

STATE BUILDING CONSTRUCTION CODE

applicable to

One- and Two-Family Dwellings

1964

STATE OF NEW YORK

Nelson A. Rockefeller, Governor

EXECUTIVE DEPARTMENT

DIVISION OF HOUSING AND COMMUNITY RENEWAL

James Wm. Gaynor, Commissioner

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STATE BUILDING CONSTRUCTION CODE

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FOREWORD

This Code, applicable to one- and two-family dwellings, is promulgated by the State Building Code Council pursuant to the authority of Article 18 of the Executive Law of the State of New York.

It constitutes the first portion of the State Building Construction Code, by which up-to-date uniform regulations in terms of performance, covering all types of building construction, are made available to the municipalities of the State.

These regulations applicable to one- and two-family dwellings are identifiable by the prefix A before the number of a section; those applicable to multiple dwellings, by the prefix B; those applicable to general building construction, by the prefix C; and those applicable to plumbing by the prefix P.

This portion of the Code was first promulgated November 1, 1951. It was amended February 15, 1954, May 1, 1958 and December 1, 1964.

* The asterisk in the margin indicates those provisions of the Code revised or added, effective December 1, 1964.

The official version of the Code for legal purposes is found in Volume 9 Executive (B) of the "Official Compilation of Codes, Rules and Regulations of the State of New York" published by the Secretary of State and designated 9 NYCRR for citation.

In this edition of the Code the numbers in parentheses refer to numbering used in the 9 NYCRR and are included for convenience in locating similar sections.

In addition to this Code, the Council has published a Code Manual to assist in the application and enforcement of the Code. The manual 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.

As a further guide in determining compliance with the performance requirements of the Code, the Council also publishes a list of Generally Accepted Standards.

The State Building Code Council is concerned with regulations for the construction of buildings and the installation therein of equipment that is essential to building operation and maintenance, such as plumbing, heating, electrical, ventilation and fire-protection equipment. The purpose of its regulations is to establish reasonable safeguards for the safety, health and welfare of the occupants and users of buildings.

The facilities for code drafting and for technical research which have been established under the provisions of the law enable the Council to provide an up-to-date code for the benefit of 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 administration and enforcement of the 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 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 these amended regulations.

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Part 1

General Provisions

A 101 (600.1)

TITLE

These regulations, promulgated pursuant to Article 18 of the Executive Law of the State of New York, amending the regulations applicable to one- and two-family dwellings promulgated on November 1, 1951 and amended February 15, 1954, shall be known as the State Building Construction Code applicable to one- and two-family dwellings. They are hereinafter referred to as this Code.

A 102 (600.2)

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 one- and two-family dwellings, and their accessory structures, and making adequate performance the test of acceptability.

A 103 (600.3)

EFFECTIVE DATE

This Code shall take effect on May 1, 1958 and shall supersede the State Building Construction Code applicable to one- and two-family dwellings promulgated on February 15, 1954, which amended the Code first promulgated on November 1, 1951.

A 104 (600.4)

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.

A 105 (601)

SCOPE

A 105-1 (601.1)

New Buildings

This Code shall apply to one- and two-family dwellings, to their accessory structures, and to parts thereof, and to buildings containing mixed occupancies in which the residential portion does not exceed two dwelling units, hereafter erected.

A 105-2 Existing Buildings
(601.2)

A 105-2.1 General

(601.2a) † This Code shall also apply to existing buildings described in this section as if hereafter erected.

a—A building hereafter occupied as a one- or two-family dwelling, which building was not so occupied when this Code became applicable to the municipality in which the building is situated, and to buildings containing mixed occupancies in which the residential portion does not exceed two dwelling units and was not previously so occupied.

b—A building which is moved into, or moved within, municipal limits subject to this Code.

c—A building containing mixed occupancy in which the residential portion does not exceed two dwelling units, 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 dwelling at the beginning of that twelve-month period.

A 105-2.2 Roof Covering

(601.2b) Whenever more than 25 per cent of the roof covering of a building is replaced in any twelve-month period, all roof covering on such building shall be made to comply with applicable regulations of this Code.

A 105-2.3 Addition or Alteration

(601.2c) Any addition or alteration, regardless of cost, made to a building shall be made in conformity with applicable regulations of this Code.

A 105-2.4 Existing Uses Continued

(601.2d) Except as otherwise herein provided, nothing in this Code shall require removal, alteration, or abandonment of, nor prevent continued occupancy or use of, an existing building.

A 105-3 Lodgers

(601.3) This Code is not applicable to a building occupied by one or two families when more than four lodgers reside with any one family. When so occupied, said building becomes subject to the regulations of that portion of the Code applicable to multiple dwellings.

† This sentence which appeared in the Code dated February 15, 1934 was omitted in the issue dated March 31, 1938. It is replaced at this time in order to clarify the intent of this section.

A 105-4 Mixed Occupancy
(601.4)

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 A 402-3, occupancy other than residential is not regulated by this Code.

A 105-5 Maintenance
(601.5)

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

A 105-6 Zoning
(601.6)

No provision of this Code shall be construed to repeal, modify, or constitute an alternative to any lawful zoning regulation.

A 105-7 Fallout Shelters
(601.7)

This Code shall not apply to fallout shelters intended for emergency use where such fallout shelters are constructed or installed or proposed to be constructed or installed to provide safety and security to the occupants in accordance with specifications and standards contained in regulations or orders issued by the New York State Civil Defense Commission.

A 106 QUALITY OF MATERIALS
(602.1)

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.

A 107 ACCEPTABILITY
(602.2)

a—Compliance with applicable provisions of generally accepted standards, except as otherwise prescribed in this Code, shall constitute compliance with this Code.
b—Deviations from applicable provisions of generally accepted standards, when it shall have been conclusively proved that such deviations meet the performance re-

quirements of this Code, shall constitute compliance with the Code.

A 108 (603) ABBREVIATIONS AND DEFINITIONS

A 108-1 (603.1) 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.

A 108-2 (603.2) Abbreviations

Btu British thermal unit
C. Centigrade
c Combustible
cfm Cubic feet per minute
F. Fahrenheit
ft Foot or feet
gal Gallon or gallons
gpm Gallons per minute
in. Inch or inches
max Maximum
min Minimum
nc Noncombustible
np Not permitted
p Permitted
psf Pounds per square foot
psi Pounds per square inch
un Unlimited

A 108-3 (603.3) Definitions

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

accessory use. A use, occupancy or tenancy customarily incidental to the principal use or occupancy of a building.

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

alley. Narrow supplementary thoroughfare 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 in building equipment.

