State Building Construction Code

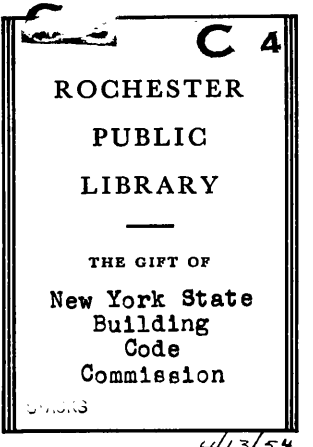
applicable to

Multiple Dwellings

December 15, 1953

State of New York

Thomas E. Dewey, Governor



STATE BUILDING CONSTRUCTION CODE

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STATE BUILDING CODE COMMISSION

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STATE BUILDING CODE COMMISSION

1740 Broadway

New York 19, New York

FOREWORD

This Code, applicable to multiple dwellings, is promulgated by the New York State Building Code Commission pursuant to the authority of Article 18 of the Executive Law of the State of New York.

The Commission issued on November 1, 1951 the first portion of the uniform state-wide building code, that portion applicable to one- and two-family dwellings. With the promulgation of this portion of the Code, applicable to multiple dwellings, up-to-date regulations in terms of performance covering all usual types of residential construction are made available to all the municipalities of the State.

The Commission is at present preparing the requirements for all other kinds of building use so as to provide a state-wide comprehensive performance-type building code applicable to all buildings.

Following promulgation of the multiple dwelling code, the Commission will issue a new edition of the Code Manual. The new edition will assist in the application and enforcement of both the one- and two-family dwelling code and the multiple dwelling code. It indicates and illustrates acceptable methods of compliance with the performance requirements set forth in the Code but does not exclude other possible methods of meeting those requirements. The Code is the law; the Code Manual is not.

The State Building Code Commission is concerned only with regulations for the construction of buildings and the installation of equipment therein. The purpose of all of its regulations is to establish reasonable safeguards for the safety, health and welfare of the occupants and users of buildings.

The administration and enforcement of this Code are the responsibility of the local municipality pursuant to its own administrative ordinance.

Zoning, which regulates the use of land and buildings, remains the prerogative of the municipalities.

The State Building Code Commission is a service agency. The facilities for code drafting and for technical research which have been established under the provisions of the law enable the Commission to prepare an up-to-date code for the benefit of all the municipalities of the State. It acts as a central clearinghouse, investigating detailed data on materials, methods and equipment. It has established a procedure for acceptance of new materials and new construction methods, and makes its findings available to the

municipalities. Such data are invaluable to municipalities, and especially to local building officials charged with building code administration and enforcement.

The municipalities of the State have the option to accept or not to accept the applicability of the State Building Construction Code. Those municipalities which have already accepted the applicability of the Code obtain without further action the protection afforded by subsequent regulations.

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Part 1

General Provisions

B 101 TITLE

These regulations, promulgated pursuant to Article 18 of the Executive Law of the State of New York, shall be known as the State Building Construction Code applicable to multiple dwellings. They are hereinafter referred to as **this Code.**

B 102 PURPOSE

The purpose of this Code is to provide basic and uniform regulations in terms of performance objectives, establishing reasonable safeguards for the safety, health, and welfare of the occupants and users of multiple dwellings and their accessory structures, and making adequate performance the test of acceptability.

B 103 EFFECTIVE DATE

This Code shall take effect on December 15, 1953.

B 104 PARTIAL INVALIDITY

If any term, part, provision, section, subdivision or paragraph of this Code shall be held unconstitutional, invalid, or ineffective, in whole or in part, such determination shall not be deemed to invalidate the remaining terms, parts, provisions, sections, subdivisions and paragraphs thereof.

B 105 SCOPE

B 105-1 New Buildings

This Code shall apply to multiple dwellings and to their accessory structures, and to parts thereof, which are hereafter erected.

B 105-2 Existing Buildings

B 105-2.1 General

This Code shall also apply to existing buildings described in this section as if hereafter erected.

a——A building hereafter occupied as a multiple dwelling, which building was not so occupied when this Code became applicable to the municipality in which the building is situated.

b——A building moved into, or moved within, municipal limits subject to this Code, which is to be occupied as a multiple dwelling.

c——A building occupied as a multiple dwelling which is altered or repaired, when the cost of such alterations or repairs within any twelve-month period exceeds 50 per cent of the cost of replacement of the building at the beginning of that twelve-month period.

B 105-2.2 Roof Covering

Whenever more than 25 per cent of the roof covering of a multiple dwelling is replaced in any twelve-month period, all roof covering on such building shall be made to comply with applicable regulations of this Code.

B 105-2.3 Addition or Alteration

Any addition or alteration, regardless of cost, made to a multiple dwelling, shall be made in conformity with applicable regulations of this Code.

B 105-2.4 Existing Uses Continued

Except as otherwise herein provided, nothing in this Code shall require removal, alteration, or abandonment of, nor prevent continued use or occupancy of, an existing building.

B 105-3 Mixed Occupancy

A building which is occupied in part for residential use, and in part for some other use not accessory thereto, shall be deemed to be a building of mixed occupancy, and, except for the separation requirements as set forth in section B 402-4.1, the occupancy other than residential is not regulated by this Code.

B 105-4 Maintenance

Buildings subject to this Code shall be maintained in a safe and sanitary condition in conformity with the provisions of this Code.

B 105-5 Zoning

No provision of this Code shall be construed to repeal, modify, or constitute an alternative to any lawful zoning regulation. Where zoning regulations and this Code contain distance requirements applicable to the same structure, the greater distance shall control.

B 105-6 Prohibited Uses

Offensive, obnoxious, or hazardous occupancy shall not be permitted on the premises of a multiple dwelling;

such prohibited uses include, but are not limited to, business, trade, industry, or purpose which is noxious or offensive by reason of the emission of odors, dust, smoke, gas, or noise, or in which flammable or explosive materials are involved except as may be incidental to the customary use of a multiple dwelling.

B 106 QUALITY OF MATERIALS

All materials, assemblies, construction, and equipment shall conform to the regulations of this Code, and shall conform to generally accepted standards with respect to strength, durability, corrosion resistance, fire resistance, and other qualities recognized under those standards. All test specimens and construction shall be truly representative of the material, workmanship, and details to be used in actual practice.

B 107 ABBREVIATIONS AND DEFINITIONS

B 107-1 General

a——Abbreviations, terms, phrases, words, and their derivatives used in this Code shall have the meanings given in this section.

b——Words used in the singular include the plural, and the plural the singular. Words used in the masculine gender include the feminine and neuter genders.

B 107-2 Abbreviations

Btu	British thermal unit
C.	Centigrade
c	Combustible
cfm	Cubic feet per minute
F.	Fahrenheit
ft	Foot or feet
gpm	Gallons per minute
in.	Inch or inches
nc	Noncombustible
np	Not permitted
psf	Pounds per square foot
psi	Pounds per square inch

B 107-3 Definitions

accessory structure. A building, the use of which is incidental to that of the main building, and which is located on the same premises.

accessory use. A use, occupancy or tenancy customarily

incidental to the principal use or occupancy of a building. In a multiple dwelling, such accessory uses may include, among others, the following: a——offices for the building management; b——dining rooms, banquet rooms, public kitchens, and ballrooms; c——recreation and play rooms; d——laundries for the use of tenants and occupants, and in connection with the management and operation of the multiple dwelling; e——maintenance and work shops; storage rooms for linen, bedding, furniture, supplies, and tenants' equipment and effects; f——rooms or space for the incidental sale or display of merchandise to occupants and tenants, such as newspaper, candy, and cigar stands; g——garages within the multiple dwelling or on the premises thereof used primarily for the storage of passenger-type motor vehicles.

addition. Extension or increase in area or height of a building.

alley. Narrow supplementary throughfare for the public use of vehicles or pedestrians, affording access to abutting property.

alteration. Any change, rearrangement, or addition to a building, other than repairs; any modification in construction or equipment.

apartment. A dwelling unit.

apartment, garden. A multiple dwelling or group of multiple dwellings containing dwelling units, occupying not more than 35 per cent of the area of the site or plot on which such dwelling or dwellings are situated.

apartment hotel. A multiple dwelling in which dwelling units are leased to permanent and, or transient tenants.

apartment house. A multiple dwelling in which dwelling units are leased to permanent tenants.

approved. Approved by the enforcement officer under the regulations of this Code, or approved by an authority designated by law or this Code.

attic. Space between top of uppermost floor construction and underside of roof.

basement. That space of a building that is partly below grade which has more than half of its height, measured from floor to ceiling, above the average established curb level or finished grade of the ground adjoining the building.

bathroom. Enclosed space containing one or more bathtubs or showers, or both, and which may also contain water closets, lavatories, or fixtures serving similar purposes. See definition of **toilet room.**

building. A structure wholly or partially enclosed within exterior walls, or within exterior and party walls, and a roof, affording shelter to persons, animals, or property.

building line. Line established by law, ordinance, or regulation, beyond which no part of a building, other than parts expressly permitted, shall extend.

cellar. That space of a building that is partly or entirely below grade, which has more than half of its height, measured from floor to ceiling, below the average established curb level or finished grade of the ground adjoining the building.

combustible. Material or combination of materials which will ignite and support combustion when heated at any temperature up to 1382° F. (750° C.).

construction classification. A classification of buildings into types of construction which is based on the fire resistance of the walls, floors, roof and other structural members. (See section B 202-2 and table B 202-2).

——**type 1, fire-resistive construction.** That type of construction in which the walls, partitions, columns, floors and roof are noncombustible with sufficient fire resistance to withstand the effects of a fire and prevent its spread from story to story.

——**type 2, noncombustible construction.** That type of construction in which the walls, partitions, columns, floors and roof are noncombustible and have less fire resistance than required for fire-resistive construction.

——**type 3, heavy timber construction.** That type of construction in which the exterior walls are of masonry or other noncombustible materials having equivalent structural stability under fire conditions and a fire-resistance rating of not less than 2 hours; in which interior structural members including columns, beams and girders, are of heavy timber, in heavy solid or laminated masses, but with no sharp corners or projections or concealed or inaccessible spaces; in which floors and roofs are of heavy plank or laminated wood construction, or of any other material providing equivalent fire-resistance and structural properties. Noncombustible structural

members may be used in lieu of heavy timber, provided the fire-resistance rating of such members is not less than 3/4 hour.

——**type 4, ordinary construction.** That type of construction in which the exterior walls are of masonry or other noncombustible materials having equivalent structural stability under fire conditions and a fire-resistance rating of not less than 2 hours, the interior structural members being wholly or partly of wood of smaller dimensions than those required for heavy timber construction.

——**type 5, frame construction.** That type of construction in which the walls, partitions, floors and roof are wholly or partly of wood or other combustible material.

construction, fireproof. Type 1 fire-resistive construction.

convalescent home. A building used for the accommodation and care of persons recuperating from illness.

corridor. Passageway or hallway which provides a common way of travel to an exit or to another passageway leading to an exit.

court, inner. An open, uncovered, unoccupied space surrounded on all sides by the exterior walls of a building or structure or by such walls and an interior lot line of the same premises.

court, inner, width. Least horizontal dimension.

court, outer. An open, uncovered, unoccupied space which has at least one side opening on a legal open space.

court, outer, width. Least horizontal dimension measured across the open end of the court.

curb level. The elevation of the curb opposite the center of the front of the building. If a building faces on more than one street, the curb level shall be the average of the elevations of the curbs at the center of each side or front of the building. Where no curb level or equivalent has been established by the municipal authority, the average elevation of the finished grade immediately adjacent to the front of the building shall be considered as the curb level. If a building faces on more than one street where no curb level has been established, the average of the elevations of the finished grade on each street side of the building shall be considered as the curb level.

distance separation. An open space between buildings or between a building and a line on adjoining premises to which a building may be legally built, provided to prevent the spread of fire.

dwelling unit. One or more rooms with provision for living, sanitary, and sleeping facilities arranged for the use of one family.

enforcement officer. A person lawfully empowered to enforce the regulations of this Code.

exit. A way of departure from the interior of a building or structure, to the exterior at street or grade, including doorways, passageways, hallways, corridors, stairways, ramps, fire escapes, and all other elements necessary for egress or escape.

family. A household constituting a single housekeeping unit occupied by one or more persons.

fire area. The floor area of a story of a building within exterior walls, party walls, fire walls, or any combination thereof.

fire limits. Boundary line establishing an area in which there exists, or is likely to exist, a fire hazard requiring special fire protection.

fireproof. Fire resistive.

fire protection equipment. Apparatus, assemblies or systems either portable or fixed, for use to prevent, detect, control, or extinguish fire.

fire resistance. That property of materials, construction or assembly of materials, which under fire conditions prevents or retards the passage of excessive heat, hot gases, or flames.

fire-resistance rating. Time in hours or parts thereof that a material, construction, or assembly will withstand fire exposure, as determined in a fire test made in conformity with generally accepted standards, or as determined by extension or interpretation of information derived therefrom.

fire resistive. The quality of materials, assemblies, constructions, or structures to resist fire and prevent its spread; fireproof.

fire separation. A construction of specific fire resistance separating parts of a building.

firestopping. A barrier effective against the spread of flames or hot gases within or between concealed spaces.

fire terrace. A level space or area at a setback of an exterior wall of a building and at approximately the same elevation as that of the curb or grade level of the higher street, to provide a safe termination for fire escapes from upper stories of the building.

flame spread. The propagation of flame over a surface.

flame-spread rating. The measurement of flame spread on the surface of materials or their assemblies as determined by tests conducted in conformity with a generally accepted standard.

floor area. The floor area within surrounding walls of a building, or portion thereof.

flue. Enclosed passage, primarily vertical, suitable for removal to the outer air of gaseous products of combustion.

generally accepted standard. A specification, code, rule, guide or procedure in the field of construction or related thereto, recognized and accepted as authoritative.

grade, finished. Natural surface of the ground, or surface of ground after completion of any change in contour.

habitable space. Space occupied by one or more persons for living, sleeping, eating, or cooking. Kitchenettes shall not be deemed to be habitable space. See definitions of **nonhabitable space, public space,** and **exit.**

hallway. An enclosed passageway leading to a stairway or other required exit, which provides common access to rooms or exitways in the same story in a building. See definition of **passageway.**

height, building. Vertical distance measured from curb or grade level to the highest level of a flat or mansard roof, or to the average height of a pitched, gabled, hip or gambrel roof, excluding bulkheads, penthouses and similar constructions enclosing equipment or stairs, providing they are less than 12 feet in height and do not occupy more than 30 per cent of the area of the roof upon which they are located.

hereafter. After the effective date of the acceptance by the municipality of the applicability of the State Building Construction Code.

horizontal exit. Protected opening through or around a fire wall, connecting two adjacent floor areas, each

of which furnishes an area of refuge, and from each of which required exits lead to legal open spaces.

hotel. A multiple dwelling used primarily for the purpose of furnishing lodging and meals to transient guests, for compensation.

interior finish. Material applied directly to walls or ceilings for acoustical correction, surface insulation, decorative treatment, or similar purposes, including but not limited to veneer, wainscoting and paneling. Surface finishes of wallpaper or other materials not more than 1/28-inch thick having no greater fire hazard than wallpaper, shall not be deemed to be interior finish.

interior trim. Material generally not exceeding 12 inches in width, around openings or on wall or ceiling; including casings, stools, aprons, baseboards, chair rails, picture molds, cornice moldings, and moldings applied for decoration.

kitchen. Space, 60 square feet or more in floor area, used for cooking or preparation of food.

kitchenette. Space, less than 60 square feet in floor area, used for cooking or preparation of food.

legal open space. Open space on the premises, such as yards or courts, or an open space permanently dedicated to public use which abuts the premises.

load, dead. Weight of all permanent construction, including walls, framing, floors, roofs, partitions, stairways, and fixed building-service equipment.

load, design. Total load which a structure is designed to sustain.

load, imposed. All loads, exclusive of dead load, that a structure is to sustain.

load, live. Load imposed solely by the occupancy.

load, racking. Load applied in the plane of an assembly in such manner as to lengthen one diagonal and shorten the other.

lobby. A public lounge or waiting place adjacent to and connected with other spaces and a passageway which serves as a principal entrance or exit.

lodger. A transient, temporary, or permanent paying guest.

lodging house. A multiple dwelling used primarily for

the purpose of furnishing lodging, with or without meals, for compensation.

lot line. Line dividing one premises from another, or from a street or other public space.

masonry. A construction of units of such materials as clay, shale, concrete, glass, gypsum, or stone, set in mortar, including plain concrete, but excluding reinforced concrete.

mezzanine. An intermediate floor between the floor and ceiling of any story, covering less than the floor area immediately below.

mixed occupancy. Occupancy of a building in part for residential use and in part for some other use not accessory thereto.

motel. A multiple dwelling, intended primarily for motorists, not over two stories in height, in which the exit from each dwelling unit or sleeping room is directly to the exterior.

multiple dwelling. a——building containing three or more dwelling units; b——building containing living, sanitary and sleeping facilities occupied by one or two families and more than four lodgers residing with either one of such families; c——building with one or more sleeping rooms, other than a one- or two-family dwelling, used or occupied by permanent or transient paying guests or tenants; d——building with sleeping accommodations for more than five persons used or occupied as a club, dormitory, fraternity or sorority house, or for similar uses; e——building used or occupied as a convalescent, old-age or nursing home, but not including private or public hospitals or public institutions.

municipality. A city, town or village.

noncombustible. Material or combination of materials which will not ignite and support combustion when heated at any temperature up to 1382°F. (750° C.), during an exposure of 5 minutes.

nonhabitable space. Space used as kitchenettes, pantries, bath, toilet, laundry, rest, dressing, locker, storage, utility, heater, and boiler rooms, closets, and other spaces for service and maintenance of the building, and those spaces used for access and vertical travel between stories. See definitions of **habitable space, public space,** and **exit.**

nursing home. A building used for the accommodation

and care of persons with, or recuperating from, illness or incapacity, where nursing services are furnished.

occupancy. Use of a building, structure, or premises.

occupied. Used, or intended, arranged or designed to be used.

old-age home. A building used for the accommodation and care of persons of advanced age.

opening protective. Assembly of materials and accessories, including frames and hardware, installed in a wall, partition, floor, ceiling or roof opening to prevent, resist or retard the passage of fire, flame, excessive heat or hot gases.

——**automatic.** Constructed and arranged to operate other than manually; if open, it will close when subjected to a predetermined temperature or rate of temperature rise.

——**self-closing.** Arranged and equipped with devices which will insure closing after having been opened.

owner. Owner of the freehold of the premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, lessee, or other person, firm, or corporation in control of a building.

passageway. Nonhabitable space which serves as a means of travel to or from other enclosed areas. See definitions of **corridor, hallway, lobby,** and **vestibule.**

premises. A lot, plot, or parcel of land including the buildings or structures thereon.

projection, street. Any part of a structure or material attached thereto extending or projecting beyond the street building line, including but not limited to architectural features, marquees, fire escapes, signs, flag poles.

property line. Line establishing the boundaries of premises.

public space. Space within a building for public use, such as lobbies, lounges, reception, ball, meeting, lecture and recreation rooms, banquet and dining rooms and their kitchens, and swimming pools.

repair. Replacement or renewal, excluding additions, of any part of a building, structure, device, or equipment, with like or similar materials or parts, for the

purpose of maintenance of such building, structure, device, or equipment.

required. Required by this Code.

residual deflection. Deflection resulting from an applied load, remaining after removal of such load.

roof covering. Material applied to roof surface for protection against the elements. Roof insulation shall not be deemed to be a roof covering.

self-closing. See definition under **opening protective.**

shaft. A vertical opening or enclosed space extending through one or more stories of a building.

shall. As used in this Code, is mandatory.

smoke stop. A partition in corridors, or between spaces, to retard the passage of smoke, with any opening in such partition protected by a door equipped with a self-closing device.

sprinkler system. A complete automatic sprinkler system which is installed in compliance with generally accepted standards.

stairway. One or more flights of stairs and the necessary landings and platforms connected therewith to form a continuous passage from one floor to another.

store. Enclosed space used for the display and sale of merchandise, or sale of service, to the general public. Space used for cigar or newspaper stand and similar uses in a public lobby or similar location, is not deemed to be a store.

story. Portion of a building which is between one floor level and the next higher floor level or the roof. If a mezzanine floor area exceeds one third of the area of the floor immediately below, it shall be deemed to be a story. A basement shall be deemed to be a story when its ceiling is 6 or more feet above the finished grade. A cellar shall not be deemed to be a story. An attic shall not be deemed to be a story if unfinished and without human occupancy.

street. Thoroughfare dedicated and accepted by a municipality for public use or legally existing on any map of a subdivision filed in the manner provided by law.

street line. Line dividing a lot, plot, or parcel from a street.

structural damage. Loosening, twisting, warping, crack-

ing, distortion, or breaking of any piece, or of any fastening or joint, in a structural assembly, with loss of sustaining capacity of the assembly. The following shall not be deemed to constitute structural damage: small cracks in reinforced concrete, perpendicular to the reinforcing bars; deformation of sheet material when a structural assembly is under applied load, which increases as such load increases but which disappears when such load is removed.

structural failure. Rupture; loss of sustaining capacity or stability; marked increase in strain without increase in load; deformation increasing more rapidly than the increase in imposed load.

structure. An assembly of materials, forming a construction framed of component structural parts for occupancy or use, including buildings.

toilet room. Enclosed space, containing one or more water closets, which may also contain one or more lavatories, urinals, and other plumbing fixtures. See definition of **bathroom.**

ventilation. Supply and removal of air to and from any space by natural or mechanical means.

ventilation, mechanical. Ventilation by power-driven devices.

ventilation, natural. Ventilation by opening to outer air through windows, skylights, doors, louvers, or stacks with or without wind-driven devices.

vestibule. An enclosed space, with doors or opening protectives, to provide protected passage between the exterior and interior of a building, or between spaces within a building.

wall, curtain. A nonbearing wall between columns or piers that is not supported at each story.

wall, fire. A wall of noncombustible construction, with qualities of fire resistance and structural stability, which completely subdivides a building into fire areas, and which resists the spread of fire.

wall, panel. A nonbearing wall built between columns in skeleton construction and wholly supported at each story.

wall, party. A wall on an interior lot line used or adapted for joint service between two buildings or structures.

yard. An open unoccupied space on the same lot, plot,

or parcel of land on which the building stands, which extends the entire length of the front or rear or interior lot line.

yield strength. Stress at which a material exhibits a specified limiting permanent set.

Part 2

Space Requirements

B 201 GENERAL REQUIREMENTS

a——All buildings occupied in whole or in part as multiple dwellings as defined in this Code shall be designed and constructed so as to comply with all the requirements hereinafter set forth concerning size, light, heat, ventilation, and all facilities, in order to provide safe and healthful environment.

b——The term, **accessory use,** shall have a uniform meaning and shall apply in the same manner and under the same conditions or restrictions to all buildings.

B 202 CLASSIFICATION OF BUILDINGS

B 202-1 Classification by Occupancy Groups

Multiple dwellings for the purpose of this Code shall be classified in respect to the permanent or transient character of their occupancy groups, and to the number and physical condition of the occupants. The classification shall be in accordance with the following groups:

Group B1:

Buildings containing one or two dwelling units with more than four lodgers residing with a family in either one of such dwelling units;

Buildings containing three or more dwellings units;

Apartment houses and apartment hotels;

Hotels;

Lodging houses;

Buildings with sleeping accommodations for more than five persons used or occupied as a club, dormitory, fraternity or sorority house, or for similar uses;

Garden apartments;

Motels.

