 1949 and September 1, 1973 and in which there has been no change of occupancy or alterations since September 1, 1973.

601-2. Water Supplies

Required sprinkler systems shall have a least one approved automatic water supply of adequate pressure, capacity and reliability.

ARTICLE 7

ADDITIONAL PROVISIONS FOR SPECIAL OCCUPANCIES

SECTION 700. GENERAL

700-1. Purpose

The intent of this Article is to require supplemental or modified safeguards for life from fire in buildings which, due to their occupancy, present hazards not fully regulated by the preceding Articles. The requirements of the proceeding Articles shall apply to all buildings regulated by this Article except as modified by the provisions of this Article.

SECTION 701. PLACES OF ASSEMBLY

701-1. Application

Places of Assembly shall conform to the requirements of this Section.

(Note 1: See Section 703 for Outdoor Places of Assembly.)

(Note 2: See Section 1701 for Existing Places of Assembly.)

701-2. Seating Arrangements

- (a) Except in gymnasiums, restaurants, night clubs, churches and other places of religious assembly, individual seats shall be provided for the persons seated therein.

(Note: See Section 703 for Outdoor Places of Assembly.)

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- (b) The width of seat allotted for each person shall be not less than 18 inches.
- (c) Seats in rows, whether fixed or movable, shall, except in boxes or loges not exceeding 60 square feet in area, be not less than 30 inches apart from back to back measured in a horizontal direction.
- (d) When individual fixed seats are provided or required, the maximum number of seats in a row extending from one aisle to another shall be 16 and the maximum number of seats in a row extending from one aisle to a wall shall be 8, except that if the seatings are fixed chairs with self-rising seats so spaced that when the seats are raised there is an unobstructed space of not less than 18 inches horizontal projection between the rows of seats, and doorways leading directly to exit corridors are provided not more than 5 feet apart along the sides of the auditorium, the number of seats in a row shall be limited.
- (e) In Places of Assembly used regularly for theatrical, operatic or similar performances, or for the display of motion pictures, the seats, except in boxes or loges not exceeding 60 square feet in area, shall be fixed and shall not be separated by arms.
- (f) In boxes or loges not exceeding 60 square feet in area, and in other locations where loose chairs are permitted, not more than one chair shall be provided for each 6 square feet of floor space occupied.

701-3. Aisles

- (a) Every aisle shall lead to an exit door, or to a cross aisle; that is, an aisle running parallel with the seat rows and leading to an exit door.
- (b) No point of a cross aisle shall have a clear width of less than 44 inches.
- (c) No point of a longitudinal aisle shall have a clear width of less than 33 inches.
- (d) A longitudinal aisle accommodating more than 180 persons, and leading to exits or cross aisles in one direction only, shall be widened uniformly in the direction of normal exit travel. The widest portion of the aisle shall be not less than as computed by the formula:

$$W = \frac{22P}{120}$$

Where W equals the required width in inches and P equals the total number of persons to be accommodated by the aisle.

- (e) A longitudinal aisle accommodating more than 180 persons, and leading to exits or cross aisles in both directions shall conform to (d) above, or shall be of constant width. When of constant width, the width shall be not less than as computed by the formula:

$$W = 16.5 + \frac{11P}{120}$$

Where W equals the required width in inches and P equals the total number of persons to be accommodated by the aisle.

- (f) There shall be no steps in any main floor aisle, except at the rear of the main floor in a stadium type theatre. Steps in other aisle shall be the full width of the aisles. Stepped aisles shall not be construed as being stairways.
- (g) The maximum slope in aisles on the main floor shall be one in six for the first, second and third rows of seats

from the rear, one in seven for the fourth, fifth and sixth rows, one in eight for the seventh, eighth and ninth and one in ten for all remaining rows.

701-4. Galleries and Balconies

In galleries, balconies or other locations where seatings are arranged on platforms or successive tiers, and the height of the riser from one platform to another below and in front of it exceeds 21 inches, a substantial railing not less than 26 inches high shall be placed at the edge of the platform along the entire row of seats.

701-5. Stage

(a) *General.* No stage for theatrical or similar performances, including drama, opera, vaudeville and the like, which requires or uses a curtain, portable or fixed scenery, light, mechanical appliances, or any of them shall be placed in a building heretofore or hereafter erected except in conformity with the appropriate provisions of this Subsection.

(b) *Enclosure Walls.*

(1) The stage shall be separated from all other parts of the building by masonry walls having a fire resistance rating of not less than 2 hours and with openings protected as required in Paragraphs (c), (f) and (g) below; except that in motion picture theatres, school auditoriums, clubs and similar Places of Assembly where the stage or platform is without provisions for the vertical shifting of scenery, separation between the stage and the auditorium shall not be required. Required separating walls shall extend from the foundation to at least 4 feet above roof, except where the roof is of Fireproof or Semi-fireproof construction, in which case the walls shall be carried up tightly against the underside of the roof slab.

(2) There shall be no window opening in the enclosure walls of such a stage within 5 feet of a lot line other than a street line.

(c) *Proscenium Wall Openings.* Each opening other than the proscenium opening in the wall which separates the stage from the auditorium shall be protected by an approved self-closing fire door of a type approved for use in Fire Partitions.

(Note: The use of a door listed in the current List of Fire Protection Equipment, Underwriters' Laboratories, Inc. as satisfactory for protection of openings in Class B situations, properly installed, will be acceptable.)

(d) *Appurtenant Rooms*

(1) Dressing rooms, scene docks, property rooms, and other rooms or compartments appurtenant to the stage shall be separated from the auditorium and stage by Fire Partitions if these spaces are greater than 150 square feet in total area.

(2) In no case shall openings, other than the necessary doorways at the stage level, connect such rooms with the rest of the stage.

(e) *Stage and Dressing Room Exits.* The stage and dressing rooms shall be provided with one or more exit doors independent of the auditorium exit doors. Stage and dressing rooms or stage and auditorium may use the same exit passage, but the stage shall not be used as a part of the exitway from the dressing rooms nor the dressing rooms used as a part of the exitway from the stage. Except in school buildings, the stage may be used as part of the exitway from dressing rooms not exceeding 150 square feet in area.

(f) *Curtain.* The proscenium opening in the required separating partition between stage and auditorium shall be

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provided with an approved curtain for the protection of the opening in case of fire on the stage. When the proscenium opening is less than 60 feet in width, a curtain conforming to Chapter 41 of the 1949 Edition of the Uniform Building Code adopted by the Pacific Coast Building Officials Conference shall be deemed approved. For proscenium openings 60 feet in width or more, a curtain conforming to the requirements of Section 1201 of the 1949 Edition of the National Building Code recommended by the American Insurance Association shall be deemed approved. Curtains not conforming to the above standards shall be submitted to the fire authority having jurisdiction for approval prior to installation.

(Note: See Appendix A for Uniform Building Code curtain requirements. See Appendix B for National Building Code curtain requirements).

