

SECTION 5
PUBLIC HEALTH AND SAFETY

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SECTION 5

PUBLIC HEALTH AND SAFETY

501 SCOPE*

This Section provides information on the design parameters for provision of buildings which will be environmentally acceptable and which if constructed in accordance with this Code provide reasonable fire resistance of critical elements and allow persons in the building time to evacuate safely.

502 MINIMUM STANDARDS

502.1 Basis of Requirement

a) General

All buildings intended for human use or occupancy shall conform to the requirements of this Section. Provided that where artificial lighting and/or ventilation are permitted as alternative to natural lighting and/or ventilation they shall also conform with the pertinent requirements of Section 11 of this Code.

b) Handicapped Persons

Provisions for physically handicapped persons must be made in accordance with Appendix F of this Code.

c) Ventilation

Every building and its several compartments shall be adequately ventilated having regard to the use for which the building and its individual compartments are intended. An adequate amount of open space shall be provided at the front and back of every building and on any side which includes a door, window or other opening.

d) Resistance to Transmission of Heat

For every building used or intended to be used for human occupation, the external walls, the roof, or roof in conjunction with the ceiling of the topmost storey, and the floor nearest the ground, shall be of such materials and be so constructed as to offer adequate resistance to the transmission of heat from the outside of the building to the inside, and from the inside of the building to the outside.

***Note:** *The Chief Fire Officer shall be consulted when arrangements are being made for the construction of buildings accessible to the public and for any fixed or unfixed seating arrangements.*

e) **Resistance to Transmission of Sound**

Every building shall be sufficiently protected against the transmission of sound from adjoining buildings or from adjoining parts of the same building, according to the use for which the building is intended.

f) **Reducing Danger from Fire**

i) For the purpose of reducing the danger of the outbreak of fire in a building, and having regard to the risk inherent in the use to which a building or part thereof is intended, the size of the building and its proximity to other buildings, every building and its several parts shall be so designed and constructed as to.

(aa) reduce sufficiently the risk of ignition of any part of the building and the spread of fire within the building to other buildings;

(bb) withstand the effects of fire for a sufficient period to avoid such collapse of the building as would increase the risk of the spread of fire.

ii) Every building shall be so designed and constructed that in the event of an outbreak of fire in the building, every person therein may leave the building and its precincts safely.

iii) All heat and flame producing appliances in a building together with their necessary accessories, shall be so constructed and installed as to prevent the ignition of any combustible material forming part of the building, or any combustible material which may be placed against the surface of any wall, or other part of the building enclosing or adjacent to the appliance.

503

FIRE AND SAFETY REQUIREMENTS

503.1

Requirements for Applications

Applications for building permits for buildings intended for public use are required to satisfy the requirements of this Code. The applicant must demonstrate through the information provided in the application, and included on the appropriate drawings in the plans, elevations and sections, that the design and construction of the building or buildings being the subject of this application conforms in principle to this Code and to the latest edition of the National Fire Protection Association Life Safety Code, 1981, NFPA 101, and Amendments.

503.2**Requirements for Fire Safety in Buildings**

- (a) All buildings other than private residences or apartment houses referred to in Group E(a) Residential Buildings, should be provided with approved fire appliances in accordance with the requirements of this Code; the provision of, and the installation of, such appliances shall be approved in writing by the Authority.
- (b) All buildings of more than 4 storeys and over 50 feet in height shall be provided with one or more wet rising mains, as the Authority shall determine; such mains shall be exclusively for fire fighting purposes.
- (c) The requirements of Sub-sections 505 and 506 of this Code shall, in particular apply to any part of any building more than 10,000 sq.ft. in area of any type of occupancy as listed in Table 3-1, where such part is used for, or intended for the use of, the bulk storage of combustible materials or products. (See Appendix D).
- (d) Where automatic fire extinguishing protection is provided in other than High Hazard Occupancies, the fire-resistance requirements may be reduced by one hour in the area or portion of the buildings so protected, provided that such a building is not more than 50 feet or 4 storeys in height.
- (e) The installation of fire protection systems shall be carried out in accordance with Part 3 Section 7 of the Caribbean Uniform Building Code.

503.3**Requirements for Building Sites**

No building shall be erected on a site which

- (a) Consists in whole or part of harmful or offensive animal or vegetable matter until such matter shall have been removed and the site made good to the satisfaction of the Director.
- (b) Cannot be put into such a condition as to prevent any harmful effect to the building or to its occupants by storm or flood waters.
- (c) Has an average site elevation of less than 4' 0" above mean sea level.

