

**UNIFORM  
BUILDING CODE  
Short Form**

Excerpts from  
Volume I of the  
Uniform Building Code  
1952 Edition



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*Preface*

¶ The Uniform Building Code is dedicated to the development of better building construction and greater safety to the public, through the elimination of needless red tape, favoritism and local politics by uniformity in building laws; to the granting of full justice to all building materials on the fair basis of the true merits of each material; and to the development of a sound economic basis for the future growth of cities through unbiased and equitable dealing with structural design and fire hazards.

¶ The Uniform Building Code was first published by the Pacific Coast Building Officials Conference at the Sixth Annual Business Meeting held in Phoenix, Arizona, October 18-21, 1927.

¶ New Editions of this Code have been published in 1930, 1933, 1937, 1940, 1943, 1946 and 1949, following official action on the floor of Annual Business Meetings.

¶ The 1952 (Ninth) Edition of the Uniform Building Code is a revision of the 1949 Edition, with Revisions, Additions and Amendments approved by the Active Members at the Twenty-Seventh, Twenty-Eighth and Twenty-Ninth Annual Business Meetings of the Pacific Coast Building Officials Conference.

¶ The Uniform Building Code, Short Form, 1952 Edition, is a complete code for buildings which are not over two stories in height or more than seventy-five hundred square feet in ground floor area. All other buildings and structures shall conform to all the provisions of the 1952 Edition, Uniform Building Code.

¶ This short form can be adopted by any jurisdiction. By reference the Short Form adopts the Uniform Building Code for construction of buildings beyond the scope of the Uniform Building Code Short Form.

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**Pacific Coast**

**Building Officials Conference**

**124 West Fourth Street, Los Angeles 13, Calif.**

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PACIFIC COAST BUILDING OFFICIALS  
CONFERENCE

UNIFORM BUILDING CODE  
SHORT FORM

Ordinance B.11 No 18

Ordinance No. ....

An ordinance regulating the erection, construction, enlargement, alteration, repair, moving, removal, conversion, demolition, occupancy, equipment, use, height, area, and maintenance of buildings or structures in the City of ..... providing for the issuance of permits and collection of fees therefor; declaring and establishing Fire Districts; providing penalties for the violation thereof, and repealing all ordinances and parts of ordinances in conflict therewith.

Be it ordained by the ..... of the City of ..... as follows:

SHORT FORM, 1952 EDITION

Sections 101-104

PART I  
ADMINISTRATIVE

CHAPTER 1—TITLE AND SCOPE

Sec. 101. This ordinance shall be known as the "Building Code," may be cited as such, and will be referred to herein as "this Code."

Sec. 102. The purpose of this Code is to provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures within the city and certain equipment specifically regulated herein.

Sec. 103. (a) Application. New buildings and structures hereafter erected in the city, and buildings and structures moved into or within the city shall conform to the requirements of this Code.

Additions, alterations, repairs and changes of use or occupancy in all buildings and structures shall comply with the provisions for new buildings and structures except as otherwise provided in Section 104.

Where, in any specific case, different sections of this Code specify different materials, methods of construction or other requirements, the most restrictive shall govern.

(b) Limited Scope of Code. This Code shall apply only to buildings not exceeding two stories in height nor seventy-five hundred square feet (7500 sq. ft.) in ground floor area. All other buildings and structures shall conform to all the provisions of the 1952 Edition, Uniform Building Code of the Pacific Coast Building Officials Conference.

EXCEPTIONS: 1. Wood frame dwellings three stories in height may be constructed under the terms of this Code.

2. Where the building requires engineering design, such design shall conform to the 1952 Edition, Uniform Building Code.

3. The basic allowable floor area and maximum height of buildings of Groups B, C, D, E, and H shall be as specified in Chapters 5 to 15.

4. Any conditions or regulations not covered by this Code shall be governed by the 1952 Edition of the Uniform Building Code.

Sec. 104. (a) General. Buildings or structures to which additions, alterations, or repairs are made shall comply with all the requirements for new buildings or structures except as specifically provided in this Section.

(b) Additions, Alterations and Repairs: More Than 50 Per Cent. When additions, alterations, or repairs within any 12-month period exceed 50 per cent of the value of an existing building or structure, such building or structure shall be made to conform to the requirements for new buildings or structures.

**Application to Existing Buildings (Cont'd.)**

(c) **Additions, Alterations and Repairs: Less than 50 per cent.** Additions, alterations and repairs complying with the requirements for new buildings or structures may be made to any portion of an existing building or structure without making the entire building or structure comply.

Minor structural or non-structural additions, alterations or repairs, when approved by the Building Official and which do not affect the required fire-resistance of any member or part of the building or structure may be made with the same material of which the building or structure is constructed.

Such building or structure, including new additions, shall not exceed the areas and heights specified in this Code.

(d) **Moved Buildings.** Buildings or structures moved into or within the city shall comply with the provisions of this Code. See Section 1601(c) for requirements in Fire Zones.

(e) **Existing Occupancy.** Buildings in existence at the time of the passage of this Code, may have their existing use or occupancy continued, if such use or occupancy was legal at the time of the passage of this Code, provided such continued use is not dangerous to life.

(f) **Maintenance.** All buildings or structures both existing and new, and all parts thereof, shall be maintained in a safe and sanitary condition. All devices or safeguards which are required by this Code in a building or structure when erected, altered, or repaired, shall be maintained in good working order. The owner or his designated agent shall be responsible for the maintenance of buildings and structures.

**Alternate Materials and Methods of Construction**

Sec. 105. The provisions of this Code are not intended to prevent the use of any material or method of construction not specifically prescribed by this Code, provided any such alternate has been approved.

The Building Official may approve any such alternate provided he finds that the proposed design is satisfactory and complies with the provisions of Chapter 23 of the 1952 Edition of the Uniform Building Code and that the material, method, or work offered is, for the purpose intended, at least the equivalent of that prescribed in this Code in quality, strength, effectiveness, fire resistance, durability, and safety.

The Building Official shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding its use.

**CHAPTER 2—ORGANIZATION AND ENFORCEMENT**

Sec. 201. There is hereby established in the city the "Building Department" which shall be under the jurisdiction of the Building Official designated by the appointing authority.

**Creation of Department**

Sec. 202. (a) **General.** The Building Official is hereby authorized and directed to enforce all the provisions of this Code. For such purpose he shall have the powers of a police officer.

**Powers and Duties of Building Official**

The determination of value or valuation under any of the provisions of this Code shall be made by the Building Official.

(b) **Deputies.** In accordance with the procedure and with the approval of the chief appointing authority of the municipality, the Building Official may appoint such number of officers, inspectors and assistants and other employees as shall be authorized from time to time. He may deputize such employees as may be necessary to carry out the functions of the Building Department.

(c) **Right of Entry.** Upon presentation of proper credentials the Building Official or his duly authorized representatives may enter at reasonable times any building, structure or premises in the city to perform any duty imposed upon him by this Code.

(d) **Stop Orders.** Whenever any building work is being done contrary to the provisions of this Code, the Building Official may order the work stopped by notice in writing served on any persons engaged in doing or causing such work to be done, and any such persons shall forthwith stop such work until authorized by the Building Official to proceed with the work.

**Unsafe Buildings**

Sec. 203. (a) **General.** All buildings or structures which are structurally unsafe or not provided with adequate egress, or which constitute a fire hazard, or are otherwise dangerous to human life, or which in relation to existing use constitute a hazard to safety or health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, or abandonment, as specified in this Code or any other effective ordinance, are, for the purpose of this Section, unsafe buildings. All such unsafe buildings are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition, or removal.

(b) **Notice to Owner.** The Building Official shall examine or cause to be examined every building or structure or portion thereof reported as dangerous or damaged and, if such is found to be an unsafe building as defined in this Section, the Building Official shall give to the owner of such building or structure written notice stating the defects thereof. This notice may require the owner or person in charge of the building or premises, within 48 hours, to commence either the required repairs or improvements or demolition and removal of the building or structure or portions thereof, and all such work shall be completed within 90 days from date of notice, unless otherwise stipulated by the Building Official. If necessary, such notice

Unsafe Buildings (Cont'd.)

shall also require the building, structure, or portion thereof to be vacated forthwith and not reoccupied until the required repairs and improvements are completed, inspected, and approved by the Building Official.

Proper service of such notice shall be by personal service upon the owner of record, if he shall be found within the city limits. If he is not found within the city limits such service may be made upon said owner by registered mail; provided, that if such notice is by registered mail, the designated period within which said owner or person in charge is required to comply with the order of the Building Official, shall begin as of the date he receives such notice.

(c) Additions, Alterations, and Repairs. Additions, alterations, and repairs not exceeding 50 per cent of the value of an existing building or structure and complying with the requirements for new buildings or structures may be made to such building or structure within any 12-month period without making the entire building or structure comply. The new construction shall conform to the requirements of this Code for a new building of like area, height, and occupancy. Such building or structure, including new additions, shall not exceed the areas and heights specified in this Code.

(d) Moved Buildings. Buildings or structures moved into or within the city shall comply with the provisions of this Code.

(e) Posting of Signs. The Building Official shall cause to be posted at each entrance to such building a notice to read: "DO NOT ENTER. UNSAFE TO OCCUPY. Building Department, City of....." Such notice shall remain posted until the required repairs, demolition, or removal is completed. Such notice shall not be removed without written permission of the Building Official and no person shall enter the building except for the purpose of making the required repairs or of demolishing same.

(f) Right to Demolish. In case the owner shall fail, neglect, or refuse to comply with the notice to repair, rehabilitate, or to demolish and remove said building or structure or portion thereof, the City Council may order the owner of the building prosecuted as a violator of the provisions of this Code and may order the Building Official to proceed with the work specified in such notice. A statement of the cost of such work shall be transmitted to the City Council, who shall cause the same to be paid and levied as a special assessment against the property.

(g) Costs. Costs incurred under Subsection (f) shall be paid out of the City Treasury. Such costs shall be charged to the owner of the premises involved as a special assessment on the land on which the building or structure is located, and shall be collected in the manner provided for special assessments.

Violations and Penalties

Sec. 204. It shall be unlawful for any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish, equip, use, occupy or maintain any building or structure in the city, or cause the same to be done, contrary to or in violation of any of the provisions of this Code.

Any person, firm or corporation violating any of the provisions of this Code shall be deemed guilty of a misdemeanor,

Violations and Penalties (Cont'd.)

and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Code is committed, continued or permitted, and upon the conviction of any such violation such persons shall be punishable by a fine of not more than \$300, or by imprisonment for not more than 90 days, or by both such fine and imprisonment.



Applications for Permits

CHAPTER 3—PERMITS AND INSPECTIONS

Sec. 301. (a) Permits Required. No person, firm or corporation shall erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish any building or structure in the city, or cause the same to be done, without first obtaining a separate building permit for each such building or structure from the Building Official.

(b) Application. To obtain a permit the applicant shall first file an application therefor in writing on a form furnished for that purpose. Every such application shall:

1. Describe the land on which the proposed work is to be done, by lot, block, tract, and house and street address, or similar description that will readily identify and definitely locate the proposed building or work;
2. Show the use or occupancy of all parts of the building;
3. Be accompanied by plans and specifications as required in Subsection (c) of this Section;
4. State the valuation of the proposed work;
5. Be signed by the permittee, or his authorized agent, who may be required to submit evidence to indicate such authority;
6. Give such other information as reasonably may be required by the Building Official.

(c) Plans and Specifications. Each application for a permit shall be accompanied by two sets of plans and specifications.

EXCEPTION: Plans and specifications need not be submitted for small and unimportant work when authorized by the Building Official.

(d) Information on Plans and Specifications. Plans and specifications shall be drawn to scale upon substantial paper or cloth and shall be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that it will conform to the provisions of this Code and all relevant laws, ordinances, rules and regulations. The first sheet of each set of plans shall give the house and street address of the work and the name and address of the owner and person who prepared them. Plans shall include a plot plan showing the location of the proposed building and of every existing building on the property. In lieu of detailed specifications, the Building Official may approve references on the plans to a specific section or part of this Code or other ordinances or laws.

Sec. 302. (a) Issuance. The application, plans and specifications filed by an applicant for a permit shall be checked by the Building Official. If the Building Official is satisfied that the work described in an application for permit and the plans filed therewith conform to the requirements of this Code and other pertinent laws and ordinances, and that the fee specified in Section 303 has been paid, he shall issue a permit therefor to the applicant.

When the Building Official issues the permit, he shall endorse in writing or stamp on both sets of plans and specifications "APPROVED." Such approved plans and specifications shall not be changed, modified or altered without authorization from

the Building Official, and all work shall be done in accordance with the approved plans.

(b) Retention of Plans. One set of approved plans, specifications and computations shall be retained by the Building Official for a period of not less than 90 days from date of completion of the work covered therein, and one set of approved plans and specifications shall be returned to the applicant, which set shall be kept on such building or work at all times during which the work authorized thereby is in progress.

Plans submitted for checking, for which no permit is issued, and on which no action is taken by the applicant for 90 days, shall be returned to the last known address of the applicant; to renew action on said plans, a payment of a new plan check fee shall be required.

(c) Validity. The issuance or granting of a permit or approval of plans and specifications shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this Code. No permit presuming to give authority to violate or cancel the provisions of this Code shall be valid, except in so far as the work or use which it authorizes is lawful. The issuance of a permit based upon plans and specifications shall not prevent the Building Official from thereafter requiring the correction of errors in said plans and specifications or from preventing building operations being carried on thereunder when in violation of this Code or of any other ordinance of the city.

(d) Expiration. Every permit issued by the Building Official under the provisions of this Code shall expire by limitation and become null and void, if the building or work authorized by such permit is not commenced within 60 days from the date of such permit, or if the building or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 60 days. Before such work can be recommenced a new permit shall be first obtained so to do, and the fee therefor shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original plans and specifications for such work; and provided, further, that such suspension or abandonment has not exceeded one year.

Sec. 303. A fee for each building permit shall be paid to the Building Official as set forth in Table No. 3-A.

TABLE NO. 3-A—BUILDING PERMIT FEES

TOTAL VALUATION	FEE
Less than \$20.00	No Fee
\$20.00 to and including \$100.00	\$1.00
More than \$100.00, to and including \$400.00	2.00
More than \$400.00, to and including \$700.00	4.00
More than \$700.00, to and including \$1,000.00	6.00
Each additional \$1,000.00 or fraction, to and including \$15,000.00	2.00
Each additional \$1,000.00 or fraction, to and including \$50,000.00	1.00
Each additional \$1,000.00 or fraction exceeding \$50,000.00	0.50

Building Permit Fees

Building Permits

**Building Permit Fees (Cont'd.)**

Where work for which a permit is required by this Code is started or proceeded with prior to obtaining said permit, the fees above specified shall be doubled, but the payment of such double fee shall not relieve any persons from fully complying with the requirements of this Code in the execution of the work nor from any other penalties prescribed herein.

**Inspections**

**Sec. 304. (a) General.** All construction or work for which a permit is required shall be subject to inspection by the Building Official.

(b) **Inspection Record Card.** Work requiring a building permit shall not be commenced until the permit holder or his agent shall have posted an inspection record card in a conspicuous place on the front premises and in such position as to allow the Building Official conveniently to make the required entries thereon regarding inspection of the work.

This card shall be maintained in such position by the permit holder until the completion of the job.

(c) **Approvals Required.** No work shall be done on any part of the building or structure beyond the point indicated in each successive inspection without first obtaining the written approval of the Building Official. Such written approval shall be given only after an inspection shall have been made of each successive step in the construction as indicated by each of the inspections required in Subsection (d).

There shall be a final inspection and approval on all buildings when completed and ready for occupancy.

(d) **Called Inspections.** No reinforcing steel or structural framework of any part of any building or structure shall be covered or concealed in any manner whatever without first obtaining the approval of the Building Official.

The Building Official upon notification from the permit holder or his agent shall make the following inspections and shall either approve that portion of the construction as completed or shall notify the permit holder or his agent wherein the same fails to comply with the law.

1. **FOUNDATION INSPECTION:** To be made after trenches are excavated and forms erected and when all materials for the foundation are delivered on the job. Where concrete from a central mixing plant (commonly termed "tray mixed") is to be used, materials need not be on the job.
  2. **FRAME INSPECTION:** To be made after the roof, all framing, fire-blocking and bracing are in place and all pipes, chimneys and vents are complete.
  3. **LATH INSPECTION:** To be made after all lathing, interior and exterior, is in place and all plastering materials are delivered on the job, but before any plaster is applied.
  4. **FINAL INSPECTION:** To be made after building is completed and ready for occupancy.
- (e) **Other Inspections.** In addition to the called inspections specified above, the Building Official may make any other inspections of any construction work to ascertain compliance with the provisions of this Code and other laws which are enforced by the Building Department.

**PART II  
DEFINITIONS AND ABBREVIATIONS**

**CHAPTER 4—DEFINITIONS AND ABBREVIATIONS**

**Sec. 401. General.** For the purpose of this Code, certain abbreviations, terms, phrases, words and their derivatives shall be construed as set out in this Section. Words used in the singular include the plural and the plural the singular. Words used in the masculine gender include the feminine, and the feminine the masculine.

**Sec. 402. AGRICULTURAL BUILDING** is a building located on agricultural property and used to shelter farm implements, hay, grain, poultry, livestock, or other farm produce, in which there is no human habitation, and which is not used by the public.

**ALLEY** is any public space, public park or thoroughfare less than sixteen feet (16') but not less than ten feet (10') in width which has been dedicated or deeded to the public for public use.

**ALTER or ALTERATION** is any change, addition or modification in construction or occupancy.

**APARTMENT** is a room or suite of rooms which is occupied or which is intended or designed to be occupied by one family for living and sleeping purposes.

**APARTMENT HOUSE** is any building, or portion thereof, which is designed, built, rented, leased, let or hired out to be occupied, or which is occupied as the home or residence of three or more families living independently of each other and doing their own cooking in the said building, and shall include flats and apartments.

**APPROVED** as to materials and types of construction, refers to approval by the Building Official as the result of investigation and tests conducted by him, or by reason of accepted principles or tests by national authorities, technical or scientific organizations.

**APPROVED AGENCY** is an established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved by the Building Official.

**AREA** (see "Floor Area").

**Sec. 403. BASEMENT** is that portion of a building between floor and ceiling, which is partly below and partly above grade (as defined in this Section), but so located that the vertical distance from grade to the floor below is less than the vertical distance from grade to ceiling. (See "Story".)

**BUILDING** is any structure built for the support, shelter, or enclosure of persons, animals, chattels, or property of any kind.

Definitions (Cont'd.)

**BUILDING—EXISTING BUILDING** is a building erected prior to the adoption of this Code, or one for which a legal building permit has been issued.

**BUILDING OFFICIAL** is the officer charged with the administration and enforcement of this Code, or his regularly authorized deputy.

**Sec. 404. CAST STONE** is a building stone manufactured from cement concrete precast and used as a trim, veneer or facing on or in buildings or structures.