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 table A 204.)

—**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 1/4 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.

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 an interior lot line, provided to prevent the spread of fire.

dwelling. Building containing not more than two dwelling units occupied exclusively for residential uses.

—**one-family dwelling.** Building arranged for one dwelling unit.

—**two-family dwelling.** Building arranged for two dwelling units.

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.

fallout shelter. A building, structure or other real property, or an area or portion thereof, constructed, altered or improved to afford protection against harmful radiation resulting from radioactive fallout, including such plumbing, heating, electrical, ventilating, conditioning, filtering and refrigeration equipment and other mechanical additions or installations, if any, as may be an integral part thereof.

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 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

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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.

flame-resistant material. Material which is flame resistant by nature or has been made flame resistant in conformity with generally accepted standards.

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.

flammable. Capable of igniting within 5 seconds when exposed to flame and continuing to burn.

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.

gas vent. Enclosed passage used for removal to the outer air of products of combustion from gas-fired equipment only.

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.

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 other constructions enclosing equipment or stairs, providing

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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.

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.

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

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, in-

cluding plain concrete, but excluding reinforced concrete.
mixed occupancy. Occupancy of a building in part for residential use and in part for some other use not accessory thereto.

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.

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

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

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.

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

property line. Line establishing the boundaries of premises.

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.

shall. As used in this Code, is mandatory.

smoke pipe. Enclosed passage, used to convey the products of combustion of any fuel to a flue.

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.

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, cracking, 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.

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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.

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

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

A 109
(604.1)

SAFETY DURING CONSTRUCTION

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 all utilities and public facilities, including among others, fire hydrants, fire alarm boxes, police call boxes, street lights, and manholes, shall be kept unobstructed during construction.

A 110
(604.2)

SAFETY DURING DEMOLITION

a—Safe and sanitary conditions shall be provided where demolition and wrecking operations are being carried on. Work shall be done in such manner that hazard from fire, possibility of injury, danger to health, and conditions which may constitute a public nuisance will be minimized, in conformity with generally accepted standards.

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

c—Gas, electric, sewer, heat, power, water and other service connections shall be disconnected, removed, or sealed, in conformity with the applicable regulations of the public utility or municipal agency having jurisdiction.

Part 2

Space Requirements

A 201
(610)

GENERAL REQUIREMENTS

a—Buildings occupied or used in whole or in part for purposes within the scope of this Code, shall be designed and constructed so as to comply with the requirements hereinafter set forth concerning size, light, heat, ventilation, and 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.

A 202
(611)

HABITABLE SPACE

A 202-1
(611.1)

Light

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 are above a roof. The amount of light shall be equivalent to that transmitted through clear glass equal in area to 10 per cent of the floor area of the habitable space.

A 202-2
(611.2)

Ventilation

Habitable space shall be provided with ventilation in accordance with either of the following:

a—Natural ventilation 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, providing total clear ventilation area equal to not less than 5 per cent of the total floor area of each habitable space, or

b—Mechanical ventilation providing at least two air changes per hour either of outdoor air, or a mixture of outdoor and recirculated air, in such proportion that a minimum of one air change per hour shall be outdoor air.

Space Requirements

A 202-3 Location in Respect to Grade Level

(611.3) Floor level of habitable space shall be not more than 4 feet below the average adjoining finished grade. No habitable space shall be located in cellars. Play or recreation rooms may be located below grade.

A 202-4* Size

(611.4) *a—A dwelling unit shall contain at least one habitable space which shall have a minimum floor area of 150 square feet with a minimum horizontal dimension of 10 feet. Other habitable spaces, except kitchens, shall have a minimum floor area of 80 square feet with a minimum horizontal dimension of 7 feet.

*b—Habitable space shall have a minimum height of 7 feet 6 inches, except that for habitable space under a sloping roof the minimum height in at least 50 per cent of the floor area shall be 7 feet 6 inches and the area where the height is less than 5 feet shall not be considered in computing required floor area.

A 203 NONHABITABLE SPACE

(612)

A 203-1 General Requirements

(612.1) Nonhabitable space shall be provided with light and ventilation adequate for the intended use of each space. Bathrooms and toilet rooms shall have provisions for privacy.

A 203-2 Light

(612.2) Kitchenettes, bathrooms, and toilet rooms shall be provided with light of sufficient intensity and so distributed as to permit the maintenance of sanitary conditions and the safe use of the space and the appliances, equipment, and fixtures. *No minimum ceiling heights*
change OCCURRED IN 1973

A 203-3 Ventilation

(612.3) a—Kitchenettes, bathrooms, and toilet rooms shall be provided with ventilation in accordance with either of the following:

Natural ventilation as set forth in section A 202-2a, except that such openable areas shall be not less than 1½ square feet for bathrooms or toilet rooms and not less than 3 square feet for kitchenettes, or.

Space Requirements

Mechanical ventilation exhausting not less than 25 cfm for bathrooms and toilet rooms and not less than 100 cfm for kitchenettes. Ventilation for bathrooms and toilet rooms may be by means of wind-driven or gravity-operated devices or by mechanical equipment.

b—Ventilation shall be provided in unheated attics, spaces below flat roofs, and crawl spaces. Location and net areas of ventilation openings shall be such as to minimize deterioration of the structural members from condensation or other causes, in conformity with generally accepted standards.

A 204 (613)

FIRE AREA AND TYPE OF CONSTRUCTION

The maximum fire area in a dwelling, within exterior walls, party walls, fire walls, or any combination thereof, shall not exceed the following:

TABLE A 204. (I-613)—MAXIMUM PERMITTED FIRE AREAS
Based on fire-resistance ratings of structural elements

Construction classification ¹	Floor	Other structural elements except exterior and fire walls	Maximum area in square feet
Type 1	2 hr	¾ hr or more	Unlimited
Type 2a	¾ hr	¾ hr	8000
Type 2b	n c	n c	5000
Type 3	¾ hr	¾ hr	5000
Type 4a	¾ hr	¾ hr	5000
Type 4b	c	c	3000
Type 5a	¾ hr	¾ hr	3000
Type 5b	c	c	2500

¹ Types 2a, 4a and 5a are those in which all structural elements are hereby required to be protected with fire-resistive materials and to have the ratings above designated. Types 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.

A 205 (614)

STAIRS

A 205-1 General Requirements

(614.1)

a—Stairs may serve in common two dwelling units.

b—Stairs, both interior and exterior, shall be arranged and constructed to provide safe ascent and descent. A fixed stair shall be provided where travel is required between two stories, each of which contains a habitable

Space Requirements

space or a recreation room, and between the first story and basement or cellar. Disappearing or folding stairs may be used between two stories above grade where only one of them contains a habitable space or a recreation room.