Adequate provision shall be made for the disposal of storm water so that the effect of increased run-off from the site will not materially affect adjoining sites.

503.4**Service Provisions**

Every building shall, having regard to its use or intended use, be provided with:

- (a) Adequate light and ventilation,
- (b) A sufficient supply of suitable water.
- (c) Adequate arrangements for the sanitary storage of solid waste (refuse and garbage). (See Section 10).
- (d) Adequate facilities for the removal, and where necessary the treatment and disposal of all waste products in such a way as not to affect public health, safety and welfare. (See Section 10).
- (e) **Efforts shall be made to equip all Public Buildings in Group A and Institutional Buildings in Group B with access ramps and adequately wide entrances and exits for use by persons in wheel chairs. (For other provisions for handicapped persons see Appendix F).**

503.5**Minimum Areas, Widths and Heights of Habitable Rooms¹**

Table 5-1 shall determine the minimum areas, widths and heights of habitable rooms and lavatories provided that:

- (a) The areas given in Table 5-1 shall be measured between the structural faces of walls permitted for such individual uses.
- (b) No habitable room used for two or more purposes shall be divided by any wall, partition, screen or fitting into areas less than the minimum areas permitted for such individual uses, unless such division or partition is not more than 4'0" high.
- (c) Any open kitchen recess shall have a minimum floor area of 30 sq.ft.
- (d) Every building or apartment of group E(a) shall provide living, dining and sleeping accommodation, together with suitable cooking and sanitary facilities, and adequate storage facilities.
- (e) In any building or apartment of group E(a) providing only one habitable room, the area of such a room shall not be less than 200 sq.ft.
- (f) Where any building of group E(a) or group E(c) is used or intended to be used for the letting or renting of individual

¹ Note that the Authority may under special circumstances permit the minimum area of a habitable room to be 72 sq.ft.

rooms or apartments with common cooking and/or sanitary facilities, the area of any such shall be determined in accordance with the following:

- (i) If shared by two (2) apartments only, the area of the facility shall be not less than 100 sq.ft. in area.
- (ii) If shared by more than two apartments the area of the facility shall not be less than 65 sq. ft. per unit of accommodation sharing the facility.
- (g) Any room used as a place of public assembly for more than 50 persons shall have a minimum height of 10' 0", except that the minimum clear height under a gallery or balcony or mezzanine of less than 500 sq. ft. may be reduced to 8 ft. provided that the space under the gallery or mezzanine is not separately enclosed.
- (h) Where ceiling fans are being erected, the minimum height from the floor to the ceiling should not be less than 9'0".

Note: The minimum areas provided in Table 5-1 may be altered by the Authority to conform to the normal custom provided that the minimum area of any habitable room is approved by the Ministry of Health.

503.6 Light and Ventilation

- (a) Any habitable room not provided with adequate artificial lighting and ventilation shall be provided with one or more window or skylights, having an area or combined area of not less than 10 percent of the floor area of the room. Not less than 50 percent of the total area of such window or skylights shall open to permit the free unobstructed passage of fresh air.
- (b) In the case of buildings provided with full mechanical ventilation systems, then the area of opening light may be reduced to not less than one third of total window area, at the discretion of the Authority.
- (c) In the case of usable rooms or spaces in buildings without natural light and ventilation, then artificial lighting and full mechanical ventilation systems or air conditioning must be provided in accordance with design and installation requirements of Section 11 of this Code.