Group B2:

Convalescent, old-age and nursing homes.

B 202-2 Classification by Type of Construction

B 202-2.1 General Requirements

a——Buildings shall be classified by types of construction, based on their relative fire safety. Certain of such

TABLE B 202-2.——MINIMUM FIRE-RESISTANCE REQUIREMENTS OF STRUCTURAL ELEMENTS
(By types of construction; fire-resistance ratings in hours)

Structural element	Construction classification[1]								
	Type 1 (Fire-resistive)		Type 2 (Noncombustible)		Type 3 (Heavy timber)	Type 4 (Ordinary)		Type 5 (Wood frame)	
	1a	1b	2a	2b		4a	4b	5a	5b
Exterior:									
Bearing walls	4	3	2	nc	2	2	2	¾	c
Nonbearing walls	2	2	2	nc	2	2	2	¾	c
Panel and curtain walls[2]	¾	¾	¾	nc					
Party walls[3]	4	3	2	2	4	2	2	2	2
Interior:									
Fire walls[4]	4	3	2	2	4	2	2	2	2
Bearing walls or partitions	4	3	2	nc[8]	2	¾	c[8]	¾	c[8]
Partitions enclosing stairways, hoistways, shafts, other vertical openings; and hallways:									
on outside exposure	2[5]	2[5]	2[5]	2[5]	2[5]	2[5]	2[5]	¾	¾
on inside exposure	1	1	¾	¾	¾	¾	¾	¾	¾
Nonbearing walls and partitions separating tenant spaces	1	1	¾	¾	¾	¾	¾	¾	¾
Columns, beams, girders and trusses (other than roof trusses):									
supporting more than 1 floor	4	3	2	nc	¾	¾	c	¾	c
supporting 1 floor	3	2	¾	nc	¾	¾	c	¾	c
Floor construction including beams	3	2	1[7]	nc[7, 8]	¾[7]	¾[7]	c[7, 8]	¾	c[8]
Roof construction including purlins, beams and roof trusses	2[6]	1[6]	¾[6]	nc	¾	¾	c	¾	c

[1] For classification of buildings by type of construction, see section B 202-2.1a.
[2] For exceptions, see section B 401-3.3b and section B 401-3.4b.
[3] Party walls shall comply with section B 401-8.
[4] Fire walls shall comply with section B 402-2.
[5] In buildings not more than three stories in height, and with not more than eight dwelling units within a fire area, 1 hour in type 1 construction; ¾ hour in type 2, 3, and 4 construction.
[6] If every part of noncombustible roof truss is more than 20 feet above floor next below, protection of the roof truss is not required. Roof construction shall be of noncombustible material, but is not required to have any rating.
[7] In buildings of type 2, 3, and 4 construction, three or more stories in height, the floor above the cellar, basement, or lowest story and all construction below, shall be type 1.
[8] ¾ hour when separating tenant spaces.

types shall be classified as subtypes, based on the relative fire-resistance ratings of the materials and assemblies of which they are constructed, as follows:

Subtypes 1a and 1b are both fire-resistive construction, but vary as to the degree of fire resistance of their structural elements.

Subtypes 2a, 4a and 5a are those in which all structural elements are required to be protected with fire-resistive materials of the ratings designated for those subtypes.

Subtypes 2b, 4b and 5b are those in which the structural elements generally are not required to be protected nor to have any specific fire-resistance rating, except where a specific requirement for the protection of exit enclosures and first floor by fire-resistive materials is established.

b——The fire resistance of each structural element for each type and subtype shall be that set forth in table B 202-2.

c——Openings in fire walls, fire separations, shafts and exit enclosures shall be closed by opening protectives as required by section B 402-4.8.

d——A building which conforms to the type of construction required by its occupancy, height and area, need not comply with the requirements for a higher type of construction even though a portion of its construction is of such higher type.

B 203 HEIGHT, FIRE AREA, AND TYPE OF CONSTRUCTION

B 203-1 General Requirements

a——The height and fire area of a building shall be determined by the occupancy group, resistance of its structural elements to fire, and its fire protection equipment.

b——The premises of every multiple dwelling shall front on one or more streets, or on one or more driveways giving access for all purposes to a street or streets, and the main entrance of the building shall be connected with a street or with such a driveway.

c——A building erected within more than one fire limit shall comply with the requirements of the more restrictive fire limit.

d——Zoning ordinances or fire-limit regulations that

TABLE B 203-1a.——MAXIMUM HEIGHT AND FIRE AREA FOR GROUP B1 OCCUPANCY

Maximum height		Maximum fire area by construction classification in square feet[1]							
In stories	In feet	Type 1 (Fire resistive)	Type 2 (Noncombustible)		Type 3[2] (Heavy timber)	Type 4[2, 3] (Ordinary)		Type 5[3, 4] (Wood frame)	
			2a	2b		4a	4b	5a	5b
1	15	Unlimited	12,000	8,500	10,000	10,000	7,500	6,000	4,000
2	30	Unlimited	11,000	6,500	8,000	8,000	5,500	4,000	3,000
3	40	Unlimited	10,000	4,500	6,000	6,000	3,500	np	np
4	50	Unlimited	9,000	3,000	5,000	5,000	2,500	np	np
5	60	Unlimited	8,000	np	4,000	4,000	np	np	np
6	70	Unlimited	7,000	np	3,000	3,000	np	np	np
7	80	Unlimited	6,000	np	np	np	np	np	np
8	90	Unlimited	5,000	np	np	np	np	np	np
9	100	Unlimited	4,000	np	np	np	np	np	np
10 or more	More than 100	Unlimited	np	np	np	np	np	np	np

[1] The maximum fire area permitted for the highest story of a building determines the maximum fire area for each story in the building.

[2] In hotels of type 3 and 4 construction, the height shall not exceed two stories, except that if a sprinkler system is installed throughout such buildings, the height may be increased to four stories.

[3] Areas indicated may be increased 25 per cent for garden apartments less than three stories in height, and for motels.

[4] See section B 401-3.4c.

TABLE B 203-1b.——MAXIMUM HEIGHT AND FIRE AREA FOR GROUP B2 OCCUPANCY

Maximum height		Maximum fire area by construction classification in square feet[1]							
In stories	In feet	Type 1 (Fire resistive)	Type 2[2] (Noncombustible)		Type 3[2] (Heavy timber)	Type 4[2] (Ordinary)		Type 5 (Wood frame)	
			2a	2b		4a	4b	5a[2]	5b[3]
1	15	Unlimited	8,000	5,000	5,000	5,000	3,500	3,000	3,000
2	30	Unlimited	7,500	3,500	3,500	3,500	3,000	2,500	2,500
3	40	Unlimited	6,500	np	np	np	np	np	np
4	50	Unlimited	5,000	np	np	np	np	np	np
5 or more	More than 50	Unlimited	np	np	np	np	np	np	np

[1] The maximum fire area permitted for the highest story of a building determines the maximum fire area for each story in the building.

[2] Areas may be increased 100 per cent, if sprinkler system is installed throughout the building.

[3] Not permitted unless a sprinkler system is installed throughout the building.

TABLE B 203-1.1a.——MAXIMUM HEIGHT AND FIRE AREA FOR SEPARATE GARAGE BUILDINGS UPON THE PREMISES OF MULTIPLE DWELLINGS

Maximum height		Maximum fire area by construction classification in square feet[1]								
In stories	In feet	Type 1 (Fire resistive)		Type 2[2] (Noncombustible)		Type 3[2] (Heavy timber)	Type 4 (Ordinary)		Type 5 (Wood frame)	
		1a	1b[2]	2a	2b		4a[2]	4b	5a	5b
1	15	Unlimited	20,000	12,000	9,500	9,500	6,500	1,000	5,000	1,000
2	30	Unlimited	20,000	12,000	9,500	9,500	6,500	np	np	np
3	40	Unlimited	20,000	12,000	9,500	9,500	np	np	np	np
4	50	Unlimited	20,000	12,000	9,500	9,500	np	np	np	np
5	60	Unlimited	20,000	12,000	np	np	np	np	np	np
6	70	Unlimited	20,000	np	np	np	np	np	np	np
7 or more	More than 70	Unlimited	np	np	np	np	np	np	np	np

[1] Fire area indicated may be increased by 2 per cent for each 1 per cent of frontage in excess of 25 per cent of the building perimeter which faces on one or more streets, or a yard, court or alley which is 30 feet or more in width and has access to a street.

[2] If sprinkler system is installed throughout the building, the height may be increased by one story or 12 feet.

TABLE B 203-1.1b.——MAXIMUM HEIGHT AND FIRE AREA FOR OPEN DECK STRUCTURES UPON THE PREMISES OF MULTIPLE DWELLINGS

Maximum height		Maximum fire area by construction classification in square feet[1]					
In stories	In feet	Type 1[2] (Fire resistive)	Type 2[2] (Noncombustible)		Type 3 (Heavy timber)	Type 4 (Ordinary)	Type 5 (Wood frame)
			2a	2b			
4	50	Unlimited	Unlimited	20,000	np	np	np
5	60	Unlimited	35,000	np	np	np	np
6	70	Unlimited	30,000	np	np	np	np
7 or more	More than 70	Unlimited	np	np	np	np	np

[1] Fire area indicated may be increased by 2 per cent for each 1 per cent of frontage in excess of 25 per cent of the building perimeter which faces on one or more streets, or a yard, court or alley which is 30 feet or more in width and has access to a street.

[2] An open deck structure may be erected on the same premises with a multiple dwelling provided the structure is located at least 20 feet from the multiple dwelling and at least 10 feet from any interior lot line.

impose more restrictive height or fire-area limitations than required by this section shall control.

e——The height, number of stories, and fire areas between exterior walls or between exterior walls and fire walls, indicated for each occupancy group of each type or subtype of construction, shall not exceed those set forth in tables B 203-1a and B 203-1b.

f——Wherever habitable space is provided on a sloping site below the highest curb level as permitted in section B 206-2, all construction below the level of a required fire terrace shall be type 1. (See section B 211-2f).

g——The height, number of stories, and fire areas between exterior walls or between exterior walls and fire walls of separate garages or structures on the same premises with a multiple dwelling, shall not exceed those set forth in tables B 203-1.1a and B 203-1.1b.

B 203-2 Existing Buildings

Except within fire limits A, a building of type 5 construction, not exceeding three stories or 40 feet in height, existing prior to the effective date of this Code, may be altered or converted to group B1 occupancy provided that such building, when so altered or converted, complies in all other respects with the requirements of this Code.

B 204 YARDS AND COURTS

B 204-1 General Requirements

a——Required windows or other openings providing natural light and ventilation for habitable space shall open upon yards or courts or other legal open spaces or any combinations thereof which comply with the requirements of this section.

b——Lawful zoning regulations shall take precedence over less restrictive requirements of this section.

c——Yards and courts shall be measured from the building outward, shall not begin higher than the floor level of the first habitable story, and in no event begin higher than 23 feet above the curb level or finished grade.

d——Yards and courts shall be open and unobstructed for their required area and full height, except that window sills, belt courses and other architectural or ornamental projections shall not project more than 4

inches from a wall, nor shall fire escapes project more than 4 feet 6 inches into a yard or court.

e——Yards shall be provided with access to a street, either directly or through an unobstructed passage of fire-resistive construction not less than 3 feet wide and 7 feet high.

f——Any recess or offset of a court shall have a minimum width of 5 feet and the depth of such recess or offset shall not exceed its width.

B 204-2 Yards

a——A rear yard shall be provided at the rear of the building and shall extend along the rear lot line of a lot that abuts other lots or portions of lots. For buildings not more than 40 feet in height, on interior lots, the minimum rear yard depth shall be 20 feet. For each foot that the rear wall of the building or portion thereof exceeds 40 feet in height, measured from the level of the rear yard, the depth of the rear yard shall be increased 3 inches. For such buildings on corner lots, the first 50 feet of the rear yard, measured from the side street line, may be reduced to one half of the depth of the rear yard required on an interior lot.

b——If a side yard is provided or required, it shall be not less than 5 feet in width, at any point. For each foot that the side wall of a building or portion thereof exceeds 30 feet in height, the width of a required side yard shall be increased 2 inches.

B 204-3 Courts

a——Outer courts shall have a minimum width of 3 inches for each foot of height of the enclosing walls but not less than 5 feet measured at any point. The length of an outer court shall not exceed four times the width.

b——Inner courts shall have a minimum width of 4 inches for each foot of the height of the enclosing walls, but the least horizontal dimension of such courts shall not be less than 10 feet. The length of an inner court shall not exceed 1½ times the width.

c——An air intake of fire-resistive construction shall be provided at or near the lowest level of every inner court, connecting directly with a street or yard. Such intake shall have a minimum dimension of 3 feet and a minimum cross-sectional area of 20 square feet, and shall be unobstructed throughout, except that where such air intake is not used as a passage, gates or grilles which do not interfere with ventilation may be installed.

B 205 SPACE

B 205-1 General Requirements

a——Space shall be classified as habitable, public, and nonhabitable.

b——Habitable and public spaces shall be so arranged, located, lighted, and ventilated as to provide safe and healthful environment.

c——Nonhabitable space shall have such of those requirements set forth in paragraph b above as may be necessary for the intended use.

B 206 HABITABLE SPACE

B 206-1 Size

a——Habitable space shall have a minimum height of 7 feet 6 inches measured from finished floor to finished ceiling.

b——Every dwelling unit shall contain at least one habitable room which shall contain a minimum of 150 square feet of floor area and shall have a minimum horizontal dimension of 10 feet.

c——Other habitable spaces shall contain not less than 80 square feet of floor area and shall have a minimum horizontal dimension of 7 feet, except that kitchens may have a minimum of 60 square feet of floor area.

d——Every alcove less than 60 square feet in area, except a cooking space or foyer, shall be deemed to be part of a habitable room. The area of the opening in the dividing partition between the alcove and the room shall be at least 80 per cent of the wall area of such partition, measured on the alcove side, but not less than 40 square feet. The depth of such alcove shall not exceed half its width. The floor area of the alcove shall be added to the floor area of the room for the purpose of complying with the requirements of section B 209. An alcove with an area of 60 square feet or more, but less than the required area of a habitable room, shall be separately lighted and ventilated as required for habitable space.

B 206-2 Location Below Curb Level

a——Where a building is situated on a sloping site and the conditions of grade are such that a portion of a story or stories below the highest curb level meets the light

and ventilation requirements for a basement, such portions may be occupied as habitable space, provided such space does not exceed in depth four times its clear height.

b——Windows for light and ventilation shall open upon a required yard, court, or legal open space having access to a public thoroughfare. The elevation of the finished grade shall be at least 6 inches below sills of such windows.

B 206-3 Miscellaneous Requirements

a——Dwelling units shall be separated from each other and from other spaces outside the dwelling unit.

b——Separation between dwelling units shall provide a sound transmission loss of at least 40 decibels in the frequency range of 256 to 1024 cycles per second.

c——Sleeping rooms within dwelling units shall be separated from each other and from other spaces outside the sleeping rooms to provide privacy.

B 207 PUBLIC SPACE

B 207-1 Height

Public space shall be at least as high as is required for habitable space, except that public space in hotels shall have a minimum height of 9 feet measured from finished floor to finished ceiling, and except that areas below and above a balcony or mezzanine shall have a minimum clear height of 7 feet 6 inches.

B 207-2 Miscellaneous Requirements

a——All food storage spaces for public kitchens shall be constructed so as to be verminproof and rodentproof.

b——All public kitchen and toilet walls or partitions shall be provided with a cove base; walls, floors, and cove base shall be constructed of nonabsorbent materials which are easily cleanable.

B 208 NONHABITABLE SPACE

B 208-1 Height

Nonhabitable space, except crawl spaces and attics, shall have a minimum height of 7 feet measured from floor to ceiling.

B 208-2 Location of Toilet Rooms

a——Toilet rooms shall be accessible from any sleeping room without passing through any other sleeping room.

b——Unless located within dwelling units or directly connected with sleeping rooms, toilet rooms shall be provided in each story containing habitable space, and shall be accessible thereto.

c——Toilet rooms shall be provided in readily accessible locations, adjacent to public spaces, and in separate rooms for each sex.

B 208-2.1 Location of Toilet Rooms for Employees

a——Toilet rooms shall be in separate rooms for each sex, where there are employees of both sexes, readily accessible to their regular working places.

b——Toilet rooms shall not open directly into any public kitchen or other public space used for the cooking or preparation of food.

B 208-2.2 Waterproofing of Bathroom and Toilet Room Floors

The floor of every bathroom or toilet room shall be made waterproof, and such waterproofing shall extend 6 inches or more above the floor so that the floor can be flushed or washed without leaking.

B 209 LIGHT AND VENTILATION

B 209-1 General Requirements

a——Habitable spaces shall be provided with both natural light and artificial light.

b——All spaces, except closets or similar spaces, shall be provided with artificial light.

c——Habitable spaces shall be provided with natural ventilation, and may also be provided with mechanical ventilation.

d——The tops of windows or equivalent sources of natural light and ventilation in habitable space shall not be more than 18 inches below finished ceilings, unless the top of at least one such source in each room is at least 7 feet above the finished floor.

e——Public spaces shall be provided with either natural ventilation or mechanical ventilation, or both.

f——Artificial light and mechanical ventilation shall comply with sections B 505-2 and B 507.

g——Required lighting or ventilating openings shall not face on a street, alley or other space permanently dedicated to public use of lesser width than required for side yards or courts, except that the width of such street, alley, or space may be credited in the computation to establish the width or depth of side yards or courts.

B 209-2 Natural Light for Habitable Space

a——Natural light shall be provided through one or more windows, skylights, transparent or translucent panels, or any combination thereof, that face directly on legal open spaces above the adjoining finished grade, or above a roof.

b——Each habitable space shall be provided with natural light by means of openings described in this section, in an amount equivalent to that transmitted through clear glass equal in area to 10 per cent of the floor area of the habitable space.

c——The lighting area equivalent to clear glass shall be increased to 12½ per cent of the floor area if the natural light is from a single light area located entirely in one wall which is more than 15 feet distant from the opposite wall, or if the distance from the jamb of the light area is more than 9 feet from an intersecting wall. No part of any room shall be more than four times its clear height distant from the lighting opening.

B 209-3 Natural Ventilation for Habitable Space

a——Natural ventilation shall be provided through openable parts of windows or other openings in exterior walls that face legal open spaces above the adjoining finished grade or above a roof, or through openable parts of skylights.

b——Each habitable space shall be provided with natural ventilation through openable parts of the opening described in this section which are equal in area to not less than 5 per cent of the total floor area of each habitable space.

c——The openable ventilating area shall be increased to 6¼ per cent of the floor area if the ventilation is from a single ventilating area located entirely in one wall which is more than 15 feet distant from the opposite wall, or if the distance from the jamb of the ventilating area is more than 9 feet from an intersecting wall.

No part of a room shall be more than four times its clear height distant from the ventilating opening.

B 209-4 Natural Ventilation for Public Space

Public spaces, if provided only with natural ventilation, shall comply with the requirements of section B 209-3.

B 209-5 Natural Ventilation for Nonhabitable Space

a——The following spaces shall be provided with natural ventilation by openings which comply with the requirements of section B 209-3, or with mechanical ventilation as set forth in section B 507. The minimum openable area of the opening for natural ventilation shall be:

TABLE B 209-5.——MINIMUM OPENABLE AREAS FOR NATURAL VENTILATION

Space	Minimum openable area
Kitchenettes	3 square feet
Bathrooms	3 square feet
Toilet rooms:	
connected to bedrooms or in dwelling units	3 square feet
used by public or employees	1 square foot per water closet; minimum 3 square feet
Cellars, basements, and attics	1 square foot per 50 square feet of floor area. Two openings oppositely located.

b——Spaces which contain central heat producing, air conditioning and other equipment, shall be ventilated to the outer air, and air from these spaces shall not be recirculated to other parts of the building.

c——Crawl spaces shall be ventilated by openings so located and of such area as to minimize deterioration of the structural members from condensation or other causes, in conformity with generally accepted standards.

B 210 ACCESS AND VERTICAL TRAVEL BETWEEN STORIES

B 210-1 Stairways and Stairs

a——Stairways, except intercommunicating or access stairs between not more than two stories within areas of the same occupancy, shall be enclosed as set forth in section B 211-5.

b——Stairways, in addition to those that serve in a required exit, shall be of the fixed type and shall be arranged and constructed for safe ascent and descent. Stairs shall be of sufficient width to serve the occupants, but not less than 28 inches in width.

c——Stairs within a dwelling unit, or stairs or escalators which are accessory or ornamental and are not part of a required exit, are not required to be enclosed if located as set forth in section B 402-4.4d. They shall be located so as not to obstruct or interfere with any required exit.

d——Ornamental stairs with a minimum width of 5 feet are permitted. If winders are used, width of treads exclusive of nosing shall not be less than 7 inches at any point.

e——Treads, risers, handrails and railings shall comply with the requirements of section B 211-3.

B 210-2 Elevators

a——Elevators shall be enclosed in hoistway shafts which conform to the fire-resistive requirements as set forth in table B 202-2. Not more than three elevators shall be installed in a multiple hoistway.

b——A stairway or other exit shall be accessible from every elevator entrance landing unless the dwelling unit or area served is otherwise provided with required exits.

B 211 EXITS

B 211-1 General Requirements

a——Every building and structure shall be provided with exits, which shall be arranged, constructed and proportioned in number and width to the number of occupants, the construction and height of the building, and its fire protection equipment, so that all occupants may escape safely from the building in case of emergency.

b——Safe continuous exit shall be provided from the interior of the building through passageways or hallways connecting with enclosed stairways leading to a street or other legal open spaces at grade level connected to a street.

c——No required exit from habitable space in a multiple dwelling shall lead through a garage.

d——Every passageway and enclosed stairway which serves as an exit or part thereof shall be enclosed with fire-resistive construction as set forth in table B 202-2. In multiple dwellings more than three stories in height, exit stairways shall be separately enclosed. Openings in such construction shall be provided with opening protectives as set forth in section B 402-4.8.

e——The required width of exits shall not be diminished throughout the path of travel to the exterior of the building. Exits shall be plainly marked with directions to a designated termination at a place of safety, as provided in section B 505-2.3, and shall be lighted at all times by natural or artificial light of intensity sufficient for safe travel.

f——Exits from any room may lead through other rooms of the same tenancy.

g——Fire escapes shall not be permitted as a means of exit from buildings of group B2 occupancy.

h——Slide escapes and spiral stairs shall not be permitted as exits, except that spiral stairs or fixed ladders of noncombustible material may be permitted as one of the means of exit to legal open spaces from a boiler, engine, or mechanical equipment room.

i——The minimum width of exits for all occupancies shall be 36 inches, except for hotels, in which the minimum width shall be 44 inches. The minimum required width of an exit shall be measured at the narrowest point in line of travel.