**CELLAR** is that portion of a building between floor and ceiling which is wholly or partly below grade (as defined in this Section) and so located that the vertical distance from grade to the floor below is equal to or greater than the vertical distance from grade to ceiling. (See "Story".)

**Sec. 405. DWELLING** is any building or any portion thereof which is not an "Apartment House" or a "Hotel" as defined in this Code, which contains one or more "Apartments" or "Guest Rooms", used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or which are occupied for living purposes.

**Sec. 406. EXIT** is a continuous and unobstructed means of egress to a public way, and shall include intervening doorways, corridors, ramps, stairways, smokeproof enclosures, horizontal exits, and exterior courts.

**Sec. 407. FAMILY** is one person living alone or a group of two or more persons living together, whether related to each other by birth or not.

**FIRE DOOR OR WINDOW** is a fire-resistive door or window conforming to nationally accepted standards. Any door or window bearing the label of the Underwriters' Laboratories shall be acceptable under this Code for use in the class of opening specified on the label.

**FIRE-RESISTIVE CONSTRUCTION.** The fire-resistive time period rating shall be as specified in the Uniform Building Code except that for the purposes of this Code the following time-period ratings may be used:

Four-hour fire-resistive construction is masonry or concrete construction.

Three-hour fire-resistive construction is masonry or concrete.

Two-hour fire-resistive construction as applied to walls is masonry or concrete or is a stud wall plastered on both sides with one inch (1") of plaster on metal or wire lath; as applied to floors is masonry or concrete.

One-hour fire-resistive construction as applied to walls is a stud wall plastered both sides on incombustible lath or is a masonry wall; as applied to floors is a joisted floor with a double wood floor on top and a plastered ceiling on incombustible lath; as applied to ceilings below unusable space is a plastered ceiling on incombustible lath.

**FLOOR AREA** is the area included within surrounding walls of a building (or portion thereof), exclusive of vent shafts and courts.

**FOOTING** is that portion of the foundation of a structure which spreads and transmits loads directly to the soil or the piles.

**FRONT OF LOT** is the front boundary line of a lot bordering on the street, and in the case of a corner lot may be either frontage.

**Sec. 408. GARAGE** is a building or portion thereof in which a motor vehicle containing gasoline, distillate or other volatile, flammable liquid in its tank, is stored, repaired or kept.

**GARAGE, PRIVATE,** is a building, or a portion of a building, not over one thousand square feet (1000 sq. ft.) in area in which only motor vehicles used by the tenants of the building or buildings on the premises are stored or kept. (See Section 1501.)

**GARAGE, PUBLIC,** is any garage other than a private garage.

**GRADE (Ground Level)** is the average of the finished ground level at the center of all walls of a building. In case walls are parallel to and within five feet (5') of a sidewalk, the above ground level shall be measured at the sidewalk.

**GRADE (Lumber)** is the division of sawn lumber into quality classes with respect to its physical and mechanical properties as defined in published lumber manufacturers' standard grading rules.

**GUEST** is any person hiring or occupying a room for living or sleeping purposes.

**Sec. 409. HEIGHT OF BUILDING** is the vertical distance from the "Grade" to the highest point of the coping of a flat roof or to the deck line of a mansard roof or to the average height of the highest gable of a pitch or hip roof.

**HOTEL** is any building containing six or more rooms intended or designed to be used, or which are used, rented or hired out to be occupied, or which are occupied for sleeping purposes by guests.

**Sec. 410. INCOMBUSTIBLE MATERIAL** shall mean any material which will not ignite at or below a temperature of 1200 degrees Fahrenheit during an exposure of five minutes and which will not continue to burn or glow at that temperature. Tests shall be made as specified in U.B.C. Standard No. 4-1.

**Sec. 411. LINTEL** is the beam or girder placed over an opening in a wall, which supports the wall construction above.

Definitions  
(Cont'd.)

**M** Sec. 412. **MASONRY** is that form of construction, composed of stone, brick, concrete, gypsum, hollow clay tile, concrete block or tile, or other similar building units or materials or a combination of these materials laid up unit by unit and set in mortar.

**MASONRY, SOLID**, is masonry built without hollow spaces.

**O** Sec. 413. **OCCUPANCY** is the purpose for which a building is used or intended to be used. Change of occupancy is not intended to include change of tenants or proprietors.

**P** Sec. 414. **PERSON** is a natural person, his heirs, executors, administrators or assigns, and also includes a firm, partnership or corporation, its or their successors or assigns, or the agent of any of the aforesaid.

**R** Sec. 415. **REPAIR** is the reconstruction or renewal of any part of an existing building for the purpose of its maintenance. The word "Repair" or "Repairs" shall not apply to any change of construction.

**S** Sec. 416. **SHAFT** is a vertical opening through a building for elevators, dumb-waiter, light, ventilation or similar purposes. **SHALL** as used in this Code, is mandatory.

**STAIRWAY**. Two or more risers shall constitute a stairway.

**STORY** is that portion of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a basement or cellar is more than six feet (6') above grade such basement or cellar shall be considered a story.

**STREET** is any thoroughfare or public park not less than sixteen feet (16') in width which has been dedicated or deeded to the public for public use.

**STRUCTURE** is that which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

**U** Sec. 416. **UNIFORM BUILDING CODE** is the 1952 Edition of the Uniform Building Code, Volume I, published January 1, 1952, by the Pacific Coast Building Officials Conference.

**U. B. C. STANDARDS** is the 1952 Edition of the Uniform Building Code Standards, also known as Volume III, Uniform Building Code, 1952 Edition.

**V** Sec. 417. **VALUE** or **VALUATION** of a building shall be the estimated cost to replace the building in kind based on current replacement costs, as determined in Section 202(a).

**VENEER** is a facing of brick, stone, concrete, tile or similar material attached to a wall for the purpose of providing ornamentation, protection or insulation but not counted as adding strength to the wall.

## PART III

## REQUIREMENTS BASED ON OCCUPANCY

CHAPTER 5—CLASSIFICATION OF ALL BUILDINGS  
BY USE OR OCCUPANCY AND GENERAL REQUIREMENTS FOR ALL OCCUPANCIES

**Sec. 501.** Every building, whether existing or hereafter erected, shall be classified by the Building Official according to its use or the character of its occupancy, as a building of Group A, B, C, D, E, F, G, H, I, or J. (See Table No. 5-A.)

Any occupancy not mentioned specifically or about which there is any question shall be classified by the Building Official and included in the Group which its use most nearly resembles based on the existing or proposed life and fire hazard.

**Sec. 502.** No change shall be made in the character of occupancy or use of any building which would place the building in a different Group of occupancy, unless such building is made to comply with the requirements of this Code for that Group.

**EXCEPTION:** The character of the occupancy of existing buildings may be changed subject to the approval of the Building Official, and the building may be occupied for purposes in other Groups without conforming to all the requirements of this Code for those Groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

**Sec. 503. (a) General.** When a building is used for more than one occupancy purpose each part of the building comprising a distinct "Occupancy," as described in Chapters 5 to 15, shall be separated from any other occupancy as specified in Section 503 (d).

When a building is used for more than one occupancy purpose, it shall be subject to the most restrictive requirements for the occupancies concerned.

**EXCEPTIONS: 1.** When a one-story building houses more than one occupancy, each portion of the building shall conform to the requirements for the occupancy housed therein. The maximum floor area of any separate occupancy shall be the area allowed by Section 505, multiplied by the percentage of the building occupied by such occupancy.

**2.** Where minor accessory uses do not occupy more than 10 per cent of the area of any floor of a building, the major use of the building shall determine the occupancy classification provided the uses are separated as specified in Section 503(d).

**(b) Forms of Occupancy Separations.** Occupancy separations shall be vertical or horizontal or both or, when necessary, of such other form as may be required to afford a complete separation between the various occupancy divisions in the building.

**(c) Types of Occupancy Separation.** Occupancy separations shall be classed as "Four-Hour Fire-Resistive", "Three-Hour Fire-Resistive", "Two-Hour Fire-Resistive", and "One-Hour Fire-Resistive."

TABLE NO. 5-A—WALL AND OPENING PROTECTION BASED ON OCCUPANCY\*

(See also pages 25 and 26)

Group	OCCUPANCY	Division	FIRE RESISTANCE OF EXTERIOR WALLS		PROTECTION OF OPENINGS IN EXTERIOR WALLS	
			Time Period (Hours)	Distance to Property Line	Opening Protection	Distance to Property Line
A	Any assembly building with a stage and an occupant load of 1000 or more in the building.....		4	Any Location	No Openings	Less than 5'
B	1—Any assembly building with a stage and an occupant load of less than 1000 in the building.....	1-2	4	Less than 5'	No Openings	Less than 5'
	2—Any assembly building without a stage and having an occupant load of 300 or more in the building.....		2	5' to 10'	E or F	5' to 10'
	3—Any assembly building without a stage and having an occupant load of less than 300 in the building, including such buildings used for school purposes less than four hours per week.....	3	2	Less than 5'	No Openings	Less than 5'
			1	5' to 10'	E or F	5' to 10'
C	Any building used for school purposes more than four hours per week, involving assemblage for instruction, education, or recreation, and not classed in Group A or Divisions 1 and 2, Group B, occupancies.....		4	Less than 5'	No Openings	Less than 5'
			2	5' to 10'	E or F	5' to 10'
		4	1	Less than 10'	E or F	Less than 10'

\* For additional restrictions see Chapters under Occupancy, Fire Zones and Types of Construction.

\*\* Or may be protected on the exterior with materials approved for one-hour fire-resistive construction.

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TABLE NO. 5-A—WALL AND OPENING PROTECTION BASED ON OCCUPANCY\*

(Continued)

Group	OCCUPANCY	Division	FIRE RESISTANCE OF EXTERIOR WALLS		PROTECTION OF OPENINGS IN EXTERIOR WALLS	
			Time Period (Hours)	Distance to Property Line	Opening Protection	Distance to Property Line
D	1—Mental hospitals, jails, prisons, reformatories, houses of correction, and buildings where personal liberties of inmates are similarly restrained.....	1	4	Any Location	No Openings	Less than 5'
	2—Nurseries for full time care of children under kindergarten age. Hospitals, sanitariums, mental sanitariums conforming to Sec. 3319 (g), and similar buildings (each accommodating more than six persons).....	2	4	Less than 5'	No Openings	Less than 5'
			1	5' or more	E or F	5' to 10'
3—Homes for the aged and homes for children of kindergarten age or older, (each accommodating more than six persons.).....	3	1	Any Location	No Openings	Less than 3'	
				E or F	3' to 10'	
E	1—Storage and handling of hazardous and highly flammable or explosive materials other than flammable liquids.....	1-2	4	Less than 5'	No Openings	Less than 5'
	2—Storage and handling of Class I, II and III flammable liquids, as specified in U.B.C. Standard 9-1; dry cleaning plants using flammable liquids, paint stores with bulk handling; paint shops and spray painting rooms and shops.....				2	5' to 10'
	3—Woodworking establishments, planing mills and box factories; shops, factories where loose, combustible fibres or dust is manufactured, processed or generated; warehouses where highly combustible material is stored.....	3-4	1	10' to 20'	E or F	10' to 20'
	4—Repair garages.....	5	1	Less than 60'	No Openings	Less than 5'
	5—Aircraft repair hangars.....				E or F	5' to 60'

\* For additional restrictions see Chapters under Occupancy, Fire Zones and Types of Construction.

\*\* Or may be protected on the exterior with materials approved for one-hour fire-resistive construction.

SHORT FORM, 1952 EDITION

Table 5-A

TABLE NO. 5-A—WALL AND OPENING PROTECTION BASED ON OCCUPANCY\*

(Continued)

Group	OCCUPANCY	FIRE RESISTANCE OF EXTERIOR WALLS			PROTECTION OF OPENINGS IN EXTERIOR WALLS	
		Division	Time Period (Hours)	Distance to Property Line	Opening Protection	Distance to Property Line
F	1—Gasoline filling and service stations, storage garages where no repair work is done except exchange of parts and maintenance requiring no open flame, welding, or the use of highly flammable liquids. 2—Wholesale and retail stores, office buildings, restaurants, undertaking parlors, printing plants, municipal police and fire stations, factories and workshops using materials not highly flammable or combustible, storage and sales rooms for combustible goods, paint stores without bulk handling. 3—Aircraft hangars where no repair work is done except exchange of parts and maintenance requiring no open flame, welding, or the use of highly flammable liquids.	1-2	1	Less than 10'	No Openings	Less than 5'
					E or F	5' to 10'
		3	1	Less than 20'	E or F	Less than 20'
G	Ice plants, power plants, pumping plants, cold storage, and creameries. Factories and workshops using incombustible and non-explosive materials. Storage and sales rooms of incombustible and non-explosive materials.		1	Less than 3'	No Openings	Less than 3'
H	Hotels, apartment houses, dormitories, lodging houses, Convents, monasteries (each accommodating more than 10 persons).		1	Less than 3'	No Openings	Less than 3'
					E or F	3' to 5'
I	Dwellings		1	Less than 3'	No Openings	Less than 3'
J	1—Private garages, sheds and minor buildings used as accessories only when not over one thousand square feet (1000 sq. ft.) in area. 2—Fences over six feet (6') high, tanks and towers.	1	**1	Less than 3'	No Openings	Less than 3'

\* For additional restrictions see Chapters under Occupancy, Fire Zones and Types of Construction.  
\*\* Or may be protected on the exterior with materials approved for one-hour fire-resistive construction.

1. A "Four-Hour Fire-Resistive Occupancy Separation" shall have no openings therein and shall be of not less than four-hour fire-resistive construction.

2. A "Three-Hour Fire-Resistive Occupancy Separation" shall be of not less than three-hour fire-resistive construction. All openings in walls forming such separation shall be protected on each side thereof by Class "A" fire doors and such doors shall be kept normally closed. The total width of all openings in any "Three-Hour Fire-Resistive Occupancy Separation" wall in any one story shall not exceed 25 per cent of the length of the wall in that story and no single opening shall have an area greater than one hundred and twenty square feet (120 sq. ft.).

All openings in floors forming a "Three-Hour Fire-Resistive Occupancy Separation" shall be protected by vertical enclosures, extending above and below such openings. The walls of such vertical enclosures shall be of not less than two-hour fire-resistive construction and all openings therein shall be protected on one side thereof by Class "B" fire doors, and such doors shall be kept normally closed.

3. A "Two-Hour Fire-Resistive Occupancy Separation" shall be of not less than two-hour fire-resistive construction. All openings in such separations shall be protected on one side by Class "B" fire doors.

4. A "One-Hour Fire-Resistive Occupancy Separation" shall be of not less than one-hour fire-resistive construction. All openings in such separations shall be protected with Class "C" fire doors, and such doors shall be kept normally closed.

(d) Fire Ratings for Occupancy Separations. Occupancy separations shall be provided between the various groups and divisions of occupancies as set forth in Table No. 5-B. Where any occupancy separation is required the minimum shall be a "One-Hour Fire-Resistive Occupancy Separation."

Location on Property

Sec. 504. (a) General. Buildings shall adjoin a public space, yard or street on not less than one side. Required yards shall be permanently maintained.

For the purpose of this Section, the center line of an adjoining street or alley shall be considered an adjacent property line.

(b) Fire Resistance of Walls. Exterior walls shall have the degree of fire-resistance and exterior openings shall have the protection as set forth in Table No. 5-A.

(c) Buildings on Same Property. For the purpose of determining the required exterior wall protection, buildings on the same property shall be assumed to have a property line between them.

When a new building is to be erected on the same property with an existing building, the assumed property line from the existing building shall be the distance to the property line for each occupancy as set forth in Table No. 5-A.

EXCEPTION: Two or more buildings on the same property may be considered as portions of one building if the area within a line circumscribing the buildings is within the limits specified in Section 505. In this case, the space between buildings shall be considered an inner court for the purpose of determining the exterior wall construction.

TABLE NO. 5-B—REQUIRED SEPARATIONS IN BUILDINGS  
OF MIXED OCCUPANCY

(In Hours)

GROUP	A	B	C	D	E-1	E-2	E-3	E-4-5	F-1	F-2	F-3	G	H	I	J
A	N	N	N	3	4	4	4	4	4	3	3	3	1	1	1
B		N	N	3	4	4	4	4	3	1	1	1	1	1	1
C			N	1	4	4	4	4	4	1	1	1	1	1	1
D				N	4	4	4	4	4	4	4	4	1	1	3
E-1					N	1	1	1	2	2	2	2	4	4	1
E-2						N	1	1	1	1	1	1	3	3	1
E-3							N	1	1	1	1	1	3	3	1
E-4-5								N	1	1	1	1	3	3	1
F-1									N	1	1	1	3	1	1
F-2										N	1	1	1	N	1
F-3											N	1	1	N	1
G												N	1	N	N
H													N	N	1
I														N	1*
J															N

\*Provided that materials as approved for one-hour fire-resistive construction on the garage side and a self-closing, tight-fitting solid wood door one and three-eighths inches (1 3/8") in thickness, shall be permitted.

Sec. 505. One-Hour Fire-Resistive Substitution. Where one-hour fire-resistive construction throughout is required by this Code, an approved fire-extinguishing system, as specified in Chapter 38, may be substituted, provided such system is not otherwise required.

Arcades

Sec. 506. Arcades. Arcades connecting buildings and used exclusively as passageways need not be considered as adjacent buildings for the provisions of this Chapter, provided that the walls of the building adjoining the arcades are finished with the same construction as required for the exterior walls of the building, with no communicating openings between the arcades and the building, except doors; and provided that the arcades are of not less than one-hour fire-resistive construction or entirely of incombustible materials, or of heavy timber construction with two-inch (2") nominal sheathing.

#### CHAPTER 6—REQUIREMENTS FOR GROUP A OCCUPANCIES

Sec. 601. Group A occupancies shall be: (See Table No. 5-A.)

Group A  
Occupancies  
Defined

Sec. 602. The requirements for Group A occupancies shall conform to the provisions in Chapter 6 of the 1952 Edition of the Uniform Building Code.

General

**CHAPTER 7—REQUIREMENTS FOR  
GROUP B OCCUPANCIES**

**Group B Occupancies Defined Area and Height**

Sec. 701. Group B occupancies shall be: (See Table No. 5-A.) For occupancy separations see Table No. 5-B.

Sec. 702. The basic floor area for buildings of Group B occupancies shall not exceed six thousand square feet (6,000 sq. ft.) for Type V buildings. The floor area may be increased when complying with the requirements of Section 506 of the 1952 Edition of the Uniform Building Code.

**Location on Property**

Sec. 703. All buildings housing Group B occupancies shall front directly upon at least one public street, not less than twenty feet (20') in width, in which front shall be located the main entrance of such building.

For fire-resistive protection of exterior walls and openings, as determined by location on property, see Section 504.

**Special Provisions**

Sec. 704. Division 1 and 2 occupancies shall be of not less than one-hour fire-resistive construction throughout, except that a fire-resistive ceiling shall not be required in one-story buildings of Type III, IV, or V construction having an open frame roof. Division 2 occupancies with an occupant load of 1000 or more shall be of Type I, II or III construction.