Table 5-1.**Minimum Areas and Dimensions of Habitable Rooms**

| Description of Room | Area (sq.ft.) | Min. Width or Length | Min. Height |
|----------------------------------|----------------------|-----------------------------|--------------------|
| Living Room | 120 | 10' 0" | 8' 0" |
| Bedrooms | 90 | 8' 0" | 8' 0" |
| Dining room | 80 | 8' 0" | 8' 0" |
| Kitchen | 40 | 5' 0" | 8' 0" |
| Living/dining/bedroom | 200 | 10' 0" | 8' 0" |
| Living/dining/kitchen | 180 | 10' 0" | 8' 0" |
| Living/bedroom | 180 | 10' 0" | 8' 0" |
| Living/dining room | 160 | 10' 0" | 8' 0" |
| Dining room/Kitchen | 100 | 8' 0" | 8' 0" |
| Any other habitable room | 80 | 7' 0" | 8' 0" |
| Lavatory (W.C. bath & basin) | 35 | 4' 6" | 7' 6" |
| Lavatory (W.C. & shower & basin) | 30 | 4' 0" | 7' 6" |
| Lavatory (bath & basin) | 25 | 3' 4" | 7' 6" |
| Lavatory (W.C. & shower) | 20 | 2' 8" | 7' 6" |
| Lavatory (Shower & basin) | 20 | 2' 8" | 7' 6" |
| Lavatory (W.C. & basin) | 20 | 2' 6" | 7' 6" |
| W.C. compartment | 12.5 | 2' 8" | 7' 6" |
| Shower compartment | 7.5 | 2' 6" | 7' 6" |

503.7**Windows**

Windows used for the provision of natural light or ventilation shall be located in an external wall and in such a position that light and fresh air are not substantially excluded by adjacent walls of the building or by the walls of adjoining buildings. Windows within toilet facilities shall normally be located 4' 0" minimum above floor level. The minimum height from the floor to the window head shall be 6' 8".

To ensure resistance to hurricane forces, the design and installation of window assemblies for buildings in Groups A, B, C and F shall be certified by a structural engineer. This certification shall be based on the requirements of Section 12 of the Code and in accordance with Part 2 Section 2 of CUBiC.

503.8 Skylights

Skylights used for provision of natural light or ventilation shall be located in a clear area of roof and shall be designed to prevent the entry of rain water when closed. Where glass is used it shall be safety glass or shall be screened internally with a high tensile steel mesh of area not more than 1 sq. in.

503.9 Enclosed Courts

Any court enclosed on three or more sides and serving windows providing natural light and ventilation shall have an area for its full height of not less than 150 sq.ft for each 10 ft.of its height, and a width of not less than 10 ft.; nor less than 5ft. for each 10 ft. of its height up to 60 ft. plus 2' 6" for each 10 ft. of its height above 60 ft.

503.10 Rear Courts

Any building of Group E(a) on a site where the rear boundary is a common boundary with an adjoining site shall have a rear court of the full length of such boundary and of a width not less than 10' 0" nor less than 2' 6" for each 10' 0" of building on the line of such court.

503.11 Rodent Proofing

Special precautions are required for restaurants, buildings where food is prepared, food storage premises and slaughter houses. Applicants for building permits are required to contact the Ministry of Health for minimum requirements with respect to the type of surfaces of walls, floors and ceiling and the screening necessary.

503.12 Sanitation

- (a) Toilet facilities accessible to the public shall be provided on each floor for each sex for all types of building, except that in a building of two floors and occupied by a single tenant, the combined toilet facilities required may be located on either floor.
- (b) Where common sanitary facilities are provided in buildings of Group E(c) used by more than 10 persons, then at the least, separate facilities shall be provided for males and females, and such facilities shall be so located that they are accessible under cover from all of the habitable rooms they serve.
- (c) A toilet shall preferably not open directly onto a room intended primarily for human habitation, other than a bedroom or dressing room and never onto any area used for the manufacture, preparation or storage of food for human consumption.

- (d) The floor and walls of public toilet facilities, to a height of 5 feet, shall be of tile or other smooth, cleanable, impervious materials.
- (e) Shower compartments shall have floors and walls constructed of smooth, corrosion resistant and non-absorbent water resistant materials to a height of not less than 70 inches above the compartment floor.
- f) Tables 3-8 and 3-9 give the number of lavatory fixtures required for various occupancies.

503.13

Storage of Hazardous Material

- a) Buildings constructed for the storage and use of hazardous material (Appendix D) must be sited and constructed in accordance with Part 3 Section 7 of CUBiC or in accordance with any other Code or Standard approved by the Authority.
- b) Part 3 Section 7 of CUBiC provides information on the following.
 - Explosion hazards
 - Volatile flammable material
 - Liquefied petroleum gases
 - Pyroxylin plastics
 - Use and storage of flammable film
 - Use and storage of combustible fibres
 - Combustible dusts, grain processing and storage
 - Paint spraying and spray booths
 - Dry cleaning establishments
 - Private garages
 - Public garages
 - Motor fuel service stations
 - Motor vehicle repair shops
 - Places of public assembly
 - Public assembly and other theatres

504.1 Basis of Requirement

All new buildings, also existing buildings for which a certificate of use and occupancy has been issued, shall be provided with adequate means of escape and exits in accordance with the requirements of this Code. Where the change of use and occupancy of an existing building requires additional or improved means of escape and/or exit, and the exact requirements of this Code cannot reasonably be met, the Authority shall have power to approve alternative proposals for providing adequate means of escape and/or exits, so long as such alternative proposals are also submitted to and approved by the Director.

