STANDARD BUILDING CODE of NEW JERSEY

RULES
FOR THE CONSTRUCTION OF
ONE AND TWO-FAMILY
DWELLINGS

STATE OF NEW JERSEY
Department of Conservation and Economic Development

M A N U A L

F O R T H E

STANDARD BUILDING CODE OF NEW JERSEY

STATE OF NEW JERSEY

Robert B. Meyner, *Governor*

N.J. DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

Joseph E. McLean, *Commissioner*

DIVISION OF PLANNING AND DEVELOPMENT · Bureau of Commerce.

Kenneth H. Creveling, *Director*

SEC. MB 802.0-U

RULES FOR

THE CONSTRUCTION OF ONE AND TWO-FAMILY DWELLINGS

Printed April, 1958

Adopted 18 JUN 1958

Prepared Pursuant to Laws of 1946, Chapter 120

BUREAU OF COMMERCE

Albert R. Post, *Chief*
520 East State Street
Trenton 25, New Jersey

RULES FOR THE CONSTRUCTION OF ONE AND TWO-FAMILY DWELLINGS

TECHNICAL ADVISORY COMMITTEE

George E. Strehan, Consultant
Consulting Engineer, Leonia, New Jersey

Robert J. L. Cadien Registered Architect Cliffside Park, N.J.	- New Jersey State Society of Architects
Hugh C. Clarke Professional Engineer Jersey City, N.J.	- New Jersey Society of Professional Engineers
Maurice B. Cooke Municipal Official Plainfield, N.J.	- Building Inspector
Richard D. Hudson Professional Engineer Montclair, N.J.	- New Jersey Home Builders Association
Samuel P. Waldron, Jr. Building Contractor Newark, N.J.	- Building Contractors' Association of New Jersey

---

Staff Assistant
Anthony J. Michaels
Department of Conservation and Economic Development

Albert R. Post, Chairman Ex-Officio
Department of Conservation and Economic Development

FOREWORD

The "Rules for the Construction of One and Two-Family Dwellings" presents detail specifications governing methods of construction and quality of materials. These conform to generally accepted practice and comply with the performance requirements of the STANDARD BUILDING CODE OF NEW JERSEY adopted by the Department of Conservation and Economic Development in accordance with the provisions of Ch. 120, P.L. 1946. The Rules are published as part of the Manual of the Standard Building Code of New Jersey, and are cited as SEC. MB 802.0-U. The provisions of this manual are subject to revision without amending the Code proper, to help meet newly accepted construction methods and techniques as well as the use of new materials and products developed by the building industry.

The objective of the Technical Advisory Committee, appointed by Joseph E. McLean, Commissioner of the Department of Conservation and Economic Development, was to prepare and recommend for adoption a precise specification code which would insure safe, sanitary and livable homes at minimum costs.

The purpose of the Rules is to establish a basis for uniform and effective administration of dwelling construction in the municipalities throughout the State. Many municipalities are without adequate building code ordinances, while in others the codes are obsolete. Frequently local codes are in conflict with those in adjacent communities. Sub-standard or costly housing may result because of failure to control building construction by reason of the absence of a modern code.

It is hoped that the Rules will be adopted locally in conjunction with the Standard Building Code of New Jersey which embraces all types of building construction under the provisions of the statute authorizing its voluntary adoption, (Ch. 120, P.L. 1946) by reference ordinance.

One (1) copy of the Rules is being forwarded to each municipal and county clerk in accordance with statutory requirements. Two (2) additional copies of the Rules will be furnished on request of the said clerks, when formal adoption action is contemplated. Three (3) copies are required for filing purposes with the local ordinance. A suggested form of adoption ordinance will be furnished on request. The State law provides that all other copies shall be sold at a charge to be determined by the Department.

Municipal clerks are requested to advise the State Department of Conservation and Economic Development when formal code adoption action is taken. This will insure proper clearances in relation to any future code amendments or changes.