**EXCEPTION:** Gymnasiums which do not have more than two balconies, each with an occupant load not to exceed 300, and which are not located over usable spaces need not have one-hour fire-resistive protection.

Division 3 occupancies located in a basement or above the first story shall be in buildings of not less than one-hour fire-resistive construction.

Group B assembly rooms having an occupant load of 1000 or more shall not be located in the basement.

Division 3 occupancies with an occupant load of 50 or more, which are located over usable space, shall be separated from such space by not less than one-hour fire-resistive construction.

**Special Hazards**

Sec. 705. Flammable liquids shall not be placed or stored in a Group B occupancy.

Each building shall be provided with an approved outside gas shut-off valve conspicuously marked.

Exterior openings in a boiler room or room containing central heating equipment, if located below openings in another story, if less than ten feet (10') from other doors or windows of the same building, shall be protected by Class "E" or "F" fire doors or windows.

Every boiler room or room containing a heating plant which burns liquid or solid fuel shall be separated from the rest of the building by a "Three-Hour Fire-Resistive Occupancy Separation". Every boiler room or room containing a heating plant which burns gas as fuel shall be separated from the rest of the building by not less than a "One-Hour Fire-Resistive Occupancy Separation."

**Exceptions and Deviations**

Sec. 706. Gymnasiums and similar occupancies may have running tracks constructed of wood or unprotected steel or iron. In gymnasiums, one-inch (1") nominal tight tongue and grooved wall covering may be used on the gymnasium side in lieu of fire-resistive plaster.

**CHAPTER 8—REQUIREMENTS FOR  
GROUP C OCCUPANCIES**

**Group C Occupancies Defined Area and Height**

Sec. 801. Group C occupancies shall be: (See Table No. 5-A.) For occupancy separations, see Table No. 5-B.

Sec. 802. The maximum number of stories for Types III, IV and V buildings shall not exceed one story, except as specified in Section 804.

Sec. 803. (a) **General.** Group C occupancies shall front directly upon at least one public street, not less than twenty feet (20') in width, in which front shall be located at least one required exit.

For fire-resistive protection of exterior walls and openings, as determined by location on property, see Section 504.

(b) **Special Provision.** Exterior walls or parts of walls of Group C occupancy having an occupant load of less than 100 persons, when within ten feet (10') of adjacent property lines, may be of one-hour fire-resistive construction.

Sec. 804. Rooms having an occupancy load of more than 100 and rooms used for kindergarten, first or second grade pupils shall not be located above the first story above grade except in buildings of Type I construction.

Two-story buildings of Type III, IV, or V construction shall be of one-hour fire-resistive construction.

Where there is usable space under the first floor of two-story Type IV and V buildings, the construction up to and including the first floor shall be of Type I construction, and the first floor shall be unperforated for human access.

Balconies and bleachers over usable space and all janitor closets shall be protected with materials approved for one-hour fire-resistive construction.

All curtains, drops and drapes shall be flame-proofed.

**Special Hazards**

Sec. 805. Each building shall be provided with an approved outside gas shut-off valve conspicuously marked.

Exterior openings in a boiler room or room containing central heating equipment, if located below openings in another story, if less than ten feet (10') from other doors or windows of the same building, shall be protected by Class "E" or "F" fire doors or windows.

Every boiler room or room containing a central heating plant which burns liquid or solid fuel shall be separated from the rest of the building by a "Three-Hour Fire-Resistive Occupancy Separation". Every boiler room or room containing a heating plant which burns gas as fuel shall be separated from the rest of the building by not less than a "One-Hour Fire-Resistive Occupancy Separation."

No flammable liquids shall be placed, stored or used in any Group C occupancies, except in approved quantities as necessary in laboratories and approved utility rooms, and such liquids shall be kept in tight or sealed containers when not in actual use.

Sec. 806. Gymnasiums and similar buildings may have running tracks constructed of wood or unprotected steel or iron.



Section 506

UNIFORM BUILDING CODE

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Sections 901-905

Exceptions and Deviations (Cont'd.)

In gymnasiums and in multi-purpose school rooms having an area not greater than thirty-two hundred square feet (3,200 sq. ft.), one-inch (1") nominal tight tongue and grooved or three-fourths inch (3/4") plywood wall covering may be used on the inner side in lieu of fire-resistive plaster. Roof covering shall be a "fire retardant" roofing as specified in Section 2204 of this Code.

Group D Occupancies Defined Area and Height

CHAPTER 9—REQUIREMENTS FOR GROUP D OCCUPANCIES

Sec. 901. Group D occupancies shall be: (See Table No. 5-A.) For occupancy separations see Table No. 5-B.

Group D Occupancies Defined Area and Height

Sec. 902. The basic floor area for buildings of Types III, IV and V construction shall not exceed six thousand seven hundred fifty square feet (6,750 sq. ft.) and five thousand two hundred fifty square feet (5,250 sq. ft.) for Type V. The floor area may be increased when complying with the requirements of Section 506 of the 1952 Edition of the Uniform Building Code. The maximum number of stories for Types III, IV and V buildings shall not exceed one story for Division 2 occupancies.

Sec. 903. For fire-resistive protection of exterior walls and openings as determined by location on property, see Section 4.

Location on Property

Sec. 904. Division 1 occupancies shall be of Type I construction throughout. Divisions 2 and 3 occupancies shall be one-hour fire-resistive construction throughout and shall be of Type I or II construction if more than two stories in height. Occupancies in which the personal liberties of inmates or patients are restrained within the building shall have floors of incombustible construction.

Special Provisions

Sec. 905. Motion picture machine booths shall conform to the requirements of Chapter 40 of the 1952 Edition of the Uniform Building Code.

Special Hazards

Storage of volatile flammable liquids shall not be allowed in Group D occupancies and the handling of such liquid shall not be permitted in any Group D occupancies in quantities of more than one gallon unless such handling complies with U. B. C. Standard No. 9-1.

Special Hazards

Each building shall be provided with an approved outside gas shut-off valve conspicuously marked. Every boiler room or room containing a heating plant which burns liquid or solid fuel shall be separated from the rest of the building by a "Three-Hour Fire-Resistive Occupancy Separation". Every boiler room or room containing a heating plant which burns gas as fuel shall be separated from the rest of the building by not less than a "One-Hour Fire-Resistive Occupancy Separation."

Exc and Dev

CHAPTER 10—REQUIREMENTS FOR  
GROUP E OCCUPANCIES

Group E Occupancies Defined Area and Height

Sec. 1001. Group E occupancies shall be: (see Table No. 5-A). For occupancy separations see Table No. 5-B.

Sec. 1002. The basic floor area shall not exceed the limits set forth in Table No. 10-A. The floor area may be increased when complying with the requirements of Section 506 of the 1952 Edition of the Uniform Building Code.

Location on Property

Sec. 1003. For fire-resistive protection of exterior walls and openings, as determined by location on property, see Section 504.

Special Provisions

Sec. 1004. Floors shall be of incombustible materials or of not less than Type II construction. In public garages and where flammable or explosive liquids are used or stored floors shall be entirely protected with incombustible materials against saturation.

Division 1 occupancies more than one story in height shall be Type I or Type II.

Divisions 2, 3, 4 and 5 more than one story in height shall be of one-hour fire-resistive construction.

Light, Ventilation, and Sanitation

Sec. 1005. All portions of Group E occupancies customarily used by human beings and all dressing rooms shall be provided with light and ventilation by means of windows or skylights with an area not less than one-eighth of the total floor area, or shall be provided with artificial light and a mechanically operated ventilating system. The mechanically operated ventilating system shall supply a minimum of five cubic feet (5 cu. ft.) per minute of outside air with a total circulated of not less than fifteen cubic feet (15 cu. ft.) per minute per seat in all portions of the building and such system shall be kept continuously in operation during such time as the building is occupied. If the velocity of the air at the register exceeds ten feet (10') per second, the register shall be placed more than eight feet (8') above the floor directly beneath.

In all buildings used for the storing or handling of automobiles operated under their own power and in all buildings where flammable liquids are used exhaust ventilation shall be provided sufficient to produce one complete change of air every 15 minutes. Such exhaust ventilation shall be taken from a point at or near the floor level.

TABLE NO. 10-A—BASIC ALLOWABLE FLOOR AREAS FOR GROUP E OCCUPANCIES

OCCUPANCY DIVISION	TYPE OF CONSTRUCTION	AREA IN SQUARE FEET
1-2	V-N	2500
1-2	V-1 Hr.	4375
1-2	IV-N and III-N	5750
1-2	IV-1 Hr. and III-1 Hr.	6625
3-4-5	V-N	5000

EXCEPTION: In public garages and aircraft hangars not exceeding an area of five thousand square feet (5000 sq. ft.), the Building Official may authorize the omission of such and ventilating equipment where, in his opinion, the building is supplied with unobstructed openings to the outer air which are sufficient to provide the necessary ventilation.

Sec. 1006. In any room in which volatile flammable liquids are used or stored no device generating a glow or flame capable of igniting gasoline vapor shall be installed or used within twenty-four inches (24") of the floor.

The use, handling, storage and sale of gasoline, fuel oil and other flammable liquids shall not be permitted in any Group E occupancy unless such use, handling, storage and sale comply with U. B. C. Standard No. 9-1.

Dry cleaning plants in which combustible solvents are used or stored shall be of Type I construction and shall not exceed one story in height. All partitions shall be of four-hour fire-resistive construction, except for the necessary openings for the vents, piping and shafting. All openings in exterior walls, except wall vents, shall be protected by Class "E" or "F" fire doors or windows. Wall vents having an area of not less than sixteen square inches (16 sq. in.) each, shall be placed in the exterior walls near the floor line, not more than six feet (6') apart horizontally. Each building shall be provided with a power driven fan exhaust system of ventilation which shall be arranged and operated so as to produce a complete change of air in each room every three minutes.

Each machine in dry cleaning establishments which uses a volatile flammable liquid shall have an adequate steam line directly connected to it, so arranged as to have the steam automatically released to the inside of such machine should an explosion occur in the machine.

Note: Highly flammable liquids shall be deemed to be those with a flash point below 190 degrees Fahrenheit as determined by the closed cup tester, provided that liquids with a flash point above 138.5 degrees Fahrenheit shall not be deemed to be highly flammable when used in a closed safety cleaning system meeting the requirements of U. B. C. Standard No. 10-1 for a class III rating.

Special Hazards

Light, Ventilation, and Sanitation (Cont'd.)

CHAPTER 11—REQUIREMENTS FOR GROUP F OCCUPANCIES

Group F Occupancies Defined

Sec. 1101. Group F occupancies shall be: (See Table No. 5-A).

For occupancy separations see Table No. 5-B.

Special Provisions

Sec. 1102. Gasoline filling stations of Type V construction shall have incombustible exterior wall covering. Canopies, including supports thereof, over pumps shall be of incombustible materials or not less than one-hour fire-resistive construction. Storage areas in excess of one thousand square feet (1,000 sq. ft.), in connection with wholesale or retail sales, shall be separated from the public areas by a one-hour fire-resistive occupancy separation.

Location on Property

Sec. 1103. For fire-resistive protection of exterior walls and openings, as determined by location on property, see Section 504.

Special Hazards

Sec. 1104. No storage of volatile flammable liquids shall be allowed in Group F occupancies and the handling and use of gasoline, fuel oil and other flammable liquids shall not be permitted in any Group F occupancy unless such use and handling comply with U.B.C. Standard No. 9-1.

Devices generating a glow or flame capable of igniting gasoline vapor shall not be installed or used within twenty-four inches (24") of the floor in any room in which volatile flammable liquids are used or stored.

CHAPTER 12—REQUIREMENTS FOR GROUP G OCCUPANCIES

Group G Occupancies Defined

Sec. 1201. Group G occupancies shall be: (See Table No. 5-A).

For occupancy separations see Table No. 5-B.

Special Provisions

Sec. 1202. Fire protection of the under side of roof framing may be omitted in all Types of Construction.

Sec. 1203. For fire-resistive protection of exterior walls and openings, as determined by location on property, see Section 504.

Special Hazards

Sec. 1204. The storage, use and handling of gasoline, fuel oil and other flammable liquids shall not be permitted in any Group G occupancy unless such storage, use, and handling comply with U. B. C. Standard No. 9-1.

**CHAPTER 13—REQUIREMENTS FOR  
GROUP H OCCUPANCIES**

**Group H Occupancies Defined** 5-A).  
Sec. 1301. Group H occupancies shall be: (See Table No. For occupancy separations see Table No. 5-B.)

**Area and Height**  
Sec. 1302. The basic floor area for buildings of Type V-N construction shall not exceed six thousand square feet (6,000 sq. ft.). The floor area may be increased when complying with the requirements of Section 506 of the 1952 Edition of the Uniform Building Code.

**Location on Property**  
Sec. 1303. For fire-resistive protection of exterior walls and openings, as determined by location on property, see Section 504.

**Special Provisions**  
Sec. 1304. Group H occupancies having more than six thousand square feet (6,000 sq. ft.) on the first floor or more than three thousand square feet (3,000 sq. ft.) above the first floor shall be of not less than one-hour fire-resistive construction throughout.

**Exit Facilities**  
Sec. 1305. All stairs and exits in Group H occupancies shall open directly upon a street or alley or upon a yard or court not less than four feet (4') in width directly connected to a street or alley by means of a passageway not less in width than the stairway opening into such passageway and not less than seven feet (7') in height.

Buildings more than one story in height shall have no transoms or ventilating openings from guest rooms to public corridors.

Doors opening from guest rooms into public corridors shall be incombustible or of wood not less than one and three-eighths inch (1 3/8") thick at any point.

**Light, Ventilation, and Sanitation**  
Sec. 1306. (a) **Windows.** All living rooms, kitchens, and other rooms used for living, eating, or sleeping purposes shall be provided with windows with an area not less than twelve square feet (12 sq. ft.) nor one-eighth of the floor area of such rooms. The window area in bathrooms, waterclosets, compartments, and other similar rooms shall not be less than three square feet (3 sq. ft.), unless adequate mechanical ventilation is provided. Not less than one-half such area shall be openable.

Required windows shall open on a court, yard, or street either directly or through a porch with a minimum clear height of not less than seven feet (7') and a depth of not more than seven feet (7'). Such porch shall be at least 50 per cent open on at least two sides.

The width of such courts or yards shall be not less than three feet (3') when such courts or yards are not more than two stories high measured down from the top of the building and shall be increased at the rate of six inches (6") for each additional story in height. If such court is entirely surrounded by the building it shall have a width at least 50 per cent greater than that otherwise required.

(b) **Room Sizes and Ceiling Heights.** Every room required to have windows by Subsection (a) shall have a ceiling height of eight feet (8') in at least 50 per cent of its area. Rooms used for living, eating, or sleeping purposes shall have an area of not less than eighty square feet (80 sq. ft.). Kitchens shall have an area of not less than fifty square feet (50 sq. ft.).

(c) **Sanitation.** Every building shall be provided with at least one toilet. Every hotel and each subdivision thereof where both sexes are accommodated shall be provided with at least two toilets located in such building, which shall be conspicuously marked, one for each sex. Not less than one toilet shall be provided for each 15 persons or major fraction thereof that such building is designed to accommodate.

One toilet shall be provided for each apartment.  
A kitchen sink shall be installed in every kitchen.

Sec. 1307. The storage and handling of gasoline, fuel oil and other flammable liquids shall not be permitted unless such storage and handling comply with U. B. C. Standard No. 9-1.

Doors leading into rooms in which volatile flammable liquids are used or kept shall be protected by fire doors and shall be kept normally closed.

**Special  
Hazards**

**UNIFORM BUILDING CODE**  
**CHAPTER 14—REQUIREMENTS FOR**  
**GROUP I OCCUPANCIES**

**Group I  
Occupancies  
Defined**

Sec. 1401. Group I occupancies shall be: (See Table No. 5-A).

For occupancy separations see Table No. 5-B.

**Location on  
Property**

Sec. 1402. For fire-resistive protection of exterior walls and openings as determined by location on property, see Section 504.

**Light,  
Ventilation,  
and  
Sanitation**

Sec. 1403. (a) **Windows.** All living rooms, kitchens, and other rooms used for living, eating, or sleeping purposes shall be provided with windows with an area not less than twelve square feet (12 sq. ft.) nor one-eighth of the floor area of such room. Not less than one-half such area shall be operable.

The window area in bathrooms, water-closet compartments, and other similar rooms shall not be less than three square feet (3 sq. ft.), and may open on a vent shaft which has a least dimension open and unobstructed to the sky of not less than three feet (3').

Required windows shall open on a court, yard, or street either directly or through a porch with a minimum clear height of not less than seven feet (7'). Such porch shall be at least 50 per cent open on at least one side.

(b) **Room Sizes and Ceiling Heights.** Every room required to have windows by Subsection (a) shall have a ceiling height of not less than seven feet six inches (7' 6") in at least 50 per cent of its required area with no portion less than five feet (5') in height. Rooms used for living, eating, or sleeping purposes shall have an area of not less than eighty square feet (80 sq. ft.). Kitchens shall have an area of not less than fifty square feet (50 sq. ft.).

(c) **Sanitation.** There shall be no opening from a room in which a water closet is located into a room in which food is prepared or stored.

**Exceptions  
and  
Deviations**

Sec. 1404. Carports. A carport, open on two or more sides need not have a fire separation between the carport and the dwelling.

Windows between the carport and the dwelling shall not be operable. Doors shall be as required between a garage and a dwelling as set forth in Table No. 5-B.

CHAPTER 15—REQUIREMENTS FOR  
GROUP J OCCUPANCIES

Sec. 1501. Group J occupancies shall be: (See Table No. Group J Occupancies  
5-A). Defined

For occupancy separations see Table No. 5-B.

Sec. 1502. The floor area shall not exceed one thousand Height  
square feet (1000 sq. ft.). The height shall not exceed one story. and Area

When any building exceeds the limit specified in this Chapter Allowable  
it shall be classed in the occupancy group other than Group  
J that it most nearly resembles.

Sec. 1503. Private garages which are constructed in con- Light and  
junction with any Group H or I occupancies and which have Ventilation  
openings into such buildings shall be equipped with fixed louver-  
ed or screened openings or exhaust ventilation with exhaust open-  
ings located within six inches (6") of the floor. The clear area  
of the louvered opening or of the openings into the exhaust  
ducts shall be not less than sixty square inches (60 sq. in.) per  
car stored in such private garage. Under no circumstances  
shall a private garage have any opening directly into a room  
used for sleeping purposes.

Sec. 1504. Flammable liquids shall not be stored, handled or Special  
used in Group J occupancies unless such storage or handling Hazards  
shall comply with U. B. C. Standard No. 9-1.