504.2 Definitions

For the purposes of this Code the following special definitions shall apply:

- (a) "Means of escape" shall include any corridor, hallway, lobby, staircase, escalator or ramp by use of which the occupants of a building may proceed safely from within a building to an exit.
- (b) "Door" shall include any shutter, cover or other form of protection to an opening in any wall of floor of a building or in the structure surrounding a protected shaft, whether the door is comprised of one leaf or several.
- (c) "Exit" shall be a means of egress and shall include:
 - (i) Any doorway in the ground storey leading directly to a street or to an open space providing free access to a street.
 - (ii) Any doorway in an upper storey fitted with fire resisting doors and leading through a fire resisting lobby directly to an external staircase terminating at ground level in an open space providing free access to a street.
 - (iii) Any doorway in an upper storey leading directly to an external balcony or flat roof from which there is further means of escape.
 - (iv) Any doorway in an upper storey or basement storey, leading directly to an enclosed internal staircase separated from all the storeys through which it passes by fire resisting doors, provided that such staircase leads directly to a ground storey exit, or a ground storey fire-resisting lobby from which there is a further means of escape.

- (d) "Fire resisting door" shall mean any door with a fire resistance rating in accordance with the requirements of an approved agency, and which is fitted in such a way that it cannot reasonably be fixed in an open position, and is provided with an approved automatic closing device.
- (e) "Fire resisting lobby" shall mean a lobby used or intended to be used as a means of escape in which all of the doors are either fire resistive doors or exits leading directly to open air.

504.3

Basis of Calculation

The occupancy content of a building or a storey of a building used in determining the number and width of means of escape and exits shall be calculated in accordance with Table 3-1 of this Code and it shall be an offence to occupy any building with a greater number of persons than the means of escape and exits provide for.

504.4

Number of Means of Escape and Exits

Table 5-2 shall determine the minimum number of means of escape and exits required for each storey of a building provided that:

- (a) The requirements for exits in this clause shall not apply to a single family residence which shall be supplied with at least two doors, preferably on opposite sides of the building.
- (b) Exits shall be located as remotely as practicable from one another and shall be reasonably distributed throughout the building.
- (c) All corridors, halls or foyers used as a means of escape shall lead directly to an exit from the storey.
- (d) Every enclosed space of more than 1,000 sq.ft with an occupancy content of more than 5 persons shall have at least two means of escape or exits.
- (e) Two or more means of escape may serve the same or communicating corridors, halls or foyers provided that the capacity of such corridors, halls or foyers is not less than the capacity of the two nearest exits.
- (f) In places of public assembly accommodating more than 500 persons, means of escape or exits shall be provided on at least 3 sides and where fixed seating is provided such means of escape or exits shall be served by permanent aisles and cross aisles.

- g) Half of the required main floor exit widths shall be proportioned to the side exits and when more than one side exit is required, shall be equally divided in full units of unit width to each side.
- h) The number of side exits shall be not less than that required by distance limitations and as set forth in the following:

| Number of Persons | Number of Side Exits |
|-------------------|----------------------|
| 0 - 600 | 1 |
| 601 - 999 | 2 |
| 1,000 or More | 4 |

- i) Where one or two side exits on each side are required, one of such exits on each side shall be located at the front of the assembly space, remote from the main-floor exits. And where four or more exits on each side are required, the additional exits shall be proportionally spaced along the length of the side walls.
- (j) No two means of escape from one place of public assembly shall use a common staircase.
- (k) No open staircase from a basement or lower ground floor shall be considered a means of escape unless it leads directly to a ground storey exit or to a ground storey hall or foyer from which there is an exit.
- (l) Stairways from the basement to ground floor should be separated from staircases serving upper floors.