B 211-2 Passageways, Ramps, Horizontal Exits and Fire Terraces

a——Passageways, unless otherwise provided for in this Code, and corridors, hallways, and vestibules, shall have a minimum floor-to-ceiling height of 7 feet 6 inches. They shall be designed in so far as practicable to keep their length to a minimum, but in no event shall they exceed 100 feet in length without a smoke stop.

b——If two or more exit passageways or ramps converge into each other, the common exit thus formed shall be at least equal in width to three fourths of the combined widths of the exits.

c——Ramps which serve as an exit or part thereof shall not have a gradient of more than 1 in 10, and their surfaces shall be nonslip. Floors of areas of different

levels on opposite sides of a horizontal exit shall be connected by a ramp, or by stairs with not less than two risers.

d——Where a stairway connects with, or is continued in any direction by means of, a ramp, or where a ramp changes direction, there shall be a level area or platform the full width of the ramp or stairs, but not less than 3 feet in length. Where a door enters upon a ramp there shall be a level area or platform extending at least one third the width of the door beyond the jamb on each side. The pitch of the ramp shall not interfere with the full swing of the door, nor shall such swing of door decrease the required width of the ramp.

e——Horizontal exits which serve as a required means of exit between areas of the same tenancy in a story shall have a continuously available path of exit travel leading from each side of the horizontal exit to an enclosed stairway or other required exit leading to legal open spaces outside the building. The floor area on either side of a horizontal exit shall be sufficient to hold the occupants of both floor areas, allowing not less than 3 square feet of floor area per person. Exit openings in walls shall be protected by opening protectives. Bridges and open-air or enclosed balconies that form a part of a horizontal exit shall be constructed of noncombustible material, and floors shall be solid and unpierced. The floor level of unenclosed balconies and bridges shall be not less than 4 inches nor more than 8 inches below the building floor level.

f——Fire terraces shall be provided on buildings of type 3 and 4 construction on sloping sites containing dwelling units located as permitted in section B 206-2, if the building faces only one street or faces one street and another street on a lower level at the rear. Fire terraces are not required on buildings that front on three or more streets or are located on corner lots. Fire terraces shall extend the full length of the wall from which the setback is made and shall connect with an enclosed fire passageway which shall extend to the street at the front of the building. The minimum width of a fire terrace shall be 8 feet.

g——Open sides of bridges, balconies, fire terraces, or roof extensions, shall be protected by parapet walls or railings at least 3 feet in height and meeting the requirements set forth in section B 304-9.

h——Wall openings opening on, or within 10 feet be-

low, or within 10 feet horizontally of, unenclosed bridges or balconies, shall be protected with opening protectives.

B 211-3 Exit Stairways

a——Required stairways shall continue to the roof in buildings three or more stories high, except when the slope of the roof exceeds 15 degrees. Required stairways which do not continue to the roof shall be connected at the top story by public passageways, hallways, or corridors.

b——Roofs of buildings three or more stories high, with a slope of less than 15 degrees, which are accessible from stairways, fire escapes, or ramps, shall be protected with a parapet wall or railing not less than 3 feet in height.

c——Stairways which serve as a required exit from any story shall be so arranged, and of such size, construction, and materials that they will provide safe ascent or descent. They shall terminate at street level and be connected to a street, or on a fire terrace or other legal open space, and they shall conform to all requirements of this section and table B 211-3.

TABLE B 211-3.——DIMENSION REQUIREMENTS FOR EXIT STAIRS,[1] HANDRAILS, AND GUARDRAILS

Component	Minimum			Maximum		
	Height	Length	Width	Height	Length	Width
Vertical rise of any run of stairs				12 ft		
Headroom over landing floors and tread nosing	7 ft					
Stairway			36 in.[3]			
Terminal and intermediate landing			36 in.[3]			
Tread		36 in.[3]	9½ in.			
Riser	(2)	36 in.[3]				
Handrail and guardrail						
Top above landing floor	33 in.			48 in.		
Top above tread nosing	31 in.			34 in.		
Projection of handrail from finished wall						3½ in.[4]
Openings in guardrail					48 in.	6 in.

[1] For required minimum width, see table B 211-9.2.

[2] The product obtained by multiplying height of riser by width of tread shall be not less than 70 nor more than 75, but the tread width exclusive of nosing shall be not less than 9½ inches.

[3] 44 inches in hotels.

[4] Clearance between handrail and finished wall 1½-inch minimum.

d——Terminal and intermediate landings shall be at the same level as the floor of any story from which doors are provided for entrance or departure to stairways. Such landings shall be at least 6 inches wider than any door opening upon them and at least 42 inches wide, but in no event less than the width of the stairway of which they are a part. There shall be a clearance of at least 22 inches from the edge of a door to any obstruction at any point in the arc of its swing. Door saddles, if any, shall not be more than 1 inch high and their top edges shall be beveled or rounded.

e——All stair treads, risers, strings and landings shall be solid. Treads shall be set level and true, and top surfaces shall not vary more than 1/8 inch in any run. Risers shall not vary more than 1/8 inch in height in any run. Treads and risers shall be constructed of noncombustible material, except in buildings of type 4a, 4b, 5a and 5b construction three stories or less in height.

f——Stairs or steps with more than three risers shall have a guardrail parallel to the slope of the stairs on any open side.

g——Stairs less than 44 inches in width shall be provided with a handrail on at least one side, and if 44 inches or more in width, on both sides. If stairways are 88 inches or more in width, they shall also be provided with intermediate handrails spaced not more than 66 inches on center.

h——All landings shall be provided with guardrails on their open sides.

i——Handrails shall be started at the first tread both top and bottom and shall have no obstruction on or above them tending to break a handhold, and the ends of handrails shall be returned to the wall or newel post.

B 211-4 Doorways

a——Doors in required exits shall swing outward in the direction of exit travel, except that in buildings of group B1 occupancy containing dwelling units exclusively, the street entrance and vestibule doors may swing inward. Doors from dwelling units or sleeping rooms shall not be deemed to be required exits, and may swing inward. Doors on any public passageway, hallway, corridor or stairway, shall not have any openings therein, nor shall transoms above such doors be permitted.

b——Exit doors to enclosed stairways shall be arranged

to remain normally closed, and shall be of such fire resistance as required by sections B 401-4.2 and B 402-4.8.

c——Exit doors shall be readily openable from any floor area or occupied space, shall be arranged so that they cannot be locked against exit from such area or space, and shall be equipped with self-closing and other necessary devices which will maintain them in a normally closed position.

d——No single swing door in a doorway of an exitway shall be more than 44 inches nor less than 28 inches in width, except that each leaf of a pair of doors shall be not less than 24 inches in width.

e——The total width of exit doorways or openings shall be not less than required to provide for the total number of persons served by such exit doorways or openings, as determined in accordance with section B 211-9. The total width of exit doorways, or openings, through which an exit stairway discharges, shall be at least equal to the width of that stairway. Where two or more exit stairways converge, the exit doorways or openings through which the combined stairways discharge shall be at least equal in total width to three fourths the combined width of such exit stairways.

f——No doorway shall be less than 6 feet 8 inches in height.

g——Wings of revolving doors shall be released by ordinary body pressure so that they shall readily fold back independently. The clear width of the resulting opening on each side shall be not less than 22 inches.

h——Not more than 50 per cent of the required exit doors may consist of revolving doors, and there shall be at least one swinging door within 20 feet of each revolving door.

i——Revolving doors shall not be permitted as a required exit from any building of group B2 occupancy.

B 211-5 Exit Enclosures

a——Passageways and enclosed interior stairways, if serving as required exits or parts thereof, shall be arranged and constructed with enclosures and separations having fire-resistance ratings as set forth in table B 202-2, and as further required in section B 402-4.4.

b——No openings shall be permitted in stairway enclosures except the required doors for entrance or exit,

windows in exterior walls, and window or skylight at roof.

c——Exits from upper stories shall be enclosed to the exterior of the building with construction which complies with the requirements set forth in table B 202-2. A lobby may be part of such enclosure provided it also meets such requirements and provided it is separated by fire separations and opening protectives from rooms or spaces in which there are combustible contents, in accordance with section B 402-1c and section B 402-4.1.

d——A basement or cellar stairway from the first story of a multiple dwelling shall be enclosed, and the door openings at the top and bottom of such stairs shall be equipped with opening protectives.

TABLE B 211-6.——MAXIMUM DISTANCE OF TRAVEL TO EXITS

Construction classification	From——	To a door——	Distance in feet
All types	Door of any room in any dwelling unit	Opening into an exit passageway on the same story[2]	50
Type 3, 4 and 5	Main entrance door of any dwelling unit or any room or any part of a fire area not divided into dwelling units or rooms, in a story above the grade story, to a passageway[1]	Opening into an exit stairway or horizontal exit on the same story[2]	50[3]
Type 3, 4 and 5	Main entrance door of any dwelling unit or any room or any part of a fire area not so divided, in a grade story, to a passageway	Opening at grade level to a legal open space or horizontal exit	50[3]
Type 1 and 2	Main entrance door of any dwelling unit or any room or any part of a fire area not so divided, in a story above the grade story, to a passageway[1]	Opening into an exit stairway or horizontal exit on the same story	100
Type 1 and 2	Main entrance door of any dwelling unit or any room or any part of a fire area not so divided, in a grade story, to a passageway	Opening at grade level to a legal open space or horizontal exit	100
All types	Door of any room or any point in a fire area not divided, in a basement or below-grade story	Opening into an exit stairway or legal open space, or horizontal exit	75
All types	Doors of below-grade rooms enclosing equipment as set forth in section B 211-6b	Opening into exit stairway leading to legal open space	20

[1] In buildings not more than three stories in height, may open directly upon exit stairway.
[2] Exits from dwelling units occupying parts of not more than two stories may be from either story.
[3] In garage buildings, or in buildings having a sprinkler system installed throughout, distance may be 100 feet.

B 211-6 Distance of Travel to, and Location of, Exits

a——Exits shall be independent of, and as remote from each other as is practicable, and shall be readily accessible to occupants of the building.

b——Spaces housing heat producing equipment capable of operating at more than 15 psi or having an individual or combined rated gross capacity of 250,000 Btu per hour or more, oil-fired incinerators, refrigerating machinery, and transformers or equipment producing or using gas or vapor, shall not be located directly under or adjacent to an exit or lobbies, and shall be separated from the required exits from below- and above-grade fire areas.

c——If a roof is used or occupied for purposes other than incidental access by the occupants, exits shall be provided for such use or occupancy as required by this Code.

d——The distance of travel from the entrance of any dwelling unit, sleeping room, public or undivided habitable space within a fire area, to exits from the story in which such space is located, shall not exceed the maximum distance set forth in table B 211-6.

B 211-7 Exterior Stairways

a——Exterior stairways shall terminate in a legal open space, with access to a street. No part of an exterior stairway shall be within 5 feet of any interior lot line.

b——Access to exterior stairways from any floor area shall be through exit doors at floor level, and the platform on which the door opens shall not be less than 4 inches nor more than 8 inches below the floor level.

c——Exterior stairways on buildings of type 4 or 5 construction, not more than two stories high, may be constructed of wood provided bearing and supporting members are not less than 4 inches, and all other members are not less than 2 inches in their least dimension. Balconies and platforms shall be securely attached to a wall or supported by columns. Treads and risers shall be as set forth in table B 211-3.

d——The platforms and landings shall be guarded by railings, and the stairs by handrails, conforming to the requirements of table B 211-3.

e——Construction shall be in conformity with generally accepted standards, but shall be not less than required

for fire escapes, except as otherwise provided in this section.

B 211-8 Fire Escapes

B 211-8.1 General Requirements

a——Fire escapes which serve as a required second means of exit from a dwelling unit, other habitable space, or roof of a building, shall be located, arranged and constructed in such manner that a safe, unobstructed and continuous passage is provided to a safe landing place on a legal open space or fire terrace. Yards, courts, or fire terraces upon which fire escapes terminate, not otherwise provided with access to a street, shall be connected with a street through an unobstructed passageway of fire-resistive construction not less than 3 feet wide by 7 feet high, independent of any other exits.

b——Fire escapes on buildings more than three stories in height shall continue to the roof, except when located on the front of building, or when the slope of the roof exceeds 15 degrees.

c——The lowest balcony above a sidewalk shall not be less than 10 feet nor more than 16 feet above the sidewalk, and if over a driveway, it shall be not less than 14 feet nor more than 16 feet above the driveway.

d——The lowest balcony shall be provided with a drop ladder or counterbalanced stairs if it is more than 5 feet above the ground or safe landing place.

B 211-8.2 Access to Fire Escapes

a——Access shall be as remote as practicable from the principal exit of the dwelling unit or other area served.

b——Access from dwelling units shall be through unobstructed windows or doors to a fire escape balcony; access from other habitable space shall be by way of passageways, hallways, or corridors to a fire escape.

c——Access shall not be through a bathroom window; if through a kitchen, access shall not be obstructed by sinks or other fixtures.

d——Access shall not be from or through a public stairway.

B 211-8.3 Limitations on Location of Fire Escapes

A fire escape which serves as one of the required exits from a dwelling unit shall be located as follows:

a——On a wall facing a street or yard, or in a recess

off such wall not more than 5 feet deep, provided such recess is open to the street or yard and at the top, or

b——On a wall of a court, if no room of the dwelling unit faces upon a street or yard, and if such court complies with the following:

An inner court, with least horizontal dimension of 35 feet, directly connected at the bottom of the court with a fire-resistive passageway not less than 3 feet wide and 7 feet high, which leads to a street, unless the court is otherwise connected with the street.

An outer court at least 18 feet in width, and the length not more than twice the width, or, if an outer court situated on an interior lot line, with a least dimension of 10 feet at every point.

B 211-8.4 Construction of Fire Escapes

Fire escapes shall be of material having the properties of ferrous metal, other than cast iron or metal of characteristics similar to cast iron, consisting of balconies and straight-flight stairways with guard and hand railings, and shall be constructed, assembled, and securely attached to the building, in conformity with generally accepted standards.

B 211-9 Determination of Required Widths, Number, and Types of Exit

Every space and subdivision including a dwelling unit, fire area, story, mezzanine, or flat roof occupied or cus-

TABLE B 211-9.1.——FLOOR AREA PER OCCUPANT

Space or occupancy	Square feet of area per occupant		
	Below-grade floor areas	First-story floor areas	Floor areas above first floor
Habitable space			
Group B1	200	125	125
Group B2	200	100	75
Public space			
Dining rooms	10	10	10
Lecture rooms, auditoriums	6	6	6
Gymnasiums	15	15	15
Recreation rooms	40	40	40
Nonhabitable space			
Storage	300	300	300
Motor vehicle garage on same premises with or in a multiple dwelling	300	300	300
Service	100	100	100

TABLE B 211-9.2.——MINIMUM REQUIRED WIDTH OF EXITS

Doorway to passageway, or horizontal exit		Stairway or ramp	
Number of persons	Width, in inches[1, 2]	Number of persons	Width, in 22-inch units
1– 85	36	1– 40	[4]
86–115	37– 44	41– 50	2
116–145	45– 55	51– 60	2½
146–175	56– 66	61– 70	3
176–205	67– 77	71– 80	3½
206–235	78– 88	81– 90	4
236–265	89– 99	91–100	4½
266–295	100–110	101–110	5
296–325	111–121	111–120	5½
326–355	122–132[3]	121–130	6[5]

[1] Width of doorway shall be the clear distance between jambs; stops shall not reduce door opening by more than 1½ inches.
[2] Doorways shall comply with section B 211-4d.
[3] If more than 132 inches wide, exit shall be arranged into two or more openings.
[4] 36 inches.
[5] If more than six 22-inch units, exit shall be arranged into two or more stairways.

TABLE B 211-9.3.——REQUIRED MINIMUM NUMBER OF EXITS

Exit from——	Group B1 1 story	Group B1 2 stories or more	Group B2 any number of stories
Building	1	2[2]	2
Story	1	2[2]	2
Cellar or basement[1]	2	2	2
Fire area	1	2[3]	2
Dwelling unit	1	2[2, 4]	2
Room, other than in dwelling unit	1	1	1
Public space	2	2	2
Mezzanine, for each 100 persons	1	1	1
Garage	2	2	2

[1] Every area containing equipment as set forth in section B 211-6b, shall be provided with an emergency exit.
[2] In buildings not more than two stories in height, one means of exit permitted from habitable space which has access to a window or other opening which is 14 feet or less above grade directly below.
[3] One exit for each fire area in type 1 construction not more than three stories in height, with not more than four dwelling units within fire area on each story, provided the exit stairs continue to a flat roof, from which there is access to another exit stairs similarly arranged, leading to a legal open space.
[4] One exit in type 1 and 2 construction.

tomarily used by persons, shall be provided with exits whose width, number, and type are determined by the following procedure:

First, using table B 211-9.1, divide the floor area of the space or subdivision by the applicable floor area per occupant to determine the number of persons for which exits are to be provided;

Second, using table B 211-9.2, obtain the required total width of exits of corresponding type, the discharge capacity of which is not less than that for the number of persons for which exits are to be provided;

Third, using table B 211-9.3, determine the minimum number of exits required; and,

Fourth, establish the types of exits, as set forth in section B 211-9.4.

B 211-9.4 Types of Required Exits

The minimum number of exits required by table B 211-9.3 shall consist of enclosed stairways, with the following alternatives permitted where two or more enclosed stairways are required:

In buildings of group B1 occupancy not exceeding six stories or 70 feet in height, one fire escape or exterior stairway is permitted in lieu of one enclosed exit stairway, if accessible directly from each dwelling unit.

In all multiple dwellings, one horizontal exit is permitted in lieu of one enclosed stairway.

Horizontal exits shall not be in excess of one half the total required number of exits from any one fire area.

B 212 GARAGES UPON THE SAME PREMISES WITH A MULTIPLE DWELLING

B 212-1 General Requirements

a——A garage may be provided or erected in any multiple dwelling, or attached thereto, or in a separate building or structure on the premises thereof, if it complies with the requirements of this Code. Motor vehicles may be parked or stored in the open upon the premises of a multiple dwelling, but no vehicle may be parked or stored nearer than 10 feet to any wall of a multiple dwelling in which there are openings.

b——Such garages shall be used primarily for the stor-

age or parking of passenger motor vehicles. The sale, storage or handling of gasoline or other flammable liquids, and the repair and refinishing of motor vehicles, shall be prohibited, but ordinary washing and polishing shall be permitted.

c——All garages shall be arranged and constructed so that flammable vapors cannot spread to fixed sources of ignition. Floors or decks shall be constructed of noncombustible materials that will not absorb flammable liquids, and each floor or roof deck upon which vehicles are stored shall be pitched for drainage.

d——Each fire area in excess of 1000 square feet of every story of a garage shall be provided with at least two exits. Entrances for vehicles may serve as required exits.

e——If ramps are used for vehicle travel from street to garage floor or from floor to floor, the slope shall not exceed 15 per cent.

f——If roof decks of multiple dwelling or garage building are used for the parking or storage of motor vehicles, the open sides of decks shall be protected by parapet walls or railings. (For bumper-block requirements, see section B 304-9).

g——Central heating equipment for a garage shall be separated as required in section B 402-4.6d, and all heating equipment installed in such garage shall comply with the requirements of section B 504-2.13.

h——Garage areas in excess of 1000 square feet shall be provided with mechanical ventilation in accordance with section B 507-5.

i——Garages shall be provided with fire protection equipment in conformity with sections B 405g and B 405h.

j——Garage areas in excess of 1000 square feet shall be provided with electric light in conformity with section B 505-2, in addition to any natural light.

B 212-2 Garages in, or Attached to, Multiple Dwellings

a——A garage in, or attached to, a multiple dwelling shall be separated from the multiple dwelling by fire-resistive material and construction. The separation shall comply with section B 402-4.2.

b——Access between a multiple dwelling and a garage with a fire area of more than 1000 square feet located

within or attached to the building, shall be provided through a vestibule of fire-resistive construction as set forth in section B 402-4.2b, and equipped with opening protectives in conformity with section B 402-4.8.

c——The garage shall be constructed so that toxic or flammable gases and vapors cannot be transmitted to the multiple dwelling, or through the heating or ventilating systems of the multiple dwelling.

B 212-3 Garage Buildings or Structures on Premises of Multiple Dwellings

A garage building or structure on the same premises with a multiple dwelling but not attached, shall be separated from the multiple dwelling by distance. The distance separation shall comply with section B 401-3.

B 213 PROJECTION BEYOND THE STREET LINE

B 213-1 General Requirements

a——No part of any building or structure shall project beyond the street line so as to encroach upon a public street or space, unless specifically permitted by the municipality.

b——Any part of a building, or sign attached thereto, projecting beyond the street line, shall be constructed so that it can be removed at any time upon demand by the municipality without causing the building to become structurally unsafe.

Part 3

Structural Requirements

B 301 GENERAL REQUIREMENTS

a——Buildings and parts thereof shall be capable of sustaining safely their own weight and the loads to which they may be subject.

b——Buildings shall be constructed and integrated so that loads are transmitted to the soil without undue differential settlement, unsafe deformation or movement of the building or of any structural part.

c——Wherever structural material or assemblies are subject to deterioration and might become structurally unsound if unprotected, protection in conformity with generally accepted standards for the material involved shall be provided. Causes of such deterioration include, among others, action of freezing and thawing, dampness, corrosion, wetting and drying, and termites and other destructive insects.

d——Buildings built in soil which is water bearing at any season of the year shall be constructed so that ground and surface water will not penetrate into habitable spaces, basements and cellars.

B 302 SOIL BEARING VALUE

B 302-1 General Requirements

The bearing value of the soil shall be determined in order that foundations may be proportioned so as to provide a minimum of absolute and differential settlement. Soil or pile tests, presumptive bearing values of the soil, reduction factors for pile groups, and pile-driving formulas, referred to in this Code, shall be in conformity with generally accepted standards.

B 302-2 Determination

a——For buildings 40 feet or less in height, the allowable bearing value of the soil upon which the building rests shall be the presumptive bearing value, or shall be determined by field loading tests made in conformity with generally accepted standards.

b——For buildings more than 40 feet in height, where the footing load on the soil exceeds 1000 psf, there shall be a minimum of one test pit or boring for every 2500 square feet or part thereof of grade-floor building area,

carried sufficiently into acceptable bearing material to establish its character and thickness. At least one boring for every 10,000 square feet or part thereof of building area shall be carried to a minimum depth below grade equal to the height of building but need not be carried more than 100 feet below grade, or to that minimum depth which shows 25 continuous feet of fine sand or better bearing material than fine sand, or 5 feet of bed rock, below the deepest proposed footing. A record of all borings made by core drill or spoon showing the foot-by-foot character of the soil, the ground water level, and the number of blows required for each foot of penetration of the spoon, shall be kept and certified by the architect or engineer in charge. The subsurface exploration apparatus including the size of spoon, weight and the drop shall be in conformity with generally accepted standards. Wash borings shall be deemed unacceptable. Boring samples taken at each significant change of soil strata and at 5-foot intervals thereafter shall be retained and made available to the enforcement officer. When in his opinion additional subsurface information is required because of the variable geology of the site, additional test pits or borings shall be made.

c——For buildings more than 40 feet in height, when the building load is transferred to the soil by spread footings, the allowable bearing values of the successive layers of soil determined by test pits or borings shall be the presumptive bearing values and, if required by the enforcement officer, shall be substantiated by field loading soil tests made on undisturbed, natural soil at the level of the proposed foundation with fill, if any, removed.

d——For buildings more than 40 feet in height, when the building load is transferred to the soil through the medium of friction or bearing piles, the capacity of a pile group shall be the number of piles multiplied by the capacity of one pile and by a reduction factor for friction piles. The capacity of a pile shall be determined by either of the following methods or by an approved combination of them with a limit determined by the strength of the pile as a structural member:

A field loading pile test, one such pile test for each 15,000 square feet or part thereof of grade-floor building area, with a minimum of two test piles, or

A generally accepted pile-driving formula.