**PART IV**  
**REQUIREMENTS BASED ON LOCATION IN**  
**FIRE ZONES**

**CHAPTER 16 — RESTRICTIONS IN FIRE ZONES**

## General

~~Sec. 1601. (a) Fire Zones defined. For the purpose of this Code, the entire city is hereby declared to be and is hereby established a Fire District and said Fire District shall be known and designated as Fire Zones One, Two and Three, and shall include such territory or portions of said City as obtained in an ordinance of said City entitled, "An Ordinance Creating and Establishing Fire Zones" whenever in this Code reference is made to any fire zone it shall be construed to mean one of the fire zones created by said ordinance.~~

(b) Buildings Located in More than One Fire Zone. A building or structure which is located partly in one fire zone and partly in another shall be considered to be in the more highly restricted fire zone when more than one-third of its total floor area is located in such zone.

(c) Moved Buildings. Any building or structure moved within or into any fire zone shall be made to comply with all the requirements for new buildings in that fire zone.

(d) Temporary Buildings. Temporary buildings such as reviewing stands and other miscellaneous structures conforming to the requirements of this Code, and sheds, canopies or fences used for the protection of the public around and in conjunction with construction work may be erected in Fire Zones No. 1 or 2 by special permit from the Building Official for a limited period of time, and such building or structure shall be completely removed upon the expiration of the time limit stated in such permit.

(e) Center Lines of Streets. For the purpose of this Chapter, the center line of an adjoining street or alley may be considered an adjacent property line. Distance shall be measured at right angles to the street or alley.

**Restrictions  
in Fire Zone  
No. 1**

Sec. 1602. (a) General. Buildings or structures hereafter erected, constructed, moved within or into Fire Zone No. 1 shall be only of Type I, II, III or IV construction and shall meet the requirements of this Section.

(b) Limitation of Types of Construction. Construction shall be of not less than one-hour fire-resistive or as permitted for Type III, H.T. construction. Exterior walls within twenty feet (20') of adjacent property lines shall be of not less than four-hour fire-resistive construction.

EXCEPTIONS: 1. One-story Type IV buildings not more than twenty-five hundred square feet (2,500 sq. ft.) in area need not be fire protected provided they are located twenty feet (20') or more from adjacent property lines.

2. Walls fronting on a street having a width of at least fifty feet (50') may be of incombustible construction with structural members fire protected as required in Part V.

(c) Openings. The sum of the widths of openings in exterior walls, except on street fronts, within twenty feet (20') of adjacent property lines or other buildings on the same property shall be limited to 50 per cent of the total length of the walls affected in each story. Openings in such walls and openings within fifty feet (50') of the opposite side of a street or public space and openings into courts which are less than twenty feet (20') in least dimension, shall be protected by Class "E" or "F" fire doors or windows.

(d) Alterations. No building of Type IV construction in excess of one thousand square feet (1,000 sq. ft.) in floor area nor any building of Type V construction already erected in Fire Zone No. 1 shall hereafter be altered, raised, enlarged, added to or moved, except as follows:

1. Such Type IV building may be made to conform to all the provisions of Subsections (b) and (c) of this Section.

2. Changes, alterations and repairs to the interior of such building or to the front thereof facing a public street may be made, provided such changes do not, in the opinion of the Building Official, increase the fire hazard of such building.

3. Roofs of such buildings may be covered only with a "Fire Retardant" roofing as specified in Section 2204.

4. Such building may be moved entirely outside the limits of Fire Zone No. 1.

5. Such building may be demolished.

(e) Occupancies Prohibited. No Group E, Division 1 occupancy having a floor area exceeding fifteen hundred square feet (1,500 sq. ft.) shall be permitted in Fire Zone No. 1. No Group E, Division 1 or 5 occupancies, shall be permitted in Fire Zone No. 1.

EXCEPTION: This shall not apply to dry cleaning plants not using highly flammable liquids.

Sec. 1603. (a) General. Buildings or structures hereafter erected, constructed, moved within or into Fire Zone No. 2 shall be one of the Types of Construction as defined in this Code and shall meet the requirements of this Section.

(b) Limitation of Types of Construction. Exterior walls of Type IV or V buildings or structures shall be of not less than one-hour fire-resistive construction. For fire-resistance and opening protection requirements for exterior walls, see Section 504. Roof covering shall be a "Fire-Retardant" roofing as specified in Section 2204. See Section 104(f) for repairs.

EXCEPTIONS: 1. Exterior walls of Type IV buildings not more than one thousand square feet (1,000 sq. ft.) in area are not required to be of one-hour fire-resistive construction if three feet (3') or more from adjacent property lines and six feet (6') or more from buildings on the same property.

2. Type IV buildings are not required to be one-hour fire-resistive if twenty feet (20') or more from adjacent property line.

3. Exterior walls fronting on a street having a width of at least thirty feet (30') may be of incombustible construction with all structural members fire-protected as required in Part V.

**Restrictions  
in Fire Zone  
No. 1  
(Cont'd.)**

**Restrictions  
in Fire Zone  
No. 2**

**Restrictions in Fire Zone No. 2 (Cont'd.)**

- (c) **Openings.** Openings except on street fronts which are less than ten feet (10') from adjacent property lines shall be protected by Class "E" or "F" fire doors or windows.
- (d) **Alterations.** No building of Type IV construction in excess of one thousand square feet (1000 sq. ft.) in floor area nor any building of Type V construction except as specified in Subsection (b) already erected in Fire Zone No. 2, shall hereafter be altered, raised, enlarged, added to or moved except as follows:
  1. Such building may be made to conform to the provisions of Subsection (b) of this Section.
  2. Changes, alterations and repairs to the interior of such building or to the front thereof facing a public street may be made provided such changes do not, in the opinion of the Building Official, increase the fire hazard of such building.
  3. Roofs of such buildings may be covered only with a "Fire Retardant" roofing as specified in Section 2204.
  4. Such building may be moved entirely outside the limits of Fire Zone No. 2.
  5. Such building may be demolished.
  6. Combustible finish on the outside of walls may be replaced by, or covered with exterior plaster as specified in Chapter 24.
- (e) **Occupancies Prohibited.** No Group E, Division 1 occupancy, having a floor area exceeding fifteen hundred square feet (1500 sq. ft.) shall be permitted in Fire Zone No. 2. No Group E, Division 1 or 5 occupancies, shall be permitted in Fire Zone No. 2.

**EXCEPTION:** This shall not apply to dry cleaning plants not using highly flammable liquids.

**Restrictions in Fire Zone No. 3**

**Sec. 1604. (a) General.** Any building or structure complying with the requirements of this Code may be erected, constructed, moved within or into Fire Zone No. 3.

**PART V  
REQUIREMENTS BASED ON TYPES  
OF CONSTRUCTION**

**CHAPTER 17—CLASSIFICATION OF ALL BUILDINGS  
BY TYPES OF CONSTRUCTION AND  
GENERAL REQUIREMENTS**

**Sec. 1701.** The requirements of Part V are minimum for the various Types of Construction and represent varying degrees of public safety and resistance to fire. Every building shall be classified by the Building Official into one of the Types of Construction set forth in Table No. 17-A. Any building which does not entirely conform to a Type of Construction set forth in Table No. 17-A shall be classified by the Building Official into a type having an equal or lesser degree of fire-resistance.

No building or portion thereof shall be required to conform to the details of a Type of Construction higher than that Type which meets the minimum requirements based on Occupancy (Part III) or Location in Fire Zone (Part IV) even though certain features of such building actually conform to a higher Type of Construction.

Where specific materials, types of construction or fire-resistive protection are required, such requirements shall be the minimum requirements and any materials, types of construction or fire-resistive protection which will afford equal or greater public safety or resistance to fire, as specified in this Code, may be used.

**Structural Frame**

**Sec. 1702.** The structural elements in Type I or II Buildings shall be of steel, iron, concrete, or masonry.

Walls and permanent partitions shall be of incombustible fire-resistive construction.

Structural elements of Type III buildings may be of any materials permitted by this Code.

Type III, One-Hour buildings shall be one-hour fire-resistive construction throughout.

Type III, Heavy Timber buildings, shall be Heavy Timber Construction. Exterior walls shall be of incombustible fire-resistive construction.

Type V buildings may be of any materials allowed by this Code.

Type V, One-Hour buildings, shall be of one-hour fire-resistive construction throughout.

**Usable Space Under Floors**

**Sec. 1703.** Usable space under the first floor shall be enclosed except in Group I and J occupancies and such enclosure when constructed of metal or wood shall be protected on the side of the usable space as required for one-hour fire-resistive construction. Doors shall be self-closing incombustible or solid core wood not less than one and three-eighths inches (1 3/8") in thickness.

**Roof Coverings**

**Sec. 1704.** Roof covering shall be "Fire-Retardant" except in Type V buildings housing Groups H, I, or J occupancies it may be "Ordinary," as specified in Section 2204.



TABLE NO. 17-A—TYPES OF CONSTRUCTION—FIRE-RESISTIVE REQUIREMENTS  
(In Hours)  
(For Details see Chapters under Occupancy and Types of Construction)

MATERIALS OF CONSTRUCTION	I		II		III		IV		V	
	Incombustible	Incombustible	1-Hr. or H.T.	N	Combustible		Incombustible		Combustible	
					1-Hour	N	1-Hour	N		
Ext. Bearing Walls	4 Sec. 1803 (a)	4 Sec. 1903 (a)	4 Sec. 2003 (a)	4 Sec. 2003 (a)	1	N	1	N	1	N
Int. Bearing Walls	3	1	1	N	1	N	1	N	1	N
Ext. Non-Bearing Walls	4 Sec. 1803 (a)	4 Sec. 1903 (a)	4 Sec. 2003 (a)	4	1	N	1	N	1	N
Structural Frame	3	2	1 or H.T.	N	1	N	1	N	1	N
Partitions—Perm.	1	1	1 or H.T.	N	1	N	1	N	1	N
Vertical Openings	2	2	1 or H.T.	1	1	1	1	1	1 Sec. 2203	1 Sec. 2203
Floors	2	1	1 or H.T.	N	1	N	1	N	1	N
Roofs	2 Sec. 1806	1 Sec. 1906	1 or H.T.	N	1	N	1 Sec. 2106	N	1	N
Exterior Doors and Windows	Sec. 1803 (b)	Sec. 1903 (b)	Sec. 2003 (b)	N	N	N	N	N	N	N
Inner Court Walls	3 Sec. 1803 (a)	2 Sec. 1903 (a)	1 or H.T.	1	1	N	1	N	1	N

N—No general requirements for fire resistance. H.T.—Heavy Timber.

NOTE: All references to section numbers apply to the 1952 Edition of the Uniform Building Code, Volume I.

Skylights shall be constructed as required in Chapter 34. Penthouses shall be constructed as required in Chapter 36.

Sec. 1705. (a). Partitions. Regardless of the fire-resistive requirements for permanent partitions, temporary partitions dividing portions of stores, offices or similar places occupied by one tenant only may be constructed of wood panels or similar light construction up to three-fourths the height of the room in which placed; when more than three-fourths the height of the room, such partitions shall have not less than the upper one-fourth of the partition constructed of glass.

(b) Show Windows and Cases. Show window frames, aprons, show cases and other appurtenances on the first floor of stores or other similar occupancies may be of wood or unprotected steel or iron.

(c) Trim. Trim, picture molds, chair rails, baseboards, hand rails, show window backing may be of wood. Unprotected wood doors may be used except where fire-resistive doors are required.

(d) Exterior Loading Platforms. Loading platforms may be of incombustible construction or heavy timber construction with wood floors not less than one and five-eighths inches (1 5/8") thick. Such wood construction shall not be carried through the exterior walls of any Type I building.

(e) Insulating Boards. Combustible insulating boards may be used under finished flooring.

Sec. 1706. (a). Building Paper. Asphalt-saturated felt free from holes and breaks and weighing not less than 14 pounds per hundred square feet (100 sq. ft.) or approved waterproof paper, shall be applied over studs or sheathing of all exterior walls. Such felt or paper shall be applied weatherboard fashion, lapped not less than two inches (2") at horizontal joints and not less than six inches (6") at vertical joints.

Building paper may be omitted in the following cases:

1. When exterior covering is of approved weatherproof panels.
2. In back-plastered construction.
3. When there is no human occupancy.
4. Over water-repellent panel sheathing.

(b) Flashing. Exterior openings exposed to the weather shall be flashed with rust-resistive metal or other approved flashing in such a manner as to make them waterproof.

Sec. 1707. All members carrying masonry in buildings over one story in height shall be fire-protected with not less than one-hour fire-protection.

EXCEPTION: Fire protection may be omitted from the bottom flange of lintels that are not a part of the structural frame.

Sec. 1708. Parapet walls not less than thirty inches (30") in height shall be provided on exterior walls of buildings when the walls are required to be fire-resistant due to their location on property as set forth in Table No. 5-A, and inner court enclosures.

Roof  
Coverings  
(Cont'd.)  
Unprotected  
Materials  
Allowed

Weather  
Protection

Members  
Carrying  
Masonry

Parapets

**Parapets (Cont'd.)**

A parapet wall shall have the same fire resistance as required for the wall itself.

**EXCEPTIONS:** Parapets shall not be required on the following walls:

1. When the roof construction is entirely incombustible.
2. When the roof has an angle of more than 20 degrees with horizontal.

Sec. 1709. Except in Type V construction, cornices and similar appendages shall be constructed of substantial incombustible materials and when over public property.

**PART VI  
DETAILED REQUIREMENTS**

**CHAPTER 18—MATERIALS AND  
GENERAL CONSTRUCTION**

Sec. 1801. (a) Grade. All lumber shall be of the grade Lumber specified in U. B. C. Standard No. 25-1.

Studding, posts, joists, rafters, planks, beams, stringers, and similar load-bearing members shall be not less in grade than 1100/ or No. 2 Douglas fir or Southern pine or comparable grades in other species.

(b) Sizes. Surfaced lumber may be used wherever a minimum nominal size is specified.

Sec. 1802. Concrete shall be in the proportions of one sack of portland cement to not more than six and one-half cubic feet (6½ cu. ft.) of sand and rock measured before the sand and rock are combined. No more than seven and one-half gallons of water shall be used for each sack of cement.

Sec. 1803. Reinforcing steel for concrete or masonry shall be standard billet bars or cold-drawn wire mesh.

Sec. 1804. Mortar shall consist of cement, lime, and sand in the proportions set forth in Table No. 18-A.

Sec. 1805. Masonry units shall conform to the specifications of U. B. C. Standard No. 24-1.

Sec. 1806. Nailing of members shall be as set forth in Table No. 18-B.

Sec. 1807. All shafts, ducts, chutes and other vertical openings shall have one-hour fire-resistive enclosing walls when they exceed nine square feet (9 sq. ft.) in area. All other shafts shall be lined with sheet metal having lock jointed or riveted seams and joints.

Combustible material of partitions and floors through which the ducts pass shall be kept at least three inches (3") from the metal lining or be protected by not less than three-eighths inch (¾") of plaster or one-fourth inch (¼") of asbestos or plaster-board. Openings between any ducts and the floor construction

**TABLE NO. 18-A — MORTAR PROPORTIONS OF  
CEMENTITIOUS MATERIALS**

(by volume)

Type	Minimum Portland Cement	Maximum Hydrated Lime or Lime Putty	Masonry Cement		Maximum Dry Loose Aggregate
			Type I	Type II	
Type A-1	1 part	¼ part	.....	.....	3 parts
Type A-2	1 part	½ part	.....	.....	4½ pts.
Type B	1 part	1 part	.....	.....	6 parts
Type B	.....	.....	.....	.....	3 parts

UNIFORM BUILDING CODE  
TABLE NO. 18-B—NUMBER OF NAILS FOR  
CONNECTING WOOD MEMBERS

CONNECTION	NAILS
Joist to sill or girder—toe nail	Box or Common 2-16d
Bridging to joist—toe nail	2-8d
1 X 6 sub-floor to joist—face nail	2-8d
2-inch sub-floor to joist or girder	2-16d
Plate to joist or blocking	16d-16" o/c
Stud to plate—end nail	2-16d
Stud to plate—toe nail	3-16d or 4-8d
Top plates—spike together	16d-24" o/c
—laps and intersections	2-16d
Ceiling joists—to plate—toe nail	2-16d
—laps over partitions	3-16d
—to parallel alternate rafters	3-16d
Rafter to plate	3-16d
Continuous 1-inch brace to stud	2-8d
2-inch cut-in bracing to stud	2-16d
1-inch sheathing to bearing	2-8d
Corner studs and angles	16-30" o/c
Plywood	6d { 6" c/c edges 12" c/c interior

through which they pass shall be filled with mortar or other incombustible material supported by wire baskets that prevent the passage of fire.

All doors opening into such vertical shafts shall be of metal or shall be covered on the shaft side by not less than one-fourth inch (1/4") of asbestos and not less than 26 U.S. gauge metal returned around all edges and well fastened to the door. Windows in such shafts shall be wire glass and metal frames and sash or such frame and sash may be of wood entirely clad with metal of not less than 26 U. S. gauge.

CHAPTER 19—FOUNDATIONS

**Sec. 1901. Footings and foundations shall be constructed of masonry or concrete and shall in all cases extend below the frost line.** The base areas of all footings and foundations shall be as specified in Sections 1903 and 1904. Mortar used in foundation walls and footings shall be type A-1 or A-2 mortar as specified in Section 1804.

Foundations shall be built upon natural solid ground where possible. Loam or soil containing organic matter shall not be used to support buildings exceeding one story in height. Where solid natural ground does not occur at the foundation depth, such foundations shall be extended down to natural solid ground or piers shall be used.

**Sec. 1902. (a) Wall Footings.** All exterior walls and interior bearing walls shall be supported on continuous solid masonry or concrete footings. Foundation walls shall extend at least six inches (6") above the finished grade adjacent to the wall at all points.

**EXCEPTIONS:** 1. Interior stud bearing walls in one-story buildings may be supported on piers.

2. A one-story building which does not exceed four hundred square feet (400 sq. ft.) in area, including additions, may be constructed without a masonry or concrete foundation if the walls are supported on a wood mudsill or on piers.

Foundations for all buildings where the surface of the ground slopes more than one foot (1') in ten feet (10') shall be level or shall be stepped so that both top and bottom of such foundations are level.

(b) **Mudsills.** Mudsills shall be all-heart cedar, all-heart cypress or Foundation Grade redwood, or any species of wood if treated under pressure with an approved preservative.

Mudsills shall be bolted to the foundation or foundation wall with not less than one-half inch (1/2") bolts, embedded at least seven inches (7") into the masonry and spaced not more than six feet (6') apart.

TABLE NO. 19-A—MINIMUM FOUNDATION REQUIREMENTS FOR STUD BEARING WALLS

Number of Stories	Thickness of Foundation Wall In Inches		Width of Footing In Inches	Thickness of Footing In Inches	Depth of Foundation Below Natural Surface of Ground and Finish Grade In Inches
	Concrete	Unit Masonry			
1	6	6	12	6	12
2	8	8	15	7	18
3	10	10	18	8	24

Where unusual conditions or frost conditions are found, footings and foundations shall be as required in Section 2805 (a), U.R.C. Vol. I. Note: The ground under the floor may be excavated to the elevation of the top of the footing.