Table 5-2

**Minimum Number of Means of Escape and Exits
Required per Storey**

| Occupancy content of floor | Means of Escape | Exits |
|----------------------------|-----------------|-------|
| 1-10 | 1 | 1 |
| 11-100 | 1 | 2 |
| 101-500 | 2 | 3 |
| 501-1000 | 3 | 4 |
| 1000 or more | 4 | 5 |

504.5 Maximum Distance of Travel to Exits

Table 5-3(a) shall determine the greatest permitted distance from any point in a storey measured along the line of travel to the nearest exit from the storey provided that:

- (a) Where an area is subdivided into rooms not exceeding 250 sq.ft in individual area the permitted distance may be measured from any door of such room which opens directly to a corridor, hall or foyer.
- (b) No dead end of a corridor shall be more than 20'0" from an exit or from a means of escape leading to at least two exits.

504.6 Widths of Means of Escape and Exits

Table 5-4 shall determine the minimum widths of means of escape and exits provided that in places of public assembly where fixed seats are provided, no means of escape or exit shall be less wide than any aisle leading directly to it.

504.7 Exits and Fire Check Doors

- (a) Exit doors shall be kept clear of obstruction at all times.
- (b) Exit doors shall be so located that they open only in the direction of escape a full 90 degree swing unobstructed by cross traffic, provided that doors regularly used for entry and fitted with glazed observation panels may also open in reverse to a full 180 degree swing.
- (c) Exit doors provided only for emergency use may be fitted with approved internal panic bolts but shall not be fitted with any other locking or closing device.
- (d) Fire check doors including doors to enclosed internal staircases, shall be so located that they open in the direction of escape with a full 90 degree swing unobstructed by cross traffic routes and fitted with glazed observation panels; they may also open in reverse to a full 180 degree swing. No fire check door shall be fitted with any kind of latch or automatic locking device. Fire check doors shall be self closing.
- (e) Glazed observation panels in fire check doors shall be 1/4" wired glass, or toughened safety glass of equal and approved performance.
- f) To ensure resistance to hurricane forces, the design and installation of exit door assemblies for buildings in Groups A, B, C and F shall be certified by a structural engineer. This certification shall be based on the requirements of Section 12

of the Code and in accordance with Part 2 Section 2 of CUBiC.

Table 5-3(a)

**Maximum Permitted Distance of Travel to an Exit (ft.)
(Without fire suppression system)**

| Building Occupancy Group | Type 1 Fire-resistant | Type 2 Semi-fire resistant | Type 3 Ordinary Masonry | Type 4 Non-combus- tible | Type 5 Wood Frame |
|---------------------------------|----------------------------------|---|--|---|----------------------------------|
| Groups A, C, D, E(a), E(c) | 150 | 150 | 100 | 75 | 75 |
| Groups B & E(b) | 100 | 100 | 75 | N/A | N/A |
| Group E (except E(b)) | 75 | 75 | 50 | 50 | N/A |
| *Group F | 300 | 300 | N/A | N/A | N/A |

* With fire suppression system

Table 5-3(b)

**Exit Capacity: Number of Persons per Unit of Exit Width (22 inches)
(Without fire suppression system)**

| Occupancy Group | Level Travel (corridors, doors, ramps etc) | Stairs |
|---|---|---------------|
| Group A: Public Buildings | 100 | 75 |
| Group B: Institutional Buildings (Generally) | 30 | 22 |
| Group C: Commercial and Industrial | 100 | 60 |
| Group D: Offices, Administrative and Retail service Buildings | 100 | 60 |
| Group E: Residential Buildings | 100 | 75 |
| *Group F: Hazardous Occupancy | 100 | 60 |

* With fire suppression system

See also Tables 3.500 and 3.510 of CUBiC Part 3 Section 5.

Table 5-4

Minimum Required Widths of Means of Escape and Exit Doors

| Capacity in Number of Persons | Corridors, Halls and Foyers | Staircases and ramps clear between handrails | Exit doors and fire check doors between jambs |
|--------------------------------------|------------------------------------|---|--|
| 1 - 10 | 3' 4" | 3' 0" | 3' 0" |
| 11 - 200 | 4' 0" | 4' 0" | 3' 8" |
| 201 - 500 | 6' 0" | 6' 0" | 5' 8" |
| 501 or more | 8' 0" | 8' 0" | 7' 8" |

504.8 Internal Staircases and Ramps used as Means of Escape

Internal staircases and ramps used as means of escape shall be designed and constructed in accordance with the following requirements:

- (a) They shall be considered as enclosed vertical openings and the enclosing structure shall be of fire resistance rating construction in accordance with the requirements of Section 4 of this Code.
- (b) They shall be designed in accordance with the requirements of Section 4 of this Code and constructed of non-combustible materials.
- (c) Flights shall preferably run straight from landing to landing without winders or tight spiral sections.
- (d) The number of risers in one flight from landing to landing shall not exceed 16.

