

FIRE SEPARATIONS REQUIRED BETWEEN CLASSES OF OCCUPANCY

Table with columns for Occupancy Classes (A, B, C, A, B, A, B, A, B, A, B, C) and rows for various occupancy types like Public, Institutional, Residential, Business, Hazardous, and Miscellaneous.

substances or gases at or near the point of origin shall be provided in addition to natural ventilation.

Mechanical Ventilation Where natural ventilation is not sufficient, mechanical ventilation to give the following air changes or amounts of air must be installed.

Every person, firm or corporation having responsibility or control of the same shall continuously operate the ventilating system provided for each building coming within the provisions of this Code during such times as the building is occupied and the operation of the system necessary to maintain healthful and comfortable air conditions therein.

Class 1—Public Toilet and Smoking Rooms—7 1/2 changes per hour. Auditoriums and Places of Assembly—20 C. F. M. per Occupant. All other rooms—6 changes per hour.

Class 2—Institutional Toilet and Smoking Rooms—7 1/2 changes per hour. Assembly Halls—20 C. F. M. per Occupant. Hospitals (contagious and epidemic)—12 Changes per hour. All other Class 2 buildings 6 changes per hour.

Class 3A—Residential Toilet and Smoking Rooms—7 1/2 changes per hour. Kitchens—15 changes per hour. All other rooms—5 changes per hour.

Class 3B—Residential Mechanical ventilation shall not be required for class 3B buildings, except bath or toilet rooms having insufficient ventilation shall be provided with 7 1/2 air changes per hour.

Class 4—Business Toilet and Smoking Rooms—7 1/2 changes per hour. All other rooms—5 changes per hour.

Class 5—Hazardous Toilet and Smoking Rooms—7 1/2 changes per hour. All other rooms—5 changes per hour.

Class 6—Miscellaneous Toilet and Smoking Rooms—7 1/2 changes per hour. All other rooms—5 changes per hour.

CHAPTER VI Means of Egress

Section 6.1 GENERAL REQUIREMENTS FOR NUMBER, WIDTH AND LOCATION OF EXITS

General Egress Requirements 6.101 (a) The requirements of this chapter are to provide sufficient exits to permit of safe and prompt egress in case of fire, and to provide for such exit construction and protection as will allow such egress without danger to life by fire, smoke, or resulting panic.

Exits, passageways, halls, stairways, etc. in the path of egress travel shall be constructed in accordance with this Code and shall be designed and proportioned so as to prevent congestion and confusion.

(b) Two means of exit need not be provided for buildings or portions thereof, the greatest horizontal dimension of which is 30 feet or less.

Two means of exit need not be provided in buildings exempted from such requirements by the Special Occupancy Provisions of Chapter XII.

Location Of Exits 6.102 (a) From every building or section thereof there shall always be at least two ways of escape, except as provided in section 6.101, exits being as remote from each other as practicable.

Class 5—Hazardous 75 feet All other classes 100 feet Which distance may be increased 25% for type I and II buildings.

For Class 2 buildings, Class 3 buildings, and school buildings, exits shall be so arranged that it is possible to go to an exit in either direction from any point in a corridor, except that corridors less than 20 feet in length may have but one direction of egress.

The two most widely separated exits of any building shall be separated by a distance not less than 75 per cent of the longest side of the building.

Unit of Door Width 6.103 The capacity of doorways shall be measured in "Doorway Units" as given in the following table for varying door widths.

1 unit not less than 28 inches in width 2 units not less than 40 inches in width 3 units not less than 62 inches in width 4 units not less than 84 inches in width

One unit shall be credited for each additional 22 inches of width and a half unit shall be credited for 12 inches or more of width added to any of the above widths. No credit shall be allowed for less than 1/2 unit of width.

The measurements given are for the door widths, which widths shall not be reduced more than 1 inch by stop beads or other projections.

Unit of Stair Width 6.104 Stairway units shall be used as a measure of exit capacity for all floors other than the ground floor. The capacity of stairways shall be measured in "Stairway Units" as given in the following table for different widths of stairs:

1 unit not less than 22 inches in width 2 units not less than 44 inches in width 3 units not less than 66 inches in width

One unit shall be credited for each additional 22 inches of width and half unit shall be credited for 12 inches or more of width added to any of the above widths. No credit shall be allowed for less than one-half unit of width.