Table 19-A

Table 19-B—MINIMUM FOUNDATION REQUIREMENTS FOR MASONRY OR CONCRETE WALLS

Number of Stories	Thickness of Foundation Wall in Inches	Width of Footing in Inches	Thickness of Footing in Inches	Depth of Foundation Below Natural Surface of Ground and Finish Grade in Inches
1	8	18	8	18
2	10	24	10	24

Sec. 1903. Foundations for wood or steel stud walls shall meet the requirements set forth in Table No. 19-A.

Sec. 1904. Foundations for masonry or concrete walls shall meet the requirements set forth in Table No. 19-B.

#### Foundations for Wood or Steel Stud Walls

Sec. 1905. (a) **Ventilation.** The space between bottom of floor joists and the ground of any building (except such space as is occupied by a basement or cellar) shall be provided with ventilating openings through foundation walls or exterior walls. Openings shall be covered with a corrosion-resistant wire mesh with openings in such mesh not greater than one-half inch ( $\frac{1}{2}$ " ) nor less than one-fourth inch ( $\frac{1}{4}$ " ) in any dimension. The minimum total area of ventilating openings shall be proportioned on the basis of two square feet (2 sq. ft.) for each twenty-five linear feet (25 lin. ft.) of major fraction thereof of exterior wall. Such openings need not be placed in the front of the building.

(b) **Underfloor Space.** Minimum clearance between bottom of floor joists and the ground beneath shall be eighteen inches (18").

#### CHAPTER 20—WALLS

#### Wood Stud Walls and Partitions

Sec. 2001. (a) **Size and Height.** Exterior stud walls and bearing partitions for buildings of two stories or less shall consist of not less than two-inch by four-inch (2"x4") studs; for buildings of three stories, the studding shall be not less than three-inch by four-inch (3"x4") or two-inch by six-inch (2"x6") to the bottom of the second floor joists and two-inch by four-inch (2"x4") for the two upper stories. Maximum allowable height of two-inch by four-inch (2"x4") and three-inch by four-inch (3"x4") stud framing shall be fourteen feet (14') and of two-inch by six-inch (2"x6") stud framing shall be twenty feet (20') unless the wall is supported laterally by adequate framing. No studding shall be spaced more than sixteen inches (16") on centers, except that in lieu of this requirement the studs and plates may be designed as a system of columns and beams, provided structural grade material is used, or such walls may be constructed of not less than four-inch by four-inch (4"x4") posts spaced not more than five feet (5') on centers or of larger members designed as required in this Chapter, or may be of post and beam framing with plank sheathing not less than one and one-half inches (1½") thick or may be of laminated construction not less than four inches (4") nominal in thickness with the structural assembly properly designed to support all loads.

One-story buildings having a total floor area of not more than four hundred square feet (400 sq. ft.) may have exterior walls of vertical one-inch (1") boards and battens without studs.

(b) **Plates.** In bearing partitions the top plate shall be doubled and lapped at each intersection with walls or partitions. Joints in the upper and lower members of the top plate shall be staggered not less than four feet (4').

(c) **Bridging.** All stud partitions or walls over ten feet (10') in height shall have herringbone bridging, not less than two inches (2") in thickness and of the same width as the stud, fitted snugly and spiked into the studs at mid-height of stud, or other means for giving equal lateral support to the studs. Herringbone bridging may serve as fire-stopping as required in Section 2002.

(d) **Corners and Bracing.** Angles at corners where stud walls or partitions meet shall be framed solid so that no lath can extend from one room to another. All exterior and main cross stud partitions shall be effectively and thoroughly braced or sheathed with approved panels adequately nailed along all edges.

(e) **Pipes in Walls.** Where a partition containing such piping runs parallel to the floor joists, the joists underneath such partitions shall be doubled and spaced to permit the passage of such pipes and shall be bridged with solid bridging. Where plumbing, heating or other pipes are placed in or partly in a partition, necessitating the cutting of the soles or plates, a metal tie not less than one-eighth inch ( $\frac{1}{8}$ " ) thick and one and one-half inches (1½") wide shall be fastened to the plate across and to each side of the opening with not less than four 16d nails.

(f) **Chimney Space.** Wood lath, furring or framing shall be placed not less than two inches (2") from any chimney and not less than four inches (4") from the back of any fireplace.

TABLE NO. 20-A—MAXIMUM ALLOWABLE SPANS FOR LINTELS

Size Lintel	Supporting One Floor, Roof and Ceiling	Supporting Roof and Ceiling Only
4" x 4"	3'—0"	4'—0"
2" x 6"	3'—0"	4'—0"
4" x 6"	5'—0"	6'—0"
2" x 8"	4'—0"	6'—0"
4" x 8"	7'—0"	8'—0"
2" x 10"	5'—0"	7'—0"
4" x 10"	9'—0"	10'—0"
2" x 12"	6'—0"	10'—0"
4" x 12"	9'—0"	12'—0"

(g) Underpinning. Underpinning shall be not less in size than the studing above, and when exceeding four feet (4') in height shall be of the size required for an additional story.

(h) Headers. All wall openings four feet (4') wide or less shall be provided with double headers not less than two inches (2") thick, placed on edge, securely fastened together, and such headers shall have two-inch (2") solid bearing to the floor or bottom plate. All openings more than four feet (4') wide shall be provided with lintels as set forth in Table No. 20-A which shall have not less than two-inch (2") solid bearing at each end to the floor or bottom plate.

(i) Interior Partitions. Interior partitions shall be constructed, framed, and firestopped as specified for exterior walls, except that interior non-bearing partitions may have a single top plate. In Group I occupancies, non-bearing partitions two-inch by three-inch (2"x3") studs sixteen inches (16") on centers may be used.

All wood frame walls covered with plaster, tile, or substitutes, which are subject to water splash shall be protected with 15 pound Asphalt Saturated Felt.

Sec. 2002. (a) Fire-Stopping. Where required, fire-stopping shall be provided to cut off all concealed draft openings (both vertical and horizontal), and form an effective fire barrier between stories, and between a top story and the roof space. It shall be used in specific locations, as follows:

1. In all stud walls and partitions, including furrowed space so placed that the maximum dimension of any concealed space is not over eight feet (8').
2. In furrowed masonry walls.
3. Between stair stringers at least once in the middle portion of each run, at top and bottom, and between studs, along and in line with run of stair adjoining such partition.
4. Around top, bottom, sides and ends of sliding door pockets.
5. In spaces between chimneys and wood framing, loose combustible materials shall be placed in combustible supports, or a metal collar tightly fitted to the chimney and nailed to the wood framing may be used.
6. Any other locations not specifically mentioned above, such as holes for pipes, shafting, behind furring strips, and similar places, which could afford a passage for flames.

(b) Wood Fire-Stops. Fire-stops when of wood shall be two-inch (2") nominal thickness.

Sec. 2003. (a) Height. Masonry walls shall be of the height and thickness set forth in Table No. 20-B, except that the height may be increased if the thickness is increased in proportion.

(b) Chases. Chases in masonry walls shall not be deeper than one-third the wall thickness nor longer than four feet (4') horizontally and shall have at least eight inches (8") of masonry in back of the chases and between chases and jambs of openings.

(c) Supported Members. Beams, joists, girders or other concentrated loads supported by a wall or pier shall have bearing at least three inches (3") in length upon solid masonry not less than four inches (4") thick or upon a metal bearing plate, or upon a continuous reinforced masonry member projecting not less than three inches (3") from the face of the wall.

(d) Support. No masonry shall be supported on combustible construction.

(e) Anchorage. Masonry walls that meet or intersect shall be securely bonded or anchored.

Wood joists or wood beams shall be securely anchored to masonry walls at intervals not exceeding four feet (4'), by metal anchors having a minimum cross section of twenty-five hundredths of a square inch (0.25 sq. in.) and at least sixteen inches (16") long, securely fastened to the joists or beams at one end of the anchor by means of a single bolt or other approved method, and the other end of the anchor in the form of a T securely built into the masonry not less than three and one-half inches (3½") with the T vertical.

Where joists run parallel to walls said anchors shall be carried beyond the third joist and shall be solid bridged to the wall. The ends of all wooden beams or joists entering masonry walls shall be cut to a bevel of at least three inches (3").

Structural members framing into or supported by walls or columns shall be adequately anchored.

(f) Piers. The height of isolated piers shall not exceed 10 times their least lateral dimension. Every pier whose width is less than three times its thickness shall be designed and constructed as required for columns if such pier is a structural member.

TABLE NO. 20-B—MINIMUM THICKNESS OF MASONRY AND CONCRETE WALLS

Type of Masonry	Maximum Height (Feet)	Nominal Minimum Thickness (Inches)	Nominal Thickness (Inches) One-Story Dwellings and Private Garages*
Plain Solid	12	8	6
Grouted Brick	14	7	6
Reinforced Brick	15	7	6
Hollow Unit	12	8	8
Cavity Wall	10	10	8
Stone (Ashlar)	10	12	8
Concrete	14	7	6
Interior Non-Bearing	24	2	2

\* Nine feet maximum height and 6 feet for gables.

**Masonry Walls (Cont'd.)**

(g) **Openings.** The masonry above openings shall be supported by well buttressed arches or adequately anchored lintels of metal, reinforced masonry, or reinforced concrete, which shall have a minimum bearing of four inches (4"). Timber centering for arches may remain in place provided the opening is not over four feet (4') wide and the timber at each end bears on the wall for a distance not exceeding two inches (2").

(h) **Returns.** Masonry walls shall be returned at the ends by piers at least four feet (4') in width.

**Plain Solid Masonry**

**Sec. 2004. (a) General.** Plain solid masonry is that form of construction made with brick, solid load-bearing concrete masonry units, or stone in which the units are all laid and set in mortar placed with a trowel.

(b) **Construction.** Plain solid masonry shall be laid with full header courses at least every sixth course or sixteen inches (16") clear vertically, or there shall be at least one full header in every seventy-two square inches (72 sq. in.) of wall surface. Brick shall be laid with full shovels mortar joints and all headed, and wall joints shall be solidly filled with mortar. At the time of laying, clay or shale units shall be clean and damp.

(c) **Corbelling.** Corbels may be built only into solid masonry walls twelve inches (12") or more in thickness. The projection for each course in such corbel shall not exceed one inch (1") and the maximum projection shall not exceed one-third the total thickness of the wall when used to support structural members and not more than six inches (6") when used to support a chimney built into the wall. The top course of all corbels shall be a header course.

**Grouted Brick Masonry**

**Sec. 2005. (a) General.** Grouted brick masonry is that form of construction made with brick in which interior joints of the masonry are filled by pouring grout therein as the work progresses.

(b) **Construction.** All brick in the outer tiers shall be laid with full head and bed joints of Type A-1 or A-2 mortar and all interior joints shall be filled with grout. Brick in the interior tiers shall be placed or floated in grout poured between the two outer tiers. One of the outer tiers may be carried up not more than three courses before grouting but the other shall be carried up not more than one course above the grout. Each pour of grout shall be stopped at least one and one-half inches (1½") below the top and properly stirred. The longitudinal vertical joints shall be not less than three-fourths inch (¾") wide. Head or end joints shall be not less than one-half inch (½") wide. Bonding headers shall not be used.

**Reinforced Brick Masonry**

**Sec. 2006. (a) Construction.** Only grouted brick masonry shall be used and such masonry shall conform to all of the construction requirements specified in Section 2005.

The thickness of grout or mortar between brick and steel shall be not less than one-fourth inch (¼"), except that one-fourth-inch (¼") bars may be laid in one-half-inch (½") horizontal mortar joints. Vertical reinforcing shall be accurately placed and held in position before brickwork is started. Horizontal reinforcement may be placed as the brickwork progresses. In addition to the minimum required reinforcement, at least one one-half-inch (½") bar or equivalent shall be placed on all

sides of every opening which exceeds twenty-four inches (24") in either dimension. The bars shall extend twenty-four inches (24") beyond the corners of the opening.

(b) **Design.** In reinforced masonry walls, the minimum area of reinforcement shall be not less than 0.002 times the cross-sectional area of the wall, not more than two-thirds of which may be used in either direction. A lesser amount of reinforcement may be used to resist tensile stresses if the masonry is designed under limitations and stresses specified for unreinforced masonry. No required vertical reinforcement shall be less than three-eighths inch (¾") in diameter.

**Sec. 2007. (a) General.** Hollow unit masonry is that type of construction made with structural clay tile or hollow concrete masonry units in which the units are all laid and set in mortar. Types A-1, A-2, or B mortar shall be used in such construction except that interior non-bearing masonry of hollow units may be laid up in gypsum mortar.

(b) **Construction.** Hollow masonry units shall have full mortar coverage of the face shells in both horizontal and vertical joints. Where two or more hollow units are used to make up the thickness of the wall, the stretcher courses shall be bonded at vertical intervals not exceeding thirty-four inches (34") by lapping at least three and three-fourths inches (3¾") over the unit below, or by lapping with units at least 50 per cent greater in thickness than the units below at vertical intervals not exceeding seventeen inches (17"). Where walls of hollow masonry units are decreased in thickness a course of solid masonry not less than four inches (4") in height shall be interposed between the wall section below such point and that next above, or special units or construction shall be used to adequately transmit the loads from the shells above to those below.

**Sec. 2008. (a) General.** Cavity wall masonry is that type of construction made with brick, structural clay tile or hollow concrete masonry units or any combination of such units in which facing and backing are completely separated except for the metal ties which serve as bonding. Type A-1, A-2, or B mortar shall be used in cavity wall masonry except that Type A-1 mortar shall be used in cavity walls having a nominal thickness of eight inches (8").

Cavity walls eight inches (8") in thickness shall not exceed twenty-five feet (25) in height, and in no case shall any cavity exceed thirty-five feet (35) in height.

(b) **Construction.** In cavity walls neither the facing nor the backing shall be less than four inches (4") in thickness and three inches (3") in width. The facing and backing of cavity walls shall be securely tied together with suitable non-corrosive bonding ties of adequate strength. There shall be at least one three-sixteenths inch (3/16") diameter steel rod or equivalent metal tie for each three square feet (3 sq. ft.) of wall surface placed in the horizontal mortar joints of the facing and backing. Where hollow masonry units are laid with cells vertical, rectangular ties shall be used. The ends of ties shall be bent to 90 degree angles to provide hooks not less than two inches (2") long. Additional bonding ties shall be placed around the perimeter of all openings and shall be spaced not more than three feet (3') apart and within one foot (1') of the opening.

**Reinforced Brick Masonry (Cont'd.)**

**Hollow Unit Masonry**

**Cavity Wall Masonry**

## Stone Masonry

**Sec. 2009.** (a) General. Stone masonry is that form of construction made with natural or cast stone in which the units are laid and set in mortar, with all joints thoroughly filled. Walls of rubble stone masonry shall be at least four inches (4") greater in thickness than specified for ashlar stone masonry in Section 2003.

(b) Construction. All ashlar stone masonry shall be so laid that there is at least one bond stone extending through the wall for every five stretchers. Such bond stones shall be uniformly distributed throughout the wall.

## Faced Walls

**Sec. 2010.** (a) Material. Facing shall be not less than two inches (2") net thickness, and in no case less in thickness than one-eighth the height of the unit.

(b) Thickness. Faced walls shall be not less in thickness than is required for masonry walls of the weakest of the combinations of units and mortars of which the wall is composed. Where bonded to the backing the facing may be considered part of the wall thickness.

(c) Bond. Ashlar facing of either natural or cast stone shall have at least 20 per cent of the superficial area extending not less than three and three-fourths inches (3 $\frac{3}{4}$ ") into the backing to form bond stones, which shall be uniformly distributed throughout the wall.

Every projecting stone, and, except when alternate courses are full bond courses, every stone not a bond stone, shall be securely anchored to the backing with substantial noncorrodible metal anchors with a cross section of not less than two-tenths of a square inch (0.2 sq. in.). There shall be at least one anchor to each stone and not less than two anchors for each stone more than two feet (2') in length and three square feet (3 sq. ft.) in superficial area. Facing stones not over twelve square feet (12 sq. ft.) in area shall have at least one anchor to each four square feet (4 sq. ft.) of superficial face area.

When walls of structural clay tile or hollow concrete masonry units are faced with hollow units, the facing units shall be bonded to the backing.

Facing of grouted masonry construction need be neither bonded nor anchored, provided the bond of grout to facing unit will develop a strength in shear of not less than 50 pounds per square inch.

**Sec. 2011.** (a) General. Steel studs, steel joists, and other supports used in the structural frame of light steel construction, shall be light weight rolled sections, or sections made of commonly accepted or specially formed light gauge flat rolled sheets; or a combination of both used alone or in combination with other materials of construction.

(b) Thickness. The following are the minimum thicknesses of metal permitted for various members of the structural frame of light steel construction:

Bearing studs, floor and roof framing members—16 gauge

Roof decks supported on ribs—20 gauge

All connections shall be riveted, bolted or welded. All steel work, including welds and connections, except where entirely encased in concrete, shall be thoroughly cleaned and given one

coat of acceptable metal protection well worked into the joints and open spaces.

(c) Construction Details. Steel studs or other steel supporting members used in the structural frame of light steel construction and steel joists shall be connected to the supporting beams, girders, foundations or other steel supporting members by arc or resistance welding, riveting, bolting or other approved methods. All such welds in light steel construction shall be made on two sides or two edges of each bearing in such a manner as to resist effectively the stresses developed. Resistance welding shall develop the full strength of the member welded.

Steel floor and roof members supported on masonry and reinforced concrete shall have end bearings at least four inches (4") in length and the ends of such members resting on masonry or reinforced concrete shall be provided with approved joist anchors thoroughly embedded therein.

Bearing plates, when required by design, shall be securely welded, bolted or riveted to such floor and roof members, studs or other supporting members.

Bearing studs or other vertical bearing members shall rest on a plate having an effective width equal to the depth of such member and having a thickness of not less than 14 gauge but in no case less than that of the vertical member resting thereon unless each such vertical bearing member is thoroughly embedded in the concrete foundation. Such plates shall be anchored to the foundation.

When bearing studs or other vertical bearing members are spliced, the full strength of such members shall be developed in the splice.

Where studs do not continue full length from one story through the next story above, a cap plate or steel member shall be provided on top of the lower story studs or a sill plate on the upper story. Such cap plate or sill plate shall be of sufficient strength to distribute adequately the loads from the upper story studs to the lower story studs.

**Sec. 2012.** (a) Limitations. Veneer shall not be assumed to add to the strength of any wall.

(b) Height. Exterior veneer shall not be attached to wood at any point more than twenty feet (20') above the adjacent ground elevation.

(c) Exceptions. The limitations in this Section shall not apply to interior veneer of units five-eighths inch ( $\frac{5}{8}$ ") or less in thickness.

(d) Vertical Loads. No veneer shall support any vertical load other than the dead load of the veneer above. Veneer above openings shall be supported upon lintels of incombustible material.