B 302-3 Performance Criteria for Field Loading Soil Test

Under field loading soil test, the total settlement caused by the proposed load on the soil, measured after a period during which no settlement has occurred for 24 hours, shall not exceed 3/4 inch. The additional settlement caused by a 50 per cent increase in the proposed load, measured after a period during which no settlement has occurred for 24 hours, shall not exceed 60 per cent of the total settlement as previously measured under the proposed load.

B 302-4 Performance Criteria for Pile Test

a——The test load shall be twice the proposed pile load, applied in increments of one quarter of the proposed pile load, with readings of settlements taken to the nearest 1/32 inch and plotted against load. The test load may be increased to more than twice the proposed pile load value until the gross settlement is approximately 1 inch. At each step the load shall remain unchanged until there is no settlement in a 2-hour period, and the test load shall remain in place until there is no settlement in 48 hours.

b——The total test load shall then be removed in decrements not exceeding one quarter of the total test load at intervals of not less than 1 hour, with rebound read after each removal of load and plotted against load and with the final rebound recorded 24 hours after removal of the last decrement. The allowable pile load shall be the lesser of one half of that load which caused:

A gross settlement of 1 inch, or

A net settlement (gross settlement minus total rebound) equal to 0.01 inch per ton times total test load in tons,

with a limit determined by the strength of the pile as a structural member.

B 303 ALLOWABLE STRESSES OF MATERIALS

B 303-1 General Requirements

Safe working stresses shall be assigned to materials in accordance with their classification either as controlled materials or ordinary materials, and these stresses shall not be exceeded unless specifically permitted in section B 304-10.

B 303-2 Controlled Materials

The safe working stresses of materials which have been identified and certified for quality and strength by a recognized authoritative inspection service, grading organization or testing laboratory, or are identified by manufacturer, producer, and mill test as meeting generally accepted standards, shall conform to the specification and stresses for such materials in such standards. When a material is formed and cast in the field, tests prior to the construction and during the construction shall be made, and the composition and strength of the material shall be certified by any of the above appropriate agencies and by the architect or engineer responsible for the design.

B 303-3 Ordinary Materials

Materials which do not conform to the requirements for controlled materials shall be considered ordinary materials, and their quality and safe working stresses shall conform to the specifications and stresses for ordinary materials in generally accepted standards. When quality and safe working stresses are not so specified, they shall be determined by test in conformity with the requirements of generally accepted standards. When a material is formed and cast in the field, tests during the construction shall be made and its composition and strength certified by any of the appropriate agencies designated under section B 303-2, and by the architect or engineer responsible for the design.

B 304 DESIGN LOADS

B 304-1 General Requirements

A building and all parts thereof shall be of sufficient strength to support the design loads and to resist the deformations caused by such loads to which they may be subjected, without exceeding the allowable stresses as described in section B 305-1. Such loads shall include the dead load and the following imposed loads where applicable: live, snow, wind, soil pressure including surcharge, hydrostatic head, and impact loads.

B 304-2 Live Loads

B 304-2.1 General

a——Loads set forth in table B 304-2.2 do not include unusual concentrations, such as but not limited to stor-

age units, floor-to-ceiling bookracks, swimming pools, water tanks, and elevator machine loads. Where such loads occur, suitable provisions shall be made for their support.

b——Where such unusual concentrations do not occur, structural members, and flooring spanning between the supporting structural members, shall be designed to support the uniformly distributed loads or the concentrated loads set forth in table B 304-2.2, whichever produce the greater stress.

c——Uniformly distributed live loads on beams or girders supporting other than motor vehicle parking areas, when such structural member supports 150 square feet or more of roof area or floor area per floor, may be reduced as follows:

When the dead load is not more than 25 psf, the reduction shall be not more than 20 per cent;

When the dead load exceeds 25 psf and the live load does not exceed 100 psf, the reduction shall be not more than the least of the following three criteria:

60 per cent,

0.08 per cent times square feet of area supported,

100 per cent times (dead load psf plus live load psf) divided by (4.33 times live load psf).

d——For columns, girders supporting columns, bearing walls, and foundation walls, supporting 150 square feet or more of roof area or floor area per floor other than motor vehicle parking areas, the uniformly distributed live loads on these members shall be not less than the following percentages of the total live loads on the following levels:

80 per cent on the roof;

80 per cent on the floor immediately below the roof;

80 per cent on the floor next below the roof;

75 per cent on the third floor below the roof;

70 per cent on the fourth floor below the roof;

65 per cent on the fifth floor below the roof;

60 per cent on the sixth floor below the roof;

55 per cent on the seventh floor below the roof;

50 per cent on the eighth, ninth, tenth, and subsequent floors below the roof.

B 304-2.2 Uniformly Distributed and Concentrated Live Loads Uniformly distributed and concentrated live loads shall be the greatest loads produced by the intended use and occupancy, but in no case less than the minimum live load in conformity with the following table:

TABLE B 304-2.2.——UNIFORMLY DISTRIBUTED AND CONCENTRATED LIVE LOADS

Location	Uniformly distributed loads, psf	Concentrated loads in pounds[1]
Dwelling units and public corridors on same floor	40	250
Private interior stairs	75[2]	250
Business offices	50	250
Public rooms, public corridors, public lobbies, public entrance halls, stores	100	250
Public stairs and exterior stairs other than fire-escapes: treads, balcony platforms	100[2]	250
Fire-escapes:		
Treads and balcony platforms	80[2]	250
Ladder rungs		250
Verticals of ladders		80[4]
Kitchens, other than domestic	100	250
Attics:		
Accessible by stair or ladder in areas where the ceiling height is:		
4 feet 6 inches or more	30	250
less than 4 feet 6 inches	20	150
Accessible by scuttle or means other than a stair, and of such height that household goods may be stored therein	20	150
Inaccessible (load for emergency access)	10	
Roofs used as promenades	40	250
Other roofs	([3])	200
Skylight screens		100[5]
Garages, ramps and driveways, for passenger cars	75	2,000[6]
Garages, ramps and driveways for busses, trucks and mixed usage	175	12,000[6]
Sidewalks over vaults	300	12,000[6]

[1] Applied at any location on an area 1 inch in diameter, except for garages, ramps, driveways and sidewalks over vaults where load is applied at any location on an area of 12 inches square for passenger cars and 24 inches square for busses, trucks and mixed usage. (See footnote 5 for skylight screens).
[2] Stringers of stairs need be designed only for uniform load.
[3] For minimum imposed load see section B 304-10c.
[4] At center of every rung.
[5] Applied at any location on an area 12 inches square on screens above and below the glass. Screens to have ¾-inch to 1-inch mesh; upper screen to be 4 to 10 inches above glass and to overhang curb an identical amount.
[6] Or actual load increased 50 per cent for impact, whichever is larger. Where clear height of garage entrance exceeds 7 feet, loads for busses, trucks and mixed usage shall be used.

B 304-3 Snow Loads

Minimum snow loads shall be in conformity with table

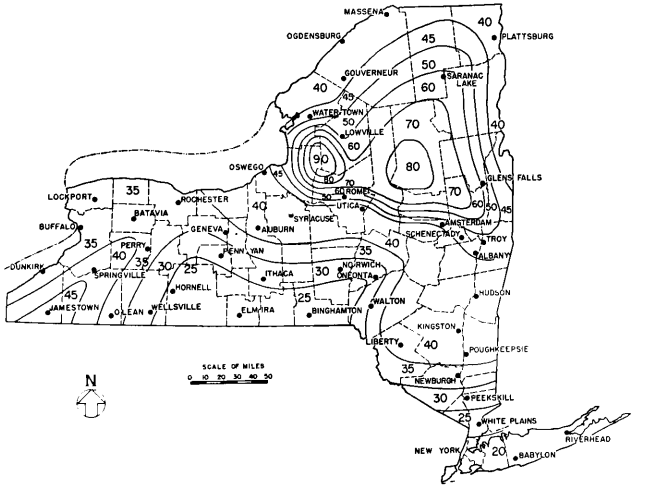
B 304-3 and the snow map below, and shall be applied normal to the roof surface:

TABLE B 304-3.——SNOW LOADS[1]
In pounds per square foot

Zone numbers on snow map	Roof slope from horizontal[2]					
	0°	20°	30°	40°	50°	60° or more
20	20	18	11	6	2	0
25	25	22	14	7	3	0
30	30	27	17	9	3	0
35	35	31	20	10	4	0
40	40	35	23	12	4	0
45	45	40	25	13	5	0
50	50	44	28	15	5	0
60	60	53	34	18	6	0
70[3]						
80[3]						
90[3]						

[1] For minimum imposed loads see section B 304-10c.
[2] For slopes between those tabulated, compute loads by straight-line interpolation.
[3] For snow zones 70, 80, and 90 on snow map, use same tabular values as for zone 60.

SNOW MAP OF NEW YORK STATE



Numbers Indicate Zones Within Lines

B 304-4 Wind Loads

Minimum wind loads shall be in conformity with tables B 304-4a and B 304-4b, and shall be applied normal to the surface:

TABLE B 304-4a.——WIND LOADS: WALLS, EAVES, CORNICES, SIGNS, TOWERS, MASTS AND ANTENNAS
In pounds per square foot

At height above grade in feet	Walls[1]	Eaves and cornices[2]	Signs, towers, masts and antennas
201 to 300	30	60	53
101 to 200	28	56	49
61 to 100	24	48	42
41 to 60	21	42	37
26 to 40	18	36	32
16 to 25	15	30	26
0 to 15	12	24	21

[1] Exterior walls shall be capable of withstanding wind load on both the interior and exterior surfaces, acting non-simultaneously. Tabular values are for square or rectangular buildings. For buildings hexagonal or octagonal in plan, use projected area and multiply tabular values by 0.8; for buildings round or elliptical in plan, use projected area and multiply values by 0.6.
[2] Load acting upward.

TABLE B 304-4b.——WIND LOADS: ROOFS
In pounds per square foot

Mean elevation of roof above grade level in feet	Direction of load[1]	Slope from horizontal[2]			
		0° to 20°	20° to 30°	30° to 60°	Over 60°
201 to 300	Downward	7	7	7 to 21	21
	Upward	25	25 to 21	21	21
101 to 200	Downward	6	6	6 to 20	20
	Upward	24	24 to 20	20	20
61 to 100	Downward	5	5	5 to 17	17
	Upward	20	20 to 17	17	17
36 to 60	Downward	5	5	5 to 15	15
	Upward	19	19 to 15	15	15
21 to 35	Downward	5	5	5 to 14	14
	Upward	17	17 to 14	14	14
0 to 20	Downward	5	5	5 to 11	11
	Upward	14	14 to 11	11	11

[1] Downward and upward loads act non-simultaneously.
[2] For slopes between 20° and 30° with wind acting upward, and between 30° and 60° with wind acting downward, compute loads by straight-line interpolation.

B 304-5 Overturning Force and Moment Due to Wind

a——The overturning force shall be the wind load. The wind load shall be the load set forth in table B 304-4a, and shall be applied only to the windward vertical surface above the horizontal plane under consideration, and to the rise of the roof. The resisting force shall be the dead load of the structure above the horizontal plane under consideration, plus the strength of material and fastenings establishing continuity with the structure below.

b——The moments of stability and overturning shall be computed about the leeward edge of the horizontal plane under consideration.

c——The moment of stability of the structure above the horizontal plane under consideration shall be not less than 1½ times the overturning moment due to wind.

B 304-6 Sliding Force Due to Wind

The sliding force due to wind load, equal to the overturning force, determined in conformity with section B 304-5, shall be resisted by the dead load of the structure above the horizontal plane under consideration, by anchors, and where applicable, by soil friction, providing a total resisting force equal to not less than 1½ times the sliding force. Anchors used to resist overturning may also provide resistance to sliding.

B 304-7 Uplift Force

Uplift force due to wind or hydrostatic head shall be resisted by dead load, acting directly or through anchors or fastenings, equal to not less than 1¼ times the uplift force.

B 304-8 Soil Pressures and Hydrostratic Head Loads

B 304-8.1 General

Retaining walls and parts of the building below ground shall be designed to withstand the following loads, if applicable, and such loads shall be in addition to other imposed loads: lateral load, from adjacent soil; lateral load, from hydrostatic head; lateral load, from surcharge of fixed or moving loads; uplift from hydrostatic head.

B 304-8.2 Freestanding Retaining Walls

a——The moments of stability and overturning shall be computed about the bottom base edge on the low earth side. The moment of stability shall be not less than 1½ times the overturning moment.

b——The resisting force due to soil friction shall be not less than 1½ times the sliding force.

B 304-9 Horizontal Impact Loads

a——Nonbearing partitions enclosing dwelling units shall be designed to resist without displacement at top or bottom a minimum linear load of 10 pounds per foot, applied at mid-height.

b——Parapet walls and railings, including handrailings both interior and exterior, other than those for roof parking decks, shall be designed to resist a lateral impact at the top equivalent to a minimum linear load of 50 pounds per foot. Railings shall not have openings which exceed 6 inches in width and 48 inches in length.

c——Parapet walls of roof parking decks, dwarf guard walls of open parking deck structures, perimeter walls enclosing above-grade garages, and walls protecting all floor, deck or roof openings, or guardrailings in lieu thereof, shall be designed to resist a minimum linear load of 150 pounds per foot applied 21 inches above the roof or deck. Parapet or dwarf guard walls which are less than 42 inches high, shall be surmounted by a railing to a minimum height of 42 inches above the roof or deck, and the horizontal impact loads, and the maximum size of railing openings, shall be as required in paragraph b above. A bumper block at least 8 inches high shall be fastened to the roof, deck or floor, 4 feet or more from the walls, and shall be designed to resist a minimum linear load of 300 pounds per foot.

B 304-10 Combined Loads

a——The stress due to wind may be ignored if it is less than one third of the stress due to dead load plus imposed load excluding wind load.

b——If the stress due to wind exceeds one third of the stress due to dead load plus imposed load excluding wind load, the allowable stress of the material may be increased by one third.

c——On roofs not used as promenades, the minimum imposed load shall be 20 psf perpendicular to the roof surface, where snow plus wind loads total less than 20 psf.

d——On roofs and eaves, snow or live load, and the wind load, shall be considered as acting simultaneously in such combination as imposes the greater stress.

B 304-11 Elevator Machine Loads

The loads on, and the safe working stresses and permissible deflections of, the supports of elevator machines shall be in conformity with generally accepted standards.

B 304-12 Loads Imposed During Construction

All flooring, structural members, walls, bracing, scaffolding, sidewalk sheds or bridges, hoists and temporary supports of any kind incidental to the erection, alteration, or repair of any building shall be of such strength as to suffer no structural damage when subject to the temporary loads and wind imposed during construction.

B 305 ANALYSIS AND TEST OF STRUCTURAL ASSEMBLIES

B 305-1 General

The capacity of an assembly to sustain dead and imposed loads without exceeding the allowable stresses shall be determined by any one of the procedures described in this section, or by an approved combination thereof.

a——**Design analysis** in conformity with generally accepted engineering practice to establish that stresses in component structural material will not exceed safe working stresses defined in generally accepted standards, or in the absence of such standards, exceed safe working stresses interpreted and established from test results with due consideration given to the reliability, durability, and uniformity of the material and its behavior under stress. In no case shall the assigned safe working stress exceed two thirds of the yield strength nor one half of the ultimate strength of the material unless specifically permitted in section B 304-10. When safe working stresses are assigned to a material, the structural characteristics and reasonable uniformity of the material, as utilized, shall be assured by conformity with generally accepted standards.

b——**Tests** made in conformity with generally accepted standards of assemblies truly representative of the construction to be used, in order to establish that such assemblies conform to the performance criteria set forth in section B 306.

c——**Comparison** with an approved assembly of known characteristics and behavior under load, which as-

sembly is directly comparable, in all essential characteristics, to the assembly under consideration.

B 305-2 Load Test on Completed Work

a——Safe performance under load tests or other suitable tests, if required by the enforcement officer and made in conformity with generally accepted standards, shall be evidence of the acceptability of the construction.

b——The assembly shall be capable of sustaining the dead load and two times the uniformly distributed imposed load, excluding impact, without structural failure for a minimum of 24 hours.

B 306 PERFORMANCE CRITERIA UNDER TEST

B 306-1 General Requirements

Buildings and their structural components subject to this Code shall, when submitted to the tests set forth in this section, meet the performance criteria prescribed for each test. Failure to meet the test criteria shall be evidence of noncompliance with this Code.

B 306-2 Under Imposed Load

When the assembly reacts by bending under the uniformly distributed imposed load, excluding impact, the deflection shall not exceed 1/360 of the span when the inside is to be plastered. When the inside is not to be plastered, the deflection shall not exceed 1/240 of the span. When a roof is not to be used as a promenade, and the underside is not to be plastered, the deflection shall not exceed 1/180 of the span.

B 306-3 Under 1½ Times Imposed Load

a——Under its dead load and 1½ times the uniformly distributed imposed load, excluding impact, the assembly shall sustain the load without structural damage. In testing floor assemblies and assemblies in compression, the load shall be applied twice.

b——For floor assemblies, the residual deflection from first application of the load shall not exceed 25 per cent of the maximum deflection under load. After the second application of the load, the total residual deflection shall be not more than 1.1 times the residual deflection resulting from the first application of the load.

B 306-4 Under Two Times Imposed Load

Under its dead load and two times the uniformly distributed imposed load, excluding impact, the floor, roof, and wall assembly shall sustain load without structural failure, for a minimum of 24 hours.

B 306-5 Impact Loads

Under an impact load of 60 pounds falling 4 feet for floors, 1½ feet for walls, roofs and nonbearing partitions enclosing dwelling units, on an area 10 inches in diameter, applied perpendicular to the assembly at its center, the assembly shall sustain no structural damage.

B 306-6 Racking Loads

Where exterior walls and partitions react by racking, the racking deformation, while the assembly is sustaining the imposed load, shall not exceed 1/400 of the height of the wall. Under 1½ times the load there shall be no structural damage, and under two times the load there shall be no structural failure.

B 306-7 Transmitted Loads

Fastenings and connections shall be capable of transmitting, without failure, twice the loads for which they are designed.

B 307 EXTERIOR PROTECTION

B 307-1 General Requirements

Whenever structural materials or assemblies are subject to deterioration and may become structurally unsound under the proposed condition of use, adequate protection shall be provided.

B 307-2 Exterior Materials

The exterior facing or covering of walls and roofs shall be resistant to the causes of deterioration as set forth in section B 301c without loss of strength or attachment which may render it unfit for use. The materials of such exterior facing or covering shall be treated if necessary to give the required protection.

B 307-3 Flashing

Whenever water can penetrate the exterior or cause damage to the interior of the assembly or structure, flashing or other barrier shall be provided to prevent its entrance or to redirect it outward.

B 307-4 Waterproofing

a——Foundation walls of cellars or basements, and floors in contact with the soil, shall be constructed or treated so as to prevent the penetration of ground and surface water.

b——Metallic structural elements in exterior walls not inherently corrosion resistant shall be protected against the effects of rain and moisture.

B 307-5 Grade Protection

Materials and assemblies subject to deterioration when in continued contact with surface water or melting snow, shall be so treated as to withstand such deterioration, or be placed so that they will not be in contact with such elements.

B 308 PROTECTION FROM DESTRUCTIVE INSECTS

B 308-1 General Requirements

Where local conditions require protection against termites and other destructive insects, the construction, soil treatment, and protection of openings shall prevent their access to vulnerable parts of the structure, in conformity with generally accepted standards.

B 309 MATERIALS REQUIREMENTS

B 309-1 General Requirements

All structural units of natural or manufactured materials shall comply with applicable specifications of authoritative agencies, or shall be subjected to test in conformity with generally accepted standards in order to determine their characteristics.

B 310 SAFETY DURING CONSTRUCTION

B 310-1 General Requirements

a——Construction, within the scope of this Code, shall be performed in such manner that the workmen and public shall be protected from injury, and adjoining property shall be protected from damage, by the use of scaffolding, underpinning, or other approved methods.

b——Access to the use of all utilities and to all public facilities, including among others, fire hydrants, fire alarm boxes, police call boxes, street lights, and manholes, shall be kept unobstructed during construction.

Part 4

Fire-Safety Requirements

B 401 PREVENTION OF EXTERIOR FIRE SPREAD

B 401-1 General Requirements

a——In order to retard the spread of fire, multiple dwellings and accessory structures shall be located and constructed so that the distance between buildings and the fire resistance of exterior walls and of roof coverings are commensurate with the fire hazard involved.

b——The minimum fire-resistance ratings of the exterior walls of multiple dwellings and accessory structures, including those of air intakes and fire passages, shall be those set forth in table B 202-2.

B 401-2 Determination of Fire Hazard

B 401-2.1 Within Fire Limits
When fire limits are established by municipalities, such fire limits shall, for the purposes of this Code, be designated as follows:

Fire limits A comprising the areas containing highly congested business, commercial and, or industrial occupancies, wherein the fire hazard is severe, and, or,

Fire limits B comprising the areas containing residential, business and, or commercial occupancies, or in which such uses are developing, wherein the fire hazard is moderate.

B 401-2.2 Outside the Fire Limits
All those areas not included in fire limits A or B are designated herein as outside the fire limits.

B 401-2.3 Municipalities Having Fire Limits
In municipalities which designate fire limits, multiple dwellings and accessory structures within such fire limits shall be constructed in conformity with the requirements set forth in section B 401 applicable to buildings within such fire limits. In such municipalities multiple dwellings and accessory structures outside such fire limits shall be constructed in conformity with the requirements set forth in section B 401 applicable to buildings outside the fire limits.

B 401-2.4 Municipalities Having No Fire Limits
Multiple dwellings and accessory structures located in

municipalities which do not designate any area or areas as a fire limit shall be constructed in conformity with the requirements set forth in section B 401 applicable to buildings outside the fire limits.

B 401-3 Distance Separations

B 401-3.1 How Measured

Distance separation shall be the clear distance measured between the exterior walls of two buildings on the same or adjacent premises, or the distance from a proposed building to a line on adjacent premises to which a building may legally be built.

B 401-3.2 When Required

a——Distance separations set forth in table B 401-3.2 shall be required.

b——Exterior walls or portions thereof may encroach upon the distance separation required by a type of construction, provided those portions of such walls which encroach are built of the higher type of construction imposed by the lesser distance separation.

c——Exterior walls or portions thereof located beyond the required distance separation shall be exempt from the requirements imposed by distance separations.

d——When distance separation is required and no building exists on the adjacent premises, the required

TABLE B 401-3.2.——MINIMUM DISTANCE SEPARATIONS
In feet

Fire limits	Height in stories	Noncombustible walls with fire-resistance ratings of——			Combustible walls with noncombustible exterior facings giving protection of——		Combustible walls with combustible exterior facings
		At least 2 hours	Less than 2 hours but at least ¾ hour	Less than ¾ hour	At least ¾ hour	Less than ¾ hour	
Within fire limits	1	Not required	10	15	np	np	np
	2	Not required	20	25	np	np	np
	3 or more	Not required	30	30	np	np	np
Outside the fire limits	1	Not required	10	10	10	10	15
	2	Not required	10	15	15	20	20
	3 or more	Not required	15	20	np	np	np

distance separation from the proposed building to the common lot line shall be reduced one half, but in no event shall be less than 3 feet.

e——When the height or construction of the exterior walls of the proposed and existing buildings is not the same, the applicable distance separation shall be that set forth for the higher building or for the building having exterior walls with the lower fire-resistance rating, whichever is greater.