(g) *Ventilators.*

- (1) Over a stage requiring separation from the auditorium there shall be provided one or more smoke ventilators in addition to any air change, ventilating, or air conditioning system. The smoke ventilators shall be of metal or other incombustible material, equipped with movable shutters or sash, having an aggregate clear area of not less than 1/8 the area of the stage, constructed to open automatically and instantly in case of fire by approved heat-actuated devices. Suitable means for manual operation shall be provided in addition.
- (2) If glass is used in the construction, only wired glass shall be used in such parts where the breaking of glass would cause it to fall on the stage.
- (3) Any air change, ventilating or air conditioning system serving the auditorium shall be independent of any such system serving the stage area of stages requiring separation from the auditorium. The system shall be provided with a smoke or fire detecting system arranged to stop the operation of the air systems automatically in case of fire, except that this does not apply to systems used solely for exhausting air to the outside.

(h) *Lights.*

- (1) The troughs or frames for footlights and border lights shall be of incombustible materials.
 - (2) The suspension lines of border lights shall be on wire for at least 10 feet from the frames.
- (i) *Location of Electrical Switchboard.* The switchboard for the electrical equipment of the stage shall be so located that it will be accessible at all times, and will be protected from falling objects and from the storage or placing of stage equipment against it.

701-6. Extinguishing Equipment

- (a) Stages required to be separated from the auditorium shall be sprinklered under the roof of the stage, under the gridiron, the rigging loft and fly and tie galleries, under the stage, in dressing rooms, scene docks, workshops and storage rooms.
- (b) On stages required to be separated from the auditorium one approved 2 1/2-inch standpipe outlet shall be provided on each side of the stage. Each outlet shall be equipped with approved 1 1/2- inch hose and nozzle, the quantity of hose being sufficient to allow a stream to reach any portion of the stage section and in no case less than fifty feet.
- (c) One approved hand fire extinguisher suitable for extinguishing fires in ordinary materials shall be located on the stage at each side of the proscenium opening; a similar device shall be located accessible to but outside the

projection booth.

701-7. Places of Assembly Combined with Other Occupancies

No Place of Assembly having a stage as described in Paragraph 701-5(a), above, or which is used for the projection of motion pictures from nitrocellulose film, shall be located within or attached to a building of other than Group A occupancy unless:

- (1) It is separated from such occupancy by wall, ceiling and floor construction having a fire resistance rating of not less than two hours, or,
- (2) Such other occupancy is equipped with an approved automatic sprinkler system.

701-8. Flameproofing Requirements

- (a) Use of combustible material for decorative purposes shall be kept to a minimum in Places of Assembly, and all such material, including curtains, draperies, artificial trees or other decorative material, but not including floors, walls or ceilings, shall be rendered flameproof. Such flameproofing shall be tested at intervals of not more than 6 months, and shall be renewed when found necessary.

(Note: See Subsection 505-6 for wall and ceiling requirements.)

- (b) On a stage requiring separation from the auditorium all scenery, drapes and sets used on the stage shall be coated or treated to render them flameproof.

SECTION 702. MOTION PICTURE PROJECTION

702-1. Application

In any building where motion pictures are projected from nitrocellulose film, the projection equipment and the storage and handling of such film shall conform to the requirements of this Section.

702-2. Projection Booths and Equipment

- (a) Motion picture projectors using nitrocellulose film shall be operated or set up for operation only within an approved enclosure, not less than 8 feet wide, 10 feet deep and 8 feet high for one projection machine, and not less than 14 feet wide, 10 feet deep and 8 feet high for 2 machines.
- (b) The walls and ceilings of the enclosure shall be of a form of construction having a fire resistance rating of not less than one hour. Only incombustible materials shall be used in the construction of the enclosure walls. All joints shall be sufficiently tight to prevent the discharge of smoke.
- (c) The enclosure shall have at least two exit doors, each not less than 30 inches wide and 6 feet high, protected by approved self-closing fire doors.
- (d) Two openings for each motion picture projector shall be provided; one for the projectionist's view (observation port) shall be not larger than 200 square inches, and the other through which the picture is projected (projection port) shall be not larger than 120 square inches. Where separate stereoptican, spot or flood light machines are installed in the same enclosure with picture machines, not more than one opening for each such machine shall be provided for both the operator's view and for the projection of the light, but two or more machines may be operated through the same opening; such openings shall be as small as practicable and shall

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be capable of being protected by approved automatic shutters.

- (e) Each opening shall be provided with an approved gravity shutter set into guides not less than one inch at sides and bottom, and overlapping the top of the opening by not less than one inch when closed. Shutters shall be of not less than 10-gauge iron or its equivalent, or of 1/4-inch hard asbestos board. Guides shall be of not less than 10-gauge iron or its equivalent. Each shutter shall have a fusible link above it, and there shall also be one located over each upper projector magazine which, upon operating, will close all the shutters. There shall also be provided suitable means for manually closing all shutters simultaneously from a point within the projection room near each exit door. Shutters on openings not in use shall be kept closed.
- (f) All shelves, furniture and fixtures within the enclosure shall be constructed of incombustible material.
- (g) Projection machines shall be adequately supported and secured against overturning.

702-3. Ventilation

- (a) Ventilation shall be provided by one or more mechanical exhaust systems which shall draw air from each arc lamp housing and from one or more points near the ceiling. Systems shall exhaust to the outdoors either directly or through an incombustible flue used for no other purpose. Exhaust capacity shall be not less than 15 cubic feet nor more than 50 cubic feet per minute for each arc lamp plus 200 cubic feet per minute for the room itself. Systems shall be controlled from within the enclosure and have pilot lights to indicate operation. The exhaust system serving the projection room may be extended to cover rooms associated therewith, such as rewind rooms, but ventilation of these rooms shall not be connected in any way with ventilation or air conditioning systems serving other portions of the building.
- (b) Exhaust ducts shall be of incombustible material and shall either be kept one inch from combustible material or covered with 1/2 inch of incombustible heat insulating material.
- (c) Fresh air intakes other than those direct to the open air shall be protected by approved fire shutters arranged to operate automatically with the port shutters.

SECTION 703. OUTDOOR PLACES OF ASSEMBLY

703-1. Flameproofing of Tents

- (a) All tents occupied for public assembly shall be effectively flameproofed. In addition, combustible material for decorative purposes in all tents used as Places of Assembly shall conform to Paragraph 701-8(a), above.
- (b) Any official authorized to enforce these Regulations may require field tests of the required flameproofing, or he may accept the report of tests made by other administrative officials or by a recognized testing laboratory.

703-2. Other Outdoor Places of Assembly

Otherwise than in Paragraph 703-1, above, Outdoor Places of Assembly such as grandstands, stadiums, reviewing stands, etc. are not covered by these Regulations.

SECTION 704. GARAGES

704-1. Application

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The provisions of this Section apply to buildings occupied as garages.

704-2. Garages Combined with Other Occupancies

- (a) Except as permitted in paragraph (b) below, and for fire stations, no garage shall be located in or attached to a Group A, Group B, Group C or Group D building of other than industrial occupancy unless:
 - (1) The garage is separated from such other occupancies by Fire Partitions and by floors and ceilings of Fireproof or Semi-fireproof construction, or
 - (2) The garage area is equipped with an approved automatic sprinkler system.
- (b) A garage not exceeding 3,000 square feet in area and used only for storage of passenger automobiles or trucks of one ton or less capacity may be located in or attached to a Group A, Group B, Group C, or Group D building of other than industrial occupancy when:
 - (1) The garage area is separated from such occupancy by wall, floor and ceiling construction of at least 3/4hour fire resistance with all connecting openings protected by approved self-closing fire doors as specified for 3/4-hour Fire Resisting Partitions, or
 - (2) The garage area is equipped with an approved automatic sprinkler system.