The pamphlet "Minimum Construction Requirements for One and Two-Family Dwellings" distributed by the Department in 1946 and reprinted in subsequent years, was produced as a suggested model code. Its publication was premised under the provisions of Ch. 21, P.L. 1946, permitting a municipality to adopt any printed code by reference ordinance. The said law as amended by Ch. 276, P.L. 1948, is not to be confused with Ch. 120, P.L. 1946, authorizing the adoption of the Standard Building Code of New Jersey. It will be observed that Ch. 120, was passed subsequent to Ch. 21, in 1946. Printing of the minimum construction requirements code pamphlet has been discontinued.

These Rules are intended to supersede the 1946 pamphlet. Municipal authorities may review the above mentioned laws for complete information concerning legal requirements, ordinances and adoption procedure. This foreword should not be construed to prohibit the voluntary adoption of these Rules separately under a reference ordinance.

The fundamental objective is to attain uniformity in the inspection and supervision of construction for one and two-family dwellings in communities throughout the State of New Jersey.

TABLE OF CONTENTS

Rules for the Construction of One and Two-Family Dwellings

RULES FOR

THE CONSTRUCTION OF ONE AND TWO-FAMILY DWELLINGS

SEC. MB 802.0-U SCOPE

SCOPE. These rules shall apply to the construction of one- and two-family dwellings and their accessory structures as herein defined. They are intended to provide minimum safe standards of design and acceptable use of materials within the requirements of the Standard Building Code of New Jersey.

0-1 CLASSIFICATION OF DWELLINGS. Dwellings shall be classified for the purpose of these rules as follows:

Class 1 - One-Family Dwellings (Class L-3 - Standard Building Code)
Class 2 - Two-Family Dwellings (Class L-3 - Standard Building Code)
Class 3 - Mixed Occupancy Dwellings (Class M - Standard Building Code)

0-2 INCIDENTAL USES. All other residential buildings which are used for the incidental purposes herein defined, except those classified as hotels and institutional buildings and those subject to the Tenement House Act, shall comply with the fire safety and exit requirements of these rules.

0-3 LIMITING HEIGHT. These rules shall apply to buildings not exceeding 2½ stories or 35 feet in height; but in no case shall the height or area exceed the limitations of Table B-301 of the Standard Building Code for the specified use and type of construction.

0-4 ZONING LAWS AND OTHER STATUTES. No provision of the zoning laws or any other legal statutes pertaining to the location or use of dwellings shall be nullified by these rules; but, in all cases, the most rigid requirements shall control. Whenever State statutes require approval of a specific use or occupancy the approval of the designated authority shall accompany the application for a building permit as required in RULE 2-2.

0-5 APPLICATION TO EXISTING BUILDINGS. Additions, alterations, repairs or changes in use of an existing building which exceed the limitations of SEC. B-110 of the Standard Building Code shall comply with all the requirements for new buildings or structures.

RULE 1. DEFINITIONS

RULE 1 DEFINITIONS. All words in the rules shall have the meanings specified in the Standard Building Code and as herein specifically defined.

ACCESSORY BUILDING. A building or structure the use of which is incidental to a dwelling located on the same lot.

BOARDING, LODGING OR TOURIST HOME. A building arranged or used for lodging, with or without meals, for compensation, for more than 5 but not more than 20 occupants.

DORMITORY. A building arranged or used for lodging 6 but not more than 20 occupants and having common toilet and bathroom facilities.

DWELLING UNIT. One or more rooms arranged for the use of one or more individuals living as a single housekeeping unit, with cooking, living, sanitary and sleeping facilities.

GRADE. The mean curb level, or when the curb level has not been established, or when all the walls of the building are more than 15 feet from street lines, "grade" means the mean elevation of the ground adjoining the building on the side or sides under consideration.

HABITABLE ROOM. A room or other enclosed floor space located in a basement, first or upper story of a dwelling, arranged for living, recreation, eating or sleeping purposes, complying with the minimum height, area, light and ventilation requirements of these rules.