(e) Anchorage. Masonry veneer shall be attached to the supporting wall with corrosion resistant metal ties, or other approved method, designed to resist a horizontal force equal to twice the weight of the attached veneer.

Veneer ties, if strand wire, shall be not less in thickness than No. 6 W. and M. gauge wire and shall have a hook embedded in the mortar joint, or if sheet metal, not less than 22 U.S. gauge corrugated. Each tie shall support not more

## Veneered Walls

## Steel Stud Walls (Cont'd.)

Veneered Walls (Cont'd.)

than two square feet (2 sq. ft.) of wall area and shall be spaced not more than twenty-four inches (24") on center horizontally.

In lieu of such wire ties, an approved method of grouting the veneer to a paper-backed reinforcement attached direct to the studs may be used.

(f) Support. The weight of masonry veneer shall be supported upon footings or other incombustible structural supports spaced not over twelve feet (12') vertically above a point twenty feet (20') above the adjacent ground elevation.

EXCEPTION: The weight of masonry veneer attached to wood frame walls shall be supported entirely upon footings.

Wall Coverings

Sec. 2013. (a) General. Exterior stud walls shall be covered on the outside with the materials and in the manner specified in this Section.

(b) Weatherboarding. Studs or sheathing shall be covered on the outside face with one layer of building paper. Weatherboarding, when in place, shall have an average thickness of not less than five-eighths inch (5/8") and a minimum thickness of not less than three-eighths inch (3/8"). Such weatherboarding shall be placed over the paper and shall be securely nailed to the studding with not less than two nails to each stud in each piece of such weatherboarding. Horizontal joints in the weatherboarding shall be tongued and grooved or shiplapped joints, or such weatherboarding shall be laid shingle fashion and lapped not less than one-half inch (1/2"). Bevel siding shall have a minimum thickness measured at the butt section of not less than seven-sixteenths inch (7/16") and a lip thickness of not less than three-sixteenths inch (3/16"). Siding of lesser dimensions may be used, provided the outside face of the stud is first covered with sheathing.

(c) Plywood. Where plywood is used for covering the exterior of outside walls it shall be of the exterior type not less than three-eighths inch (3/8") thick. Joints shall be backed solid with nailing pieces not less than two inches (2") wide.

(d) Shingles or Shakes. Shingles or shakes may be used for exterior wall covering provided the frame of the structure is covered with building paper. The thickness of shingles or shakes between wood nailing boards shall be not less than three-eighths inch (3/8").

(e) Weather-Resistant Metal. Treated or non-corrosive metal may be used on stud walls without sheathing when approved by the Building Official. Contact between dissimilar metals shall be broken by bituminous compound or building paper. Nailing strips shall be placed in such manner as to permit the metal to be nailed at vertical intervals of not more than four feet (4').

(f) Exterior Plastering. See Chapter 24.

(g) Masonry Veneer. See Section 2012.

(h) Galvanized Iron. Galvanized iron not less than 28 gauge may be used on stud walls without sheathing. Walls shall be effectively braced and nailing strips shall be placed in such manner as to permit the metal to be nailed at vertical intervals of not more than four feet (4').

(1) Sheathing. Stud wall buildings three stories in height shall have the exterior walls covered with a solid sheathing as specified in this Subsection.

Sheathing where required for exterior walls shall be applied solidly over the wall surface and shall be one or more of the following materials:

Wood not less than five-eighths inch (5/8") thick.

Fiberboard not less than seven-sixteenths inch (7/16") thick complying with U. B. C. Standard No. 22-1.

Gypsum sheathing not less than one-half inch (1/2") thick complying with U. B. C. Standard No. 22-2.

Plywood not less than five-sixteenths inch (5/16") thick complying with U. B. C. Standard No. 22-3.

Table with multiple columns and rows, mostly illegible due to low resolution and bleed-through from the reverse side.



CHAPTER 21—FLOORS

Wood Floors

Sec. 2101. (a) Girders. Girders supporting first floor joists in residence buildings shall be not less than four inches by four inches (4" x 4") for spans of five feet (5') or less, or not less than four inches by six inches (4" x 6") (placed on edge) for spans not more than seven feet (7').

(b) Joists. Table No. 21-A gives the maximum allowable spans for floor joists of a grade not less than 1100/ or No. 2 Douglas fir or Southern pine or comparable grades in other species, surfaced four sides to U. B. C. Standard No. 25-1 sizes

TABLE NO. 21-A—ALLOWABLE SPANS FOR FLOOR JOISTS

SIZE (Inches)	SPACING TO CENTER (Inches)	MAXIMUM ALLOWABLE SPAN (Feet and Inches)	
		Plastered Ceiling Below	Without Plastered Ceiling Below
2 x 6	12	10-5	11-6
	16	9-1	10-0
	24	7-8	8-2
2 x 8	12	13-10	15-2
	16	12-1	13-3
	24	9-11	10-11
2 x 10	12	17-5	19-1
	16	15-2	16-8
	24	12-6	13-9
2 x 12	12	20-11	22-11
	16	18-3	20-1
	24	15-1	16-7
2 x 14	12	24-4	26-7
	16	21-4	23-5
	24	17-8	19-5
3 x 6	12	12-4	14-5
	16	11-3	12-7
	24	9-10	10-4
3 x 8	12	16-4	18-11
	16	14-11	16-7
	24	13-1	13-9
3 x 10	12	20-6	23-7
	16	18-10	20-10
	24	16-5	17-3
3 x 12	12	24-6	28-2
	16	22-7	24-11
	24	20-0	20-9
3 x 14	12	28-7	30-6
	16	26-4	28-3
	24	23-1	24-2

TABLE NO. 21-B—MINIMUM THICKNESSES OF PLYWOOD

PLYWOOD THICKNESS (inches)	LIVE LOADS (lbs. per sq. ft.)	
	20	40
5/16	18 inch span	12 inch span
3/8	22 inch span	16 inch span
1/2	27 inch span	21 inch span
5/8	33 inch span	24 inch span

and based on live load of 40 pounds per square foot uniformly distributed.

Joists of other grades, other woods and other sizes may be used, in which case they shall not be stressed to exceed the maximum allowable fiber stress.

All joists, beams and girders shall be framed away at least two inches (2") from all flues and chimneys and at least four inches (4") from the back of any fireplace.

Solid blocking not less than two inches (2") nominal in thickness and full depth of the joists shall be provided in the following places: over all bearing walls, bearing partitions and around all stairways or other vertical openings; and over all girders, except when joists are not ceiled on the underside thereof. Such solid blocking shall serve as the required bridging.

(b) Plywood Flooring. Where used as flooring, plywood shall be of the minimum thicknesses set forth in Table No. 21-B.

Sec. 2102. (a) Joists. Steel joists shall be securely cross bridged at intervals not to exceed eight feet (8') along the joist length. The lateral unsupported length of the top chord of any steel joist shall not exceed 40 times the width of the compression flange.

(b) Cellular Floors. Cellular steel floor construction shall consist of sheet or strip steel formed into an integrated system of parallel steel beams which combine the function of load-bearing members and a continuous deck spanning between main supporting girders, beams, or walls.

The thickness of the steel used in the manufacture of steel joists shall be not less than U. S. Standard gauge No. 18.

(c) Concrete Floors. Concrete slab floors shall be not less than two inches (2") thick. Topping when poured monolithic with the slab may be included as a structural part of the slab. Sleepers for the nailing of a wood floor shall not decrease the required structural depth of the slab unless placed in the direction of span and then shall not be placed more than one-half inch (1/2") into the slab.

**CHAPTER 22—ROOF CONSTRUCTION AND COVERING**

**General**

Sec. 2201. All roofs shall be so framed and tied into frame-work and supporting walls as to form an integral part of the whole building.

**Construction**

Sec. 2202. The general requirements for construction of floors as specified in Chapter 21 shall apply to roofs except that plywood roof sheathing, unless of exterior type, shall have no surface or edge exposed to weather.

**Rafters**

Sec. 2203. Table No. 22-A gives the maximum allowable spans for ceiling joists and roof rafters of a grade not less than 1100/ or No. 2 Douglas fir or Southern pine or comparable grades in other species, surfaced four sides to U. B. C. Standard No. 25-1 sizes and based on live load of 20 pounds per square foot uniformly distributed.

Joists or rafters of other grades, other woods and other size may be used, in which case they shall not be stressed to exceed the minimum allowable fiber stress.

The allowable span of roof rafters shall be measured from plate to ridge, except that where rafters are braced to ceiling joists and a complete truss is formed, the span shall be considered as the distance between intersecting points of trussing.

Roof framing and trussing shall be thoroughly and effectively angle braced. Roof joists when supported on a ribbon board shall be well nailed to the stud.

**TABLE NO. 22-A—ALLOWABLE SPANS FOR CEILING JOISTS AND ROOF RAFTERS**

SIZE (Inches)	SPACING TO CENTER (Inches)	MAXIMUM ALLOWABLE SPAN (Feet and Inches)		
		Ceiling Joists	Rafters	Slope of 12 in 12 and Greater
2 x 4	12	11-0	11-0	11-10
	16	10-1	9-7	10-5
	24	8-11	7-11	8-7
2 x 6	12	16-7	16-9	18-3
	16	15-4	14-8	16-0
	24	13-8	12-2	13-2
2 x 8	12	21-7	21-10	23-9
	16	20-1	19-3	22-0
	24	17-11	16-0	17-4
2 x 10	12	26-9	27-2	29-8
	16	25-0	24-0	26-2
	24	22-5	20-1	22-0
32	12	20-8	17-6	19-2
	16	18-2	15-9	17-6
	24	15-9	12-6	14-0

**TABLE NO. 22-B—FIRE RETARDANT VALUES OF ROOFING MATERIALS**

SHIPPING WEIGHT (In lbs.)	TYPES OF MATERIALS	MIN. WT. PER 100 SQ. FT. OF ROOF AREA (In lbs.)	FIRE RETARDANT VALUE
(a) BASE SHEETS ONLY	15 Asphalt Saturated Felt.....	14	3
	30 Asphalt Saturated Felt.....	28	6
	20 Asphalt Saturated and Coated Dampcourse.....	18	4
	40 Asphalt Smooth Surfaced Roofing.....	37	6
	15 Asphalt Saturated Asbestos Felt.....	14	5
	20 Asphalt Saturated Asbestos Felt.....	18	5
(b) BASE OR CAP SHEETS	45 Asphalt Saturated Asbestos Felt (Black Top).....	41	9
	55 Asphalt Saturated Asbestos Felt (Black Top).....	50	10
	15 Asphalt Saturated Asbestos Felt (minimum 2 layers).....	28	10
(c) CAP SHEETS ONLY	55 Mineral Surfaced Split Sheets (minimum 2 layers).....	106	12
	58 Ilmenite Surfaced Split Sheets (minimum 2 layers).....	106	12
	58 Ilmenite Surfaced Roofing.....	55	7
	90 Mineral Surfaced Asphalt Cap Sheet.....	83	10
	75 Smooth Surfaced Cap Sheet.....	68	9
	65 Smooth Surfaced Cap Sheet.....	60	7
	55 Smooth Surfaced Cap Sheet.....	50	6
	39 Asphalt Saturated Asbestos Roofing (White Top).....	37	9
	55 Asphalt Saturated Asbestos Roofing (White Top).....	52	10
(d) GRAVEL, CERAMIC AND OTHER SIMILAR SURFACING MATERIALS	Gravel ¼" to ½" in size.....	400	6
	Slag ¼" to ½" in size.....	300	6
	Ceramics and other surfacing materials	300	4
	⅛" to ½" in size.....	400	6

Roofing

Sec. 2204. (a) **Composition Roofing.** Asphalt shingles laid in one or more layers. Any composition roofing or any built up composition roofing consisting of materials whose fire-retardant value as set forth in Table No. 22-B equals not less than 15 points.

Ordinary composition roofing consisting of materials whose fire-retardant value equals not less than 15 points.

On buildings housing Group J, Division 1 occupancies any composition roofing having fire-retardant value equal to not less than 6 as set forth in Table No. 22-B.

(b) **Wood Shingles.** Wood shingles shall be of clear vertical grain all-heart wood, not less in thickness than five shingles to two inches (2") at the butt, laid with the following exposures:

Total Length of Shingle	Permissible Exposed Length
16 in.	5 in.
18 in.	5½ in.
24 in.	7¼ in.
32 in.	9½ in.
36 in.	11 in.

All wood shingles shall be nailed firmly with copper, zinc, zinc-coated or commercially pure iron nails of at least 14 B. and S. gauge and not less than one and one fourth inch (1¼") long. Each shingle shall be nailed with two nails driven substantially into the supporting roof construction.

(c) **Slate Shingles.** Slate shingles shall be securely fastened with copper nails or with copper nails and No. 14 B. and S. gauge copper wire, with nails of such length as to provide not less than three-fourths inch (¾") of penetration into the nailing strips or sheathing. Under all such shingles there shall be placed at least one layer of asphalt saturated felt weighing not less than 30 pounds to 108 square feet.

(d) **Tile Roofing.** Clay roof tile shall be securely fastened with copper nails or copper wire; provided that for roofs not exceeding a rise of eight inches (8") in twelve inches (12"), galvanized iron nails may be used, and provided further that tile with projection lugs need not be nailed or wired in place. Wire shall be not smaller than No. 14 B. and S. Gauge. Nails shall penetrate the supporting roof construction not less than three-fourths inch (¾").

Roofing tile other than flat pan tile with or without flanges, or flat shingle tile, or flat decorative tile, shall satisfy the following strength requirements: When supported on the turned down edges at points six inches (6") each side of the center of the tile, giving four points of support and a span of twelve inches (12") and loaded with a concentration at the center, the average breaking load per tile for five representative tile tested shall be not less than 400 pounds and the breaking load for any individual tile tested shall be not less than 350 pounds.

Roof tile shall not absorb more than 15 per cent of the dry weight of the tile during a 48-hour immersion test.

Under all burned clay units, there shall be placed not less than two layers of asphalt saturated rag felt, each layer weighing not less than 14 pounds to one hundred square feet (100 sq. ft.), solidly mopped between and surfaced with asphalt.

Roofing (Cont'd.)

(e) **Metal Roof.** Metal roof covering shall be corrugated, standing seam or flat type of not less than No. 30 U.S. gauge metal. All flat metal roof coverings shall be laid on solid sheathing. Corrugated or standing seam metal roof covering shall be designed to support the required live load between supporting members.

Attic Spaces

Sec. 2205. All buildings shall have access provided to the attic space by means of a stairway or permanent ladder or a scuttle. The openings provided through the ceiling for such access into the attic space shall be not less than eighteen inches (18") square.

In wood frame roof construction where ceilings occur the attic space or spaces between ceilings and the under side of roofs shall be divided into horizontal areas of not more than twenty-five hundred square feet (2500 sq. ft.) with tight one-inch (1") partitions of matched wood, one-half inch (½") thick exterior type plywood, or approved incombustible materials. All openings through these partitions shall be protected by self-closing doors of the same thickness and materials as the partition.

**EXCEPTION:** Where the attic is fully sprinklered, the divided horizontal area may be tripled.

CHAPTER 23—CHIMNEYS, VENTS AND FIREPLACES

**General**  
 Sec. 2301. Chimneys, fireplaces, flues and vents carrying products of combustion, and their connections, shall conform to the requirements of this Chapter.

**Chimneys**  
 Sec. 2302. (a) **Design.** Chimneys shall be reinforced and anchored as required in this Chapter.

(b) **Materials.** Flue linings used in connection with solid or liquid fuel and bricks used in lieu of such flue linings shall have a softening point not lower than 1994 degrees Fahrenheit.

(c) **Flue Area.** No flue used in connection with solid or liquid fuel shall be smaller in area than the flue connection on the appliance attached thereto, and in no case shall the flue area be less than as set forth in Table No. 23-A.

(d) **Height.** Every chimney shall extend to a point at least two feet (2') above the highest elevation of any portion of the building within ten feet (10') of the chimney; provided that the Building Official may approve a chimney of lesser height installed with an approved vent cowl having a spark arrester whose opening shall be not less than six feet (6') from any portion of the building measured horizontally.

(e) **Inlets.** Every inlet to any chimney shall enter the side thereof and shall be of not less than one-eighth-inch (1/8") thick metal or five-eighths inch (5/8") thick refractory material. Every inlet shall be at least six inches (6") from any combustible material. There shall be only one inlet connection to a flue.

(f) **Loads on Chimney.** No chimney shall support any load other than its own weight.  
 (g) **Anchorages.** Chimneys in wood frame buildings shall be anchored laterally at each floor and ceiling line which is more than six feet (6') above grade.

**Masonry Chimneys**  
 Sec. 2303. (a) **Flue Lining.** Masonry chimneys shall be lined with fire-clay flue lining not less than five-eighths-inch (5/8") thick or with firebrick lining not less than four inches

TABLE NO. 23-A—FLUE AREA FOR SOLID OR LIQUID FUELS

TYPE OF EQUIPMENT	MINIMUM AREA OF FLUE		
	ROUND	RECTANGLE	UNLINED
Small stoves and heaters	28 sq. in.	35 sq. in. 8"x8"	64 sq. in.
Ranges and room heaters	40 sq. in.	57 sq. in. 8"x12"	85 sq. in.
Fireplaces	1/12 of opening—minimum 50 sq. in.	1/10 of opening—minimum 64 sq. in.	1/8 of opening—minimum 100 sq. in.
Warm air furnaces or boilers	70 sq. in.	87 sq. in. 12"x12"	135 sq. in.

Note: For altitudes over two thousand feet (2,000') above sea level the Building Official shall be consulted in determining the area of the flue.

(4") thick. The lining shall extend from eight inches (8") below the lowest inlet to four inches (4") above enclosing walls.  
 (b) **Wall Thickness.** Walls shall be not less than eight inches (8") in thickness, except that where flue lining is used, the thickness of brick may be reduced to four inches (4"). Division walls separating flues shall be at least three inches (3") in thickness including flue lining.

(c) **Chimneys of Hollow Clay Tile.** Chimneys shall not be built of hollow clay tile units unless such chimneys are an integral part of a wall of such units. Eight inches (8") of such wall may serve as the wall of the chimney.

(d) **Support.** Masonry chimneys shall be supported on foundations designed as required in Chapters 23 and 28 of the 1952 Edition of the Uniform Building Code.

(e) **Protection.** No combustible material shall be placed within two inches (2") of masonry chimneys.

**Sec. 2304. (a) General.** Smoke pipes are pipes used in connection with solid and liquid fuel connecting fire boxes or combustion chambers with chimneys or smokestacks.  
 (b) **Materials.** Every smoke pipe connecting a fire box or combustion chamber with a chimney or smokestack shall be of metal.

(c) **Location.** Combustible material within twelve inches (12") of any smoke pipe shall be protected by not less than three inches (3") of fire-resistant material. When within three feet (3'), such combustible material shall be protected by fire-resistant plaster. These distances shall be measured at right angles to the smoke pipe.