704-3. Ventilation

All garages having one or more floors below grade shall have such stories continuously ventilated by a mechanical ventilating system with positive means for both the inlet and exhaust of at least one cubic foot of air per minute per square foot of floor area. Controls for the exhaust and inlet fans shall be close to the entrance door. The ventilating equipment may be combined with the heating system, provided that no air shall be recirculated.

704-4. Miscellaneous

Ramps connecting floors of garages need not be enclosed and protected in the various stories if the garage is protected with automatic sprinklers or if ramps are around an open air shaft extending through the roof, or if fifty percent of the wall area of two sides of the garage is open to the air at each story above the first floor or above the basement floor if a basement is provided. Suitable egress provisions shall be provided for persons from each floor.

**PART C - FIRE SAFETY REQUIREMENTS APPLICABLE TO
BUILDINGS CONSTRUCTED OR OCCUPIED PRIOR TO APRIL 12, 1949**

ARTICLE II - ADMINISTRATION

SECTION 1100. SCOPE (DELETED - SEE PART A)

ARTICLE 12 - DEFINITIONS

SECTION 1200. DEFINITIONS (SEE PART A)

ARTICLE 13 - CLASSIFICATION AND RESTRICTIONS

SECTION 1300. CLASSIFICATION OF OCCUPANCIES (SEE PART A)

ARTICLE 14

MEANS OF EGRESS

SECTION 1400. GENERAL

1400-1. Application of Article

Every building constructed prior to April 12, 1949, and in which there has been no change in occupancy since that date shall be provided with means of egress adequate for the safety of the occupants. Such means of egress shall not provide less safety to the occupants than that obtained by compliance with the provisions of this Section.

1400-2. Meaning of Terms

Terms uses in this Article shall have the same meanings as used in Article 4 unless clearly indicated otherwise.

SECTION 1401. ARRANGEMENT

1401-1. Discharge of Stairways

- (a) Exitways may discharge into the first story provided at least one Exitway in buildings over 4,000 square feet in area, and in buildings required to have more than one Exitway, shall discharge directly to the outside; and further provided that Exitways from Places of Assembly of which any part is located below grade shall also discharge directly to the outside. These requirements shall not apply to sprinklered buildings or to buildings of Fireproof or Semi-fireproof construction.
- (b) Exitways required to discharge directly to the outside may discharge into lobbies, foyers and similar spaces which connect directly to the outside when such spaces are of a size and character which do not constitute a serious life hazard in case of fire and when:
 - (1) They are constructed as Exit Hallways, or
 - (2) The adjoining rooms are sprinklered, or
 - (3) The adjoining rooms are cut off by 3/4 hour Fire Resisting Partitions.

SECTION 1402. NUMBER OF EXITWAYS

1402-1. From Stories

Every story shall have at least one Exitway and every story in which the number of occupants would require for new buildings more than 44 inches of exit width shall have at least two separate Exitways, except that in any building of Fireproof or Semi-Fireproof construction and in any building of other construction not over two stories in height, and in any sprinklered building, a single Exitway may be used provided it and the other floor openings are protected with enclosures having a fire resistance rating of not less than 3/4 hour, with all openings therein protected as specified for such enclosure in section 1404.4, and the distance to the Exitway conforms with the provisions of Section 1403-1.

1402-2. From Places of Assembly

- (a) Every room used as a Place of Assembly shall have at least two Exit Doorways.

- (b) Every Place of Assembly having a capacity greater than 200 persons shall have Exitways conforming as to number and width with paragraph 402-2(b) and Subsection 404-4. In applying Subsection 404-4, a stairway 40 inches wide may be accepted as two units.

1402-3. Residence Occupancy Located Above a Business Occupancy

Residence occupancies located above a business occupancy shall be provided with an Exitway in addition to any extending through the business area.

1402-4. School Buildings and Group B Buildings

Group B occupancies and school buildings shall be provided with at least two Exitways, except that neither this requirement nor any other requirements for multiple Exits shall apply to buildings occupied by persons under legal restraint.

(Note: The term "persons under legal restraint" applies only to persons who are of sound mind and are not bedridden.)

SECTION 1403. LOCATION OF EXITWAYS

1403-1. General

The number and location of Exitways shall be such that it will not be necessary to travel more than a distance of 125 feet from the door of any room, or from any point on a floor not divided into rooms, to reach the nearest Exitway, except that in office buildings, and in sprinklered buildings, and in buildings of Fireproof or Semi-fireproof construction, and in buildings equipped with an approved automatic fire alarm system, such travel distance may be increased 50%.

SECTION 1404. INTERIOR EXIT STAIRWAYS

1404-1. Minimum Requirements for Existing Interior Exit Stairways

- (a) The Interior Exit Stairway in one of the Exitways from any story or stories occupied by a total of six or more persons shall have treads not less than 7 inches in width, exclusive of nosing, and risers not higher than 9 1/2 inches nor more than 1.2 times the width of tread. Winder treads shall have a width of not less than 6 inches measured one foot from the narrow end. This paragraph shall not be construed as modifying the pitch and tread requirements for any new Interior Exit Stairway construction in existing buildings.
- (b) All Interior Exit Stairways shall be guarded at the sides by well secured balustrades or other acceptable guards wherever such are needed for the safety of users, and shall have a handrail on at least one side when the stairway exceeds 44 inches in width.

1404-2. Stairways Which Shall Be Protected

All interior stairways, including moving stairways, shall be enclosed in accordance with Section 1404-3 and 4 below, except that stairways as follows shall be exempt from such requirements.

- (1) Stairways not required to be enclosed in new construction.

(Note: See Section 404-2 (d)).

- (2) Stairways in school buildings used for instructional purposes; provided there are at least two Exitways located a reasonably remote distance apart on each floor which accommodates more than 10 persons.

- (3) Stairways in buildings of other than Group B occupancy, having only two stories or two stories and basement or cellar; provided there are at least two Exitways located a reasonably remote distance apart on each floor which accommodates more than 10 persons; and further provided that in Group A and C buildings, any basements or cellars shall be sprinklered or shall be cut off from the upper floors by enclosures at the head or foot of all basement or cellar stairs.
- (4) Stairways in buildings of other than Group B occupancy, not over four stories in height, where the stories above the second are used for storage only; provided there are at least two Exitways located a reasonably remote distance apart on each floor which accommodates more than 10 persons; and further provided that in Group A and C buildings, any basements or cellars shall be sprinklered or shall be cut off from the upper floors by enclosure at the head or foot of all basement or cellar stairs.
- (5) Stairways in sprinklered buildings.