HEIGHT. The height of a building is the vertical distance measured from the average grade of the lowest side of the building facing on a street to the average elevation of the roof of the highest story. In a split-level dwelling, the height shall be measured from the average grade at the front entrance to the building.

MIXED OCCUPANCY. A dual occupancy building which is used in part for dwelling units for not more than 2 families and in part for some other use.

ONE-FAMILY DWELLING. A building containing one dwelling unit with not more than 5 lodgers or boarders.

PRIVATE GARAGE. An accessory building for the storage of not more than 4 private motor vehicles one of which may be a commercial vehicle of not more than 1½ ton capacity, with no provisions for repairing or servicing such vehicles for profit.

PRIVATE GARAGE (CLASS A). One without living or sleeping quarters, every wall of which is located not less than 10 feet from the wall of the main dwelling.

PRIVATE GARAGE (CLASS B). One which is directly attached to the dwelling or does not otherwise classify as a Class A Garage.

PRIVATE SANITARIUM AND CONVALESCENT HOME. A one- or two-family dwelling used for the care or treatment of people excluding those that are restrained or suffer from mental or other disorders or are otherwise incapable of helping themselves, with not more than 20 occupants.

PRIVATE SCHOOL OR NURSERY. A one- or two-family dwelling used for educational training or care of minors in which the enrollment at any one time does not exceed 20 pupils.

SEMI-DETACHED DWELLING. A building which is divided into 2 parts by a continuous party wall and which is occupied by not more than one family on each side.

SPLIT-LEVEL DWELLING. A one- or two-family dwelling having part floors at staggered levels, so arranged to have a habitable room or rooms both above and below the first floor level.

TWO-FAMILY DWELLING. A building containing 2 dwelling units with not more than 5 lodgers or boarders per family, but not more than 20 occupants.

RULE 2. ADMINISTRATION AND ENFORCEMENT

RULE 2 ADMINISTRATION AND ENFORCEMENT. When not otherwise provided for by municipal charter, a building committee shall be appointed by the mayor, commissioner or other presiding officer with such duties over building supervision as the governing body may direct in conformity to the State laws.

RULE 2-1 BUILDING OFFICIAL. A building official delegated with authority to administer the building code shall be appointed as provided in SEC. B-102.0 of the Standard Building Code. He is directed and authorized to enforce all its provisions and shall have the right of entry to any building or premises in the discharge of his duties as provided in SEC. A-105.1 of the Standard Building Code.

RULE 2-2 APPLICATION FOR PERMIT. No building operation shall be undertaken until a building permit has been obtained from the building official by the owner or his authorized representative. The application for a permit shall be made in writing on approved forms accompanied by 2 complete sets of dimensioned plans showing all floors, basement, cellar, foundation and sections; and by specifications describing the kind, size, quality and grade of all construction materials and the service equipment. The building official may waive the requirement of filing plans when the work involved is of a minor nature not involving structural changes and the building operation is adequately described in the application. All plans submitted for filing shall be prepared and signed as required by Chapter 293 of 1948; Chapter 149 of 1950 and Chapter 132 of 1952, laws of the State of New Jersey.

RULE 2-3 APPROVED PLANS. One copy of the approved plans including the plot diagram required by SEC. B-114.5 of the Standard Building Code together with the signed permit shall be kept at the site of the operation until completion. One set of the approved plans and specifications of every building operation, other than temporary structures, shall be kept on file in the office of the building official as a permanent record so long as the building remains in existence.

RULE 2-4 TIME LIMIT OF APPLICATION AND REVOCATION OF PERMITS. An application for a permit shall be deemed to have been abandoned 6 months after date of filing, unless such application has been diligently prosecuted or a new permit shall have been issued. Any permit issued shall become invalid if the authorized work shall not have been commenced within one year after issuance or is suspended or abandoned for a period of one year after commencing the work. The building official may revoke a permit or approval issued under the provisions of the Standard Building Code or these rules in case of a false statement or misrepresentation of vital facts in the application or on the plans, when such revocation is in the public interest.