B 401-3.3 Construction Limitations Within Fire Limits

a——Multiple dwellings and accessory structures may be of any type of construction other than type 5 providing they conform to the height and fire-area limitations set forth in tables B 203-1a, B 203-1b, B 203-1.1a and B 203-1.1b, and the distance separations conform to the requirements set forth in table B 401-3.2.

b——Where distance separations conform to the requirements of table B 401-3.2, exterior walls, including panel and curtain walls, of noncombustible construction, shall not be required to have any fire-resistance rating, provided a continuous vertical separation or spandrel at least 3 feet in height, with a fire-resistance rating of at least 1 hour, is constructed at the floor level of each story, except where such walls form a part of an exit required to be enclosed.

c——Open and enclosed balconies and porches shall be constructed of noncombustible materials.

d——Eaves, cornices and exterior trim may be constructed of combustible materials provided they do not encroach upon the minimum distance separations set forth in table B 401-3.2, or do not extend outward from the exterior wall more than 2 feet and are not less than 5 feet distant at any point from a lot line or similar appurtenance on another building; if they exceed these limitations, they shall be constructed of noncombustible materials.

B 401-3.4 Construction Limitations Outside the Fire Limits

a——Multiple dwellings and accessory structures may be of any type of construction providing they conform to the height and area limitations set forth in tables B 203-1a, B 203-1b, B 203-1.1a and B 203-1.1b, and the distance separations conform to the distance separation requirements set forth in table B 401-3.2.

b——Where distance separations conform to the requirements of table B 401-3.2, exterior walls, including

panel and curtain walls, of noncombustible construction, shall not be required to have any fire-resistance rating, provided a continuous vertical separation or spandrel at least 3 feet in height, with a fire-resistance rating of at least 1 hour, is constructed at the floor level of each story, except where such walls form a part of an exit required to be enclosed.

c——Multiple dwellings of type 5 construction shall have not more than eight dwelling units in such building or each part of a building within fire walls.

d——Open porches, verandas, and balconies or enclosed porches with at least 60 per cent of glass area on three sides and serving not more than three dwelling units, may be constructed of combustible materials provided they do not extend outward more than 10 feet from the building, or upward more than 4 feet above the ceiling of the story which they serve, and are not less than 5 feet distant at any point from a lot line or from similar appurtenances on another building; if they exceed said limitations or serve as horizontal exits, they shall be constructed of noncombustible materials

B 401-4 Protection of Openings in Exterior Walls

B 401-4.1 General Requirements

a——Openings in exterior walls located less than 3 feet from an interior lot line shall be equipped with opening protectives.

b——Exterior wall openings less than 10 feet from an opening in a facing wall shall be equipped with opening protectives.

c——An exterior wall opening directly above another opening in the same wall shall be equipped with an opening protective, except when the vertical separation between the openings is at least 3 feet, or when the two openings are separated by horizontal fire-resistive construction extending outward at least 2 feet from the wall.

d——Exterior wall openings less than 30 feet above the roof of an extension or an adjacent building located within a horizontal distance of 10 feet, shall be equipped with opening protectives, unless the roof construction of such extension or the adjacent building has a fire-resistance rating of 1 hour or more.

B 401-4.2 Fire Resistance of Exterior Wall Opening Protectives

Fire-resistance ratings of required exterior wall opening protectives shall be as set forth in table B 401-4.2. Wired

glass used in exterior wall opening protectives shall be not less than 1/4 inch in thickness, and the size of glass panels shall be no greater than indicated in the table below.

TABLE B 401-4.2.——OPENING PROTECTIVES FOR EXTERIOR WALL OPENINGS

Type of opening protective	Fire-resistance rating in hours	Maximum size of wired-glass panels		
		Area in square inches	Height in inches	Width in inches
Door[1]	1½	0	0	0
Door[2]	¾	720	54	54
Window[1]	¾	720	54	54
Window[2]	¾	2916	54	54

[1] Protectives for use in enclosed exits.
[2] Protectives for use in exterior wall openings other than in enclosed exits.

B 401-5 Eaves, Cornices, and Trim

Eaves, cornices, and trim may project not more than 2 feet beyond the building face, but this regulation shall not be deemed to authorize any projection beyond the lot line. When such appurtenances are within 5 feet of the lot line or other similar appurtenances on any other building, they shall be of noncombustible material, or of combustible material covered with metal.

B 401-6 Roof Coverings

Roof coverings shall be capable of resisting fire commensurate with the severity of exposure and shall be installed in conformity with generally accepted standards.

B 401-6.1 Classification

Roof coverings shall be classified on the basis of their resistance to exterior fire exposure as determined by tests made in conformity with generally accepted standards, as follows:

Class 1, 2 or 3 roof coverings are those which are capable of resisting severe, moderate, or light fire exposure, respectively, and which do not give off flying brands.

Class 4 roof coverings are those which are moderately effective in resisting light fire exposure, afford a slight degree of heat insulation to the roof deck, and are likely to give off flying brands.

B 401-6.2 Limitations of Use

a——Within the fire limits, roof coverings, with or without insulation, shall be class 1 or 2, except that where the distance separation between buildings is more than 20 feet and the horizontal projected area of the roof does not exceed 2500 square feet, class 3 roof coverings may be used.

b——Outside the fire limits, roof coverings, with or without insulation, shall be class 1, 2 or 3; except that where the distance separation between buildings is more than 20 feet and the horizontal projected area of the roof does not exceed 2500 square feet, and the building does not exceed two stories in height, class 4 roof coverings or wood shingles may be used.

B 401-7 Parapet Walls

Parapet walls at least 2 feet in height shall be provided on buildings of type 3 and 4 construction when the roof slope of such buildings is 15 degrees or less, or when the exterior walls are less than 10 feet distant from another building.

B 401-8 Party Walls

a——When multiple dwellings are joined at a common lot line, such dwellings shall be separated by party walls in conformity with the requirements set forth in this section.

b——Openings shall not be permitted in party walls.

B 401-8.1 Construction

a——Party walls shall form a continuous fire and smoke barrier between adjoining buildings from foundation to or through the roof, and in the event of removal or collapse of construction on one side shall not endanger the support of construction on the opposite side, and shall be capable of serving as exterior walls.

b——Party walls shall be constructed of noncombustible materials and shall extend not less than 6 inches above roofs of combustible construction. When a roof is of noncombustible construction above the wall and for a distance of at least 18 inches on each side of the wall, a party wall may terminate at the underside of the roof providing the junction of the wall and roof is made smoketight.

c——Party walls shall be made smoketight at their junction with exterior walls and protected with non-

combustible construction for a distance of at least 18 inches on each side of the wall. In lieu of such protection at the end of party walls in type 5 construction, the party wall shall project through the exterior wall at least 6 inches.

d——When combustible members, such as joists and beams, are framed into party walls, such combustible members shall not extend through the wall but shall have at least 4 inches of solid noncombustible material below and at the sides and ends of such members.

B 401-8.2 Fire Resistance

a——The fire-resistance ratings of party walls shall be as set forth in table B 202-2, except as otherwise set forth in this section.

b——Party walls between one-story multiple dwellings without a basement or cellar shall have a fire-resistance rating of not less than 1 hour.

c——Party walls of the uppermost story of multiple dwellings of type 3 construction shall have a fire-resistance rating of not less than 2 hours.

d——Party walls of multiple dwellings of type 4 construction, more than two stories in height, shall have a fire-resistance rating of not less than 3 hours for that portion of the wall extending through a basement, cellar, or the lowest story of buildings which do not have a basement or cellar.

e——When a party wall is located between a multiple dwelling and a building containing an occupancy of higher fire hazard, the fire-resistance rating of such party wall shall be increased so as to be commensurate with the higher fire hazard.

B 402 PREVENTION OF INTERIOR FIRE SPREAD

B 402-1 General Requirements

a——Structural elements or members, including walls, partitions, columns, beams and trusses, shall have fire-resistance ratings of not less than those set forth in table B 202-2, except as required in section B 402-2.1. The fire-resistance ratings of the structural elements or members shall be determined in conformity with generally accepted standard fire test procedure except that walls and partitions with fire-resistance ratings of less than 1 hour shall also meet the hose stream test

requirements applicable to walls and partitions having 1-hour ratings.

b——The floor area per story of multiple dwellings shall be limited, or shall be divided by fire walls into fire areas commensurate with the fire hazard incident to the occupancy and type of construction and height of the dwelling, as set forth in tables B 203-1a and B 203-1b.

c——Rooms and spaces used for purposes involving a fire hazard, including among others, rooms for storage of combustible materials, paint and repair rooms, kitchens and pantries serving public dining rooms, garages, and rooms for incinerators and heating equipment, shall be enclosed by fire-resistive construction as set forth in section B 402-4, or shall be provided with fire-protection equipment as set forth in section B 405.

d——Exits, including passageways, hallways, and stairways, and elevator and dumbwaiter hoistways, escalators, shafts and other openings in floors, shall be enclosed or protected as set forth in section B 402-4.4.

e——Space within multiple dwellings used for occupancies other than residential or accessory, shall be separated from space used for residential purposes as set forth in section B 402-4.1.

B 402-2 Fire Walls

B 402-2.1 Construction

a——Fire walls shall form a continuous fire and smoke barrier between fire areas from foundation to or through the roof, except as otherwise set forth in paragraph c of this section; and the removal or collapse of construction on one side shall not endanger the support of construction on the opposite side.

b——Fire walls shall be constructed of noncombustible material and shall extend not less than 6 inches above roofs of combustible construction. When a roof is of noncombustible construction above the wall and for a distance of at least 18 inches on each side of the wall, a fire wall may terminate at the underside of the roof providing the junction of the wall and roof is made smoke-tight.

c——Fire walls in type 2, 3 or 4 construction shall not be required to extend downward through a cellar, basement, or lowest story, provided the floor over such cellar, basement, or lowest story is type 1 construction, and the structural supports for the fire walls have fire-resistance ratings at least equal to those required for the fire wall.

d——Fire walls shall be made smoketight at their junction with exterior walls and protected with noncombustible construction for a distance of at least 18 inches on each side of the wall. In lieu of such protection at the end of fire walls in type 5 construction, the fire wall shall project through the exterior wall at least 6 inches.

e——When combustible members, such as joists and beams, are framed into fire walls, such combustible members shall not extend through the wall but shall have at least 4 inches of solid noncombustible material below and at the sides and ends of such members.

B 402-2.2 Fire Resistance

The fire-resistance ratings of fire walls shall be the same as for party walls as set forth in section B 401-8.2.

B 402-3 Protection of Columns, Beams, Girders, and Trusses in Buildings of Type 1 and 2 Construction

a——Columns supporting more than one floor, and beams and girders serving as main bracing members for the structural frame, shall be individually encased throughout their length by fire-protective material having minimum fire-resistance ratings as set forth in table B 202-2.

b——Columns, beams, girders and trusses other than those of reinforced concrete, supporting one floor, a roof or one floor and the roof, shall be individually encased or be fire-protected by a continuous ceiling having a fire-resistance rating equivalent to that required for the floor or roof construction which they support or of which they form a part; except that a noncombustible truss, beam or purlin supporting a roof of noncombustible material shall not be required to be fire-protected when the lowest member of such truss, beam or purlin is 20 feet or more above the level of the floor.

c——In type 2 construction when beams, girders and other structural members are protected by a continuous ceiling with a fire-resistance rating of 1½ hours, such beams, girders and other structural members need not be individually encased. The concealed space above said ceiling shall be divided into areas not exceeding 3000 square feet, with no dimension greater than 100 feet, except that concealed space directly above an individual room or above a dwelling unit need not be so

divided. Access to such concealed space shall be through a single opening having dimensions not to exceed 3 feet in either direction and protected by an opening protective conforming with the requirements set forth in section B 402-4.8.

d——If continuous ceilings are pierced or recessed for fixtures, devices or duct outlets, adequate provision shall be made to maintain the integrity of the required fire-resistance rating of the ceiling.

B 402-4 Division by Fire Separations

B 402-4.1 Separation of Mixed Occupancies

a——Nonresidential occupancies within a multiple dwelling, not accessory thereto, shall be separated from the multiple dwelling occupancy by fire separations having a fire-resistance rating of at least 2 hours. In buildings of type 3 or 4 construction, the horizontal fire separation between nonresidential occupancies and the multiple dwelling occupancy shall be finished on the nonresidential side with noncombustible material, and have a fire-resistance rating of at least 1 hour. Openings shall not be permitted in such fire separations except as provided in paragraphs b and c of this section.

b——Separations betwen nonresidential occupancies and lobbies or exit corridors of multiple dwellings may have openings not to exceed 35 square feet in area, equipped with self-closing opening protectives. Such openings shall be protected by sprinklers on each side of the separation.

c——Display windows in lobbies and exit corridors of a multiple dwelling shall be separated from the nonresidential use by a fire separation as set forth in table B 202-2, but the fire-resistance rating shall be not less than 1 hour. Access openings to display windows shall be equipped with self-closing opening protectives.

d——When the lobbies or exit corridors and the adjacent nonresidential occupancies are both protected with a sprinkler system, there shall be no restriction on the size of openings in the fire separation, and no requirement for opening protectives.

e——Vending or service equipment or stands such as those used for the sale or distribution of tobacco, candy, or periodicals to tenants, may be located in lobbies, corridors, and passageways, provided that they involve

no greater fire hazard than that incidental to the ordinary equipment of the lobby, corridor, or passageway, and do not obstruct or interfere with any part of a required exit.

f——Mixed occupancies shall not be permitted in buildings of type 5 construction.

B 402-4.2 Separations of Garages in, or Attached to, Multiple Dwellings

a——Each garage area of 1000 square feet or less in, or attached to, a multiple dwelling, shall be separated from other spaces in the multiple dwelling by construction having a fire-resistance rating of at least 3/4 hour but not less than that required for the corresponding components of the multiple dwelling. Openings in the separation between the garage and multiple dwelling shall be limited to a single doorway having a sill at least 8 inches above the garage floor; such opening shall be equipped with a self-closing opening protective having a fire-resistance rating of at least 3/4 hour.

b——Garage areas of more than 1000 square feet in, or attached to, a multiple dwelling, shall be separated from other space in the multiple dwelling by noncombustible construction having a fire-resistance rating of at least 2 hours but not less than that required for the corresponding components of the multiple dwelling. Access between such a garage and a multiple dwelling shall be through a vestibule of 2-hour fire-resistive construction, ventilated directly to the outer air, as set forth in section B 507-5d. The top of the sill in a door opening between such vestibule and garage or the floor of such vestibule shall be at least 8 inches above the level of the garage floor. The distance between the openings into and from the vestibule shall be not less than 6 feet, and such openings shall be protected with self-closing opening protectives having a fire-resistance rating of at least 1 1/2 hours.

c——For purposes of this Code, a carport with no more than two enclosing walls shall not be deemed to be a garage.

B 402-4.3 Enclosure of Storage and Service Rooms

Carpenter, repair and paint shops, and storage rooms for mattresses, furniture, insecticides, waxes, flammable solvents or cleaners, and other hazardous materials, located in a multiple dwelling or within 20 feet thereof, shall be individually enclosed by construction having

a fire-resistance rating of at least 2 hours. When such shops or rooms are located within a multiple dwelling, the enclosing construction shall have a single opening leading to space within the multiple dwelling. Such opening shall be protected by a self-closing 1½-hour opening protective. Such storage rooms may contain individual tenant storage spaces. If individual tenant storage rooms are provided, other than in general storage rooms, such individual tenant storage rooms may be enclosed with partitions of 1-hour fire-resistance rating.

B 402-4.4 Enclosure of Stairways, Hoistways, and Shafts

a——Exits, including stairways and hallways forming a part thereof, shall be enclosed with construction having minimum fire-resistance ratings as set forth in table B 202-2. Lobbies may be a part of such enclosed exits provided they are within the enclosure and separated from nonresidential space as set forth in section B 402-4.1.

b——Elevator and dumbwaiter hoistways, escalators, shafts and other openings in floors, shall be enclosed with construction having minimum fire-resistance ratings as set forth in table B 202-2, except when located as set forth in paragraphs c and d of this section.

c——Stairways and other spaces as set forth in section B 210-1c for vertical travel between not more than two successive stories or between two levels of a single tenancy shall be permitted without enclosure.

d——Ornamental supplementary stairs and escalators shall be permitted without enclosure when they connect the main entrance to the story immediately below, or to the story immediately above, or when they lead from the floor level to a mezzanine in the same story. Enclosures shall not be required when ornamental stairs or escalators pass through only one floor to or from a fully enclosed room in either of the two stories which they connect.

e——Enclosures for exits, stairways, hoistways, and shafts shall be continuous and have no openings other than those required for entrance or exit, or for venting as set forth in paragraphs j and k of this section; except that windows in exterior walls shall be permitted.

f——Basement or cellar stairs shall be enclosed and separated from stairs leading to or from the upper stories, at the grade-level story, and shall have the

openings at the top and bottom of such enclosure protected with self-closing opening protectives.

g——All openings in enclosures for exits, stairways, hoistways, and shafts shall be protected with opening protectives conforming to the requirements as set forth in sections B 401-4.2 and B 402-4.8.

h——Public hallways which are separated from enclosed exit stairs by fire separations with opening protectives meeting the requirements set forth in section B 402-4.8, shall be enclosed with construction having a minimum fire-resistance rating as required for separation between tenant spaces as set forth in table B 202-2.

i——Shafts and hoistways which do not extend to the lowest floor, basement, or cellar of a building, shall be closed at the bottom. All shafts and hoistways which do not extend through the roof construction shall be closed at the top. Such closures shall have a fire-resistance rating at least equal to that of the nearest floor of the building but not less than that required for the enclosing walls of the shaft or hoistway.

j——A stairway, shaft or hoistway passing through more than two stories and which does not extend through the roof shall be provided with smoke vents having an area of at least 3½ per cent of the stairway, shaft or hoistway area. Such vents shall have the same fire-resistance rating as required for the shaft enclosure. In no event shall the area of the smoke vent be less than 3 square feet for each elevator car in each elevator hoistway or less than 72 square inches for all other shafts. Single smoke vents shall be permitted only when such vents extend through the roof; when it is impractical to continue the smoke vent vertically through the roof, two smoke vents shall be provided, each having the same area as required for a single smoke vent, and terminating at different sides of the building.

k——Stairways, shafts or hoistways serving the topmost story of a multiple dwelling, which extend through the roof, shall be vented as required for such stairways or shafts terminating at lower stories. Of the total required vent area for stairways, hoistways or other shafts, not less than one third shall be of the open type. Such open vent may be a louvered panel. The closed portion of the required vent area may be windows or skylights with metal frames glazed with shatterable plain glass not more than ⅛-inch thick. Such skylights shall be

protected above and below with wire mesh conforming with the requirements set forth in table B 304-2.2. When the fixed portion of the required vent is a window, it shall be not closer than 3 feet to an interior lot line. Such window shall be located near the ceiling of such shaft and have the sill at least 2 feet above the main roof.

l——Machine rooms for elevators and hoistways shall be enclosed in walls of noncombustible material having a fire-resistance rating of not less than that required for the hoistway enclosure. The separation between the machine room and hoistway shall be of noncombustible material with no openings other than those essential for ventilation and elevator operating equipment.

m——Access to machine rooms shall be through self-closing and self-locking doors, openable from the inside, meeting the applicable fire-resistance requirements set forth in sections B 401-4 and B 402-4.8.

B 402-4.5 Enclosure of Kitchens, Cooking Spaces, and Public Dining Rooms

a——Kitchens and pantries serving public dining rooms, including but not limited to restaurants, cafeterias, coffee shops, and lunch rooms, shall be enclosed by construction having a fire-resistance rating of at least 2 hours; except that when a sprinkler system is installed in such kitchens and pantries, the enclosure may have a fire-resistance rating of 1 hour. Openings between kitchens or pantries and the public dining rooms which they serve shall be protected with:

Self-closing 1½-hour opening protectives when the kitchens or pantries are not sprinklered, or

Self-closing ¾-hour opening protectives when the kitchens and pantries are sprinklered, or

Self-closing doors having a rating of less than ¾-hour when the kitchens and pantries are sprinklered and sprinkler heads are provided above such openings on each side of the separation.

Kitchen exhaust systems shall be fire protected as set forth in section B 507-5.

b——Kitchens in motels shall be separated from sleeping areas by fire separations having a fire-resistance rating of at least 1 hour.

c——Cooking spaces other than kitchens which are combined with, or located adjacent to or within dining

areas, such as in coffee shops, shall be separated from the dining area by a smoke and draft baffle.

d——Public dining rooms, coffee shops and other spaces used for similar purposes, which have no permanently installed equipment for cooking within such space, shall not be required to be enclosed or separated from other public space. When a separation is provided between a dining room and other public space, it shall be of noncombustible material.

B 402-4.6 Enclosure of Heat Producing Equipment

a——Fuel-burning heat producing equipment having an individual or combined rated gross capacity of 1,000,000 Btu per hour or more, or capable of operation at pressures in excess of 15 psi, shall be located in a separate room enclosed by noncombustible construction having a fire-resistance rating of not less than 2 hours and with interior wall and partition openings protected by self-closing 1½-hour opening protectives. An emergency escape directly to the outside of the multiple dwelling shall also be provided from such rooms.

b——Fuel-burning heat producing equipment having an individual or combined rated gross capacity from 250,000 to 1,000,000 Btu per hour, shall be located in a separate room enclosed by construction having a fire-resistance rating of not less than 1 hour and with interior openings protected by self-closing ¾-hour opening protectives.

c——Heater and boiler rooms in motels shall be separated from other space by separations having a fire-resistance rating of not less than 1 hour and with interior openings protected with self-closing ¾-hour opening protectives.

d——Fuel-burning heating equipment for garages, other than direct-fired unit heaters installed 8 feet or more above the garage floor level, shall be located in separate buildings or in rooms enclosed by vaportight noncombustible construction having a fire-resistance rating of not less than 2 hours. Entrance to such enclosed rooms shall be from the outside of the garage. Openings in the construction separating the enclosed room and the garage shall be limited to those necessary for the passage of heating pipes and ducts. The space around such pipes and ducts shall be sealed with noncombustible material.

e——Boilers for generating steam for accessory clean-

ing and pressing shall not be required to be enclosed, and are excluded from the provisions of this section.

B 402-4.7 Enclosure of Incinerator and Refuse Rooms

a——Incinerator rooms and spaces for the temporary storage of refuse shall be enclosed by noncombustible construction having a fire-resistance rating of not less than 2 hours with a single opening protected by a self-closing 1½-hour opening protective.

b——Flues for incinerators shall be enclosed in noncombustible material and shall be constructed in conformity with the requirements for flues as set forth in section B 504-3.

c——Service openings for incinerators shall be equipped with self-closing ¾-hour opening protectives arranged so that there is no opening into the flue when the hopper is being filled.