1404-3. Required Protection for Stairways

- (a) Except as provided in Paragraphs (b) and (c) below, required enclosures for stairways shall have a fire resistance rating of not less than 3/4 hour.
- (b) In any building of Fireproof or Semi-fireproof construction, or of other construction not over 4 stories high, and in any sprinklered building, required enclosures, may be constructed of 3/4-inch gypsum plaster on metal lath on each side of studs, or equivalent, or of wired glass in metal framework. Gypsum plaster means a mixture of one part of neat gypsum to not more than two parts of sand by weight for the scratch coat, and one part of neat gypsum to not more than three parts of sand by weight for the brown coat.
- (c) In any building not over 4 stories high and in any sprinklered building, existing enclosures or parts thereof constructed of plaster on wood lath or equivalent, and in good repair, may be continued in use provided they are effectively fire stopped at the basement ceiling.
- (d) An enclosure required by this Section may include both elevators and stairs, but two or more separate stairways shall not be in a single enclosure.
- (e) In lieu of a full enclosure, stairways, including moving stairways, may be protected with an enclosure at the head or at the foot of each stairway from one floor to another. Stairways so protected will not be accepted as Exit Facilities. The construction of such enclosures shall be in accord with the requirements of Paragraphs (a), (b), and (c) above.

1404-4. Door and Window Openings in Required Enclosures for Stairways

- (a) All openings in required enclosures for stairways, except window openings to the exterior of the building, shall be protected with doors in accordance with the following Paragraphs. Movable transoms in such enclosures are prohibited.
- (b) Doors in such enclosures shall be metal doors or metal covered doors or solid wooden doors of the flush type of not less than 1 3/4-inch nominal thickness, except that existing doors in acceptable existing enclosures or parts thereof in any building not over 4 stories high and in any sprinklered building, may be any substantial wood doors having any wood panels not less than 1/2 inch thick covered on the side opposite the stair side with sheet steel not thinner than No. 28 U. S. gauge, securely attached with bolts or screws. Any glass in doors or fixed transoms shall be wired glass.
- (c) Doors in such enclosures, except doors opening into apartments, shall be self-closing; provided that

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doors protecting openings in required enclosures of stairways which are frequently used for other than emergency purposes; and doors protecting openings in required enclosures of stairways in sprinklered buildings may be arranged to close automatically in case of fire.

SECTION 1405. HORIZONTAL EXITS

1405.1 Construction of Horizontal Exits

A partition dividing a story and having a fire resistance rating of not less than 3/4 hour, containing no openings other than necessary doorways and properly protected duct openings, and with each doorway protected by a self-closing door at least equal in fire resistance to one and three-fourths inch nominal thickness flush type wooden door, shall be acceptable as a Horizontal Exit even though such partition is provided only in one story, provided an Exitway exits on each side of the partition.

SECTION 1406. EXTERIOR EXIT STAIRWAYS

1406-1. Existing Exterior Stairways

- (a) Exterior stairways heretofore constructed on buildings shall be accepted as Exit Facilities when conforming substantially to the requirements of Section 1406-1(b), below, for school buildings; theatres and Group B buildings, and section 1406-1(c), below, for other buildings.
- (b) Exterior Exit Stairways hereafter constructed on school buildings, theatres and Group B buildings shall conform to the requirements of Section 407.
- (c) Exterior Exit Stairways hereafter constructed on buildings other than school buildings, theatres and Group B buildings shall conform to the following minimum requirements:
 - (1) They shall be constructed of incombustible materials, except on buildings of Frame construction or on buildings of Ordinary construction not over three stories in height.
 - (2) They shall be constructed with stairs not less than 22 inches wide between rails, having risers not higher than 9 inches and having treads not narrower than 6 inches exclusive of nosing. Ladders may be used from the upper landing to the roof.
 - (3) Unless the stair leading to the ground at the foot of the Stairway is permanently fixed, it shall be constructed with counter balancing devices that permit it to be easily and quickly released and placed in rigid position for use.
 - (4) They shall be of sufficient strength to sustain a live load of 100 pounds per square foot or loads of 300 pounds spaced 3 feet center to center, each bearing on an area one foot wide by the depth of the tread, whichever will produce the greater stress.
 - (5) They shall be so placed that they can be readily and safely reached by the occupants of the building.
 - (6) They shall be so located that safe egress will be provided at the foot either directly or through an enclosed exitway to a street or to an open space that communicates with a street.
 - (7) They shall be wide enough to insure that the movements of those using them will not be retarded.
 - (8) All balconies and stairs shall be provided with substantial guard railings at least 4 feet high, without any

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openings greater than 8 inches in width, except that for industrial buildings, Group E buildings and buildings not over 5 stories high, triple guard rails equally spaced, with top rail not less than 3 1/2 feet high may be used.

- (9) Except on buildings not exceeding three stories in height and on buildings of Frame construction, all doors opening on or within 10 feet of the Exterior Exit Stairway shall be approved self-closing fire doors and any windows opening on or within 10 feet of the exterior stairway shall be approved fire windows; provided that where occupancy inside these windows or doors is such as to present a light fire hazard or is sprinklered, or the overall exit arrangements are such that this protection is of minor importance, this requirement may be waived by the fire official having jurisdiction.

SECTION 1407. SLIDE TYPE FIRE ESCAPES

1407-1. General

Slide Type Fire Escapes used as Exit Facilities shall conform to Section 409.

SECTION 1408. EXIT HALLWAYS

1408-1. General

Exit Hallways connecting Exit Stairways to the outside shall be protected in the same manner as the Exit Stairways served thereby.

SECTION 1409. EXIT DOORWAYS

1409-1. Hanging of Doors

Doors in required Exitways from Places of Assembly and from stores having a sales floor area in excess of 2,500 square feet shall be hung to swing opening the direction exit travel.

1409-2. Revolving Doors

- (a) Revolving doors shall not be used at Exit Doorways in theaters or Group B buildings nor in buildings occupied as stores where more than 75 persons are likely to be congregated, unless there are also Exit Doorways of the swinging type, having an aggregate width of at least 50 percent of required width of Exit Doorways and there is at least one swinging door adjacent to each revolving door. Revolving doors shall not be used in Exitways from school buildings.
- (b) Revolving doors shall not be used in Exitways from Places of Assembly except under one or more of the following conditions:
- (1) Where the Place of Assembly is in a building of Fireproof or Semi-fireproof construction.
 - (2) Where the Place of Assembly and the remainder of the building are protected by an approved automatic sprinkler system.
 - (3) Where the Place of Assembly has a capacity of not over 200 persons and has an Exit Doorway of the swinging type adjacent to each revolving door.

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- (4) Where a place of refuge is provided for all occupants of the Place of Assembly in portions of the building between the Exit Doorways of the Place of Assembly and the revolving doors, and there is an Exit Doorway of the swinging type adjacent to each revolving door. Such place of refuge may consist of hallways, stairways, or areas separated from the Place of Assembly by Fire Walls or Fire Partitions.

(c) Revolving doors shall be used in Exitways only at points in first story above grade.

1409-3. Panic Hardware

When fastening devices are installed on the Exit Doors of buildings or spaces in the classifications listed below, they shall be latches (fire exit bolts) which release when pressure of not to exceed 15 pounds is applied to the releasing devices in the direction of exit travel. Such releasing devices may be bars or panels extending not less than two-thirds of the width of the (d) floor and placed at heights suitable for the service required usually not less than 30, nor more than 44 inches above the floor.

Schools having more than 4 classrooms.

Places of Assembly have a capacity in excess of 500 persons, except Churches.

Places of Assembly in school buildings have a capacity in excess of 200 persons.