RULE 2-5 DERELICTIONS AND ERRORS. No dereliction of duty or error on the part of the building official shall legalize the erection, construction or alteration of any building or structure not in conformity to these rules. No building permit shall be construed as authority to violate, cancel or set aside any provision of the Standard Building Code or the rules adopted thereunder, or of any other statute or ordinance pertaining thereto, except such variation as may be legally granted under the provisions of SEC. A-113 of the Standard Building Code.

RULE 2-6 SERVICE CONNECTIONS. A permit to demolish or remove a building shall not be issued until a release is obtained from the public utility company and the municipal enforcing official having jurisdiction stating that all abandoned water, electric, sewer and other service connections have been removed, plugged or otherwise sealed in a safe manner.

RULE 2-7 VIOLATIONS AND PENALTIES. It shall be unlawful for any person, firm or corporation to violate any provision of these rules or to cause, permit or suffer such violation. Any person violating these rules shall be guilty of a misdemeanor and subject to the penalties provided in SEC. A-107 of the Standard Building Code.

RULE 2-8 STOP-WORK ORDER. Whenever the provisions of these rules, or of the plans and specifications approved thereunder are not compiled with, a stop-work order shall be served on the owner or his representative and a copy thereof may be posted at the site of the operation. Such stop-work order shall not be revoked except by written notice of the building official after satisfactory evidence has been supplied to him that the unlawful work has been corrected.

RULE 2-9 UNSAFE BUILDING. The building official shall condemn all unsafe buildings and structures as provided in SEC. B-120 of the Standard Building Code. When there is actual or immediate danger of failure or collapse or when the life of occupants of the building or of the public is endangered, he shall order such buildings or structures to be vacated forthwith and, when necessary for the public safety, he may temporarily close sidewalks, streets and adjacent buildings. He shall cause the necessary work to be done as expeditiously as possible to render the building or structure or part thereof temporarily safe. All costs of emergency work shall be paid out of the municipal treasury and the legal authority of the municipality shall institute the necessary legal action for the recovery of such costs.

RULE 2-10 FEES. Upon making an application for a building permit, the applicant shall pay the following fee based upon the physical value of the work. No amendment to a permit necessitating an increase in estimated cost of the work shall be approved until the additional fee shall have been paid. The fee for a building permit may be based on the size of the structure and scheduled cubic or square foot rates established by the building official or on the estimated cost of the work as suggested in the following table; but in no case shall such fee exceed the cost incurred by the municipality in granting the permit and in regulating and controlling construction.

TABLE 2-10 PERMIT FEES

ESTIMATED COST	FEE	SUGGESTED FEE
Less than $500	-----	$3.00
$500 to $1,000	-----	5.00
$1,001 to $5,000	-----	10.00
$5,001 to $10,000	-----	20.00
$10,001 and over	-----	20.00 plus $3.00 for each additional $1,000 or a fraction thereof.

Fees shall also be established for special inspections, certificates of occupancy and all other services as established by local law or ordinance.

RULE 2-11 NUISANCE ABATEMENT. Whenever an existing building is damaged to an extent of 50 per cent or more of the replacement value and the damage is not repaired, or an existing building remains vacant and unused in a dilapidated condition and the nuisance is not abated, the building official shall serve a written notice on the owner to make the necessary repairs or to demolish the building within 30 days of the receipt of such notice. Each day that the nuisance is permitted to stand after the expiration of the 30-day period shall constitute a separate violation subject to the penalties herein provided. If the owner fails to abate or remove the nuisance within 60 days after service of the notice, the municipality shall employ the necessary labor and materials as may be deemed necessary for the general public health and safety. The legal authority of the municipality shall institute the appropriate action against the owner of the premises for recovery of the costs which shall become a lien against the premises until the claim is satisfied.

RULE 2-12 SPECIAL TECHNICAL SERVICES. When an application for unusual design or magnitude of construction is filed, the building official may retain a properly qualified licensed engineer or registered architect to examine the plans or he may refer such plans to the State Board of Standards for recommendations with respect to safety and compliance with the Standard Building Code and these rules.