B 402-4.8 Openings in Fire Walls and Fire Separations

a——Openings in fire walls, fire separations, and in other interior walls and partitions required to have a fire-resistance rating, shall be protected by opening protectives having fire-resistance ratings as set forth in table B 402-4.8. Wired-glass used in opening protectives shall be not less than ¼-inch thick and the size of glass panels shall be no greater than set forth in the following table:

TABLE B 402-4.8.——OPENING PROTECTIVES FOR INTERIOR WALL OPENINGS

Fire-resistance rating of wall in which opening occurs, in hours	Fire-resistance rating of opening protective, in hours	Maximum size of wired-glass panels		
		Area in square inches	Height in inches	Width in inches
3 or more.....	3	0	0	0
2.....	1½	100	12	12
1 or ¾.....	¾	1296	54	54

b——Two 1½-hour opening protectives installed on opposite faces of the wall shall be deemed equivalent to one 3-hour opening protective when installed in conformity with generally accepted standards.

c——Openings in fire walls for ventilating or air conditioning ducts shall be equipped with fire shutters and have a combined fire-resistance rating commensurate

with the fire-resistance rating of the wall as set forth in the table above. Such shutters shall be arranged so that one shutter is on each face of the fire wall and so that both of them operate automatically when either is exposed to fire in the duct.

B 402-5 Firestopping

B 402-5.1 General Requirements

Concealed spaces within wall, partition, floor, stair, attic or cornice construction and around chimney, pipe and duct openings in such construction, shall be firestopped to prevent the passage of flame, smoke, fumes, and hot gases.

B 402-5.2 Materials for Firestopping

a——Firestopping shall be of material which can be shaped, fitted and permanently secured in position.

b——Noncombustible firestopping materials shall be used in buildings of type 1 and 2 construction, and also around fireplaces, flues and chimneys in buildings of all types of construction.

c——Either noncombustible or combustible firestopping materials may be used in buildings of type 3, 4 and 5 construction.

B 402-5.3 Location of Firestopping

a——Concealed vertical spaces in walls and partitions shall be firestopped at each floor level and at the ceiling of the uppermost story so that such spaces will not be continuous for more than one story, or communicate with concealed horizontal spaces in the floor or roof construction.

b——When combustible materials form a part of the concealed space between surface finish and the base to which they are applied, the concealed space shall be filled with noncombustible material, or be firestopped so that no dimension of such concealed space exceeds 8 feet vertically or 20 feet horizontally.

c——Space between floor joists, where ceilings are attached directly to the joists, shall be firestopped for the full depth of the joists at all points of support, under supported walls and partitions having a required fire-resistance rating, and under all partitions separating dwelling units.

d——Concealed space in stairs shall be firestopped so as not to communicate at the top and bottom of the stairs with concealed space in the floor construction.

e——Exterior cornices and eaves shall be firestopped at the ends of fire and party walls, and at intervals of not more than 20 feet.

f——In buildings of type 3, 4, and 5 construction, the space in attics or between combustible floor or roof construction and a ceiling, shall be firestopped so that no area of such concealed space shall be greater than 3000 square feet.

B 403 INTERIOR FINISHES, TRIM AND DECORATIVE MATERIALS

B 403-1 General Requirements

a——Interior finish materials used for acoustical correction, surface insulation and decorative treatment on the surfaces of walls and ceilings, and interior trim materials, shall conform with all requirements set forth in this section.

b——Interior finish and trim shall be of materials that will not, in burning, give off excessive amounts of smoke or objectionable gases.

B 403-2 Classification of Interior Finish Materials

Interior wall and ceiling finish materials shall be classified in accordance with their surface flame-spread ratings determined by tests conducted in conformity with generally accepted standards, and as follows:

Class	Surface flame-spread rating
A	0 to 30
B	31 to 75
C	76 to 225
D	226 to 500

B 403-3 Use of Interior Finishes

a——Interior wall and ceiling finishes in multiple dwellings shall be as set forth in the following table, except as otherwise provided in this section.

b——Spaces in which class C finish is used shall be enclosed by construction having a fire-resistance rating of at least 3/4 hour.

c——Class C finish used on ceilings shall not exceed 500 square feet in area, unless separated into areas not exceeding 500 square feet by class A or B interior finish with a minimum width of 2 feet.

d——In multiple dwellings more than three stories high and in all multiple dwellings of group B2 occupancy,

TABLE B 403-3.——INTERIOR FINISH IN MULTIPLE DWELLINGS

Location	Class of interior finish
Enclosed stairways, passageways and exits	A
Passageways and corridors not a part of an enclosed exit	A or B
Public kitchens and pantries, paint and repair rooms, storage rooms, and similar fire hazardous areas	A
Other locations in group B1 occupancy	A, B, or C
Other locations in group B2 occupancy	A or B

class B interior finish may be used on walls and ceilings of passageways or corridors provided such finish does not extend more than 50 linear feet, or is separated by at least 2 feet of noncombustible material at intervals not exceeding 50 linear feet.

e——Class D finish shall not be used in multiple dwellings more than one story in height nor in multiple dwellings of group B2 occupancy.

f——When a sprinkler system not otherwise required is provided, class B interior finish may be used in locations where class A is required, and class C may be used in locations where class B is required.

B 403-4 Use of Interior Trim

a——Interior trim in exits, stairways and passageways serving as required means of egress from buildings more than three stories in height, and in all locations in buildings 150 feet or more in height, shall be of noncombustible material.

b——Interior trim and doors of wood may be used in all locations where noncombustible trim is not required by this section.

c——Wood or other combustible finish flooring may be used in any location in a multiple dwelling except in an exit or passageway serving as a required means of egress from:

Buildings having more than eight dwelling units;
Buildings having thirty or more sleeping rooms, or
Buildings more than three stories in height.

B 403-5 Attachment of Interior Finish and Trim

a——Interior finish and trim shall be cemented or other-

wise fastened in place so that they will not readily loosen when subjected to a room temperature of 400° F. for a period of 30 minutes.

b——Interior wall and ceiling finishes which are less than 1/8-inch thick may be used when mounted directly on noncombustible material.

c——Interior finish materials applied to walls and ceilings required to be of noncombustible construction, shall be applied directly to a noncombustible base or to furring or nailing strips which do not exceed 1¾ inches in nominal thickness. Concealed space between finish materials and noncombustible base shall be firestopped in conformity with the requirements set forth in section B 402-5.3b.

d——When class C finishes are set out from walls or ceilings more than 1¾ inches, they shall be attached directly to noncombustible backing.

e——In multiple dwellings not more than three stories in height or which contain less than thirty sleeping rooms for transient occupancy, interior finish materials may be applied directly to combustible structural members or to a combustible base.

f——In multiple dwellings of type 1 and 2 construction, wood finish flooring and wearing surface materials including cork, rubber, linoleum, asphalt and composition tile, and other materials of similar combustible characteristics, shall be attached directly to the noncombustible floor construction or to a wood subfloor fastened to wood sleepers or over insulating board.

B 403-6 Use of Draperies and Other Decorative Materials

In public spaces and exits of multiple dwellings, draperies, hangings and decorative fabrics and plastics shall be noncombustible or flame resistant as determined by their behavior when exposed to flame in tests made in conformity with generally accepted standards.

B 404 FIREPLACES

B 404-1 General Requirements

Fireplaces and similar construction intended for burning fuel in open fires shall be designed and constructed of noncombustible material, shall be stable and structurally safe, shall be connected to chimneys in conformity with the requirements set forth in section B 504-3,

and shall be insulated so that, when in use, nearby or adjacent combustible material and structural members shall not be heated to temperatures in excess of 175° F.

B 404-2 Hearths and Linings

Hearths and linings or other parts of fireplaces exposed directly to flame shall be of materials that will not melt, disintegrate, spall, or shatter at temperatures up to 2000° F.

B 404-3 Mantels and Trim

Wood mantels and trim on fireplaces shall be placed and attached so that they cannot be heated to temperatures in excess of 175° F. or ignited by sparks or embers from the fire.

B 405 FIRE PROTECTION EQUIPMENT

a——Hotels three or more stories in height or buildings which contain thirty or more sleeping rooms for transient occupancy, shall be equipped with a fire alarm system.

b——Multiple dwellings of type 3, 4 and 5 construction, designed for group B2 occupancy, having sleeping accommodations for ten or more persons on the second story, shall be equipped throughout with a sprinkler system.

c——Multiple dwellings more than three stories in height of type 1 or 2a construction which contain seventy-five or more sleeping rooms for transient occupancy, and multiple dwellings of type 2b, 3, and 4 construction more than two stories in height which contain fifty or more sleeping rooms for transient occupancy, shall be provided with a watchman's recording system unless such multiple dwellings are equipped throughout with a fire-detecting system or a sprinkler system.

d——In existing buildings converted to multiple dwelling occupancy, the storage and service rooms and exit enclosures may be protected with a sprinkler system in lieu of compliance with the provisions of sections B 402-4.3 and B 402-4.4.

e——In existing buildings converted to multiple dwelling occupancy, kitchens and pantries serving public dining rooms shall be protected with a sprinkler system, except when such areas are completely enclosed by fire-resistive walls and partitions as set forth in section B 402-4.5.

f——In existing buildings converted to multiple dwelling occupancy, cellars or basements shall be equipped with a sprinkler system, except when the floor over such cellar or basement is of noncombustible construction or of combustible construction finished with a noncombustible ceiling and having a fire-resistance rating of 3/4 hour.

g——A standpipe system with outlets on each story for first-aid hose and for municipal fire department use shall be provided in the following:

In multiple dwellings more than six stories or 70 feet in height, or in which a fire area exceeds 10,000 square feet;

In multiple dwellings of type 2b, 3, or 4 construction more than three stories or 40 feet in height; and

In garages on premises of multiple dwellings more than three stories or 40 feet in height.

h——Garages with a fire area of 5000 square feet or more per story shall be provided with a sprinkler system.

Part 5

Equipment Requirements

B 501 GENERAL REQUIREMENTS FOR EQUIPMENT

a——Plumbing, heating, electrical, mechanical, fire protection, elevator, dumbwaiter, escalator, and other equipment and systems shall be designed, installed, and located so that under normal conditions of use such equipment and systems will not be a potential danger to health or welfare, or a potential danger because of structural defects, or a potential source of ignition, and will not create excessive noise, or otherwise become a nuisance. Equipment and systems include, but are not limited to, apparatus, devices, fixtures, piping, pipe hangers, pipe covering, wiring, fittings and materials used as part of or in connection with such installations.

b——Equipment and systems shall be made of approved materials, shall be free from defective workmanship, and shall be designed and installed so as to be durable, without need for frequent repairs or major replacements. Equipment requiring operation, inspection, or maintenance shall be located so that easy access to it is provided.

c——Equipment and systems shall be designed and installed in conformity with generally accepted standards, and as required or otherwise provided herein.

d——New installation of equipment in existing buildings, and alterations and extensions to existing equipment and systems, shall conform with the requirements of this Code.

e——Equipment and systems shall be subjected to such tests as are appropriate which will disclose defects and leaks. No equipment or part of a system shall be covered or concealed until it has been tested and approved.

f——Equipment and systems shall be capable of performing their functions satisfactorily without being forced to operate beyond the safe design capacity.

g——Equipment and systems subject to freezing, shall be adequately protected against freezing.

h——Equipment within garages shall be protected from damage by motor vehicles.

i——Each multiple dwelling shall be provided with

equipment to serve its own requirements, except that buildings designed to remain permanently under a single ownership may have common service facilities.

j——Moving parts of equipment which may be a potential hazard shall be guarded to protect against accidental contact.

k——Piping, conduits, or ducts which may be a potential hazard shall not be permitted in exits, stairways, or hoistways.

B 502 PLUMBING

B 502-1 General Requirements

a——Plumbing systems shall conform with the requirements of section B 501, and shall be designed, constructed and maintained so as to guard against fouling, clogging, and depositing of solids.

b——Plumbing systems shall be installed in such manner as not to weaken structural members nor cause damage or deterioration to any part of the building through fixture usage.

c——Plumbing systems shall be maintained in a sanitary and serviceable condition.

B 502-2 Public Water Supply or Public Sewer: When Deemed Available

a——The source of water supply for a dwelling shall be a public water supply system when such system is within 500 feet of the premises of the dwelling and a connection may be made lawfully thereto.

b——The means of sewage disposal for a dwelling shall be a public sanitary or combined sewer system when it is within 500 feet of the premises of the dwelling and a connection may be made lawfully thereto.

c——The means for storm water disposal shall be a public storm or combined sewer system when it is within 500 feet of the dwelling and a connection may be made lawfully thereto.

B 502-3 Water Supply

a——Pure and wholesome water from an approved source shall be available at all times on the premises of every multiple dwelling. The domestic water supply system of the multiple dwelling shall be connected to

such approved source and shall not be subject to contamination.

b——Water supply systems shall be designed and installed so as to provide at all times a supply of water to plumbing fixtures, devices and appurtenances in sufficient volume and at pressures adequate to enable them to function satisfactorily and without undue noise under all normal conditions of use.

c——Water supply systems shall be designed and installed so that water used for purposes of cooling, heating, or processing will not be reintroduced into the domestic water supply system nor be distributed through such equipment to plumbing fixtures.

B 502-4 Domestic Hot Water Systems

Domestic hot water systems shall be provided with safety devices arranged to relieve hazardous pressures and excessive temperatures.

B 502-5 Plumbing Fixtures

a——Plumbing fixtures shall be made of smooth nonabsorbent material and shall be free from concealed fouling surfaces.

b——Plumbing fixtures shall be installed with regard to spacing so as to be reasonably accessible for their intended use.

c——Plumbing fixtures shall be located in spaces that are accessible, lighted, and ventilated.

d——Water closets, urinals, showers, and bathtubs shall be located only in toilet rooms or bathrooms provided with waterproof floors and with waterproofing extending 6 inches or more above the floor.

B 502-6 Sewage Drainage System

a——Every plumbing fixture shall be drained to a sewage drainage system and such system shall be connected to a public sewer or to an adequate and approved system of sewage disposal.

b——Every multiple dwelling shall have access on the premises to an adequate and approved means of sewage disposal.

c——Where a public sewer is not available, a system shall be provided to receive and dispose of sewage without health hazard or nuisance.

d——Sewage or other waste which may be deleterious to surface or subsurface waters, shall not be discharged into the ground or into a waterway unless it has first been rendered harmless through subjection to treatment in accordance with generally accepted standards.

e——Where a drainage system may be subject to backwater, suitable provision shall be made to prevent its overflow into the building.

f——Any substance which will clog the pipes, produce explosive mixtures, destroy the pipes or their joints or interfere unduly with the sewage disposal process, shall be prevented from entering the building drainage system.

g——Each fixture directly connected to the sewage drainage system shall be equipped with a water seal trap.

h——Adequate cleanouts shall be provided and arranged so that the pipes may be readily cleaned.

i——The drainage system shall be designed so as to provide adequate circulation of air in all pipes in order that siphonage, aspiration, or pressure will not cause a loss of trap seal under ordinary conditions of use.

j——Each vent terminal shall extend to the outer air and be installed so as to minimize the possibilities of clogging, frost closure, the return of foul air to the building, or the creation of a nuisance to adjacent premises.

k——Whenever a structure is to be built higher than the vent terminal of an adjacent building and thereby adversely affects the vent system of the adjacent building or when such vent is a potential nuisance to the occupants of the higher structure, then the owner of the higher structure shall at his expense and with the consent of the owner of the adjacent building, cause such vent to be extended or altered to correct the condition.

l——Drains provided for fixtures, devices, appliances, or apparatus containing food, water, sterile goods or similar materials, shall be equipped with air breaks, and installed in conformity with generally accepted standards.

m——Drains provided for fixtures, devices, appliances or apparatus which have interior surfaces not readily accessible to permit effective cleaning, shall be indirectly connected.

B 502-7 Storm Drainage System

a——Roofs and paved areas, including yards and courts, shall be drained. Storm drainage shall be conveyed to an adequate and approved system of storm water disposal where available. Storm drains shall be discharged in such manner that water will not flow onto sidewalks.

b——Where a drainage system may be subject to backwater, suitable provision shall be made to prevent overflow into the building.

c——Leaders and gutters, if used, shall be constructed of noncombustible material, except that wood leaders and gutters may be used for buildings not more than three stories high.

B 502-8 Minimum Plumbing Facilities

a——Multiple dwellings shall be equipped with plumbing systems designed to furnish hot and cold water to every sink, laundry tray, automatic laundry washing machine, lavatory, bathtub and shower required therein.

b——There shall be provided within each dwelling unit, plumbing fixtures consisting of at least:

One kitchen sink,
One water closet,
One bathtub or shower, and
One lavatory.

c——Multiple dwellings containing sleeping accommodations arranged as individual rooms or suites shall be provided with plumbing fixtures consisting of at least:

One water closet,
One bathtub or shower, and
One lavatory

for each multiple of six sleeping rooms or fraction thereof. Motels may have such plumbing facilities provided in another building within 50 feet of, and on the same premises with, such motel.

d——Multiple dwellings containing sleeping accommodations arranged as a dormitory shall be provided with plumbing fixtures consisting of at least:

One water closet,
One bathtub or shower, and
One lavatory

for each multiple of fifteen persons or fraction thereof so accommodated.

e——Whenever water closet rooms are provided for the exclusive use of males, urinals may be substituted for not more than one third of the required number of water closets.

f——There shall be provided in each dwelling unit, not designed for use primarily by transients, at least one laundry tray, or in lieu thereof there shall be provided in a readily accessible location within a laundry room at least one two-compartment laundry tray for each ten dwelling units. Automatic laundry washing machines may be substituted for not more than one half the number of required two-compartment laundry trays located in a laundry room. Such substitution shall be on the basis of one automatic laundry washing machine for two two-compartment laundry trays.

g——Every kitchen serving public dining spaces shall have installed therein at least one lavatory for the personal use of kitchen employees.

h——Garages having an area of more than 1000 square feet shall be equipped with adequate floor drains connected to the sewage drainage system. Open deck garages with floors pitched to storm drains shall not require floor drains.

i——Privies, privy vaults and outhouses shall be permitted only for temporary use in connection with new building construction. Such facilities shall be maintained in a sanitary and serviceable condition. Prior to the occupancy of a multiple dwelling, such facilities and the sewage remaining therefrom shall be removed and the area cleaned, disinfected, and filled with clean earth.

B 502-9 Swimming Pools Within Multiple Dwellings

B 502-9.1 General Requirements

Swimming pools within multiple dwellings shall conform with the requirements of section B 501.

B 502-9.2 Water Supply

a——Water supply used for filling or for cleaning of the pool shall be clean.

b——Water supply shall be protected against potential pollution from all sources, including cross-connection and backflow.

B 502-9.3 Circulation of Water

Pool inlets and outlets shall be located and spaced so as to secure satisfactory dispersion and complete circulation.

502-9.4 Water Overflow
Water overflow drains shall be provided at the high water line.

502-9.5 Drainage
a——Drains shall be provided so that the pool can be safely and completely drained in 4 hours or less.

b——Drains shall be provided in floors surrounding the swimming pool, and shall be arranged so that water from such areas will drain without entering the pool.

502-9.6 Filtering, Sterilizing, and Auxiliary Equipment
a——Filtering, sterilizing, and auxiliary equipment, where required, shall be adequate to maintain the sanitary quality of water during each period the pool is in use.

b——Equipment containing gases or disinfectants capable of giving off irritating, toxic, or flammable fumes shall be located in ventilated rooms.

502-9.7 Foreign Matter
The installation shall be designed to prevent dirt, sand, or other foreign matter from entering the bathing area.

502-9.8 Plumbing Facilities
Lavatories, water closets, and showers shall be provided. Such facilities shall be readily accessible to bathers at all times, and shall be located so that bathers must pass them before entering the pool.

502-10 Water Supply Tanks

502-10.1 Construction
a——Water supply tanks shall be designed and constructed so as to be watertight, verminproof, and rodentproof, resistant to corrosion, and capable of withstanding the pressures under which they are to operate.

b——Tanks shall be provided with safe and easy means of access for inspection.

c——The capacity of any single tank in or on a building shall not exceed 30,000 gallons. Where tanks are located on flat roofs and the total capacity exceeds 30,000 gallons, drain pipes shall be located so as to distribute water over separate areas.

502-10.2 Supports
a——Supports for tanks shall be of noncombustible construction.

b——Tanks and their supports shall not be used to sup-

port equipment or structures other than for tank use, except where specially designed for such other use.

B 502-10.3 Piping

a——Means shall be provided for emptying water supply tanks. The emptying pipe and valve shall be of a size to permit quick emptying, shall be located and arranged so as to prevent damage from water discharged, and shall be connected through an air break to the drainage system.

b——Gravity tanks shall be provided with overflow pipes at least one pipe size larger than the filling pipe.

B 502-10.4 Location of Tanks

Tanks shall not be located over openings in floor or roof construction. Openings in floor or roof for piping are permitted provided they are made watertight.

B 502-10.5 Tanks for Sprinkler or Standpipe Systems

a——Tanks used to supply water to a sprinkler or a standpipe system shall be designed and installed to furnish water in sufficient quantity and pressure for such systems.

b——A tank used to supply water both to a domestic system and a sprinkler or standpipe system, shall have the outlet for the domestic system located a sufficient distance above the bottom to maintain the minimum reserve required for fire protection service.

c——A tank used to supply water both to a sprinkler and to a standpipe system shall have the outlet for the standpipe system located a sufficient distance above the bottom to maintain the minimum reserve required for the sprinkler system.

B 503 GAS PIPING EQUIPMENT AND SYSTEMS

B 503-1 General Requirements

a——Gas piping systems, including systems for liquefied petroleum gas, shall be in conformity with the requirements of section B 501.

b——Gas piping systems shall be of approved materials resistant to the corrosive effects of gases conveyed by them. Systems shall be designed and installed so as to remain gastight, safe and operative under conditions of use. The use of other than rigid pipe shall be limited so as not to be a potential hazard.

c——Gas piping installed in cinder fill or other material tending to cause corrosion, shall be protected against such corrosion.

d——Cleanouts shall be provided where condensate, dirt or other foreign matter may collect.

e——Gas piping and equipment shall not be located in ducts, chutes, chimneys, flues, hoistways, stairways, or exits.

f——Gas piping systems shall be designed and installed so as to provide a supply of gas sufficient to meet the maximum expected demand of the installed gas burning appliances connected thereto.

B 503-2 Shutoff Valves

a——Gas piping systems, other than liquefied petroleum gas systems where containers are adjacent to the building, shall have at least two accessible means for shutting off all gas supply. One means of shutoff shall be located outside and at a safe distance from the building, and shall be suitably protected against unauthorized use, and the other shall be located inside the building, ahead of the meter and as close as practicable to the point of service entrance.

b——Liquefied petroleum gas systems using containers adjacent to the building shall have at least one accessible means for shutting off all the gas supply. Such means shall be located outside the building and shall be suitably protected against unauthorized use.

c——An easily accessible shutoff valve or cock shall be provided in the piping in close proximity to, and ahead of, every gas appliance or outlet for a gas hose connection.