All such widths shall be clear of all obstructions and so maintained at all times, except that handrails attached to walls may project not more than 3 1/2 inches at each side into the required width.

Number of Persons Occupying Floor 6.105 The number of persons occupying any given floor area shall be as determined by the following table, except in theatres with fixed seats and other places where it is possible to definitely determine the number of persons for which provision must be made.

Table with columns for Occupancy, Per Person, Sq. Ft., and Occupancy, Per Person. Lists various building types like Apartments, Armories, Assembly halls, etc.

In buildings of occupancies other than those listed above, the nearest similar occupancy shall govern. In the event of doubt as to the classification, the Building Inspector shall determine the number of persons for which provision must be made.

Section 6.2 NUMBER AND WIDTH OF EXITS REQUIRED

Ground Floor Exits 6.201 The width of the ground floor exits shall be determined by the following formula:

D. U. = n / F

In which: D. U. is the number of doorway units required, n is the number of persons to be served by such exits, F is a factor depending upon the obstructions in the path of egress travel, as given in the following table:

Table with columns for Where the path of egress travel shall be by means of, and Value of "F". Lists Ramps or passageways, Ramps not steeper than 1 foot vertical to 8 feet horizontal, etc.

NOTE: Ramps steeper than 1 foot vertical to 8 feet horizontal not allowed as a required means of exit.

Exits Required For Floors Above the First 6.202 All exit requirements for floors above the first shall be measured in terms of stairway units, as defined in Section 6.104, on the basis of stairways with fire resistive enclosures.

Stairways Required. (a) The number of stairway units required shall be determined by the following formula, as modified by paragraphs (b) to (g) inclusive of this section.

S. U. = N x H / 80

In which: S. U. is the number of stairway units required, N is the total number of persons in the building above the first floor, or in buildings over twelve stories in height the total number of persons occupying the floors from the second to the twelfth inclusive, number of persons to be determined in accordance with Sec. 6.105.

H is a height factor depending on the height of the building, as given in the following table:

Table with columns for Height in Stories, Value of H, Height in Stories, and Value of H. Lists 2, 3, 4, 5, 6, 7 stories and their corresponding H values.

The exits required for a mezzanine or balcony shall be the same as for a second floor of the same occupancy.

Buildings over twelve stories in height shall not be required to have additional stairway widths beyond those required for the first twelve stories.

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

Stairways shall be required to extend their full width from the first or ground floor to the uppermost floor of the building, except that in buildings of greater height than 12 stories or in setback buildings, the floors above the 12th or above the setback need be served only by stairways sufficient to provide 1 stairway unit for each 12 persons occupying the floor so served, number of persons occupying each floor to be determined in accordance with Section 6.105.

The number of stairway units required shall be increased 50 per cent for open stairs or stairs not enclosed as specified in Section 6.202

The number of stairway units required shall be increased 25 per cent for Class 5 occupancy. The number of stairway units required may be reduced 25 per cent for Type I or II buildings.

The number of stairway units required may be reduced 25 per cent for buildings completely sprinklered as specified in Section 13.2. NOTE—For method of computing increases and reductions in the required number of stairway units see Appendix, paragraph 1.

Horizontal Exits.

(b) Horizontal exits shall be rated on the basis of one unit of doorway width equivalent to 1 1/2 units of stairway width, provided, however, this provision shall not reduce by more than 50 per cent the required number of stairway units as computed under Sec. 6.202 (a).

Horizontal exits, to be rated as such, shall comply with the provisions of Section 6.306.

Elevators (c) Elevators shall be rated on the basis of 200 square feet of passenger elevator platform equal to one stairway unit, but shall not reduce the required stairway units by more than 10 per cent of the required stairway units as computed under Sec. 6.202 (a).

Escalators. (d) Escalators of the horizontal trend type may be rated the same as stairways, but shall not reduce the required number of stairway units by more than 10 per cent of the required stairway units as computed under Sec. 6.202 (a).

Ramps. (e) Ramps with a slope of not greater than 1 foot vertical to 8 feet horizontal shall have the same rating as stairs.

Fire Escapes. (f) Fire escapes shall not be credited as stairway units in new buildings. Fire escapes shall be credited in existing buildings as stairway units to an extent not to exceed 50 per cent of the requirements of such buildings as computed under Sec. 6.202 (a).

Ladders. (g) Ladders and other sub-standard means of egress not conforming to the requirements of this Code may be used as the second means of egress for not more than five persons, provided, however, they shall not be used as a means of egress serving the general public.