1409-4. Other Hardware

In buildings in which the occupants are involuntarily detained and in which the Exit Doors must be kept locked, adequate arrangements shall be made to insure prompt evacuation of the occupants in case of fire.

SECTION 1410. MAINTENANCE, MARKING AND LIGHTING

1410-1. Physical Condition

Exitways shall at all times be maintained in good, safe, usable condition, and shall at all times be kept free and clear of obstructions and shall be readily accessible.

1410-2. Exit Signs

- (a) In rooms and stories accommodating more than 100 persons, Exit Doorways shall be plainly marked by approved exit signs, sufficiently illuminated when the floor area is occupied to be readily distinguished.
- (b) Enclosed interior stairways and exterior stairways, which are provided in or for a building in addition to the required stairways and which do not conform to the provisions of this Article for required stairways, shall be marked in a suitable manner to indicate that they are not approved exits, but may be marked to indicate the extent to which they can be used as means of egress.
- (c) When the Exitways are not visible from all locations in public corridors directional signs shall be placed on walls or otherwise displayed in conspicuous locations to direct occupants thereto.

1410-3. Lighting

- (a) Required Exitways, including exterior open spaces to which they lead which give safe access to a street, shall be kept adequately lighted at all times that the building served thereby is occupied.

- (b) Electrical lighting shall be provided wherever natural lighting is inadequate.
- (c) Adequate lighting shall be provided in Places of Assembly during occupancy, except during a performance requiring dimming or darkness. During the showing of motion pictures, where it is the practice for patrons to proceed to and from seats at any time, such light intensity shall not be less than 1/20 of a foot candle at every point thirty inches above the floor.
- (d) Required lights that are likely to be or become dangerous in any way to occupants shall be protected by suitable wire netting or other efficient means against breakage and other hazards.
- (e) In Group A buildings and Group B buildings the artificial lighting required by this Section shall be by electricity so arranged and supplied that the interruption of service on any other circuit inside the building will not result in interruption of the required lighting.

(Note: This does not necessarily require a second source of electrical energy for the building.)

1410-4. Occupancy Prohibited

No part of an Exitway shall be used for any purpose which will interfere with its value as an Exitway.

ARTICLE 15

FIRE SAFETY FEATURES OF CONSTRUCTION

SECTION 1500. MASONRY WALLS

1500-1. General

Required masonry walls which are not otherwise regulated by this Article shall meet generally recognized minimum standards of safety. Such walls when conforming to the requirements of the current edition of any of the standards or codes listed below shall be accepted.

- (a) National Building Code recommended by American Insurance Association.
- (b) BOCA Basic Building Code recommended by Building Officials and Code Administrators International.
- (c) Southern Building Code recommended by Southern Building Code Congress.
- (d) Uniform Building Code recommended by International Conference of Building Officials.
- (e) Any other standard or code which is acceptable to the authority having jurisdiction.

SECTION 1501. FIRE WALLS

1501-1. Application

Fire Walls for which credit is claimed under any provision of these Regulations shall conform to the requirements of this Section.

1501-2. Construction

Fire Walls shall be of approved masonry or reinforced concrete.

1501-3. Fire Resistance

Fire Walls for any combination of occupancy and construction shall have a fire resistance rating adequate to restrict the spread of fire from one side to the other, and shall have a fire resistance rating of at least 4 hours.

(Note: See definition of "Fire Division".)

1501-4. Termination at Top

The Fire Wall shall extend at least three feet above the roof of the building which it is to protect except where the roof is of Fireproof or Semi-fireproof construction; in which case the Fire Wall shall be carried up tightly against the underside of the roof slab.

1501-5. Openings

- (a) Except in sprinklered buildings, no openings in a Fire Wall shall exceed 120 square feet in area, with no dimension greater than 12 feet, and the aggregate width of all openings at any level shall not exceed 25 percent of the length of the wall.
- (b) Every opening in a required Fire Wall shall be protected on each side of the wall with an automatic fire door, approved for such opening, except that when an opening in a Fire Wall serves as a Horizontal Exit, one of the fire doors at each such opening may be replaced by a fire door approved for openings in Fire Partitions. Steel plate security doors may be substituted for approved Fire Doors in applications involving the protection of buildings used or occupied by persons under legal restraint.

(Note: The term, "persons under legal restraint" applies only to persons who are of sound mind and are not bedridden.)

SECTION 1502. FIRE PARTITIONS

1502-1. Construction

- (a) Fire Partitions shall have a fire resistance rating of at least two hours. They shall be constructed of approved masonry or reinforced concrete, or other approved form of construction of incombustible materials.
- (b) Fire Partitions shall be supported in each story on construction having a fire resistance rating of not less than two hours; provided that when they also are load bearing the supporting construction shall have a fire resistance rating of not less than three hours in case the building is of Fireproof construction.
- (c) The maximum unsupported height of a Fire Portion shall not exceed thirty times its total thickness unless suitably reinforced and anchored at floor and ceiling, or unless substantially secured to vertical supports at intervals of not over thirty times the thickness.
- (d) Fire Partitions shall be deemed continuous, even though the several parts are not directly over one another in successive stories, if the intervening parts of the floors at the levels where offsets occur are unpierced and of Fireproof construction or Semi-fireproof construction and all parts not supported directly on the foundations are carried on Fireproof construction.

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- (e) Chases or recesses that would reduce the thickness below the required minimum shall not be built nor cut in Fire Partitions.

1502-2. Openings

- (a) Fire Partitions shall have no openings other than required door openings, or properly protected duct openings.
- (b) Openings in required Fire Partitions shall be equipped with approved automatic-closing or self-closing fire doors. A door listed in the current edition of the Underwriters Laboratories, Inc., "List of Inspected Fire Protection Equipment and Materials" as being approved for Class B situations shall be deemed satisfactory.

SECTION 1503. 3/4 HOUR FIRE RESISTING PARTITIONS

1503-1. Construction

- (a) 3/4 hour Fire Resisting Partitions shall have a fire resistance rating of at least 3/4 hour. They shall be of approved form of construction.
- (b) Such partitions may be load-bearing only where the construction is approved for that purpose.
- (c) Such partitions shall be well secured.

1503-2. Openings

- (a) Required 3/4 hour Fire Resisting Partitions shall have no openings other than required door openings, or properly protected duct openings.
- (b) Openings in required 3/4 hour Fire Resisting Partitions shall be equipped with substantial metal or metal covered doors or solid wooden doors of the flush type of nominal thickness not less than 1 3/4 inches. Doors shall be self-closing except as provided in Paragraph 1401(c).

SECTION 1504.0 FIRE RETARDANT CEILINGS

1504-1. Construction

- (a) Fire Retardant Ceilings shall be constructed in accordance with one of the followings specifications:
 - (1) Any ceiling assembly described as a "fire retardant ceiling" in a nationally promulgated standard in effect at or after the time of building construction.
 - (2) Not less than 1/2 inch plaster consisting of one part gypsum to not over two parts sand on 3/8 inch perforated gypsum lath, attached to wood supports by nails not smaller than one and one-eighth inches long with 3/8 inch diameter heads, and with three-inch strips of expanded metal lath nailed over all joints in the gypsum lath with nails not smaller than 1 3/4 inches long with 1/2 inch heads.
 - (3) Any combination floor and ceiling construction having a fire resistance rating of 3/4 hour or more.