B 503-3 Service Equipment for Other than Liquefied Petroleum Gas

a——Gas meters shall be located in spaces that are dry, well ventilated, readily accessible, free from steam or chemical fumes and protected against extreme heat. Gas meters shall be located as near as practicable to the point of entry of the gas service. Gas meters shall not be installed within a boiler room, garage, or stairway, nor in any public hall above the cellar, nor above the lowest story if there is no cellar. Gas meters shall not be installed in spaces designed for the storage of paints or flammable products.

b——Gas services, gas meters, and gas pressure regulators shall be located so that they are protected from damage. Such equipment shall be sufficiently removed or separated from the bottom termination of a stairway so as not to constitute a potential hazard.

B 503-4 Gas Refrigerators

a——Gas refrigerators shall be installed with clearance for ventilation.

b——Refrigerator parts serving as flues shall be resistant to the action of the products of combustion.

B 503-5 High Pressure Gas

a——Buildings supplied with gas at pressures exceeding 1 psi gage shall have all exterior wall openings below grade and within 10 feet of the gas service pipe made gastight. Where openings are provided for service pipes of any kind to enter such buildings below grade, the openings shall be made gastight and the pipe shall be protected from damage by settlement or corrosion.

b——Any service connection supplying gas at a pressure in excess of 1 psi gage shall be provided with a device to reduce such pressure to not more than ½ psi gage prior to entering the meter.

B 503-6 Liquefied Petroleum Gas

a——Gas in liquid form shall not be permitted within multiple dwellings.

b——Liquefied petroleum shall not be vaporized by devices utilizing open flame or open electrical coil.

c——Containers shall be arranged so that they can be replaced without shutting off the flow of gas to equipment.

d——Containers shall be designed, stored, and located so as not to be a hazard to the premises served, or to the surrounding property.

e——Gas service entrance into multiple dwellings shall be above ground, and shall be protected from damage by settlement or corrosion. Exposed exterior wall openings located below and within 5 feet horizontal distance of gas service entrance shall be made gastight.

f——Liquefied petroleum gases shall be odorized so that the presence of gas will be recognizable by a distinctive odor when the concentration is equal to, or greater than, one fifth the lower limit of combustibility.

g——Systems shall be provided with safety devices to relieve excessive pressures, and shall be arranged so that the discharge terminates at a safe location.

B 504 HEATING

B 504-1 General Requirements

a——Heating systems shall conform with the requirements of section B 501.

b——Multiple dwellings intended for occupancy between the first day of November and the first day of May of the following year shall be provided with heating equipment designed to maintain a temperature of not less than 70° F. at a distance of 3 feet and more from exterior walls, and at a level of 5 feet above the floor, in habitable spaces, kitchenettes, bathrooms and toilet rooms. The capability of the heating equipment to maintain such indoor temperature shall be based on the average of the recorded annual minimum outside temperatures for the locality.

B 504-2 Heat Producing Equipment

B 504-2.1 Combustion Space
Fuel-burning heat producing equipment shall have combustion space designed and constructed to withstand the maximum temperature attained and to operate efficiently at the expected loads.

B 504-2.2 Smoke Control
Fuel-burning heat producing equipment shall be designed and installed so that the emission or discharge into the atmosphere of smoke, dust, particles, fly ash, odors or other products of combustion will not create a nuisance or be detrimental to the health, comfort, safety or property of any person.

B 504-2.3 Warm Air Heating
Ducts and other air handling equipment used for heating shall conform to the requirements of such equipment used for ventilating purposes.

B 504-2.4 Heat Producing Equipment in Spaces Used for Other Purposes
a——Fuel burning equipment or ash removal equipment shall not be installed in spaces intended for the storage or use of paints, flammable liquids or gases, paper or trash.

b——Fuel burning equipment shall not be located in a bathroom or toilet room.

B 504-2.5 Fuel Supply Connection
Fuel burning equipment, except that which is fully portable, shall be permanently fastened and connected in place. Fuel supply connection to such equipment shall be made with pipe or tubing of solid metal.

B 504-2.6 Installation and Clearance
Where heat producing equipment is installed on, or adjacent to, combustible materials, the location, insulation, clearance, and the control of the equipment shall be such that the temperature on the surface of the combustible materials will not exceed 175° F.

B 504-2.7 Air Supply
a——Direct-fired heat producing equipment and the enclosure in which it is located shall be provided with a supply of air adequate both for complete combustion at the rated gross output of the equipment and for the ventilation of the enclosure to prevent the accumulation of heat.

b——Rooms containing fuel burning equipment having an individual or combined rated gross capacity of 250,000 Btu per hour or less, may have such air supply provided by means of one or more openings to the exterior, or by means of fixed openings to interior spaces having openings to the exterior. Where the combined rated gross capacity exceeds 250,000 Btu per hour the air supply shall be provided by means of fixed openings to the exterior.

c——Openings shall be adequate to provide air for the simultaneous operation of all equipment within such rooms. Openings designed for the purpose of supplying air for combustion or ventilation shall be fixed and shall provide a clear ventilating area equal to not less than the combined cross-sectional area of all the smoke pipes or gasvent connections leading from such equipment.

B 504-2.8 Removal of Products of Combustion
a——Equipment for burning solid or liquid fuel shall be connected to suitable chimneys or flues and shall not be connected to gasvents.

b——Gas-fired equipment shall be connected to a suitable chimney, flue or gasvent when the discharge of products of combustion into the space where the equipment is installed would be a hazard.

B 504-2.9 Safety Devices
a——Equipment capable of developing hazardous pres-

sures or temperatures shall be provided with means to relieve safely such pressures and temperatures.

b——Controls for the safe operation of automatically operated heat producing equipment shall be provided to function as follows:

When failure or interruption of flame or ignition occurs, the fuel supply shall be cut off.

When a predetermined temperature or pressure is exceeded, the input of additional heat shall be prevented or reduced to a safe rate.

When the water level in a steam boiler drops below a predetermined level, the fuel supply shall be cut off.

c——Fuel burning equipment operating with automatic ignition and liquefied petroleum gas, shall be arranged to shut off automatically the gas supply to the main burner and pilot light in the event of pilot light or main burner failure.

d——Fuel burning equipment located in bedrooms shall be provided with controls to cut off the fuel supply upon the failure or interruption of the flame or ignition, or whenever a predetermined temperature or pressure is exceeded.

504-2.10 Fuel Storage and Handling

Fuel storage and handling facilities shall not be located within garages exceeding 1000 square feet in area. In garages not exceeding 1000 square feet in area, a maximum of two 275-gallon fuel oil tanks is permitted.

504-2.11 Covering

Covering for surfaces of heat producing equipment shall be of noncombustible materials.

504-2.12 Expansion Tanks

Hot water heating systems shall be provided with expansion tanks or other means to allow for the expansion of water in the system.

504-2.13 Garage Heating

a——Fuel burning unit heaters installed in garages shall be 8 feet or more above the garage floor level. No other location of fuel burning equipment shall be permitted within the garage space.

b——Garages heated by recirculated air and using equipment other than unit heaters, shall be provided with a mechanical means of air handling designed to

prevent the accumulation of vapors or gases near the floor. At least 5 per cent of the air moved in such a system shall be fresh air.

B 504-3 Chimneys, Flues, and Gasvents

B 504-3.1 General Requirements

a——Chimneys, flues, gasvents and their supports shall be designed and constructed so as to be structurally safe, durable, smoketight and capable of withstanding the action of flue gases without softening, cracking, corroding, or spalling.

b——Such facilities shall effectively convey the products of combustion to the outer air without creating a nuisance.

c——Masonry chimneys, except approved prefabricated chimneys, shall have noncombustible foundations.

d——Chimneys shall be provided with flue lining capable of withstanding the action of flue gas without softening, cracking, corroding or spalling at the temperature to which they will be subjected.

e——Metal smokestacks shall be sufficiently separated from building construction so as not to constitute a potential hazard.

f——Openings for smoke pipes or gasvent connections shall be provided with means for easy connection without restriction of flue.

g——No flue shall have smoke-pipe or gasvent connections in more than one story of a building.

h——Fuel burning equipment and fireplaces located in different tenancies shall not be connected to the same flue.

i——Incinerator flues equipped with service openings shall not be used as flues for other fuel burning equipment.

B 504-3.2 Draft

Chimneys, flues, and gasvents or other devices installed on fuel burning equipment shall provide sufficient draft to develop the rated output of the connected equipment.

B 504-3.3 Fire Safety

Chimneys, flues, and gasvents shall be located, designed and constructed so that under conditions of use, the temperature of any combustible materials adjacent

thereto, insulated therefrom or in contact therewith, does not exceed 175° F.

B 504-3.4 Spark Arresters

Any chimney or flue connected to an incinerator, and any chimney or flue which may emit sparks, shall be provided with a spark arrester of noncombustible construction. Spark arrester shall have sufficient total clear area to permit unrestricted passage of flue gases. Openings in spark arrester shall be of such size as to prevent passage of embers and to minimize clogging by soot.

B 504-3.5 Location of Outlets

The horizontal distance separation of outlets of chimneys, flues, and gasvents from windows or other exterior openings, and the vertical distance of such outlets from unprotected combustible material on the same or adjacent premises, and from the point where the flue passes through the roof, shall be in accordance with the following table:

TABLE B 504-3.5.——LOCATION OF OUTLETS
Minimum distance in feet

Relation of outlets to other construction	Incinerator flues	Other flues	Gasvent
Horizontal distance to windows or other exterior opening where the bottom of such exterior opening is at a higher level and less than 30 feet above the flue outlet	(1)	20[1]	15
Vertical distance between the top of the outlet and the highest point on the roof where the flue passes through	10[2]	3	2
Vertical distance of outlet above unprotected combustible material where the horizontal distance to such combustible material is:			
Within 10 feet	10[2]	3	2
Over 10 feet and within 15 feet	3	2	

[1] Outlets of incinerator flues and flues from fuel burning equipment having a rated gross capacity exceeding 1,000,000 Btu per hour, shall be carried above the top of windows or other exterior openings in walls within a horizontal distance of 50 feet.

[2] Where roofs are noncombustible and cannot be used for a promenade, clothes hanging, etc., minimum distance shall be 3 feet. Where roofs are noncombustible and can be used for such purposes, minimum distance shall be 8 feet.

B 504-3.6 Extending Existing Chimneys, Flues, and Gasvents

a——Whenever a structure is built higher than an existing chimney, flue or gasvent on the same or adjacent premises, the minimum distance of windows, other exterior openings and unprotected combustible material of such structure from the outlet of the chimney, flue or

gasvent shall be in accordance with the applicable requirements of section B 504-3.5.

b——Whenever a structure is built higher than an existing chimney, flue or gasvent on the same or adjacent premises and causes a deficiency in the draft of heat producing equipment connected thereto, or whenever a chimney, flue or gasvent is a potential nuisance to the occupants of such higher structure, then the owner of such higher structure shall, at his expense, and with the consent of the owner of the adjacent building, cause the existing chimney, flue or gasvent to be extended or altered to correct the conditions.

c——Whenever a new chimney, flue or gasvent is to be erected adjacent to an existing higher building, the proposed chimney, flue or gasvent shall be installed by the owner of the lower building in conformity with section B 504-3 and may, at his expense, and with the consent of the owner of the higher building, be attached to such higher building.

B 505 ELECTRICAL WIRING AND EQUIPMENT

B 505-1 General Requirements

a——Electrical wiring and equipment shall conform with the requirements of section B 501, and shall be designed and installed so as not to be a potential source of ignition of combustible material or a potential source of electrical hazard.

b——Where the service entrance conductors have a rated capacity of 200 amperes or more or where the voltage between such conductors exceeds 600 volts, a room or enclosure shall be provided to be used for electric service, metering and main distribution equipment. Such room or enclosure may also contain gas or water meters and shall be of ample size to provide proper clearance for the equipment and shall be ventilated as required in section B 507-5.

c——There shall be a switch or other means for controlling a light in each dwelling unit or room for transient occupancy near the point of entrance to such unit or room.

B 505-2 Artificial Lighting

B 505-2.1 General Requirements

a——Multiple dwellings and accessory structures shall be wired for electricity, and lighting equipment shall be

installed throughout to provide adequate illumination for the intended use of each space. Electricity shall be obtained from public utility or private sources, except as otherwise set forth in sections B 505-2.2 and B 508-2.4.

b——During periods of occupancy, whenever natural light is lacking or insufficient for safe travel, electric light of intensity sufficient for safe travel shall be provided throughout exits, excluding fire escapes, and for garages having a floor area of more than 1000 square feet, automobile driveways, ramps, elevator cars, escalator landing areas and approaches, swimming pools, and spaces in which fire protection equipment is located. Switches controlling such light shall be provided in a central location and if accessible to other than authorized persons, shall be designed so as to be protected against unauthorized use.

B 505-2.2 Emergency Lighting

a——Emergency lighting shall be provided in multiple dwellings for transient occupancy three or more stories in height and having 100 or more sleeping rooms, and in multiple dwellings having one or more spaces for public assembly with a total capacity of 200 or more persons.

b——Emergency lighting shall consist of that lighting necessary to illuminate adequately exits, excluding fire escapes, and all portions of the premises to which the public has access.

c——Emergency lighting shall be designed and installed so as to permit occupants to make their way safely out of the building in the event of failure of the normal lighting.

d——Emergency lighting shall be furnished through an independent electrical wiring system supplied from a main source, and from an auxiliary source, except that where electric service is obtained from a reliable underground network distribution system, the auxiliary source shall not be required.

e——Where a single source of electricity is permitted, the connection for the emergency lighting shall be taken on the supply side of the main service disconnect and shall be sufficiently separated from the main service protective device to minimize the possibility of simultaneous interruption of supply.

f——Where an auxiliary source is required, means shall

be provided for automatically transferring the emergency lighting supply from the main source to the auxiliary source in the event of failure of the main source.

g——The auxiliary source shall have a capacity sufficient to supply and maintain the total emergency lighting load for a period of at least 30 minutes, with not more than a 9 per cent reduction from rated system voltage.

B 505-2.3 Exit and Directional Signs

a——Exits in multiple dwellings shall be provided with exit and directional signs, visible from the approach to the exits, except that such signs shall not be required in those portions of a building which contain dwelling units only, or in which exit from sleeping rooms is directly to the outside.

b——Exit signs shall be provided over each exit doorway and opening forming part of an exit on every story.

c——Directional signs shall be provided at locations in the public hall, passageway, or corridor from which the exit doorway is not readily discernible.

d——Such signs shall be worded in plainly legible block letters with the word **EXIT** for exit signs and the words **TO EXIT** with a suitable pointer or arrow indicating the direction of exit, for directional signs. Letters for signs shall be conspicuous, readily discernible, and at least 6 inches high except that for internally illuminated signs the height of such letters shall be at least 4½ inches.

e——Exit and directional signs shall be illuminated either externally or internally by electric lights, and shall be kept illuminated at all times when the building is occupied. Where a system of emergency lighting is provided, electric lights illuminating exit and directional signs shall be supplied with current from the emergency lighting system. When such system is not provided, current shall be supplied from a separate circuit or circuits controlled from a central location. Circuits supplying exit and directional sign outlets shall supply no other outlets.

B 506 INCINERATORS

B 506-1 General Requirements

a——Incinerators shall conform with the applicable requirements of sections B 501 and B 503. They shall be of adequate capacity for the intended use.

b——Flue-fed incinerators shall be equipped with means for burning auxiliary fuel in sufficient quantity to assure complete combustion of refuse.

c——Incinerator combustion space shall be designed and constructed so as to be durable and gastight.

d——Incinerators shall be equipped with means for regulating the draft and for minimizing the emission of fly ash, smoke, dust, particles, and odors.

e——Every flue serving an incinerator shall be provided with a substantially constructed spark arrester.

f——Every incinerator shall be connected to a suitable noncombustible chimney, smokestack, or flue.

g——Incinerator flues used also for dropping refuse shall be vertical, of noncombustible construction, shall have a smooth finish on the inside, and shall have connections to incinerators arranged to provide free passage of refuse without clogging.

h——Incinerator rooms may contain boilers, furnaces, and heating equipment, but shall not be used for any other purpose.

B 506-2 Service Openings

a——Service openings shall be readily accessible to the building occupants.

b——Service openings shall be equipped with metal, self-closing charging devices of fire-resistive construction as set forth in section B 402-4.7c. Incinerator flue used also for dropping refuse shall have charging devices constructed so that openings to the flue are closed while the charging devices are in the open position. No part of the charging devices shall project into a refuse chute or incinerator flue.

c——Durable signs with plainly legible letters prohibiting disposal of highly flammable substances in incinerators, shall be provided near service openings.

B 506-3 Incinerator Rooms and Refuse Rooms

Openings in refuse rooms used to charge refuse into incinerators shall be provided with charging doors designed and installed so as to minimize the heat transmitted to the refuse room and to prevent tampering by unauthorized persons.

B 507 REFRIGERATION, AIR CONDITIONING, AND MECHANICAL VENTILATION

B 507-1 Refrigeration

B 507-1.1 General Requirements
Mechanical refrigeration equipment shall conform with the requirements of section B 501, and shall be designed and installed so as not to be a potential source of hazard from excessive pressure or refrigerant leakage.

B 507-1.2 Location
Refrigerating equipment shall not be permitted in exits, except that self-contained refrigerating units shall be permitted in lobbies provided that they do not obstruct or diminish the width of exits, and the refrigerant contained in any such unit is limited so as not to constitute a potential hazard.

B 507-1.3 Materials
Refrigerating equipment shall be of materials resistant to the corrosive effects of refrigerant conveyed by them, so as to remain gastight and safe. All parts of such equipment shall be designed, constructed, and installed so as not to exceed the allowable working stresses of the material used.

B 507-1.4 Refrigerants
a——Refrigerants shall be classified as to their flammable or toxic qualities.

b——Refrigerants that are highly flammable in nature shall not be used in multiple dwellings.

c——In direct refrigerating systems using nonflammable and nontoxic refrigerants, the amount of refrigerant contained in each system shall not exceed the amount that in case of leakage may be contained safely in the space in which the equipment is located, or in the spaces in which the refrigerant would be dissipated.

d——Direct systems using refrigerants that are moderately flammable or moderately toxic in nature shall be limited to self-contained systems containing not more than 6 pounds of refrigerant, and shall not be used for air conditioning purposes.

e——Systems containing refrigerants exceeding the limits stated in paragraphs c and d of this section shall be of the indirect type using chilled water or brine as the cooling medium, and equipment containing the refrigerant shall be located in a machinery room.

B 507-1.5 Refrigerant Piping

a——Refrigerant piping shall not be located in ducts, chutes, exits, stairways, or hoistways, or where it may be subject to mechanical damage.

b——Direct systems containing nonflammable and nontoxic refrigerants may have refrigerant piping carried through floors provided that where passing through spaces not served by the system, such piping shall be enclosed in rigid, noncombustible material and shall be arranged so that leakage of gas will not enter such spaces.

B 507-1.6 Machinery Room

a——No apparatus to produce an open flame shall be installed in any required refrigeration machinery room unless such flame is provided with a suitable hood that is capable of effectively removing the products of combustion to the outer air.

b——Refrigeration machinery rooms shall be used for no purpose other than for mechanical equipment.

c——Refrigeration machinery rooms shall be provided with tight-fitting doors having no partitions or openings that will permit the passage of escaping refrigerant to other parts of the building. Machinery rooms shall be provided with either natural ventilation, mechanical ventilation, or both.

B 507-1.7 Safety Controls

Refrigerating equipment shall be provided with means to relieve excessive pressures safely.

B 507-1.8 Plumbing Connections

Plumbing connections for refrigerating equipment shall be in conformity with the requirements set forth in section B 502.

B 507-2 Cooling Towers

a——Cooling towers in exterior locations shall be constructed of noncombustible materials, including the exterior finish, with the exception that the drip bars may be of wood.

b——Cooling towers shall be designed, installed, and located so that when in operation noise, fog, or water spray will not cause a nuisance.

c——Outdoor cooling towers located on multiple dwellings shall permit access for fire fighting, and shall not constitute a fire hazard.

B 507-3 Ventilating Systems

a——Ventilating systems shall be designed and installed so that the rapid spread of heat, flame, or smoke through the system will be prevented, and so that under conditions of use the temperature of any combustible material adjacent thereto, or in contact therewith, will not exceed 175° F.

b——Systems designed for exhaust ventilation of toilets, garages, interior passageways or vestibules separating garages from multiple dwellings, or ventilation of spaces where the exhaust may be flammable, toxic, or irritating in nature, shall each be independent of other systems, except that such systems may be interconnected at a fan located on the roof which serves as a common means of exhaust.

c——Stairways, passageways, exits, shafts, hoistways, or attics shall not be used as a plenum chamber, except that in a motel an attic conforming with the requirements of sections B 402-3c or B 402-5.3f may be used as a plenum chamber provided each ventilating opening is equipped with a shutter that will close automatically in case of fire.

d——Ducts shall be securely fastened in place, and shall be firestopped as set forth in section B 402-5.1.

e——Material used for the insulation or soundproofing of ducts shall be noncombustible, except that slow-burning material may be used on the outside when the inside is subject to temperatures not exceeding 150° F.

f——Ducts and other air handling equipment shall be of noncombustible material.

g——Filters shall be constructed of such materials as will not constitute a fire or smoke hazard.

h——Ducts passing through or located within combustible construction shall be separated from such construction by a clearance of at least ½ inch or by a noncombustible insulating material at least ¼-inch thick.

i——Ducts passing through fire walls shall be equipped with shutters as set forth in section B 402-4.8c. At other points ducts shall be provided with means to prevent the rapid spread of heat, smoke or flame, or shutters shall be provided that will close automatically in case of fire.

j——Plenum chambers or enclosures for ventilating purposes shall conform to the requirements for ducts.

B 507-4 Air Intake and Exhaust Openings

a——Air intake and exhaust openings shall be designed, located, and installed so as not to constitute a hazard or nuisance, and so as to prevent the possibility of fire, smoke, fumes, or foreign matter being drawn into the system.

b——Ventilating systems shall be provided with adequate openings for incoming and outgoing air to obtain the required circulation. Intake openings shall provide air from an uncontaminated source.

B 507-5 Ventilation Requirements

a——Enclosures or spaces where heat, gases, vapors or odors may accumulate and become a potential source of hazard or nuisance, shall be provided with adequate means of ventilation to remove such excess.

b——Spaces designed for purposes of public assembly shall be provided with means for obtaining fresh air or conditioned air for the maximum number of persons to occupy such spaces.

TABLE B 507-5d.——MEANS FOR OBTAINING REQUIRED VENTILATION
(See table B 507-5e for quantity requirements)

Classification of space	Required ventilation obtained by means of——		
	Openings to the outer air	Ducts connected to ventilators or other wind-operated devices	Fans or other means for obtaining mechanical ventilation
Habitable spaces	Required	(3)	(3)
Water closet compartments and bathrooms	Permitted	Permitted	Permitted
Exits, passageways and stairways	Permitted	Permitted	(3)
Garage areas over 1000 square feet[1]	(3)	(3)	Required
Kitchens serving restaurants or public dining rooms[2]	(3)	(3)	Required
Other spaces	Permitted	Permitted	Permitted

[1] Garage areas of more than 1000 square feet, in basements and cellars, shall be provided with an air intake and adequate air circulation at floor level.
[2] For requirements for cooking equipment in such areas, see section B 507-5c.
[3] Not permitted as a means to obtain required ventilation, but permitted as an additional means.