**Sec. 2305. (a) Fireplaces, smoke chambers and fireplace chimneys,** shall be of solid masonry or reinforced concrete and shall conform to the following minimum requirements:  
 1. **Fireplace Walls.** Structural walls of fireplaces shall be not less than eight inches (8") in thickness. Back walls of fireboxes shall be not less than ten inches (10") in thickness, except that where a lining of firebrick is used such back walls shall be not less than eight inches (8") in thickness.  
 2. **Metal Heat Circulators.** Approved metal heat circulators may be installed in fireplaces.  
 3. **Smoke Chamber front and side walls** shall be not less than eight inches (8") in thickness. Smoke chamber back walls shall be not less than six inches (6") in thickness.  
 4. **Fireplace Chimney Walls** shall be not less than eight inches (8") in thickness, or when lined with fire-clay flue lining, not less than four inches (4") in thickness.  
 5. **Clearance.** Combustible material shall not be placed within two inches (2") of fireplaces, smoke chambers, or chimneys when built entirely within a structure, or within one inch (1") when the chimney is built entirely outside the structure. Combustible materials shall not be placed within six inches (6") of the fireplace opening. No such combustible material within twelve inches (12") of the fireplace opening shall project more than one-eighth inch (1/8") for each one-inch (1") clearance from such opening.  
 6. **Areas of Flues, Throats and Dampers.** The net cross-sectional area of the flue and of the throat between the fire-

**Smoke Pipes**  
 Masonry Chimneys (Cont'd.)

**Fireplaces  
(Cont'd.)**

box and the smoke chamber of a fireplace shall be not less than as set forth in Table No. 23-A. Where dampers are used, damper openings shall be not less in area, when fully opened, than the required flue area.

7. **Lintel.** Masonry over the fireplace opening shall be supported by an incombustible lintel.

8. **Hearth.** Every fireplace shall be provided with a brick, concrete, stone or other approved incombustible hearth slab at least twelve inches (12") wider on each side than the fireplace opening and projecting at least twenty inches (20") therefrom. This slab shall be not less than four inches (4") thick and shall be supported by incombustible materials or reinforced to carry its own weight and all imposed loads. Combustible forms and centering shall be removed.

9. **Firestopping.** Firestopping between chimneys and wooden construction shall meet the requirements of Section 2002.

10. **Non-Conforming Fireplaces.** Imitation and other fireplaces not conforming to the other requirements of this Section shall not exceed six inches (6") in depth.

**Gas Vents****Sec. 2306. (a) Construction.** Gas vents shall be constructed

of unglazed clay tile not less than one-half inch ( $\frac{1}{2}$ ") in thickness. The connections of such pipe shall be by sleeves or flanges well cemented. The pipe shall be securely fixed to the building frame at each sleeve or flange, and shall be at least three-fourths inch ( $\frac{3}{4}$ ") away from all combustible material between flanges. Vents of other materials or design may be approved by the procedure specified in Section 105.

(b) **Height.** Every gas vent shall extend above the roof surface and terminate in a hood or cap with a venting capacity not less than that of the vent.

(c) **Size.** The area of any flue or vent shall be not less than the area of the largest connection plus 50 per cent of the areas of all additional connections with a minimum area of not less than twelve square inches (12 sq. in.) and a minimum dimension of not less than two inches (2").

(d) **Connection Inlet.** Any two inlets shall be staggered by not less than the diameter of the larger inlet. All inlets to any one vent shall be within the same story.

(e) **Connection.** The vent connection shall be of an incombustible material not less durable than galvanized or copper-bearing metal pipe exposed to view in a room throughout its entire length. It shall be not less in diameter than the vent outlet on the appliance. Vent connections shall have a rise of not less than one inch (1") per foot. The horizontal projected length shall not exceed the vertical projected length of the vent and vent connection.

(f) **Combustible Material.** Combustible material within twelve inches (12") vertically or six inches (6") horizontally of any vent connection shall be protected by fire-resistant material. These distances shall be measured at right angles to the vent connection.

(g) **Water Heater Vents.** Every gas water heater shall have an entirely separate and independent vent, except that not more than four gas water heaters in the same story may be con-

nected to a common vent manifold if constructed and installed in accordance with the following additional requirements:

If more than three feet (3') of vent connection is required to connect a water heater to the common vent, the water heater shall be connected to a vent manifold.

The length of the vent manifold shall not be greater than 75 per cent of the height of the vertical vent to which it connects, nor shall the length of the vent manifold exceed fifteen feet (15').

The connection between any heater and a vent manifold shall not exceed three feet (3') in length.

Vent connections shall approach and intersect the vent manifold so that the flow of the products of combustion will converge at an angle of not more than 45 degrees.

The size of the common vent and the vent manifold shall be not less than five inches (5") in diameter.

**Kitchen  
Ventilation**

**Sec. 2307.** There shall be installed in the wall or ceiling, approximately over the cooking facilities, a ventilating opening with an area of not less than six inches by eight inches (6" x 8"), connected to a ventilating duct leading to the outside air, such duct for each kitchen to be not less than thirty-six square inches (36 sq. in.) in cross sectional area. An approved system of forced draft ventilation may be substituted for the natural draft ventilating system.

**General**

Sec. 2401. Lathing and plastering shall be done in the manner and with the materials specified in this Chapter. No plaster shall be applied until the lathing has been inspected and approved by the Building Official.

The Building Official may require that test holes be made in the wall for the purpose of determining the thickness of the plaster, provided the permit holder has been notified 24 hours in advance of the time of making such test.

**Interior Plastering: Lathing**

Sec. 2402. (a) **Distance Between Supports.** The distance between supports shall not exceed sixteen inches (16").

Internal angles, external angles, covers, arches and junctures between wood, fiber insulation, gypsum lath and other plaster bases shall be reinforced with cornerite, except where metal or wire lath is carried around such intersections. Cornerite shall be fastened only sufficiently to retain position during plastering and shall not be rigidly attached to the wood framing.

No interior lath shall be applied until all exterior framing is covered.

(b) **Gypsum Lath.** Gypsum lath shall be nailed to wood supports at intervals not to exceed four inches (4") with 13-gauge, one and one-eighth inch (1 1/8"), three-eighths inch (3/8") flathead, galvanized or blued nails and shall be secured to horizontal or vertical metal supports by means of approved special clips.

Joints between walls and ceilings shall be staggered. Lath shall be applied with joints broken in each course. Lath shall not be butted tightly together, nor be more than one-quarter inch (1/4") apart.

(c) **Wood Lath.** Wood lath shall be spaced not less than one-quarter inch (1/4") or more than three-eighths inch (3/8") apart at edges, one-quarter inch (1/4") apart at ends, and shall be nailed with 3d fine, 16-gauge, blued nails, full driven. Joints shall be broken every seventh lath and above or below all openings.

Lath shall run approximately at right angles to the supporting members, and no lath shall extend through any wall.

Wood lath shall be thoroughly soaked before being nailed in place, and kept damp until plaster is applied.

(d) **Fiber Insulation Lath.** Fiber insulation lath shall be nailed to wood supports at intervals not to exceed four and one-half inches (4 1/2") with nails of the following sizes, placed not less than three-eighths inch (3/8") from the ends, and not less than one-half inch (1/2") from shipplapped, tongued and grooved, or interlocking edges:

For one-half inch (1/2") lath—One and one-eighth inch (1 1/8") fiberboard nails or 4d box nails.  
For one-inch (1") lath—One and three-fourths inch (1 3/4") fiberboard nails or 6d box nails.

End joints, except in interlocking type lath, shall be not less than three-sixteenths inch (3/16") wide. Shipplapped, tongued and grooved, or interlocking edges shall be fitted to contact.

(e) **Metal and Wire Lath.** 1. The weight of metal and wire lath and the spacings of supports shall conform to the requirements set forth in Table No. 24-A.  
2. Metal and wire lath shall be lapped at least one mesh at side and ends, but need not exceed one inch (1").

TABLE NO. 24-A—WEIGHTS OF METAL AND WIRE LATH

TYPES OF LATH	WEIGHT (lbs. per sq. yd.)	MAXIMUM SPACING OF SUPPORTS	
		FOR WALLS	FOR CEILINGS
Wire Lath	2.48	16"	12"
Flat Expanded	2.5	16"	0
Flat Expanded	3.4	16"	16"
Flat Rib	2.75	16"	16"
Flat Rib	3.4	24"	24"
3/8" Rib	3.4	24"	24"
Sheet Lath	4.5	24"	24"

3. Metal and wire lath shall be attached to vertical wood supports at not to exceed six-inch (6") spacing with not less than 4d common nails driven to a penetration of at least three-quarters inch (3/4") and bent over to engage not less than three strands of lath. Metal and wire lath shall be attached to ceiling joists or other horizontal wood supports with not less than one and one-half inch (1 1/2"), 11 gauge, barbed nails with a head not less than seven-sixteenths inch (7/16") in diameter, or an equivalent approved attachment.

4. Metal and wire lath shall be attached to horizontal and vertical metal supports at not to exceed six-inch (6") spacing with not less than No. 18 W. & M. gauge, galvanized annealed wire, or an equivalent approved attachment.

Sec. 2403. (a) **Number of Coats.** Plastering with gypsum, hardwall, lime or cement plaster shall be three-coat work when applied over metal and wire lath, and shall be not less than two-coat work when applied over other plaster bases allowed in this Chapter.

Lime or cement plaster shall not be applied directly to fiber insulation lath or gypsum lath.

In no case shall a brush coat be accepted as a required coat where three-coat work is required in this Section.

(b) **Thickness.** Grounds shall be installed to provide for the thicknesses of plaster, from face of plaster base to finished plaster surfaces, set forth in Table No. 24-B.

Sec. 2404. (a) **Base Coats.** The base coats shall be mixed and proportioned in accordance with the following procedure:  
1. Gypsum or Hardwall Plaster. First coat on all types of lath shall be mixed in the proportion of one part of gypsum or hardwall plaster to not more than two parts of sand, by weight.

TABLE NO. 24-B—REQUIRED THICKNESS OF INTERIOR PLASTER

TYPE OF LATH	THICKNESS OF PLASTER
Metal or wire lath	3/8" minimum
All other types allowed in Chapter 24	1/2" minimum

**Interior Plastering: Lathing (Cont'd.)**

**Interior Plastering: Number of Coats and Thickness**

**Interior Plastering: Proportioning and Mixing**

Interior Plastering: Proportioning and Mixing (Cont'd.)

First coat on masonry surfaces (except monolithic concrete) and second coat (brown) in all three-coat work shall be mixed in the proportions of one part of gypsum or hardwall plaster to not more than three parts of sand, by weight.

2. Lime Plaster. The first coat for three-coat work on metal and wire lath shall be composed of eleven cubic feet (11 cu. ft.) of lime putty or 500 pounds of hydrated lime, 150 pounds of Keene's cement and six pounds of fiber to one cubic yard (1 cu. yd.) of sand.

The second coat for three-coat work on metal and wire lath and for two-coat work on wood lath, brick, tile, or concrete, shall be composed of ten cubic feet (10 cu. ft.) of lime putty or 450 pounds of hydrated lime, 150 pounds of Keene's cement and four pounds of fiber to one cubic yard (1 cu. yd.) of sand.

3. Portland Cement Plaster. For three-coat work, the first two coats shall be as required for the first two coats of exterior work.

(b) Finish Coats for Gypsum or Lime Plaster. The finish coats shall be mixed and proportioned in accordance with the following procedure:

1. Smooth white finish, mixed in the proportion of not less than one part gypsum gauging plaster or Keene's cement to three parts lime putty by volume, or a prepared gypsum trowel finish.

2. Sand-float finish, mixed in the proportion of one part gypsum neat unheated plaster to not more than two parts sand by weight, or one and one-half parts of Keene's cement to two parts of lime putty and not more than four and one-half parts of sand by volume, or a prepared gypsum sand-float finish.

3. Keene's cement finish, mixed in the proportions of three parts Keene's cement to one part lime putty, by volume.

4. Lime sand-float finish shall be mixed in the proportion of one part of gypsum gauging plaster or Keene's cement, three parts of lime putty, and three parts of sand by volume.

5. Interior stucco finish shall be mixed in the proportion of one part of Keene's cement, two parts of lime putty, and three parts of white sand by volume, or a prepared color finish.

(c) Finish Coat for Portland Cement Plaster. Finish coats for interior portland cement plaster may be:

1. As required for the third coat of exterior stucco.

2. A gauged cement plaster mixed in proportion of one part portland cement to not more than two and one-half parts of lime putty and not more than four parts of sand by volume.

3. Smooth white finish, mixed in the proportion of not less than one part gypsum gauging plaster or Keene's cement to three parts lime putty by volume.

4. Keene's cement finish, mixed in the proportions of three parts Keene's cement to one part lime putty, by volume.

5. Lime sand-float finish shall be mixed in the proportion of one part gypsum gauging plaster or Keene's cement, three parts of lime putty, and three parts of sand, by volume.

6. Interior stucco finish shall be mixed in the proportion of one part of Keene's cement, two parts of lime putty, and three parts of white sand by volume, or a prepared color finish.

EXCEPTION: When finishes No. 3, No. 4, No. 5, or No. 6 are used, portland cements having plasticity agents added in

the manufacturing process shall not be used in the coat to which this finish is applied.

Sec. 2405. (a) Base Coats. 1. Gypsum Plaster. The scratch coat shall be applied with sufficient material and pressure to form a full key or bond.

For two-coat work it shall be doubled back to bring the plaster out to grounds and straightened to a true surface and left rough to receive the finish coat. For three-coat work, the surface shall be scratched to provide a bond for the brown coat and shall have been in place at least 12 hours before the second or brown coat is applied. The second coat (brown) shall be brought out to grounds, and straightened to a true surface and left rough, ready to receive the finish coat.

2. Lime Plaster. The first two coats shall be applied in the same manner as gypsum plaster, except that in three-coat work, the second coat (brown) shall be applied over a dry base coat.

3. Portland Cement Plaster. The first two coats shall be as required for the first two coats of exterior work, except that the interval between the first and second coats shall be not less than 24 hours.

(b) Finish Coats. 1. Smooth white finish shall be applied over base coat which has set and is surface-dry. Thickness shall be from one-sixteenth inch (1/16") to one-eighth inch (1/8").

2. Sand-float finish shall be applied over set base coat which is not quite dry.

3. Keene's cement finish shall be applied over set base coat which is not quite dry. Thickness shall be from one-sixteenth inch (1/16") to one-eighth inch (1/8"), unless finish coat is marked off or jointed, in which case the thickness may be increased as required by depth of marking or jointing.

4. Portland cement plaster finish shall be applied in the same manner as required for the third coat of exterior stucco, or as specified in Section 2404(d).

(c) Plaster on Concrete. Monolithic concrete surfaces shall be clean, free from efflorescence, damp and sufficiently rough to insure adequate bond.

Gypsum plaster applied to monolithic concrete ceilings shall be specially prepared bond plaster for use on concrete, to which water only shall be added. Gypsum plaster on monolithic walls and columns shall be applied over a scratch coat of bond plaster before it has set.

Sec. 2406. Staff. Staff shall be soaked before sticking. Lugs shall be of pure fiber and plaster of paris. Rust-resistant fastenings of sufficient strength to anchor the staff to the support shall be not less than No. 14 B. & S. gauge copper wire.

Sec. 2407. (a) Backing. Studs shall be sheathed, or wire of not less than No. 18 W. & M. gauge shall be stretched taut horizontally at intervals not exceeding six inches (6") on centers vertically and securely fastened in place. This shall not be required with metal lath or paper-backed wire fabric.

(b) Weather Protection. Weather protection shall be as specified in Section 2410.

(c) Metal Reinforcement. Exterior plaster over studs shall be reinforced with one of the materials having a rust-resistant coating as set forth in Table No. 24-C.

Interior Plastering: Application of Plaster

Interior Plastering: Staff

Exterior Plastering: Backing

**Exterior Plastering: Backing (Cont'd.)**

Metal reinforcement shall be furred out from the backing at least one-quarter inch (1/4") by an approved furring method, and shall be nailed with galvanized nails or approved furring devices driven to at least three-quarters inch (3/4") penetration which shall be spaced not more than six inches (6") apart vertically and sixteen inches (16") apart horizontally. Metal reinforcements shall be lapped at least one full mesh at all joints. When no sheathing is used, all vertical joints shall be made at the studs and horizontal joints where expanded metal or metal lath is used shall have at least one tie between studs, made with No. 18 W. & M. gauge galvanized annealed the wire.

**Exterior Plastering: Application**

**Sec. 2408. (a) General.** Exterior cement plaster shall be portland cement plaster meeting the requirements of Table No. 24-D, except when applied over concrete or masonry.

(b) **Plasticity Agents.** Plasticity agents shall be of approved types and amounts, and if added to portland cement in the manufacturing process, no later additions shall be made.

(c) **Application. 1. General.** Except when applied to concrete or masonry, and except as otherwise provided for pneumatically applied plaster, exterior cement plastering materials shall be mixed by machine methods for not less than two minutes, and shall be applied in three coats as set forth in Table No. 24-D. The first coat shall be forced through all openings in the reinforcement so as solidly to fill all spaces. It shall then be scored horizontally with a scratcher having one-eighth inch (1/8") clipped teeth and grooves not more than one-half inch deep.

**TABLE NO. 24-C—EXTERIOR PLASTER REINFORCEMENT**

TYPE OF REINFORCEMENT	MINIMUM GAUGE	MINIMUM WEIGHT PER SQUARE YARD
Expanded Metal	18	1.8
Metal Lath	18	1.4
Welded or Woven Wire Netting	16	1.0
Welded Wire Fabric		

**TABLE NO. 24-D—EXTERIOR PORTLAND CEMENT PLASTER**

COAT	MAXIMUM VOLUME OF SAND PER VOLUME OF CEMENT	MINIMUM THICKNESS	MINIMUM PERIOD MOIST CURING	MINIMUM INTERVAL BEFORE APPLICATION SUCCEEDING COAT
First or scratch	3 1/2	1/2"*	48 hrs.	7 days
Second or brown	4 1/2	(1st & 2nd coats) 3/4"	48 hrs.	7 days
Third or finish	2**	1/8"		

\*Measured from backing to crest of scored plaster.  
 \*\*Approved prepared finish coats containing not less than 1/3 by weight of portland cement may be used.

**Exterior Plastering: Application (Cont'd.)**

The second coat shall be rodded and water floated, with no variation greater than one-quarter inch (1/4") in any direction under a five-foot (5') straightedge.

The third coat shall not be a brush coat.

**2. Plastering on Masonry or Concrete.** The masonry surface on which plaster is to be applied shall be clean, free of efflorescence, damp and sufficiently rough to insure proper bond. Mixtures specified for the second coat in this Section may be applied directly to masonry.

**Pneumatically Placed Plaster**

**Sec. 2409.** Pneumatically placed cement plaster shall be a mixture of portland cement and sand, mixed dry, conveyed by air through a pipe or flexible tube, hydrated at the nozzle at the end of the conveyor and deposited by air pressure in its final position.