A 205-2 (614.2) Treads

a—Minimum widths of treads shall be 9 inches, plus 1½-inch nosing for closed riser type, or 9 inches for open riser type, except that treads of folding or disappearing stairs intended for occasional use only shall have a minimum width of 6 inches.

b—Winder treads at converging ends of winders, exclusive of minimum 1-inch nosings, shall be not less than 4 inches wide unless the winders are guarded at the converging ends by continuous handrails which prevent walking where the tread widths are less than 6 inches. If the winder treads are without a minimum 1-inch nosing, the tread widths in these locations shall be not less than 5 inches and 7 inches, respectively.

c—Winder tread widths at a distance of 18 inches from the converging ends shall be not less than the tread widths as set forth in paragraph a of this section.

d—Treads shall be level and all other than winder treads shall be uniform in width, with no variation exceeding ¼ inch in any one run of stairs.

A 205-3 (614.3) Risers

a—Maximum heights of risers shall be 8¼ inches except that the maximum height of risers of folding or disappearing stairs, exterior stairs to basements or cellars, and of other stairs intended for occasional use only, shall be 9 inches.

b—There shall be no variation exceeding ¼ inch in the height of risers in any one run of stairs.

A 205-4 (614.4) Width

Widths of stairs connecting habitable spaces shall be not less than 2 feet 8 inches clear between handrails or between handrail and opposite wall surface, except that stairs from a second story to a third story, and stairs to a basement and to a cellar shall not be less than 2 feet 6

inches clear between handrails or between handrail and opposite wall surface.

A 205-5 (614.5) Headroom

The minimum clear headroom over any portion of any fixed stair tread shall be not less than 6 feet 6 inches measured vertically from the surface of the tread, except that the minimum shall be not less than 6 feet 4 inches over stairs from a second story to a third story and over stairs to a basement or to a cellar.

A 205-6 (614.6) Handrails and Railings

a—Stairs or steps of more than three risers shall have a handrail or railing parallel to the stair slope on at least one side. Where one or both sides of such stairs or steps are open, railing shall be provided on the open sides.

b—Window openings on stairs or landings, and well openings, shall be guarded by railings or other equivalent protection.

c—Top surfaces of handrails and railings shall be not less than 30 inches nor more than 36 inches in height above the floor or tread level. On stair runs, the height shall be measured directly above the riser face.

d—Clearance between handrail and supporting wall shall be not less than 1½ inches.

A 205-7 (614.7) Landings

The swing of a door opening on a stairway shall not overlap the top step. Where landings are provided, their width shall be not less than the width of the stair of which they are a part.

A 205-8 (614.8) Light

Treads of stairs shall be lighted by either natural or artificial light of sufficient intensity to allow safe ascent and descent.

A 206 (615) EXITS

A 206-1 (615.1) General Requirements

*In addition to the primary exit from a recreation room, or a habitable space except kitchens, there shall be provided at least one opening for emergency use.

A 206-2* Openings for Emergency Use

- (615.2) *a—Openings for emergency use shall include doors or openable parts of windows, located so as to provide unobstructed egress to legal open spaces.
- *b—Such openings shall have a minimum area of 4 square feet, with a minimum dimension of 18 inches, with bottom of openings no higher than 3 feet 6 inches above finished floor in all above-grade stories, and no higher than 4 feet 6 inches where required in basement and cellar.

A 206-3 Exits for Dwellings**(615.3a) More than Three Stories in Height**

Every building exceeding three stories in height shall have exits from every story which shall provide safe, continuous passage to a legal open space and which shall comply with one of the following requirements:

- a—One interior stairway enclosed in a fire separation as set forth in section A 402-3.3. All openings in such enclosures shall be provided with a self-closing opening protective as set forth in section A 402-3.6.
- b—Two interior stairways with all doors opening upon such stairways equipped with a self-closing device.
- c—One interior stairway with all doors opening upon such stairway equipped with a self-closing device, and one exterior stairway or fire escape providing exit from each dwelling unit on any story.
- d—One interior stairway equipped with an automatic sprinkler system, with all doors opening upon such stairway equipped with a self-closing device.

A 206-3.1 Width of Interior Exit Stairs

- (615.3b) All interior exit stairways in dwellings more than three stories in height shall be at least 3 feet wide, and in all other respects shall comply with section A 205.

A 206-4 Exits for Buildings with Mixed Occupancy

- (615.4) Exits for buildings containing mixed occupancy shall conform with the provisions set forth in section A 206-3.

A 207* GLASS IN EXITS, SHOWER STALLS AND BATHTUB ENCLOSURES

- (616) *a—Glass in exit doors, shower doors and enclosures, and bathtub doors and enclosures shall be so sized, con-

structed, treated or combined with other materials as to minimize effectively the possibility of injury to persons in the event the glass is cracked or broken.

- *b—Shatter-resistant material may be substituted for glass intended to be used as described in this section. Where used in exits such material shall conform to the requirements of section A 403.

- *c—Where generally accepted standards require glass to be identified, each piece of glass shall be permanently and legibly marked in conformity with the requirements of generally accepted standards.

Part 3

Structural Requirements

A 301
(630)

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.

A 302
(631)

SOIL BEARING VALUE

A 302-1
(631.1)

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.

A 302-2
(631.2)

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 deter-

mined 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 psi, 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 shall be carried to a minimum depth below grade equal to the height of building, 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 acceptable 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, with a minimum of two test piles, or a generally accepted pile-driving formula.

A 302-3
(631.3)

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 $\frac{1}{4}$ 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.

A 302-4
(631.4)

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 $\frac{1}{32}$ 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.

A 303
(632)

ALLOWABLE STRESSES OF MATERIALS

A-303-1
(632.1)

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 A 304-10.

A 303-2 Controlled Materials
(632.2)

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 specifications 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.

A 303-3 Ordinary Materials
(632.3)

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 section A 305-1. 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 A 303-2, and by the architect or engineer responsible for the design.

A 304 DESIGN LOADS
(633)

A 304-1 General Requirements
(633.1)

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 A 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.

A 304-2 Live Loads
(633.2)

A 304-2.1 General
(633.2a)

a—Loads set forth in table A 304-2.2 do not include unusual concentrations, such as, but not limited to, storage units, floor-to-ceiling bookracks, 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 A 304-2.2, whichever produce the greater stress.

c—Uniformly distributed live loads on beams or girders, 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 for each square foot 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, 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 second floor below the roof,

75 per cent on the third floor below the roof,

70 per cent on the fourth floor below the roof.