SECTION 1505. MISCELLANEOUS REQUIREMENTS

1505-1. Wood Construction Around Fireplaces, Flues and Chimneys

- (a) In buildings where alterations involve the specified items, the provisions of this subsection shall apply.
- (b) All wooden beams and joists shall be trimmed away from flues and chimneys. Headers, beams and joists shall be not less than two inches from the outside face of a chimney or from masonry enclosing a flue. Headers supporting trimmer arches or fireplaces shall be not less than six inches from the inside face of the nearest flue.
- (c) No woodwork shall be placed within four inches of the back face of a fireplace; nor shall combustible lathing, furring or studding be placed against a chimney; but this shall not prevent plastering directly on the masonry or on metal lath and furring.
- (d) No wooden mantel or other woodwork shall be hereafter placed within eight inches of either side nor within twelve inches of the top of a fireplace opening.
- (e) All spaces between the masonry or chimneys or flues and wooden joist, beams or headers shall be firestopped by filling with incombustible materials.
- (f) All spaces back of combustible mantels shall be filled with incombustible materials.

1505-2. Partitions in Multifamily Houses

In every building altered to be occupied as a multifamily house, unless sprinklered, partitions separating apartments, or apartments from public hallways, or apartments from other occupancies shall be 3/4 hour Fire Resisting Partitions.

1505-3. Transoms

In buildings converted to use as sleeping quarters, transoms or similar openings shall not be installed in walls or partitions separating public hallways from apartments and sleeping rooms.

1505-4. Floors in Multifamily Houses

In every building altered to be occupied as a multifamily house, the floor construction immediately above those parts of the building occupied for business purposes shall have a fire resistance rating of not less than 3/4 hour, unless such parts are sprinklered.

1505-5. Cellar Ceilings

In buildings of Ordinary construction or Frame construction, except one story buildings, altered to change their occupancy classification, the ceilings over cellars shall conform to the requirements for Fire Retardant Ceilings.

SECTION 1506. FIRESTOPPING

1506-1. Application

In buildings where alterations involve the specified items, the provisions of this Section shall apply.

1506-2. General

Firestopping shall be provided in buildings of Ordinary and Frame construction to cut off all concealed draft

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openings and form effectual fire barriers. Such firestopping shall be of wood two inches in nominal thickness, or of approved incombustible materials.

1506-3. Furred Walls

When the walls are furred, the furred space shall be firestopped at floors, ceilings and roofs.

1506-4. Partitions

- (a) Interior stud partitions shall be firestopped at the floors and ceilings of each story by a two inch, nominal dimension, plate, the width of the stud, or the equivalent.
- (b) When sliding doors are pocketed in partitions, such pockets shall be completely firestopped at the top, bottom and ends.

1506-5. Exterior Walls

Exterior walls of frame construction shall be properly firestopped at each floor level, at the top story ceiling level, at the roof level in the case of flat roofs, and at the foot of roof rafters in the case of sloping roofs.

1506-6. Wainscoting and Paneling

Combustible wainscoting or paneling attached to plastered walls and partitions shall be firestopped at floor and ceiling, or at top and bottom.

1506-7. Pipes, Shafting, Belts, Conveyors and Ducts

- (a) All openings around conduits, pipes or ducts shall be filled with approved incombustible material or shall be closed off by fitting incombustible material at the ceiling and floor line or on each side of the wall.
- (b) All openings for belts, chutes and conveyors shall be provided with approved slotted doors, or be otherwise suitably protected.

SECTION 1507. PROTECTION OF OPENINGS IN EXTERIOR WALLS

1507-1. Buildings Affected

- (a) Openings in exterior walls of buildings listed below shall be protected as required by this Section:
 - (1) Buildings over 70 feet in height to the floor of the highest story, or
 - (2) Buildings over one story in height whose occupants are bedridden, or under legal restraint, or who, because of age or mental or physical infirmities, would ordinarily be unable to make quick exit in case of emergency, or
 - (3) Portions of buildings used as Place of Assembly.
- (b) Exceptions: Churches, Group E buildings and buildings of Frame and Unprotected Metal construction are exempt from the requirements of this Section.

1507-2. Openings Affected

- (a) Approved fire windows or other approved protectives shall be installed in openings in exterior walls of buildings required to be protected when:
- (1) They are less than 30 feet in a direct line from an opening in the wall of a building of Fireproof, Semifireproof, Heavy Timber, Ordinary or Noncombustible construction, or
 - (2) They are less than 30 feet in a direct line from a building of Frame or Unprotected Metal construction, or
 - (3) They are less than 30 feet distant from a roof of combustible construction or from an opening in a roof of any construction.
- (b) Exceptions: Such protection is not required when:
- (1) The opening in questions and the opening against which it is to be protected are in walls in the same plane and are facing in the same direction, or
 - (2) The opening in question is a show window which does not extend above the first full story above grade.
- (c) For the purposes of this Section, any space within thirty feet devoted to use as a lumber yard or for the storage of comparable quantities of combustible material shall be considered as an exposing building.

1507-3. Fire Shutters

When equipped with fire shutters, at least one in every three openings facing a street in each story shall have such shutters arranged to be readily opened from the outside. Distinguishing marks shall be provided on these shutters.

1507-4. Exit Openings

When fire doors or fire shutters are used on openings to Exitways they shall be so arranged as not to obstruct such Exitways.

1507-5. Wired Glass

For the glazing of fire doors, when permitted, or of fire windows, only wired glass shall be used which shall be not less than one-quarter inch thick.

1507-6. Closing of Protectives

Non-automatic fire doors, fire shutters and fire windows on exterior openings, when not required to be open, shall be kept closed by the occupant or occupants of the building having the use or control of them.

1507-7. Installation and Approval

Fire doors, fire windows, fire shutters, window sprinklers and other protectives required by this section shall be of approved types and installed in an approved manner. Devices enumerated in the "List of Inspected Fire Protection Equipment and Materials" issued by Underwriter Laboratories, Inc., as revised from time to time, and listed for the purposes intended, if installed in accordance with the provisions of the Standard of the National Fire Protection Association (N.F.P.A.-80 Standard For Fire Doors and Windows) shall be deemed to be approved within the meaning of this Section.

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SECTION 1508. PROTECTION OF SHAFTWAYS

1508-1. Application

The provisions of this Subsection shall apply to all existing shaftways used for ventilation, light, elevator, pipes, or other purposes, except stairways, moving stairways, ducts, incinerator chutes and flues and shaftways in Frame Buildings and in Group C buildings of Ordinary construction extending from the ceiling of the top story to and above the roof.

1508-2. Protection Required

All interior shaftways shall be protected in the same manner and to the same extent as prescribed in Section 1404-2, 3 and 4 for interior stairways; provided that doors may be automatic closing if maintaining them self-closing is impractical; and further provided that in lieu of an enclosure, floor openings for elevators, chutes, or conveyors in factories and industrial occupancies may be protected by substantial guards or gates with approved draft tight trap doors at each floor opening. Such trap doors shall be constructed to form a substantial floor surface when closed, and those for elevators shall be arranged to open and close by action of the elevator in ascending or descending. The trap doors shall be kept closed when the shaftway is not in use.