Roof Egress. 6.203 Every building three or more stories in height shall have at least one stairway extending to and through the roof, and all buildings two stories in height shall have roof egress facilities not less than a fixed ladder extending from the top of a stairway to a scuttle in the roof, which scuttle shall provide ready egress to the roof; provided, however, such means of egress need not be provided for buildings having a roof with a slope greater than 1 foot vertical in 3 feet horizontal nor for single residences.

Basement Exits. 6.204 (a) The number and width of exits from a basement shall be as determined for a 3 story building and for a sub-basement the same as for a 5 story building, etc.

Basements shall be provided with two means of egress located as remote from each other as practicable, one of which shall be a horizontal exit or a stairway leading directly to a street, alley or open court providing safe egress in case of fire. There shall be at least one stairway leading from every basement and sub-basement to first floor or grade.

Exceptions. (b) The following basements need not be provided with 2 means of egress: Basements, not used as salesrooms, manufacturing, places of assembly or resort, when such basements are not over 40 feet in length nor contains more than 1,000 square feet, nor where the number of persons occupying such basements, as determined by Section 6.105 does not exceed 20.

Basements of dwellings not over 2,000 square feet in area. Miscellaneous Requirements. 6.205 (a) The following provisions shall apply to all buildings, except one and two family residences and terraces, unless specifically exempted therefrom.

Mixed Occupancy. (b) When a building is occupied for business purposes under a portion occupied for residence purposes, the occupancies must be completely separated and an enclosed continuous stairway exit provided for the residence occupancy.

Room Exits. (c) Every room having an occupancy of more than 75 persons as determined in Section 6.105 shall have 2 means of egress remote from each other leading to exits.

Egress to Street. (d) At least 1/2 of the required stairway units shall lead to the street either directly or by way of a yard, court, or fire resistive passageway not less than 8 feet in height, with a width at least equal to the aggregate widths of all the exits discharging through it. Where there is communication between such passageway and the street floor or ground floor, all such openings shall be protected by class B standard fire doors; provided, however, that passageways leading from smoke proof towers or type I enclosures shall be unperched.

Exits Indicated. (e) Stairs and other exits shall be so located that they are readily accessible and visible and the direction of egress to the street shall be clearly indicated at the street level.

Exit Doors Unlocked. (f) At all times during which the building is occupied, the fastenings or locks on required exit doors shall be such as to be readily opened from the inside without the use of keys.

Section 6.3—GENERAL CONSTRUCTION REQUIREMENTS

Stairways 6.301 The following provisions shall apply to the construction of all stairways constituting a required means of egress, except stairs in Class 3B buildings or stairs exempted from such provisions in other parts of this Code.

Type of Construction Required. (a) All stairs, including platforms, landings and exit passageways in buildings four or more stories in height shall be of incombustible construction throughout. Stairs in buildings less than 4 stories in height may be of combustible materials, provided that the underside of the stairs are protected by construction affording 1 hour fire resistance rating, and all concealed spaces are fireproofed. Handrails may be of combustible material.

Live Loads. (b) All stairs, platforms, landings, balconies, and stair hallways shall be designed and constructed in accordance with the provisions of this Code to sustain a live load of not less than 100 pounds per square foot.

Treads and Risers. (c) There shall be no variation in the width of treads or the height of risers in any flight. Where variation in the height of risers in different flights is necessary such variation shall not exceed 3/16 inch between any two contiguous flights. All treads, except from places of public assemblage where the direction of egress is up, shall have a nosing of not less than 1/2 inch. The rise of stairs shall be not more than 7 1/2 inches, and the tread exclusive of nosing not less than 9 1/2 inches, except that in places of public assemblage the rise shall be not more than 7 inches, and the tread exclusive of nosing shall be not less than 10 1/2 inches. The surface material of treads and landings shall be such as not to involve danger from slipping.

Winders. (d) An arrangement of treads known as winders (see Chapter II for definition) shall be permitted only under the following conditions. Winders may be used in stairs when such stairs serve not to exceed 25 persons, as determined in Section 6.105, and such stairways are not the only means of egress and are used mainly as utility stairs.

Winders when used by more than 25 persons as a required means of egress shall be not less than 8 inches in width, exclusive of the nosing, at the narrowest point. Risers shall be not more than 7 3/4 inches in height. The width of treads shall not vary more than 2 1/4 inches