A 304-2.2 Uniformly Distributed and Concentrated Live Loads
(633.2b)

Uniformly distributed and concentrated live loads shall be the greatest loads produced by the intended occupancy and use, but in no case less than the minimum live load

Structural Requirements

in conformity with table A 304-2.2. Where a concentrated load is not given, load shall be at least 250 pounds on an area 1 inch in diameter. Other concentrated loads shall be applied as follows: 150 pounds on an area 1 inch in diameter, 200 pounds on an area 1 inch in diameter, 2000 pounds on an area 30 inches square.

TABLE A 304-2.2 (I-633)—UNIFORMLY DISTRIBUTED AND CONCENTRATED LIVE LOADS

Occupancy or use	Uniformly distributed loads, psf	Concentrated loads in pounds
First floor of each dwelling unit.....	40	
Other floors.....	30	
Stair treads.....	75 ¹	
Attics:		
Accessible by stair or ladder in areas where the ceiling height is:		
4 feet 6 inches or more.....	30	150
less than 4 feet 6 inches.....	20	
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.....	30	
Other roofs.....	(²)	200
Garages for passenger cars.....	50	2,000 ³

¹ Stringers of stairs need be designed only for uniform load.

² For minimum imposed load, see section A 304-10c.

³ Or actual wheel load increased 50 per cent for impact, whichever is larger.

A 304-3 Snow Loads (633.3)

Minimum snow loads shall be in accordance with table A 304-3 and the snow map below, and shall be applied normal to the roof surface.

TABLE A 304-3. (II-633)—SNOW LOAD
In pounds per square foot

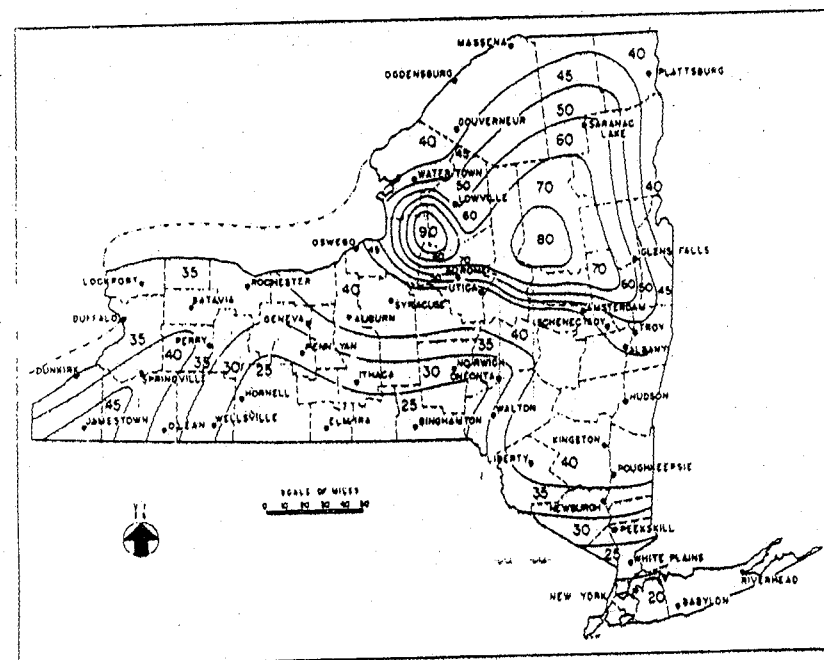
Zone numbers on snow map	Roof slope from horizontal ¹					
	0°	20°	30°	40°	50°	60° or more
20 ²	20	18	11	6	2	0
25 ²	25	22	14	7	3	0
30	30	27	17	9	3	0
35	35	31	20	10	4	0
40	40	35	23	12	4	0
45	45	40	25	13	5	0
50	50	44	28	15	5	0
60	60	53	34	18	6	0
70 ³						
80 ³						
90 ³						

¹ For minimum imposed loads see section A 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.

⁴ For snow zone 20 and 25 on snow map, use same tabular values as for zone 30.



A 304-4 Wind Loads (633.4)

Minimum wind loads shall be in conformity with tables A 304-4a and A 304-4b, and shall be applied normal to the surface. These loads are based on a design wind velocity of 75 miles per hour at a height of 30 feet above grade level.

TABLE A 304-4a. (III-633) — WIND LOADS: WALLS, EAVES, AND CORNICES¹
In pounds per square foot

At height above grade in feet	Walls	Eaves and cornices ¹
26 to 40 -----	18	36
16 to 25 -----	15	30
0 to 15 -----	12	24

¹ Exterior walls shall be capable of withstanding wind load on both the interior and exterior surfaces, acting non-simultaneously.
² Load acting upward.

TABLE A 304-4b. (IV-633) — 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°
21 to 40	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.

A 304-5 Overturning Force and Moment Due to Wind (633.5)

a—The overturning force shall be the wind load. The wind load shall be the load set forth in table A 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 $1\frac{1}{2}$ times the overturning moment due to wind.

A 304-6 Sliding Force Due to Wind (633.6)

The sliding force due to wind load, equal to the overturning force, determined in conformity with section A 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 $1\frac{1}{2}$ times the sliding force. Anchors used to resist overturning may also provide resistance to sliding.

A 304-7 Uplift Force (633.7)

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 $1\frac{1}{2}$ times the uplift force.

A 304-8 Soil Pressures and Hydrostatic Head Loads (633.8)

A 304-8.1 General (633.8a)

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.

A 304-8.2 Freestanding Retaining Walls (633.8b)

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 $1\frac{1}{2}$ times the overturning moment.

b—The resisting force due to soil friction shall be not less than $1\frac{1}{2}$ times the sliding force.

A 304-9 Horizontal Impact Loads (633.9)

a—Nonbearing partitions enclosing dwelling units shall be designed to resist without displacement at top or bot-

from a minimum linear load of 10 pounds per foot, applied at mid-height.

b—Parapet walls and railings, including handrailings both interior and exterior, shall be designed to resist a lateral impact at the top equivalent to a minimum linear load of 50 pounds per foot.

A 304-10 Combined Loads (633.10)

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.

A 304-11 Elevator Machine Loads (633.11)

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

A 304-12 Loads Imposed During Construction (633.12)

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 load imposed during construction.