(Note: Hoistway doors may be considered self-closing when the elevator cab cannot be moved from the opening in question unless the doors are closed.)

ARTICLE 16

FIRE PROTECTION EQUIPMENT

SECTION 1600. GENERAL

1600-1. Design and Installation

All fire extinguishing equipment required by these Regulations, or for which credit is claimed under some provision of these Regulations, shall be designed and installed in accordance with good engineering practice. Compliance with the appropriate portions of the following Standards of the National Fire Protection Association shall be deemed prima facie evidence of compliance with this Article, in so far as they apply. Applicable Standards of the National Fire Protection Association, include:

"Sprinkler System Installation" (NFPA No. 13)

"Standpipe and Hose Systems" (NFPA No. 14)

"Local Protective, Auxiliary Signaling, Remote Station, Proprietary Signaling Systems" (NFPA No. 72)

1600-2. Materials

Materials, appliances, fittings and devices hereafter installed in fire extinguishing equipment required by this Article shall be of approved type and quality. Such materials, appliances, fittings and devices when currently approved by Underwriter's Laboratories, Inc., and listed for the purposes intended shall be accepted as conforming to the requirements of this Section.

SECTION 1601. SPRINKLER AND FIRE DETECTION EQUIPMENT

1601-1. When Required

When a building or structure, due to its construction, occupancy, or other factors and due to the lack of an automatic sprinkler system or other approved automatic detection and extinguishing devices presents a condition excessively hazardous to life from fire, such building or structure shall be equipped with an approved automatic sprinkler system or other approved automatic detection and extinguishing devices on written order of the Chief Administrative Officer, in those localities enforcing the Statewide Fire Prevention Code; or the Director of the Department of Housing and Community Development in other localities.

Note: This section applies only to buildings and structures constructed prior to April 12, 1949 and which have not been altered or changed use group since September 1, 1973.

1601-2. Water Supplies

Required sprinkler systems shall have at least one approved automatic water supply of adequate pressure, capacity and reliability.

ARTICLE 17

ADDITIONAL PROVISIONS FOR SPECIAL OCCUPANCIES

SECTION 1700. GENERAL

1700-1. Purpose

The intent of this Article is to require supplemental or modified safeguards for life from fire in buildings which, due to their occupancy, present hazards not fully regulated by the preceding Articles. The requirements of Article 11, 12, 13, 14, 15 and 16 shall apply to all buildings regulated by this Article except as modified by the provisions of this Article.

SECTION 1701. PLACES OF ASSEMBLY

1701-1. Application

Existing Places of Assembly in buildings shall conform to the requirements of this Section. No new Place of Assembly shall be established in a building unless it conforms to Section 701 and Section 702.

(Note: See Section 703 for Outdoor Places of Assembly.)

1701-2. Seating Arrangements

- (a) Except in gymnasiums, restaurants, night clubs, churches and other places of religious assembly, individual seats shall be provided for the persons seated therein.
- (b) The width of seat allotted for each person shall be not less than 18 inches.
- (c) Seats in rows, whether fixed or movable, shall, except in boxes or loges not exceeding 60 square feet in area, be not less than 30 inches apart from back to back measured in a horizontal direction.
- (d) When individual fixed seats are provided or required, the maximum number of seats in a row extending from one aisle to another shall be 16 and the maximum number of seats in a row extending from one aisle to a wall shall be 8, except that if the seatings are fixed chairs with self-rising seats so spaced that when the seats

are raised there is an unobstructed space of not less than 18 inches horizontal projection between the rows of seats, and doorways leading directly to exit corridors are provided not more than 5 feet apart along the sides of the auditorium, the number of seats in a row shall not be limited.

- (e) In Places of Assembly used regularly for theatrical, operatic or similar performances, or for the display of motion pictures, the seats, except in boxes or loges not exceeding 60 square feet in area, shall be fixed and shall be separated by arms.
- (f) In boxes or loges not exceeding 60 square feet in area, and in other locations where loose chairs are permitted, not more than one chair shall be provided for each 6 square feet of floor space occupied.

1701-3. Aisles

- (a) Every aisle shall lead to an exit door, or to a cross aisle; that is, an aisle running parallel with the seat rows and leading to an exit door.
- (b) No point of a cross aisle shall have a clear width of less than 33 inches.
- (c) No point of a longitudinal aisle shall have a clear width of less than 30 inches, except that the clear width may be 28 inches when there are seats on only one side of the aisle.
- (d) A longitudinal aisle accommodating more than 220 persons and leading to exits or cross aisles in one direction only, shall be widened uniformly in the direction of normal exit travel. The widest portion of the aisle shall be not less than as computed by the formula:

$$W = \frac{22P}{160}$$

Where W equals the required width in inches and P equals the total number of persons to be accommodated by the aisle.

- (e) A longitudinal aisle accommodating more than 200 persons, and leading to exits or cross aisles in both directions shall conform to (d) above, or shall be of constant width. When of constant width, the width shall be not less than as computed by the formula:

$$W = 15 + \frac{11P}{160}$$

Where W equals the required width in inches and P equals the total number of persons to be accommodated by the aisle.

- (f) There shall be no steps in any main floor aisle, except at the rear of the main floor in a stadium type theatre. Steps in other aisles shall be the full width of the aisles. Stepped aisles shall not be construed as being stairways.

1701-4. Galleries and Balconies

In galleries, balconies or other locations where seatings are arranged on platforms or successive tiers, and the height of the riser from one platform to another below and in front of it exceeds 21 inches, a substantial railing not less than 26 inches high shall be placed at the edge of the platform along the entire row of seats.

1701.5. Stage

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- (a) **General.** No stage for theatrical or similar performances, including drama, opera, vaudeville and the like, which requires or uses a curtain, portable or fixed scenery, light, mechanical appliances, or any of them shall be placed in a building except in conformity with the appropriate provisions of this subsection.
- (b) **Enclosure Walls.** the stage shall be separated from all other parts of the building by masonry walls having a fire resistance rating of not less than 2 hours and with openings protected as required in Paragraphs (c) and (d) below; except that in motion picture theatres, school auditoriums, clubs and similar Places of Assembly where the stage or platform is without provisions for the vertical shifting of scenery, separation between the stage and the auditorium shall not be required. Required separating walls shall extend from the foundation to at least 4 feet above the roof, except where the roof is of Fireproof or Semi-fireproof construction, in which case the walls shall be carried up tightly against the underside of the roof slab.
- (c) **Proscenium Wall Openings.** Each opening other than the proscenium opening in the wall which separated the stage from the auditorium shall be protected by an approved self-closing fire door of a type approved for use in Fire Partitions as provided in Section 1602.2.

(Note: The use of a door listed in the current List of Fire Protection Equipment, Underwriter's Laboratories, Inc. as satisfactory for protection of openings in Class B situations, properly installed, will be acceptable).

- (d) **Curtain.** The proscenium opening in the required separating partition between stage and auditorium shall be provided with an approved curtain for the protection of the opening in case of fire on the stage. When the proscenium opening is less than 60 feet in width, a curtain conforming to Chapter 41 of the 1949 Edition of the Uniform Building Code adopted by the Pacific Coast Building Officials Conference shall be deemed approved. For proscenium openings 60 feet in width or more, a curtain conforming to the requirements of Section 1201 of the 1949 Edition of the National Building Code recommended by the American Insurance Association shall be deemed approved. Curtains not conforming to the above standards shall be submitted to the authority having jurisdiction for approval prior to installation.