TABLE B 507-5e.——MINIMUM VENTILATION REQUIREMENTS

Classification of space	Amount of ventilation	Arrangement of equipment
Habitable spaces	Openings to the outer air, see section B 209-3	
Recreation rooms	2 air changes per hour	
Places of public assembly	15 cfm per person	
Kitchens, kitchenettes and cooking spaces in dwelling units	150 cfm per range or stove	Ducts provided with access for cleanout
Public water closet compartments	40 cfm per water closet or urinal	
Private water closet compartments and bathrooms	25 cfm	
Workshops, utility service rooms, stairways, and passageways	1 air change per hour	
Elevator machinery rooms	6 air changes per hour	
Kitchens serving restaurants or public dining rooms	4 air changes per hour	
Cooking equipment in kitchens serving restaurants or public dining rooms	Sufficient to create a velocity of 150 feet per minute at hood	Fan motor controls near motor and hood; duct velocity not less than 1500 and not more than 2200 feet per minute
Locker rooms and dressing rooms	3 air changes per hour	
Refrigeration machinery rooms	Determined by the refrigerant content of the largest system in the room	Fan motor control located outside of refrigeration machinery room
Enclosed garage areas over 1000 square feet	4 air changes per hour	To provide adequate air circulation at floor level; fan motor control located near entrance
Interior passageway or vestibule separating garage from multiple dwelling	Not less than 4, nor more than 10, air changes per hour	Fan motor control located outside of passageway

c——Cooking equipment in kitchens serving restaurants or public dining rooms shall be provided with mechanical exhaust systems which shall not be connected with any other exhaust system. Such systems shall be designed and constructed with openings of size to permit easy inspection and cleaning. Such systems shall be equipped with effective means to extinguish fire, and shall be arranged so that in the event of fire within the

system the danger of spread to other parts of the building will be minimized.

d——Enclosed spaces in multiple dwellings and accessory structures shall be provided with means for obtaining required ventilation as set forth in section B 209 and table B 507-5d. The amount of ventilation required for such spaces shall be in conformity with table B 507-5e. The capacity of wind-operated devices to exhaust the required air quantities shall be based on their performance when subjected to wind velocities of 4 miles per hour.

B 507-6 Air Flow

Exhaust air from a dwelling unit or from a room or space whose contents may emit odors, fumes, or vapors shall not be circulated to other spaces within the multiple dwelling.

B 507-7 Safety Controls

a——Manually operated controls shall be provided to stop the operation of all central fan equipment. Such controls shall be conspicuously identified and in readily accessible locations outside the fan room.

b——Every system using recirculated air and serving a space of public assembly or more than one fire area or more than one story of a building, shall be provided with controls arranged so that under abnormal rise in temperature of the air in the system the fans causing normal circulation shall stop and require manual restart.

c——Systems arranged to operate in case of fire shall be provided with controls to start exhaust fans automatically in the presence of smoke or abnormal rise in temperature, and to stop automatically the operation of central supply fans.

d——Every system used for ventilating a place of public assembly shall be provided with an emergency switch conveniently located in the public space with a durable sign giving instructions for shutting down the system in case of fire.

B 507-8 Emergency Ventilation of Equipment Rooms

Telephone rooms, pump rooms, and other places within a multiple dwelling which require the attendance of an operator during a fire or other emergency, shall be provided with natural ventilation, or in lieu thereof, with an independent mechanical system for obtaining fresh

air from outside the building. The mechanical system shall be capable of introducing outside air in sufficient quantity to minimize the effect of smoke from other parts of the building, and a manual control for the system shall be provided within the room in a conspicuous and readily accessible location.

B 508 FIRE PROTECTION EQUIPMENT

B 508-1 General Requirements

Fire protection equipment shall be provided as set forth in section B 405, and shall be in conformity with the requirements set forth in this section.

B 508-2 Fire Alarm Systems

B 508-2.1 General Requirements

a——Fire alarm systems shall conform with the requirements of section B 501, and shall be designed and installed so as to warn all the occupants in the event of fire or other emergency.

b——The component parts of a fire alarm system shall be designed, made and assembled for fire alarm purposes, and so as not to require frequent major replacements.

c——Fire alarm systems shall be electrically operated.

d——Fire alarm systems shall be under constant electrical supervision so that failure of the main power supply or an open or grounded circuit which prevents the normal operation of the system will be instantly and audibly indicated. Where such electrical supervision is impracticable for certain types of sounding devices, such as vibrating bells, such sounding devices shall be connected alternately on separate circuits and shall be equally distributed throughout the building.

e——Each separate fire area shall be deemed a separate story, and shall be provided with manual fire alarm boxes in conformity with section B 508-2.2.

f——Installation of presignal systems shall be permitted only in buildings where an authorized person or a trained fire brigade is available at all times on the premises to receive the alarm and take proper action.

g——Fire alarm systems required in group B2 occupancies shall be of the coded type.

B 508-2.2 Manual Fire Alarm Boxes

a——Fire alarm systems shall be provided with man-

ually operated fire alarm boxes, each designed to transmit an alarm signal to the sounding devices on the premises.

b——There shall be at least one box on each story.

c——Boxes shall be located in a public hall or passageway in the natural path of escape from fire and shall be accessible on every story without passing through a fire door.

d——Boxes shall be located so that the horizontal distance from any point on a story not divided into rooms or from any door opening out of a room or suite to the nearest box shall not exceed 100 feet except that for buildings of type 1 construction, or where such horizontal distance is protected by sprinklers, the distance may be increased to 150 feet.

e——Boxes shall be in a position and ready at all times to operate when actuated.

f——Boxes shall be identified and shall have a conspicuous exterior color.

g——Boxes shall be designated to be used only for fire protection purposes or other emergency.

B 508-2.3 Sounding Devices

a——Fire alarm systems shall be provided with sounding devices designed to sound a clear audible alarm signal that is distinct from all signals of other sounding devices used in the vicinity.

b——All fire alarm sounding devices within a building shall be of the same type.

c——A sufficient number of sounding devices shall be provided and so located that the alarm is audible in all parts of the building.

B 508-2.4 Electrical Requirements

a——Fire alarm systems shall be supplied with electrical energy from a main source and, in case of failure of the main source, from an auxiliary source, except that where electric service of three-, four-, or five-wire type is obtained from a reliable underground network distribution system, the auxiliary source shall not be required.

b——Circuits used for the transmission of alarms shall be used for fire protection or other emergency purposes only, and shall be arranged and installed so that there

can be no interference with the operation of the sounding devices.

c——Electrical wiring shall be protected against corrosion, moisture, or mechanical damage. Wiring shall be protected by a metallic raceway or armor, except that such raceway or armor shall not be required for wiring installed at least 7 feet above the floor provided the input to the circuit is limited to 100 volt-amperes, current does not exceed 5 amperes, and voltage does not exceed 50 volts.

d——Raceway and boxes containing fire alarm conductors shall not contain conductors used for any purpose other than fire protection.

B 508-2.5 Tests
The trouble signal of fire alarm systems shall be tested daily, and all fire alarm boxes and sounding devices shall be tested at least once a month during periods of occupancy.

B 508-3 Fire-Detecting Systems

B 508-3.1 General Requirements
a——Fire-detecting systems shall conform with the requirements of section B 501, and shall be designed and installed so as to detect a fire in its initial stage, or to detect a rapid or excessive rise of temperature, and automatically to actuate an alarm.

b——The component parts of a fire-detecting system shall be designed, made and assembled for fire-detecting purposes, and shall be reasonably free from false alarm possibilities.

c——Fire-detecting systems shall be provided with fire-detecting devices arranged to transmit an alarm signal to sounding devices located throughout the building.

d——Fire-detecting systems shall be electrically operated.

B 508-3.2 Fire-Detecting Devices
Fire-detecting devices shall be located so as to operate promptly, and shall be protected from damage.

B 508-3.3 Manually Operated Fire Alarm Box
Fire-detecting systems shall be equipped with at least one manual fire alarm box located in a natural path of escape from fire to provide an auxiliary means for actuating the alarm system. Where practicable, such box shall be located on the grade story near the main exit.

B 508-3.4 Miscellaneous Requirements
In addition to the regulations set forth herein for fire-detecting systems, such systems shall also conform to the applicable requirements of sections B 508-2.1, B 508-2.3, B 508-2.4, and B 508-2.5.

B 508-4 Sprinkler Systems

B 508-4.1 General Requirements
a——Sprinkler systems shall conform with the requirements of section B 501, and shall meet the requirements for light hazard conditions as defined in generally accepted standards.

b——Sprinkler systems shall, upon actuation by heat produced by fire, automatically distribute water upon the fire in sufficient quantities either to extinguish it entirely or confine it without spread.

c——The component parts of sprinkler systems shall be designed, constructed, and assembled so as to function as a unified system.

d——Connection to a sprinkler system for other than sprinkler use is prohibited, except as otherwise provided in sections B 508-4.6 and B 508-5.3d.

B 508-4.2 Water Supply
a——Sprinkler systems shall have at least one automatic water supply of adequate pressure, capacity, and reliability.

b——Water pressure shall be sufficient to maintain, for a minimum period of 20 minutes, at least 15 psi gage at the highest sprinkler head in the system when 25 per cent of the total number of heads in a fire area are in operation. Where the water pressure under such conditions is insufficient to maintain 15 psi gage, but is sufficient to maintain at least 5 psi gage at the highest head, the deficiency may be overcome by an automatic pump used as an auxiliary means for furnishing the required pressure. Such pump shall be used for no other purpose, shall be capable of automatically furnishing the required water supply, and shall be connected so that it will not restrict the flow of water to sprinklers.

c——Sprinkler systems of adjacent multiple dwellings may be connected from a common source of water supply provided such buildings are designed to remain permanently under a single ownership and provided the source is of sufficient capacity for the largest sprink-

ler system within any one building, and no more than four buildings are so connected.

B 508-4.3 Sprinkler Heads

a——Sprinkler heads shall be located and arranged to spray all parts of the area to be protected, including closets and alcoves.

b——In locations where ceiling temperatures up to 100° F. prevail, the temperature at which sprinkler heads operate to discharge water shall be from 135° F. to 165° F.

c——In locations such as furnace, boiler and laundry rooms, where ceiling temperatures are over 100° F. but do not exceed 150° F., the temperature at which sprinkler heads operate to discharge water shall be from 175° to 212° F.

B 508-4.4 Fire Department Connections

a——Fire department connections shall be required for sprinkler systems where there is a fire department equipped with suitable pumpers and the sprinkler system supplies a total of thirty-six or more sprinkler heads in any one building.

b——Fire department connections shall be of approved Siamese type to fit the equipment of the nearest local fire department that would respond to an alarm; shall be of corrosion-resistive metal, and shall be conspicuously identified.

c——Fire department connections shall be located on a street front of the building accessible for fire department use without being a potential hazard.

d——Buildings facing one street only shall be provided with one connection for each multiple of 200 feet of frontage or fraction thereof.

e——Where the building has more than one street frontage, additional connections shall be provided so that at least one connection is located on each street frontage which is 50 feet or more in length, except that where the frontage is continuous only one such connection shall be required for each multiple of 200 feet or fraction thereof of such frontage.

B 508-4.5 Sprinkler Alarm

a——A required sprinkler system in a multiple dwelling occupied by transients shall be equipped with automatic means for sounding an alarm audible throughout

the building when there is a flow of water through any sprinkler head. In lieu of such an alarm, a signal shall be transmitted to the telephone switchboard or other approved central location in the building, provided a signal is also transmitted automatically to the local fire department or recognized central station.

b——Any valve controlling the water supply to a sprinkler head shall be provided with means for locking in the open position, or in lieu thereof, there shall be provided a means to give warning of the closure of any valve controlling such water supply. The warning shall be an automatically operated alarm signal audible to the occupants or transmitted to a recognized central station.

c——A sprinkler system required for the protection of exits, public halls, and stairways, and for a garage within a multiple dwelling, and any sprinkler system containing more than ten heads, shall be provided with a local alarm, except as otherwise provided in paragraph a of this section. Local alarm shall function so that the flow of water from the system equal to or greater than that from a single sprinkler head will result in the sounding of an audible alarm signal on the premises.

B 508-4.6 Domestic Water Service Supply from Sprinkler System Service

a——Sprinkler systems shall be maintained for sprinkler use only, except that a domestic water service connection may be made from the largest diameter of sprinkler water service connection to the water main, provided the domestic service connection is not more than 1¼ inches for a 4-inch sprinkler service connection to the water main, and not more than 2 inches for a 6-inch or larger sprinkler service connection to the water main. Where the size of the domestic water connection exceeds that set forth above, the water service shall be deemed inadequate for supplying a sprinkler system, but may be used to supply a partial sprinkler installation.

b——Domestic water supply connection shall be made so as to be free of the hazard of potential pollution from the sprinkler system.

B 508-4.7 Partial Sprinkler Installation Supplied from the Domestic Water System

a——Sprinkler heads installed in conformity with this section do not constitute a sprinkler system, and may be

supplied from the domestic water service within the building, or from a branch, provided the requirements listed hereafter are met:

Domestic water supply system shall be free of the hazard of potential pollution from sprinkler installation.

The size of the domestic water supply piping up to the point at which sprinkler connections are made shall be at least equal to the size required by generally accepted standards for the total number of sprinkler heads to be served.

b——When the sprinkler connection to the domestic water supply piping is made within the building at a point other than the water service connection, the following additional requirements shall also be met:

The sprinkler connection shall be made to a main or branch from the main with no intervening means of shutoff from the main or main riser;

No more than the equivalent of two ½-inch heads shall be supplied from any such connection;

No more than the equivalent of ten ½-inch heads shall be connected to the domestic water system of a building.

B 508-5 Standpipe Systems

B 508-5.1 General Requirements

a——Standpipe systems shall conform with requirements of section B 501, and shall be designed and installed so that all parts of every floor area can be quickly reached by an effective stream of water.

b——Standpipe systems shall be designed for furnishing heavy hose streams for severe fires and first-aid streams to control incipient fires.

B 508-5.2 Piping

a——Standpipes shall be of ample size to convey water from any designated source in sufficient quantity to supply the hose streams that are likely to be in simultaneous use.

b——At least one riser shall be located in an enclosed stairway.

c——Piping shall be connected so that water from any designated source of supply can flow to any one or combination of risers to deliver its full rated capacity without excessive friction loss.

B 508-5.3 Hose Stations

a——Hose stations shall be located in, or in close proximity to, enclosed stairways; they shall be conspicuously identified, and shall be arranged for easy accessibility.

b——Hose and equipment shall be provided at hose stations, and shall be arranged so as to permit quick and easy handling by occupants or trained personnel, whichever use is intended.

c——Hose shall be installed in locations that are dry, ventilated, and free of excessive heat, so as to prevent deterioration.

d——First-aid fire hose may be supplied from a 2½-inch or larger automatic wet sprinkler pipe.

e——Where first-aid fire hose is located so as not to be conspicuous to the occupants, it shall be located in spaces which are accessible and unlocked at all times. A durable sign, conspicuously located, shall be provided directing attention to the location of such fire hose.

f——Cabinets used to enclose first-aid fire hose shall be conspicuously identified, of noncombustible construction, equipped with keyless doors, and arranged so as to provide for the quick and easy removal of equipment.

B 508-5.4 Water Supply

a——Standpipe systems shall have a reliable and adequate source of water to supply the hose streams that are likely to be needed simultaneously for protecting the building.

b——Where a single source of supply is used it shall be capable of automatically supplying water to maintain at least one heavy hose stream for buildings containing no more than two risers, and two heavy hose streams for buildings containing more than two risers.

c——Where more than one source of supply is used, at least one of the sources shall be capable of automatically supplying water to maintain one heavy hose stream until other sources can be brought into action.

d——Water supply for fire department use shall have sufficient pressure at the nozzle of the highest outlet to permit the discharge of an effective stream.

e——Water supply designed for use only as first-aid fire protection shall have sufficient pressure at the

nozzle of the highest outlet to permit the discharge of an effective first-aid stream when another such stream in the system is being discharged simultaneously.

B 508-5.5 Fire Department Connection

a——Where there is a fire department equipped with suitable pumpers, at least one fire department connection shall be provided.

b——Fire department connections shall be located and constructed in conformity with the requirements set forth in sections B 508-4.4b and B 508-4.4e.

B 508-6 Watchmen's Systems

B 508-6.1 General Requirements

a——Watchmen's systems shall conform with the requirements of section B 501, and shall be designed and installed so that routes are established to cause the watchman, in his patrol, to pass sufficiently close to each space of the building to detect evidence of fire or other emergency.

b——Routes shall be arranged so that a watchman can visit every space to be patrolled within a period of 40 minutes.

c——Equipment for watchmen's systems shall be tamperproof and designed to record legibly and completely the movements of the watchman so that a check can be made of the patrol of his route.

B 509 ELEVATORS, DUMBWAITERS, AND ESCALATORS

B 509-1 General Requirements

a——Elevators, dumbwaiters, and escalators shall conform with the requirements of section B 501, and shall be designed and installed so as to be free from physical and fire hazards.

b——Elevators, dumbwaiters, and escalators shall be designed and installed to sustain safely the loads to which they are subject.

c——Elevator cars, dumbwaiter cars, and escalators shall be provided with durable signs in conspicuous locations on which the rated capacity shall be indicated.

d——Elevators, dumbwaiters, and escalators shall be maintained in proper working order, and elevators and escalators shall be inspected and tested periodically.

e——One or more passenger elevators shall be pro-

vided in multiple dwellings of group B2 occupancy exceeding three stories in height. In such buildings at least one landing opening shall be provided at each story for access to an elevator.

f——One or more passenger elevators shall be provided in multiple dwellings of group B1 occupancy exceeding four stories in height. In such buildings sufficient landing openings shall be provided so that it will not be necessary to travel by stairs more than one story, up or down, to gain access to an elevator.

g——Elevator landing openings shall not be required at basement or penthouse levels. From such levels, travel by stairs for one story in group B2 occupancy and for two stories in group B1 occupancy to gain access to a required elevator, shall be permitted.

B 509-2 Elevators and Dumbwaiters

B 509-2.1 Hoistway

a——Elevators and dumbwaiters shall be installed in enclosed hoistways constructed of noncombustible material having fire-resistance ratings as set forth in section B 402-4.4.

b——Hoistway and machinery space enclosures extending into the top story shall be carried to a point at least 3 feet above the roof or to the underside of a roof of fire-resistive construction.

c——Not more than three elevators shall be installed in a multiple hoistway.

d——A pit with a ready means of access shall be provided at the bottom of every power elevator hoistway. A manually operated stop switch which will prevent the operation of the elevator machinery by the operating device shall be provided in the pit.

e——Hoistways of elevators and dumbwaiters exceeding 40 feet in height shall be provided with natural means for venting smoke and hot gases to the outer air in the event of fire. Such ventilating openings shall conform to the requirements set forth in sections B 402-4.4j and B 402-4.4k.

f——Pipes, conduits, and cables, except traveling cables, shall be securely fastened to the hoistway construction. Sewage drainage piping and piping or ducts conveying gases, vapors or liquids which, if discharged, would endanger life or create a fire hazard, shall not be permitted in hoistways.

g——Clearances shall be maintained in the hoistway to prevent the car or counterweight from striking any part of the structure or equipment other than buffers.

h——Elevator hoistways shall have not more than two landing openings on a floor for each car.

i——Elevator and dumbwaiter hoistway landing openings shall be provided with opening protectives having fire-resistance ratings as set forth in section B 402-4.8.

j——In portions of single hoistways for elevators, where landing openings are more than 36 feet apart, there shall be provided at least one door assembly and door for emergency exit at every third floor but in no event shall such doors be more than 36 feet apart.

B 509-2.2 Machine Rooms

a——Power dumbwaiter machinery installed outside the hoistway, and all elevator machinery, shall be enclosed in a room or roof structure of construction having fire-resistance ratings as set forth in paragraph designated by the letter el of section B 402-4.4.

b——Machine rooms shall be provided with natural or mechanical ventilation to avoid overheating of electrical equipment and to insure safe and normal operation of the hoisting equipment.

c——Machine rooms shall be maintained free of refuse and shall not be used for the storage of articles or materials unnecessary for the maintenance of the elevator or dumbwaiter. Flammable liquids shall not be kept in such rooms.

d——Moving parts of elevator machinery used in raising or lowering the elevator car shall be guarded to protect against accidental contact.

B 509-2.3 Machines and Machinery

a——Electric elevators shall be of the counterweighted traction type, except that non-counterweighted drum-type machines may be used for freight elevators where the rise is not more than 40 feet and the rated speed is not more than 100 feet per minute, and the rated load does not exceed 6000 pounds.

b——Motors shall be direct-connected or gear-connected to the hoisting machine, and shall be used for no other purpose. No belt- or chain-driven machine shall be used to drive a power elevator.

c——Machines and machinery shall be so supported

and held in place as to prevent effectively any part from becoming loose or displaced under the conditions imposed in service.

B 509-2.4 Car Construction

a——Elevator cars shall be constructed of noncombustible materials and shall be fully enclosed at sides, top, and bottom, except that openings shall be provided for entrance, escape, and ventilation.

b——Elevator cars shall be provided with ventilation by natural or mechanical means.

c——The interior of passenger elevator cars may be lined with class A or B interior finish material, as classified in section B 403-2, firmly bonded flat to the sides without intervening air spaces. Such material shall not be padded or tufted.

d——Glass used in elevator cars shall be of the nonshatterable type.

e——Dumbwaiter cars shall be of such strength and stiffness that they will not deform appreciably if the load leans or falls against the side of the car.

f——Freight elevator cars and operator-controlled passenger elevator cars shall be provided with a door or gate at each entrance. Automatic passenger elevator cars shall be provided with a door at each entrance.

g——No elevator car shall have more than one compartment.

h——No elevator car shall be arranged to counterbalance another elevator car.

i——Platform elevators shall not be permitted.

B 509-3 Escalators

B 509-3.1 Design and Construction

a——Escalators shall be constructed of noncombustible materials throughout, except for handrails and step wheels.

b——The angle of inclination, the width and the speed of escalators, shall be designed so as to provide for the safety of the passengers.

c——Clear and unobstructed access and egress shall be provided for each escalator.

d——Step treads and landings shall be of a material and design affording a secure foothold.

e——Minimum clearance between all exposed moving parts shall be maintained and guards shall be provided so as to prevent injury to passengers.

f——Escalators shall be provided with solid, smooth balustrading on each side. Such balustrading shall have no sharp projections or edges nor any abrupt change in width.

g——Each balustrading shall be equipped with a handrail moving at substantially the same speed and in the same direction as the travel of the steps.

h——Escalators, including floor openings, shall be protected by enclosures in conformity with the requirements set forth in section B 402-4.4.

i——The sides and undersides of escalator trusses and machinery spaces shall be fully enclosed with noncombustible material having fire-resistance ratings as required for escalator enclosures.

B 509-4 Controls

a——Elevators, dumbwaiters, and escalators shall be provided with operating, safety, and emergency controls to insure proper operation of the equipment and the safety of operators and passengers.

b——Power elevators shall not be controlled by direct hand-operated rope, rod, wheel or lever mechanism.

c——Hydraulic elevators shall be provided with full electric control.

d——Sidewalk elevators shall be operated only by continuous-pressure operating devices. When the car is in contact with the sidewalk level doors, it shall be operable only by a manual control located at the sidewalk level nearby.

e——Sidewalk elevators shall be provided with an audible warning device at the sidewalk level arranged to sound when the elevator is ascending.

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