A 305 ANALYSIS AND TEST OF STRUCTURAL ASSEMBLIES (634)

A 305-1 General (634.1)

The capacity of an assembly to sustain dead and imposed loads without exceeding the allowable stresses shall be

determined by any one of the following procedures, or by an approved combination of them:

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 A 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 A 306.

c—Comparison with an approved assembly of known characteristics and behavior under load, which assembly is directly comparable, in all essential characteristics, to the assembly under consideration.

A 305-2 Load Test on Completed Work (634.2)

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.

A 306 PERFORMANCE CRITERIA UNDER TEST (635)

A 306-1 General Requirements (635.1)

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.

A 306-2 (635.2) 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.

A 306-3 (635.3) Under $1\frac{1}{2}$ Times Imposed Load

a—Under its dead load and $1\frac{1}{2}$ 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.

A 306-4 (635.4) 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.

A 306-5 (635.5) Impact Loads

Under an impact load of 60 pounds falling 4 feet for floors, $1\frac{1}{2}$ 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.

A 306-6 (635.6) Racking Loads

Where exterior walls and partitions react by racking, the racking deformation, while the assembly is sustain-

ing the imposed load, shall not exceed $1/400$ of the height of the wall. Under $1\frac{1}{2}$ times the load there shall be no structural damage, and under two times the load there shall be no structural failure.

A 306-7 (635.7) Transmitted Loads

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

A 307 (636) EXTERIOR PROTECTION

A 307-1 (636.1) 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.

A 307-2 (636.2) Exterior Materials

The exterior facing or covering of walls and roofs shall be resistant to the causes of deterioration as set forth in section A 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.

A 307-3 (636.3) 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.

A 307-4 (636.4) Waterproofing

a—Foundation walls of cellars and 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.

A 307-5 Grade Protection
(636.5)

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

A 308 PROTECTION FROM DESTRUCTIVE INSECTS
(637)

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.

A 309 MATERIALS REQUIREMENTS
(638)

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.

Part 4

Fire-Safety Requirements

A 401 PREVENTION OF EXTERIOR FIRE SPREAD
(645)

A 401-1 General Requirements
(645.1)

In order to retard the spread of fire, 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.

A 401-2 Determination of Fire Hazard
(645.2)

A 401-2.1 Within Fire Limits
(645.2a)

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.

A 401-2.2 Outside the Fire Limits
(645.2b)

All those areas not included in fire limits A or B are designated herein as outside the fire limits.

A 401-2.3 Municipalities Having Fire Limits
(645.2c)

In municipalities which designate fire limits, dwellings and accessory structures within such fire limits shall be constructed in conformity with the requirements set forth in section A 401 applicable to buildings within such fire limits. In such municipalities, dwellings and accessory structures outside such fire limits shall be constructed in conformity with the requirements set forth in section A 401 applicable to buildings outside the fire limits.

Fire-Safety Requirements

A 401-2.4 Municipalities Having No Fire Limits

(645.2d) 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 A 401 applicable to buildings outside the fire limits.

A 401-3 Distance Separations

A 401-3.1 How Measured

(645.3a) Distance separation shall be the clear distance measured between the exterior walls of two buildings on the same premises, or from an exterior wall of a building to an interior lot line.

A 401-3.2 When Required

(645.3b) a—Distance separations set forth in table A 401-3.2 shall be required except as provided in paragraphs b and f of this section.

b—Distance separations shall not be required between buildings on the same premises when either building is one story in height and has an area of not more than 100 square feet.

c—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.

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

e—Where the heights or construction of the exterior walls of the proposed and existing buildings are 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 the greater distance.

f—An open breezeway with at least 5 feet between the dwelling and garage shall be acceptable as distance separation as set forth in section A 402-3.5.

g—Where zoning regulations and this Code contain distance requirements applicable to the same structure, the greater distance shall control.

A 401-3.3 Construction Limitations Within Fire Limits

(645.3c) a—Buildings within fire limits A may be of any type of construction other than type 5 providing they conform to the fire-area limitations set forth in section A 204 including table A 204.

TABLE A 401-3.2 (I-845)—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 ¾ hour	Less than ¾ hour	At least ¾ hour	Less than ¾ hour	
Within fire limits A	1	0	5'	np	np	np
	2	0	8	np	np	np
	3	0	np	np	np	np
	4 or more	0	np	np	np	np
Within fire limits B	1	0	3'	3'	np	np
	2	0	4	4	np	np
	3	0	5	np	np	np
	4 or more	0	np	np	np	np
Outside the fire limits	1	0	2'	0	3'	4'
	2	0	3	0	4	5
	3	0	4	0	5	6
	4 or more	0	np	np	np	np

¹ The minimum distance separation between adjacent one-story private garages of this type of construction not exceeding 750 square feet in area may be 1½ feet.

b—Buildings within fire limits B may be of any type of construction other than that having combustible walls with a fire-resistance rating of less than ¾ hour providing they conform to the fire-area limitations set forth in section A 204 including table A 204.

c—Open porches, verandas, and balconies or enclosed porches with at least 60 per cent of glazed area on three sides, 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 second story, and are not less than 3 feet distant at any point from a lot line or from similar appurtenances on another building, if they exceed said limitations, they shall be constructed of noncombustible materials.

Fire-Safety Requirements

A 401-3.4 Construction Limitations Outside the Fire Limits

(645.3d) a—Buildings may be of any type of construction providing they conform to the fire-area limitations set forth in section A 204 including table A 204.

b—Porches, verandas, and balconies of combustible construction shall be not less than 3 feet distant at any point from a lot line or from similar appurtenances on another building.

A 401-4 Protection of Openings in Exterior Walls

A 401-4.1 General Requirements

(645.4a) Exterior wall openings located less than 2 feet from an interior lot line shall be equipped with opening protectives.

A 401-4.2 Fire Resistance of Exterior Wall Opening Protectives

(645.4b) Fire-resistance ratings of required exterior wall opening protectives shall be at least $\frac{3}{4}$ hour.

A 401-5 Eaves, Cornices, and Trim

a—Eaves and main exterior cornices may project beyond the building face not more than one third of the required distance separation, but this regulation shall not be deemed to authorize any projection beyond the lot line.

b—Building trim may project beyond the building face not more than one sixth of the required distance separation, but this regulation shall not be deemed to authorize any projection beyond the lot line.

c—Eaves, cornices and exterior trim shall be of non-combustible materials when the distance between such eaves, cornices or trim of adjoining buildings is less than 3 feet.

A 401-6 Roof Coverings

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

A 401-6.1 Classification

(645.6a) Roof coverings shall be classified on the basis of their resistance to exterior fire exposure as determined by tests

Fire-Safety Requirements

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.