(Note: See Appendix A for Uniform Building Code curtain requirements. See Appendix B for National Building Code curtain requirements.)

- (e) **Location of Electrical Switchboard.** The switchboard for the electrical equipment of the stage shall be so located that it will be accessible at all times, and will be protected from falling objects and from the storage or placing of stage equipment against it.

1701-6. Extinguishing Equipment

- (a) Stages required to be separated from the auditorium shall be sprinklered under the roof of the stage, under the gridiron, the rigging loft and fly and tie galleries, under the stage, in dressing rooms, scene docks, workshops and storage rooms.
- (b) On stages required to be separated from the auditorium one approved 2 1/2-inch standpipe outlet shall be provided on each side of the stage. Each outlet shall be equipped with approved 1 1/2-inch hose and nozzle, the quantity of hose being sufficient to allow a stream to reach any portion of the stage section and in no case less than fifty feet.
- (c) One approved hand fire extinguisher suitable for extinguishing fires in ordinary materials shall be located on the stage at each side of the proscenium opening; a similar device shall be located accessible to but outside the projection booth.

1701-7. Places of Assembly Combined with Other Occupancies

No Place of Assembly having a stage as described in Paragraph 1701-5 (a), above, or which is used for the projection of motion pictures from nitrocellulose film, shall be continued in use within or attached to a building of other than Group A occupancy unless:

- (1) It is separated from such occupancy by wall, ceiling and floor construction having a fire resistance rating of not less than two hours, or,
- (2) Such other occupancy is equipped with an approved automatic sprinkler system.

1701-8. Flameproofing Requirements

- (a) Use of combustible material for decorative purposes shall be kept to a minimum in Places of Assembly, and all such material, including curtains, draperies, artificial trees or other decorative materials, but not including floors, walls or ceiling, shall be rendered flameproof. Such flameproofing shall be tested at intervals of not more than 6 months, and shall be renewed when found necessary.
- (b) On a stage requiring separation from the auditorium all scenery, drapes and sets used on the stage shall be coated or treated to render them flameproof.

SECTION 1702. MOTION PICTURE PROJECTION

1702-1. Application

In any building where motion pictures are projected from nitrocellulose film, the projection equipment and the storage and handling of such film shall conform to the requirements of this section.

1702-2. Projection Booths and Equipment

- (a) Motion picture projectors using nitrocellulose film shall be operated or set up for operation only within an approved enclosure, not less than 8 feet wide, 10 feet deep and 8 feet high for one projection machine, and not less than 14 feet wide, 10 feet deep and 8 feet high for 2 machines.
- (b) The walls and ceilings of the enclosure shall be of a form of construction having a fire resistance rating of not less than one hour. Only incombustible materials shall be used in the construction of the enclosure walls. All joints shall be sufficiently tight to prevent the discharge of smoke.
- (c) The enclosure shall have at least two exit doors, each not less than 30 inches wide and 6 feet high, protected by approved self-closing fire doors.
- (d) Two openings for each motion picture projector shall be provided; one for the projectionist's view (observation port) shall be not larger than 200 square inches, and the other through which the picture is projected (projection port) shall be not larger than 120 square inches. Where separate stereoptican, spot or flood light machines are installed in the same enclosure with picture machines, not more than one opening for each such machine shall be provided for both the operator's view and for the projection of the light, but two or more machines may be operated through the same opening; such openings shall be as small as practicable and shall be capable of being protected by approved automatic shutters.
- (e) Each opening shall be provided with an approved gravity shutter set into guides not less than one inch at sides and bottom, and overlapping the top of the opening by not less than one inch when closed. Shutters shall be of not less than 10-gauge iron or its equivalent, or of 1/4 inch hard asbestos board. Guides shall be of not less than 10 gauge iron or its equivalent. Each shutter shall have a fusible link above it, and there

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shall also be one located over each upper projector magazine which, upon operating will close all the shutters. There shall also be provided suitable means for manually closing all shutters simultaneously from a point within the projection room near each exit door. Shutters on openings not in use shall be kept closed.

- (f) All shelves, furniture and fixtures within the enclosure shall be constructed of incombustible material.
- (g) Projection machines shall be adequately supported and secured against overturning.
- (h) Existing enclosures for motion pictures projectors may be continued in use if of a general construction such that the gases of combustion will not be liberated into the seating area; in which case the above requirements respecting size of enclosure and size and number of door openings thereto may be disregarded.

1702-3. Ventilation

- (a) Ventilation shall be provided by one or more mechanical exhaust systems which shall draw air from each arc lamp housing and from one or more points near the ceiling. Systems shall exhaust to the outdoors either directly or through an incombustible flue used for no other purpose. Exhaust capacity shall be not less than 15 cubic feet nor more than 50 cubic feet per minute for each arc lamp plus 200 cubic feet per minute for the room itself. Systems shall be controlled from within the enclosure and have pilot lights to indicate operation. The exhaust system serving the projection room may be extended to cover rooms associated therewith, such as rewind rooms, but ventilation of these rooms shall not be connected in any way with ventilation or air conditioning systems serving other portions of the building.
- (b) Exhaust ducts shall be of incombustible material and shall either be kept one inch from combustible material or covered with 1/2 inch of incombustible heat insulating material.
- (c) Fresh air intakes other than those direct to the open air shall be protected by approved fire shutters arranged to operate automatically with the port shutters.

SECTION 1703. GARAGES

1703-1. Application

The provisions of this Section apply to buildings occupied as garages.

1703-2. Garages Combined with Other Occupancies

- (a) Except as permitted in paragraph (b) below, and for fire stations, no garage shall be located in or attached to a Group A, Group B, Group C, or Group D building of other than industrial occupancy unless:
 - (1) The garage is separated from such other occupancies by Fire Partitions and by floors and ceilings of Fireproof or Semi-fireproof construction, or
 - (2) The garage area is equipped with an approved automatic sprinkler system.
- (b) A garage not exceeding 3,000 square feet in area and used only for storage of passenger automobiles or trucks of one ton or less capacity may be located in or attached to a Group A, Group B, Group C, or Group D building of other than industrial occupancy when:
 - (1) The garage area is separated from such occupancy by wall, floor and ceiling construction of at least 3/4 hour fire resistance with all connecting openings protected by approved self-closing fire doors as specified for 3/4 hour Fire Resisting Partitions, or

- (2) The garage area is equipped with an approved automatic sprinkler system.

1703-3. Ventilation

All garages having one or more floors below grade shall have such stories continuously ventilated by a mechanical ventilating system with positive means for both the inlet and exhaust of at least one cubic foot of air per minute per square foot of floor area. Controls for the exhaust and inlet fans shall be close to the entrance may be combined with the heating system, provided that no air shall be recirculated.

1703-4. Miscellaneous

Ramps connecting floors of garages need not be enclosed and protected in the various stories if the garage is protected with automatic sprinklers or if ramps are around an open air shaft extending through the roof, or if fifty percent of the wall area of two sides of the garage is open to the air at each story above the first floor, or above the basement floor if a basement is provided. Suitable egress provisions shall be provided for persons from each floor.