Rebound material may be screened and re-used as sand in any amount not greater than 25 per cent of the total sand in any batch.

Pneumatically placed cement plaster shall consist of a mixture of one part cement to not more than five parts of sand. Plasticity agents may be used as specified in Section 2408 (b). Except when applied to concrete or masonry, such plaster shall be applied in not less than two coats to a minimum total thickness of seven-eighths inch (7/8"). The first coat shall be rodded as specified in Section 2408 (c) for the second coat. The curing period and time interval shall be as set forth in Table No. 24-D.

**Weather Protection**

**Sec. 2410. (a) Building Paper.** Asphalt-saturated felt free from holes and breaks and weighing not less than 14 pounds per 100 square feet, or approved waterproof paper, shall be applied over studs or sheathing. Such felt or paper shall be applied weatherboard fashion, lapped not less than two inches (2") at horizontal joints and not less than six inches (6") at vertical joints.

Building paper may be omitted in the following cases:

1. When exterior covering is of approved weatherproof panels
2. In back-plastered construction.
3. When there is no human occupancy.
4. Over water-repellent panel sheathing.

(b) **Flashing.** Exterior openings exposed to the weather shall be flashed with rust-resistant metal or other approved flashing in such a manner as to make them waterproof.



CHAPTER 25—STAIRS, EXITS AND OCCUPANT LOADS.

General

Sec. 2501. (a) Purpose. The purpose of this Chapter is to determine the occupant loads and to provide minimum standards of egress facilities for occupants of buildings.

(b) Scope. Every building shall be provided with exits as required by this Chapter. Where there is conflict between a general requirement and a specific requirement for an individual occupancy, the specific requirement shall be applicable.

(c) Definitions. "Occupant Load" is the total number of persons actually occupying a building or portion thereof at any one time, but shall never be assumed to be less than the result obtained by dividing the floor area by the square feet per occupant set forth in Table No. 33-A for the occupancy housed therein. When the square feet per occupant is not given for a particular occupancy it shall be determined by the building official, based on the square feet given for the occupancy which it most nearly resembles.

"Panic hardware" is a bar which extends across at least half the width of each door leaf, or is a floor plate below the full width of each door opening, either of which will open the door if subjected to pressure.

(d) Room Capacity. The occupant load of a room or building shall be the actual number of seats but not less than the result obtained by dividing the floor area by the square feet per occupant set forth in Table No. 25-A.

(e) Benches. Where benches or pews are used the number of seats shall be based on one person for each eighteen inches (18") of length of the pews or benches.

(f) Mixed Occupancies. The capacity of a building containing mixed occupancies shall be determined by adding the number of occupants of the various portions as set forth in Table No. 25-A.

(g) More Than One Occupancy. The capacity of a room or building which is used for different occupancies at different times shall be determined by the occupant load which gives the largest number of persons.

(h) Exit Obstruction. No obstruction shall be placed in the required width of an exit.

(i) Room Capacity Posted. The maximum room capacity shall be conspicuously posted by the owner of the building by means of durable metal signs placed in each assembly room, auditorium or room used for a similar purpose where fixed seats are not installed, and it shall be unlawful to remove or deface such notice or to permit more than this legal number of persons within such space.

Exits Required

Sec. 2502. (a) Width. The total width of exits in feet shall be not less than the total occupant load served divided by 50. Such width of exits shall be divided approximately equally among separate exits.

TABLE NO. 25-A—AVAILABLE SQUARE FEET PER OCCUPANT

OCCUPANCY	SQUARE FEET PER OCCUPANT
Assembly Areas	7
Classrooms	20
Dance Floors	7
Dining Rooms	15
Dwellings (Group I)	300
Gymnasiums	15
Homes for Children and Aged	50
Hospitals and Sanitariums	100
Sales—Retail	20
Basement	30
First Floor	30
Upper Floors	50
School Shops and Vocational Rooms	50
Skating Rinks	15
All Others	100

the tributary occupant load in the story next above or below, provided the resulting width is not less than that required for the upper story considered separately.

(b) Number of Persons. The number of persons permitted in any building or portion thereof shall not exceed those set forth in Table No. 25-A, except that where additional exit facilities are provided the occupancy load may be increased in accordance with Section 2502 (a) and (c).

(c) Number of Exits. Group D and Group H occupancies having an occupant load of more than 10 shall have not less than two exits.

Other occupancies having an occupant load of more than 50 shall have not less than two exits.

Buildings or portion thereof having an occupant load of 500 to 999 shall have not less than three exits.

Buildings or portion thereof having an occupant load of 1,000 or more shall have not less than four exits.

If two or more exits are required, they shall be arranged a reasonable distance apart so that if one becomes blocked the other will be available.

(d) Distance from Exit. No point in any building shall be more than one hundred fifty feet (150') from an exterior exit, a horizontal exit, an enclosed stairway, or a fire-resistive passageway measured along the line of travel.

Sec. 2503. (a) General. This Section shall apply to every door exit door serving an occupant load of more than 10, and from hazardous rooms or areas.

(b) Swing. Exit doors shall swing in the direction of exit travel when serving an occupant load of 50 or more.

(c) Operation. Exit doors shall be operable from the inside without the use of key or any special knowledge or effort.

Exits Required (Cont'd.)

**Doors** (d) **Width.** The required width of a door opening shall not be reduced more than three inches (3") by any projections. No required doorway shall be less than thirty-six inches (36") in width.

(e) **Door Leaf Width.** No leaf of an exit door shall exceed four feet (4') in width.

(f) **Special Doors.** Revolving, vertical sliding and overhead rolling doors shall not be used unless exit doors of required width are installed adjacent thereto.

(g) **Egress from Door.** Every door shall open into a corridor, enclosed stairway, exterior stairway where permitted as a required exit, an exterior exit court, or public way.

(h) **Doors Opening into Stairway.** Every door opening into a stairway shall open on a landing within two inches (2") of the floor level. The width of the landing shall not be reduced more than six inches (6") by the door when fully open.

**Sec. 2504.** (a) **General.** This Section shall apply to every corridor serving as a required exit for an occupant load of more than 10.

(b) **Width.** Every required corridor shall be not less in width than forty-four inches (44").

(c) **Projections.** The required width of corridors shall be unobstructed.

**EXCEPTIONS:** 1. Trim and handrails may project three and one-half inches (3½").

2. Doors, when fully open, may project six inches (6").

(d) **Access to Exits.** Floors above the first floor shall have exits so arranged that it is possible to go in either direction from any point in a corridor to a stairway.

(e) **Walls.** Corridor walls and ceilings shall be of not less than one-hour fire-resistive construction, except one-story buildings housing Groups F and G occupancies.

(f) **Corridor Dead Ends.** There shall be no dead end in any corridor or hall more than twelve feet (12') beyond the exit stair or door.

**Sec. 2505.** (a) **Width.** Stairways serving an occupant load of more than 50 shall be not less in width than forty-four inches (44").

**EXCEPTIONS:** Stairways serving an occupant load of 50 or less may be thirty-six inches (36") wide.

Stairways serving an occupant load of 10 or less may be thirty inches (30") wide.

Trim and handrails may project three and one-half inches (3½") into the required width of any stairway.

(b) **Rise and Run.** The rise of every step in a stairway shall not exceed seven and one-half inches (7½"), and the run shall be not less than ten inches (10").

Except as provided under Subsection (c) of this Section, the maximum variations in the height of risers and in the width of treads in any one flight shall be three-sixteenths inch (3/16").

## Stairs

**EXCEPTION:** In stairways serving an occupant load of 50 or less or serving temporary reviewing stands, the rise may be eight inches (8") and the run may be nine inches (9").

(c) **Winders.** In Group I occupancies and in monumental unreinforced stairways, winders may be used if the required width of run is provided at a point not more than twelve inches (12") from the side of the stairway where the treads are the narrower, but in no case shall any width of run be less than six inches (6") at any point.

(d) **Landings.** Every intermediate landing shall have a dimension measured in the direction of travel equal to the width of the stairway, but such dimension need not exceed four feet (4').

In Groups A, B, and C occupancies the walls at the outer corners of landings shall be curved on a radius of at least two feet (2'), or a 45-degree splay not less than twenty inches (20") wide shall be provided to eliminate right-angle corners.

(e) **Basement Stairways.** Where a basement stairway and a stairway to an upper story terminate in the same vestibule or other space, the basement stairway shall be cut off by a one-hour fire-resistive partition and a self-closing Class "B" fire door.

(f) **Distance Between Landings.** There shall be not more than twelve feet (12') vertically between landings.

(g) **Handrails.** Stairways shall have handrails on each side, and every stairway more than eighty-eight inches (88") in width shall have intermediate handrails dividing the stairway into portions not more than sixty-six inches (66") in width.

Handrails shall be placed not less than thirty inches (30") nor more than thirty-four inches (34") above the nosing of treads, and ends of handrails shall be returned to the wall.

**EXCEPTIONS:** 1. Stairways three feet (3') or less in width may have one handrail.

2. Handrails shall not be required for exterior monumental stairways.

(h) **Exterior Stairways.** Every opening in the exterior wall of a building served by an exterior stairway used as a required exit shall be protected by an automatically closing Class "E" or "F" fire door or window if the opening is within twenty feet (20') of the stairway.

**EXCEPTION:** Openings above or level with the highest portion of the stairway may be unprotected if not nearer than ten feet (10') to the stairway.

(i) **Space under Stairways.** The underside of interior stairways of wood construction and enclosed usable spaces under all stairways shall be protected with lath and plaster approved for one-hour fire-resistive construction, except in Group I occupancies.

(j) **Stairway Construction—Interior.** Interior stairways shall be constructed as specified in Part V of this Code.

Stairs  
(Cont'd.)

(k) **Stairway Construction—Exterior.** Exterior stairs shall be of incombustible material except that on buildings not exceeding two stories in height they may be of wood not less than two inches (2") in nominal thickness.

(l) **Stairway to Roof.** In every building more than two stories in height, one stairway shall extend to the roof surface unless the roof has a slope greater than four in 12.

(m) **Headroom.** Every required stairway shall have headroom clearance of not less than six feet six inches (6'6") measured vertically from the nearest nosing to the nearest soffit.

**Sec. 2506. (a) General.** A ramp conforming to the requirements of this Section may be used as an exit.

(b) **Width.** The width of ramps shall be as required for corridors.

(c) **Slope.** The slope of a ramp shall not exceed one in eight.

(d) **Handrails.** A ramp with slope exceeding one in 10 shall have handrails as required for stairways.

(e) **Construction.** Ramps shall be constructed as required for stairways.

(f) **Surface.** The surface of ramps shall be roughened or shall be of non-slip material.

Horizontal  
Exits

**Sec. 2507. (a) Definition.** A horizontal exit is a horizontal passageway or ramp into another building or into another section of the same building through a "One-Hour Fire-Resistive Occupancy Separation."

(b) **Used as a Required Exit.** If conforming to the provisions of this Chapter, a horizontal exit may be considered as a required exit.

(c) **Discharge Areas.** A horizontal exit shall lead into a floor area having capacity for an occupant load not less than the occupant load served by such exit. The capacity shall be determined by allowing three square feet (3 sq. ft.) of net clear floor area per occupant. The area into which the horizontal exit leads shall be provided with exits as required by Section 2502, at least one of which shall lead directly to a public way.

Exit  
Enclosures

**Sec. 2508. (a) General.** Every interior stairway, ramp, or escalator shall be enclosed as specified in this Section.

**EXCEPTIONS:** 1. In occupancies other than Group D, an enclosure will not be required for a stairway, ramp, or escalator serving only the second floor and not connected with corridors or stairways serving floors above the second floor.

2. In sprinklered buildings of Type I construction housing Groups F and G occupancies, enclosures are not required for escalators.

3. Stairs in Group I occupancies need not be enclosed.

(b) **Enclosure Construction.** Enclosure walls shall be of not less than two-hour fire-resistive construction in buildings more

Exit  
Enclosures  
(Cont'd.)

than four stories in height and shall be of not less than one-hour fire-resistive construction elsewhere.

(c) **Openings into Enclosures.** There shall be no openings into exit enclosures except exit doorways and openings in exterior walls. Every exit door in an exit enclosure shall be a self-closing Class "B" fire door. Every opening in an exterior wall forming part of an exit enclosure shall be protected by a Class "E" or "F" fire door or window unless opening into a public way at least sixteen feet (16') wide.

(d) **Extent of Enclosure.** Stairway and ramp enclosures shall include landings and parts of floors connecting stairway flights and shall also include a corridor on the ground floor leading from the stairway to the exterior of the building.

**Sec. 2509.** Every exit shall discharge into a public way or exit court.

Exit  
Courts

**Sec. 2510. (a) Discharge.** Every exit court shall discharge into a public way or passageway leading to a public way. The passageway shall be without other openings and shall have walls, floors, and ceilings of the same period of fire resistance as the walls, ceilings, and floors of the building but shall be not less than one-hour construction.

(b) **Width.** Every exit court shall be not less in width than the required total width of the tributary exits.

(c) **Slopes.** The slope of exit courts shall not exceed one in 10.

(d) **Openings.** Openings between a Group A and B occupancy and an exit court less than sixteen feet (16') wide shall be protected by Class "E" or "F" fire doors or windows.

**EXCEPTION:** Openings more than twenty feet (20') above the floor of the exit court may be unprotected.

(e) **Obstructions.** The required width of exit courts shall be unobstructed except for trim and handrails which may project not more than three and one-half inches (3½") into the required width.

At any point where the width of an exit court is reduced from any cause, the reduction in width shall be effected gradually by a guard rail at least three feet (3') high. The guard rail shall make an angle of not more than 30 degrees with the axis of the exit court.

Exit Signs  
and  
Illumination

**Sec. 2511. (a) Exit Illumination.** Exits shall be illuminated at all times with light having an intensity of not less than one foot candle at floor level.

(b) **Exit Signs.** At every exit doorway and wherever otherwise required to clearly indicate the direction of egress an exit sign with letters at least five inches (5") high shall be provided from all areas serving the occupant load specified in this Subsection. In interior stairways the floor level leading direct to the exterior shall be clearly indicated.

1. Groups B, C, D and H with an occupant load of more than 50.

2. All other occupancies serving an occupant load of more than 100.

**Exit Signs and Illumination (Cont'd.)**

(c) Illumination of Signs. Exit signs shall be lighted in the following occupancies with two electric lamps of not less than 15 watts each in the manner specified in this Subsection.

1. Two separate sources of supply shall be required for Group A occupancies and Divisions 1 and 2 of Group B except buildings with occupant loads less than 750 persons used as churches, lodge rooms, recreation halls and gymnasiums.

2. Separate circuits, one of which shall be required for the all other circuits in the building, shall be required for the following occupancies:

- (1) Groups A, B, and C occupancies with an occupant load over 300 persons and not otherwise regulated in this subsection.
- (2) Group D and H occupancies with an occupant load over 100 persons.
- (3) Group F occupancies with an occupant load over 1000 persons.

**Aisles**

**Sec. 2512.** (a) **General.** Every portion of every building in which are installed seats, tables, or equipment, shall be provided with aisles leading to an exit.

(b) **Width.** Every aisle shall be not less than three feet (3') wide if having seats on only one side and not less than three feet six inches (3'6") wide if having seats on both sides. Such minimum width shall be measured at the end farthest from the foyer and shall be increased by one and one-half inches (1½") for each five feet (5') in length toward the foyer.

**EXCEPTION:** In Group B, Division 4 occupancies, aisles need not be over three feet six inches (3'6") wide.

(c) **Distances to Nearest Exit.** In areas occupied by seats, and in Group A and B occupancies without seats, the line of travel to an exit door by an aisle shall not be more than one hundred and fifty feet (150').

(d) **Aisle Spacing.** Aisles shall be located so that there will be not more than six intervening seats between any seat and the nearest aisle.

**EXCEPTION:** There may be 20 intervening seats between any seat and the nearest aisle in Group B, Division 4 occupancies.

(e) **Cross Aisles.** When aisles terminate in a cross aisle instead of a foyer, the width of the cross aisle shall be no less than the sum of the width of the widest aisle plus 50 per cent of the total width of the remaining aisles leading thereto.

(f) **Vonitories.** Vonitories connecting the main exit with the cross aisles shall have a total width not less than the sum of the width of the widest aisle leading thereto plus 50 per cent of the total width of the remaining aisles leading thereto.

(g) **Slope.** The slope of aisles shall not exceed one foot (1') fall in eight feet (8').

**Seats**

**Sec. 2513.** (a) **Spacing.** The spacing of rows of seats from back to back shall be not less than thirty-three inches (33"), nor less than twenty-seven inches (27") plus the sum of the thickness of the back and inclination of the back.

**EXCEPTIONS:** In Group B, Division 4 occupancies, the spacing of rows of seats without backs may be twenty-four inches (24").

(b) **Width.** The width of any seat shall be not less than eighteen inches (18").

**Sec. 2514.** (a) **Main Exit.** Every Group A occupancy shall be provided with a main exit. Exits: Group A Occupancies

The main exit shall be of sufficient width to accommodate one-half the total occupant load but shall not be less than the total width of all aisles and stairways leading thereto and shall connect to a stairway or ramp leading to a public way.

Steps may be used if separated from the main exit by a landing not less in area than the foyer.

(b) **Side Exits.** Every auditorium and balcony of a Group A occupancy shall be provided with exits on each side. The exits on each side of the auditorium or balcony shall be of sufficient width to accommodate one-third of the total occupant load served. Side exits shall open directly into an exit court or a ramp leading to an exit court, except that side exits from a balcony may lead to a stairway, and side exits from balconies above the first balcony shall be by way of a stairway or ramp in a smokeproof enclosure. Side exits shall be accessible from a cross aisle or a side aisle.

(c) **Panic Hardware.** An exit door from a Group A occupancy having an occupant load of more than 50, shall not be provided with a latch or lock unless it is panic hardware.

**Sec. 2515.** (a) **Group B, Divisions 1 and 2, Divisions 1 and 2 occupancies shall have exits as required by Section 2514. Exits: Group B Occupancies**

(b) **Group B, Divisions 3 and 4.** An exit door from any Group B occupancy, Divisions 3 and 4, having an occupant load of more than 50, shall not be provided with a latch or lock unless it is panic hardware.

**Sec. 2516.** (a) **Corridors.** The width of a corridor in a Group C occupancy shall be the width required by Section 2502 plus two feet (2'), but no corridor shall be less than six feet (6') wide. Exits: Group C Occupancies

Corridor walls and ceilings shall be of not less than one-hour fire-resistive construction.

There shall be no change of elevation of less than two feet (2') in a corridor unless ramps are used.

(b) **Corridors Serving Auditoriums.** An exit serving both an auditorium and other rooms need provide only for the capacity of whichever requires the greater width if the auditorium is not to be used simultaneously with the other rooms.

(c) **Stairs.** Each floor above or below the ground floor level shall have not less than two exit stairs and the required exit width shall be equally divided between such stairs, provided that no stair shall be less than five feet (5') in width exclusive of rails serving an occupant load of more than 100.