A 401-6.2 Limitation of Use

(645.6b) a—Within the fire limits, roof coverings shall be class 1, 2, or 3, except that where the distance separation between buildings is more than 5 feet and the horizontal projected area of the roof does not exceed 500 square feet, class 4 roof coverings may be used.

b—Outside the fire limits, roof coverings shall be class 1, 2, or 3, except that where the distance separation between buildings is more than 10 feet, class 4 roof coverings or wood shingles may be used.

A 401-6.3 Skylights

(645.6c) a—Skylights and transparent or translucent roof panels shall conform to the requirements for roof coverings as set forth in section A 401-6, except as provided in paragraphs b and c of this section.

b—Skylights and roof panels located in roofs of combustible construction may be glazed with combustible self-extinguishing material.

c—Skylights and roof panels located in roofs of non-combustible construction, may be glazed with combustible self-extinguishing material provided that the aggregate area of such material does not exceed 20 per cent of the fire area under the roof, that the area of each such skylight or panel does not exceed 200 square feet, and that the distance between them is at least 5 feet. No individual sheet of such glazing material shall exceed 50 square feet in area, between supports.

A 401-7 Parapet Walls

(645.7) Parapet walls at least 6 inches in height shall be provided on fire and party walls required to extend through the roof.

A 401-8 Party Walls
(645.8)

- a—Where buildings are joined at a common lot line, such buildings 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.

A 401-8.1 Construction
(645.8b)

- 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 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 the exterior wall shall be protected with noncombustible construction for a distance of at least 18 inches on each side of the party 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—Where 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.

A 401-8.2 Fire Resistance
(645.8c)

- a—The fire-resistance rating of party walls between one-story one- and two-family dwellings without a basement shall be at least 1 hour.
- b—The fire-resistance rating of party walls between one- and two-family dwellings more than one story in height shall be at least 2 hours, except that in dwellings more than two stories in height the fire-resistance rating for that portion of the wall extending through a basement, cellar, or the lowest story of such buildings which

do not have a basement or cellar shall be at least 1 hour.

c—The fire-resistance ratings of party walls between one- and two-family dwellings and buildings containing nonresidential occupancies of low, moderate or high hazard classification shall be at least 2, 3 or 4 hours respectively.

A 402
(646)

PREVENTION OF INTERIOR FIRE SPREAD

A 402-1
(646.1)

General Requirements

Buildings shall be constructed, arranged and separated into fire areas so as to confine and restrict the spread of fire.

A 402-2
(646.2)

Fire Walls

The floor area of buildings shall be divided by fire walls into fire areas in accordance with section A 204 including table A 204.

A 402-2.1 Construction
(646.2a)

- a—Fire walls shall form a continuous fire and smoke barrier between fire areas from foundation to or through the roof, 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 materials and shall extend not less than 6 inches above roofs of combustible construction. Where a roof is of noncombustible construction 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 smoketight.
- c—Fire walls shall be made smoketight at their junction with exterior walls. In type 5 construction, the exterior walls shall be protected with noncombustible construction of the same fire-resistance rating as the fire walls for a distance of at least 18 inches on each side of the fire wall, or the fire wall shall project through the exterior wall at least 6 inches.
- d—Where combustible members, such as joists and beams, are framed into fire walls, such combustible members shall not extend through the wall but shall have

Fire-Safety Requirements

at least 4 inches of solid noncombustible material below and at the sides and ends of such members.

A 402-2.2 Fire Resistance

(646.2b) a—The fire-resistance rating of fire walls in one-story one- and two-family dwellings without a basement shall be at least 1 hour.

b—The fire-resistance rating of fire walls in one- and two-family dwellings more than one story in height shall be at least 2 hours, except that in buildings more than 2 stories in height the fire-resistance rating for that portion of the wall extending through a basement, cellar, or the lowest story of such buildings which do not have a basement or cellar shall be at least 3 hours.

A 402-3 Division by Fire Separations (646.3)

A 402-3.1 Separation of Mixed Occupancies

(646.3a) a—Nonresidential occupancies in or attached to a one- or two-family dwelling, not accessory thereto, shall be separated from the dwelling occupancy by fire separations having fire-resistance ratings in conformity with the requirements of table A 402-3.

TABLE A 402-3, (I-646)—MINIMUM FIRE SEPARATION REQUIRED BETWEEN OCCUPANCIES
(Fire-resistance ratings in hours)

(See State Building Construction Code applicable to General Building Construction, table C 402-4.)

Occupancy	Residential
Business (C1)	1
Mercantile (C2)	1
Industrial (C3.1)	2
(C3.2)	2
(C3.3)	np
Storage (C4.1)	2
(C4.2)	2
(C4.3)	np
Assembly (C5.1)	2
(C5.2)	3
(C5.3)	4
(C5.4)	2
(C5.5)	2
Institutional (C6.1)	2
(C6.2)	2
(C6.3)	2

Fire-Safety Requirements

b—In buildings of type 3, 4 and 5 construction, the horizontal fire separation between nonresidential areas of 3000 square feet or less and the dwelling occupancy shall be finished on the nonresidential side with noncombustible material and have a fire-resistance rating of at least 1 hour.

A 402-3.2 Construction

(646.3b) a—Fire separations and their supporting construction shall form a continuous fire and smoke barrier.

b—Fire separations between dwelling units and occupancies other than residential shall be continuous and any openings therein shall be protected with self-closing opening protectives.

A 402-3.3 Enclosure of Exits and Stairways

(646.3c) Exits, including stairways and passageways forming a part thereof, serving in common two dwelling units or passing through or adjoining another dwelling or any occupancy other than residential shall be separated therefrom by a fire separation having a fire-resistance rating of at least $\frac{3}{4}$ hour.

A 402-3.4 Enclosure of Heat Producing Equipment

(646.3d) a—Heat producing equipment shall be mounted on noncombustible floor construction, or on protected combustible floor construction, shall be installed with sufficient clearance from adjacent wood and other combustible material to prevent their ignition, and when the ceiling above can be heated to temperatures in excess of 175° F., it shall be protected for a distance of 3 feet on all sides of the heat producing equipment by noncombustible material providing 10 minutes or more of fire protection, except when such ceiling is constructed of noncombustible material and has a fire-resistance rating of at least $\frac{3}{4}$ hour.

b—Where heat producing equipment is located on the first floor or above, the walls, floor and ceiling 3 feet or less from such equipment shall have a fire-resistance rating of at least $\frac{3}{4}$ hour and a noncombustible interior finish providing at least 10 minutes of fire protection to the combustible members. Such protection shall not be required where tests made in conformity with gener-

ally accepted standards show that such heat producing equipment will not create a fire hazard or heat adjacent combustible material above 175° F. Where doors are provided for enclosed heater rooms they shall be self-closing and finished or covered on the inside with non-combustible material.