504.9 Fixed Seating in Places of Public Assembly

In places of public assembly with fixed seating arrangements the seating shall be separated into blocks by aisles in accordance with the following requirements:

- (a) The maximum number of seats in a row between two aisles shall be 14 and in a row served by only one aisle shall be 7.
- (b) Where bench seats without dividing arms are provided they shall not be longer than 21' 0" between two aisles or 10' 6" when served by only one aisle.

- (c) The spacing of seats shall not be less than 2' 3" back to back nor less than 1' 0" clear from the back of one seat to the front of the seat immediately behind it.
- (d) The maximum number of rows of seats in one block shall be 21 and blocks shall be separated by cross aisles.
- (e) The number of seats in a row may be increased to 100 where seats are so spaced that there is an unobstructed space of not less than 18" horizontal projection between the rows of seats, and doorways leading directly to exit corridors are provided along each side of the place of assembly at the rate of one doorway for every 3 rows of seats.
- (f) Every aisle shall lead directly to a means of escape or to an exit or to a cross aisle.

Aisles serving up to 50 seats shall be not less than 2' 6" wide.
- (g) Aisle serving more than 50 seats shall be not less than 3' 0" wide when serving seats on one side only, and not less than 3' 6" wide when serving seats on both sides.
- (h) Aisles leading directly to a means of escape or an exit shall not be less than 4' 0" wide.
- (i) Every cross aisle shall lead directly to a means of escape or to an exit.
- (j) Every ramped aisle shall have a non-slip walking surface.
- (k) No ramped aisle shall have an average slope of more than 1 in 10 or a maximum slope of more than 1 in 5. No aisle or cross aisle shall be ramped across its widths.
- (l) In stepped aisles the risers shall extend the full width of the aisle and each riser shall be illuminated. Treads and risers shall conform with the requirements of Sub-section 504.

505

STAIRCASES AND RAMPS

505.1.

Definitions

- (a) Private stairway shall mean a stairway of steps intended to be used by only one dwelling.
- (b) Common stairway shall mean a stairway of steps which is intended for common use.
- (c) The width of a stairway shall mean:

- (i) the horizontal distance between the centre lines of handrails, in the case of a stairway with handrails on both sides;
 - (ii) the horizontal distance between the centre line of handrail and any wall, screen or extremity on the other side of the step, where there is a handrail on one side only;
 - (iii) the width of the narrowest part if tapered.
- (d) Pitch line shall mean a notional line drawn to connect all the nosings of the treads in a particular flight of stairs.
 - (e) The going of a step shall mean the distance measured on plan between the nosing of its tread and the nosing of the tread of the step or landing next above it.
 - (f) Parallel step shall mean a step of which the nosing is parallel to the nosing of the steps or landing above it.
 - (g) Tapered step shall mean a step, the nosing of which, is not parallel to the nosing of the step or landing next above it.

505.2

Basis of Requirements

Staircases and ramps shall be designed and constructed in accordance with the requirements of Sub-section 504 and when used as a means of escape they shall also conform to the pertinent requirements of Sub-section 503 of this Code.

505.3

Private Stairways

Any private stairway shall be so constructed that:

- a) Between consecutive floors there is an equal going for each parallel step and an equal rise for every step and landing.
- b) Over the whole width of the stairway there is:
 - (i) headroom of not less than 6' 6", measured vertically above the pitch line,
 - (ii) clearance of not less than 5' 0" measured at right angles to the pitch line,
- c) The dimensions of treads and risers conform to Table 5-5.
- d) The pitch of the stairway is not more than 42 degrees.
- (e) Tapered steps conform to the requirements of Sub-section 50-4.6.

505.4**Common Stairways**

Any common stairway shall be so constructed that:

- a) It complies with Table 5-5 for the relevant category of use.
- b) The pitch of the stairway is not more than 38 degrees.
- c) The stairway has not more than 16 risers in any flight.
- d) Tapered steps must conform to the requirements of Sub-section 504.6.
- e) The sum of the going plus twice the rise should not be less than 24" nor more than 26".