*c—A permanent heating or other appliance with an open flame, for use within a garage, shall be protected from physical damage by vehicles, and where intended for floor mounting, shall be installed on a noncombustible platform not less than 18 inches above the floor level.

A 402-3.5 Separations of Garages in, or Attached to, (646.3e) One- or Two-Family Dwellings

a—Private garages in, or attached to, a dwelling shall be separated from other spaces in the building by construction having a fire-resistance rating of at least 30 minutes. Openings in the separation between the garage and other space in the building shall be limited to a single doorway equipped with a self-enclosing door having a fire-resistance rating of at least 20 minutes. Such door shall not open directly into a room used for sleeping purposes.

b—Floors in garages shall be of noncombustible material that will not absorb flammable liquids and shall be placed or arranged so that heavier-than-air flammable vapors can not spread to fixed sources of ignition.

c—Construction of garages and arrangement of equipment installations shall be such that toxic gases originating within garages shall not spread to the dwellings, nor shall air for heating or ventilation be circulated through garages to dwellings.

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

e—An open breezeway with at least 5 feet between the dwelling and garage shall be acceptable as separation between a garage and a one- or two-family dwelling providing a firestop is provided between the roof and ceiling at the garage end of the breezeway.

f—Where an open breezeway is less than 5 feet between the dwelling and garage, separation by fire-protective materials and construction shall be required. Such

construction shall be smoketight and finished on the garage side with noncombustible material to prevent the ignition of combustible members of such protected parts for 10 minutes or more.

A 402-3.6 Openings in Fire Walls and Fire Separations (646.3f)

Openings in fire walls and fire separations shall be protected by opening protectives having fire-resistance ratings as set forth in table A 402-3.6.

TABLE A 402-3.6 (II-646) — OPENING PROTECTIVES FOR INTERIOR WALL OPENINGS

Fire-resistance rating of wall or separation in which opening occurs, in hours	Fire-resistance rating of opening protective, in hours
2 or more -----	1 1/2
1 or 3/4 -----	3/4

A 402-4 (646.4) Firestopping

A 402-4.1 General Requirements (646.4a)

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.

A 402-4.2 Materials (646.4b)

a—Firestopping or fill shall be of nonflammable 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—Combustible firestopping materials may be used in buildings of type 3, 4 and 5 construction.

d—Flammable materials shall not be permitted as insulation or fill in concealed or attic spaces.

A 402-4.3 Location (646.4c)

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 with ceilings 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 suspended ceiling, shall be firestopped so that no area of such concealed space shall be greater than 3000 square feet.

A 403 (647) INTERIOR FINISHES, TRIM AND DECORATIVE MATERIALS

A 403-1 (647.1) General Requirements

a—Interior finish materials 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.

A 403-2 (647.2) Classification of Interior Finish Materials

Interior wall and ceiling finish materials shall be classi-

fied 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 20
B -----	20 to 75
C -----	75 to 200
D -----	200 to 500

A 403-3 (647.3) Use of Interior Finishes

a—Interior wall and ceiling finish materials in required enclosed exits shall be class A or B.

b—Interior wall and ceiling finish materials in any location other than in an enclosed exit shall be class A, B, or C, except that in dwellings not exceeding two stories in height, class D may be used.

A 404 (648) FIREPLACES

A 404-1 (648.1) 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 A 505, 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.

A 404-2 (648.2) 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.

A 404-3 (648.3) 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.

Part 5

Equipment Requirements

A 501
(655)

GENERAL REQUIREMENTS FOR EQUIPMENT

a—Plumbing, heating, electrical, ventilating, and conditioning equipment, elevators, and other mechanical additions, installations, or systems for the use of the building 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, a danger because of structural defects, or a 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—The design and installation of equipment and systems shall conform to the requirements of section A 107.

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 damage from freezing shall be adequately protected against freezing.

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

Equipment Requirements

A 502 PLUMBING (656)

A 502-1 General Requirements (656.1)

a—Plumbing systems shall conform with the requirements of section A 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.

A 502-2 Public Water Supply or Public Sewer: (656.2)

When Deemed Available

a—The source of water supply for a dwelling shall be a public water supply system when such system is within 100 feet of the premises on which the dwelling is located, measured along a street, 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 100 feet of the premises on which the dwelling is located, measured along a street, 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 100 feet of the premises on which the dwelling is located, measured along a street, and a connection may be made lawfully thereto.

A 502-3 Water Supply (656.3)

a—Pure and wholesome water from an approved source shall be available at all times on the premises of every dwelling. The domestic water supply system of the dwelling shall be connected to such approved source, and shall not be subject to contamination. When supplied from a public source, the potable water supply system shall not be connected to private or unsafe water supplies.

b—Water supply systems shall be designed and installed so as to provide at all times a supply of water to

Equipment Requirements

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 or heating shall not be reintroduced into the domestic water supply system nor be distributed through such equipment to plumbing fixtures.

d—Hot water supply systems shall be provided with safety devices arranged to relieve hazardous pressures and excessive temperatures.

A-502-4 Sewage Drainage System (656.4)

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 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 conformity with generally accepted standards.

e—Where a drainage system may be subject to backwater, suitable provisions 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.

Equipment Requirements

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.

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

A 502-5 (656.5) Storm Drainage

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 its 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.

A 502-6 (656.6) Minimum Plumbing Facilities

*a—Each dwelling shall be provided with a plumbing system designed to dispose of the sewage from all fixtures and to furnish cold water to every water closet, and hot and cold water to every sink, lavatory, bathtub and shower required therein, except that hot water need not be furnished unless required by law.

*b—There shall be provided within each dwelling unit

Equipment Requirements

at least:

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

A 502-7 (656.7)

Plumbing Fixtures

a—Plumbing fixtures shall be made of smooth non-absorbent 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.

A 503 (657)

A 503-1 (657.1)

FUEL GAS PIPING EQUIPMENT AND SYSTEMS

General Requirements

a—Fuel gas piping systems shall be in conformity with the requirements of section A 501.

b—Fuel 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.

c—Gas piping shall not be installed in cinder fill or other corrosive material unless protected against corrosion.

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

e—Fuel gas piping and equipment shall not be located in ducts, chimneys, flues, stairways, or exits.

f—Fuel 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.

A 503-2 (657.2)

Shutoff Valves

a—Gas piping systems shall have at least one accessible means for shutting off all gas supply, except that systems supplied with gas at pressures exceeding 1 psi gage shall have at least two accessible means for shutting

Equipment Requirements

off all gas supply. Where two means are required, one means 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 ahead of the meter and as close as practicable to the point of service entrance.

b—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.

A 503-3 (657.3) Service Equipment for Gas Supplied from Utility Mains

a—Gas meters shall be located in spaces that are dry, well ventilated, readily accessible, and protected against extreme heat. Gas meters shall be located as near as practicable to the point of entry of the gas service.

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.

A 503-4 (657.4) 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.

A 503-5 (657.5) High Pressure Gas

a—Buildings supplied with gas from utility mains 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 such openings are provided for service pipes, the pipes 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 $\frac{1}{2}$ psi gage prior to entering the meter.

A 503-6 (657.6) Liquefied Petroleum Gas

a—Undiluted liquefied petroleum gas in liquid form shall not be permitted within buildings.

Equipment Requirements

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

c—Where two or more containers are installed, connection shall be arranged so that containers 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 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.

h—Systems supplied from containers exceeding 125 gallons of capacity shall have at least two accessible means for shutting off the gas at the main supply. Shutoff valves shall be located in conformity with the requirements of section A 503-2a.

A 504 (658)

HEATING

A-504-1 (658.1) General Requirements

a—Heating systems shall conform to the requirements of section A 501.

b—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.

Equipment Requirements

A 504-2 Heat Producing Equipment (658.2)

A 504-2.1 Combustion Space

(658.2a) Fuel-burning heat producing equipment shall have combustion space designed and constructed to withstand the maximum temperature attained.

A 504-2.2 Smoke Control

(658.2b) Fuel-burning heat producing equipment shall be designed and installed so that the emission or discharge into the atmosphere of smoke, dust, particles, odors or other products of combustion will not create a nuisance or be detrimental to the health, comfort, safety or property of any person.

A 504-2.3 Warm Air Heating

(658.2c) Ducts and other air handling equipment used for heating shall conform to the requirements of such equipment used for ventilating purposes.

A 504-2.4 Prohibited Locations for Heat Producing Equipment

(658.2d) Fuel-burning water heaters shall not be located in sleeping rooms, bathrooms or toilet rooms.

A 504-2.5 Fuel Supply Connection

(658.2e) 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.

A 504-2.6 Installation and Clearance

(658.2f) 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.

A 504-2.7 Air Supply

(658.2g) 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 h

Equipment Requirements

b—Rooms containing fuel burning equipment shall have such air supply provided by means of one or more openings to the exterior, or by means of fixed openings to interior spaces which open to the exterior.

A 504-2.8 Removal of Products of Combustion

(658.2h) 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.

*c—Where a gasvent is permitted, a permanent sign stating the type of heating equipment which may be connected to the gasvent shall be provided and located where the gasvent passes through the wall or ceiling.

A 504-2.9 Safety Devices

(658.2i) a—Equipment capable of developing hazardous pressures 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.

When failure or interruption of pilot light or main burner of liquefied petroleum gas equipment occurs, the fuel supply to each pilot light and main burner shall be cut off.

A 504-2.10 Insulation

(658.2j) a—Insulation provided to reduce the rate of heat flow through building construction shall conform to the requirements of section A 501.

b—Insulation on surfaces of heat producing equipment shall be of noncombustible materials.

Equipment Requirements

A 504-2.11 Expansion Tanks

(658.2k) Hot water heating systems shall be provided with expansion tanks or other means to allow for the expansion of water in the system.

A 505 CHIMNEYS, FLUES, AND GASVENTS

A 505-1 General Requirements

a—Chimneys, flues, gasvents and their supports shall be designed and constructed so as to be structurally safe, durable, smoketight, noncombustible, 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.

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

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

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

A 505-2 Draft

Chimneys, flues, and gasvents shall provide sufficient draft to develop the rated output of the connected equipment.

A 505-3 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.

A 505-4 Location of Outlets

Flue and gasvent outlets shall be located so as not to be lower than the level of the top of any window or other exterior opening which is within 15 feet measured horizontally from the outlet, nor shall such outlets be located less than 2 feet above the level of any unprotected com-

Equipment Requirements

combustible part of any building or construction when such part is within 10 feet of the outlet.

A 506

AIR CONDITIONING AND MECHANICAL VENTILATION

A 506-1

General Requirements

a—Air conditioning and mechanical ventilating equipment shall conform to the requirements of section A 501.

b—Ducts shall be securely fastened in place, and shall be firestopped as set forth in section A 402-4.

A 506-2

Ventilation Requirements

a—Required ventilation shall be provided in accordance with sections A 202-2 and A 203-3.

b—Exhaust air from a dwelling unit shall not be circulated to another dwelling unit.

A 507

EQUIPMENT FOR FUEL OIL

A-507-1

General Requirements

Fuel oil for furnaces, boilers and automatically or remotely controlled oil burners shall be received, stored, and conveyed by means of fixed liquidtight equipment designed and installed in conformity with the requirements set forth in section A 501.

A 507-2

Storage Tanks

a—Fuel oil storage tanks shall rest on noncombustible supports.

b—Tanks shall be protected against settling, sliding, or displacement because of buoyancy. Where located in areas subject to traffic, they shall be protected against physical damage.

c—Tanks shall be located at a safe distance from the property line. MIN. 10'

d—Underground tanks shall be located so as not to receive any foundation load.

e—Tanks shall be provided with means for venting.

f—Fuel oil storage tanks inside of buildings shall be provided with liquid-level indicating devices of fixed vaportight construction.

Equipment Requirements

g—Unenclosed fuel oil storage tanks inside of buildings shall have a maximum capacity of 550 gallons.

A 507-3 (661.3) Piping

- a—Pipes for fuel oil entering buildings shall be protected from damage by settlement or corrosion.
- b—Such pipes having discharge outlets located within buildings shall be provided with remote control to stop the flow during fire or other emergency.
- c—Filling, emptying, and venting of tanks shall be by means of fixed piping. Pipes to underground tanks shall be pitched toward tanks. Terminals of fill and vent pipes shall be located outside buildings at a safe distance from building openings.

A-508 (662) ELECTRICAL WIRING AND EQUIPMENT

A 508-1 (662.1) General Requirements

Electrical wiring and equipment shall conform to the requirements of section A 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.

A 509 (663) ELEVATORS

A 509-1 (663.1) General Requirements

Elevators shall conform to the requirements of section A 501, and shall be designed and installed so as to be free from physical and fire hazards and so as to sustain safely the loads to which they are subject.

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