Table 5-5

Tread and Riser Sizes/Dimensions

| Occupancy Group | Maximum for Risers (inches) | Minimum for Treads* (inches) |
|-----------------------------------|--|---|
| Group A - Public Buildings | 7-1/2 | 10 |
| Group B - Institutional Buildings | 7-1/2 | 10 |
| Group E - Residential Buildings | 8-1/4 | 9 |
| All others | 8 | 9 |

* Excluding nosings

505.5**Open Riser Stairways**

- (a) Stairways which have no risers below the treads and landings shall conform in all respects to the requirements of Sub-sections 504.3 and 504.4 as appropriate.
- (b) The nosing of each tread and landing shall overlap on plan, the back edge of the tread of the step below it by not less than 5/8".

505.6**Tapered Steps**

- (a) In the application of requirements Sub-sections 504.3, 504.4 and 504.5 to tapered steps, the going and pitch of tapered steps shall be measured in the vertical planes of the pitch lines connecting the nosings of consecutive steps at a distance of 10-1/2" from the extremities of the width of such steps.

- (b) The sum of the going plus twice the rise shall be:
 - (i) Not less than 22-1/2".
 - (ii) Not more than 25" where the angle of taper is 10 degrees or less or 28" in all other cases.

505.7

Guarding of Stairways and Landings

- (a) Any private or common stairway shall be guarded on each side by a wall, a securely fixed screen, balustrade or railing extending to a height of not less than 2' 9" measured vertically above the pitch line.
- (b) The side of any landing or similar space forming part of a stairway or directly overlooking a stairwell shall be guarded by a wall, securely fixed screen, balustrade or railing extending to a height above the floor of such landing or space, in the case of private stairways 3' 0" and in the case of common stairways 3' 6".
- (c) Any flight of steps with an aggregate rise of more than 2' 0" shall have a continuous handrail fixed securely at a height of not less than 2' 9" nor more than 2' 11" measured vertically above the pitch line, one on each side if the stairway is more than 3' 6" wide or on one side only if the width is less.
- (d) Easy to grasp handrails with 1-1/2" clearance from a wall shall extend 1' 6" at top and bottom of stairs with ends turned down to floor or into walls, but not to create a safety hazard.
- (e) All hand railing should have intermediate vertical or longitudinal rails or latticework which would prohibit the passage of a 6" diameter sphere, except for industrial buildings where the intermediate rails or latticework should prohibit the passage of a 12" sphere.

505.8

Guarding of Balconies and External Areas

- a) Any balcony, platform, roof or other external area which is 2' 0" or more above ground and to which a person habitually has access other than for maintenance and repair shall have a balustrade, parapet or railing not less than 3' 6" high and of such extent, construction and material as to afford safety to persons using the balcony, platform, roof or external area.
- b) Balustrades, parapets and railings on balconies and platforms for single family dwellings only shall not be less than 3' 0" high.
- c) For the structural design of handrails and balustrades see 1201.6

505.9 Ramps

No ramp shall be steeper than 1:10 nor more than 40" wide between handrails, nor more than 8' 0" wide without a centre handrail and the whole of the walking surface shall be finished with a non-slip material. Minimum headroom for a ramp shall be 6' 6" measured at right angles to the slope of the ramp.

505.10 Landings

Landings shall be at least as deep as the widest staircase, flight or ramp served, and such depth shall be clear of any door swing or other obstruction to free passage. However for straight staircases landings shall be a minimum of 3 ft deep.

506 FIRE SUPPRESSION SYSTEMS

506.1 Basis of Provision

When fire suppression systems such as automatic sprinkler systems are installed in accordance with the requirements of this Code or on the advice of the Director they shall be maintained to the satisfaction of the Director. Reference should be made to CUBiC Part 3 Section 7 for the choice of a suitable suppression system for the building.

506.2 Special Provisions

Special precautions, and fire protection systems, e.g. halogenated installations, shall be provided if so required by the Authority in any building, or part of a building

506.3 General Requirements for Sprinkler Systems

All automatic sprinkler or other type of systems shall be of proprietary manufacture. The installation shall be carried out by an experienced specialist contractor and both design and installation shall be in accordance with recognised standards of good practice at least equal to the standard recommended in the latest edition of NFPA Standards 13, 13A, 13D, 13R and 14 as may be appropriate for the class of building and availability of water supply.

506.4 Approval of Installation

The installation of any required sprinkler system shall be approved by the Authority in writing on completion. No Certificate of Occupancy shall be issued by the Director until a copy of such approval has been provided.