RULE 2-13 INSPECTIONS. The building official shall make the necessary inspections of every building and construction operation herein specified within 24 hours notification from the applicant or holder of a building permit, excluding Saturdays, Sundays and holidays; or he may accept the inspection reports of accredited agencies. He shall maintain an official record of all inspections.

RULE 2-13-1 PRELIMINARY INSPECTION. Except for minor work, he shall examine or cause to be examined the site of the operation and all existing buildings or structures on the site for which an application has been filed for a building permit.

RULE 2-13-2 FOUNDATIONS AND FOOTINGS. After excavation and before any footings are installed, he shall approve the foundation bed for allowable soil capacity.

RULE 2-13-3 STRUCTURAL FRAMEWORK. He shall make a closing-in inspection of the framework after the structural members are secured in place, and before lath and plaster, or other finish or fire-protection coverings are installed. He shall inspect all wood framing, including the roof tier, bracing, and firestopping after all piping, rough plumbing, electric wiring, chimneys, flues, ducts and vents are in place and before any interior wall or ceiling covering has been applied.

RULE 2-13-4 LATHING AND REINFORCEMENT. He shall inspect all lathing and concrete reinforcement after installation is in place and before any plaster has been applied or concrete poured.

RULE 2-13-5 SPECIAL INSPECTION. Special inspections shall be made when required of unusual construction or installation of special mechanical service equipment, including plumbing, air-conditioning and electric wiring. When a building or structure of unusual character or type of construction is contemplated, he may assign inspectors to constantly supervise the work through such periods deemed necessary by him, at the expense of the permit holder.

RULE 2-13-6 FINAL INSPECTION. Upon completion of the building or structure and before issuance of the certificate of occupancy, he shall make a final inspection and the holder of the permit shall be notified of all violations of the permit, the approved plans or the specifications.

RULE 2-14 COORDINATED INSPECTION. All provisions of the Statutes of the State of New Jersey and of legally adopted rules and regulations of the health, labor and other enforcing agencies of the State in respect to operation, equipment, housekeeping and maintenance of safe and sanitary conditions of use and occupancy of all buildings shall be enforced by the administrative officials to whom such authority is delegated. Every authorized enforcement official shall immediately notify the appropriate administrative official, having jurisdiction, of the violation of any provisions of law governing building construction and use.

RULE 3. TYPES OF CONSTRUCTION

RULE 3 TYPES OF CONSTRUCTION. For the purpose of these rules, all buildings and structures erected or to be erected, extended or altered shall be classified in respect to construction as one of the following types:

RULE 3-1 FIREPROOF CONSTRUCTION. A fireproof building shall be constructed with enclosure walls of approved masonry, reinforced concrete or other approved noncombustible construction and with interior walls, partitions, floors and roofs, exitways and structural elements designed and protected with noncombustible materials having the fireresistance ratings specified in Rules 11 and 14; except as provided for permissible uses of combustible materials in Rules 11-10 and 14-5.

RULE 3-2 ORDINARY CONSTRUCTION. A building of ordinary construction shall have exterior, fire and party walls of approved masonry or other approved noncombustible materials of not less than 2 hour fireresistance rating with floors, roofs and interior framing constructed of wood or similar combustible materials or of unprotected steel; except that girders and their supports that carry masonry walls shall in all cases be protected to afford the required fireresistance rating of the walls supported thereon.

RULE 3-3 LIGHT GAGE STEEL FRAME CONSTRUCTION. A building of light gage steel frame construction shall have the structural members, walls, partitions, floor and roof panels fabricated and assembled of unprotected strip or sheet steel used alone or in combination with component noncombustible materials for heat and sound insulation, but having no designated fireresistance rating.

RULE 3-4 WOOD FRAME CONSTRUCTION. A building of wood frame construction shall have walls, partitions, floors and roofs constructed wholly or partly of wood stud and joist assemblies or of other materials of similar combustible characteristics, having all vertical and horizontal draft openings firestopped to prevent the travel of flame or smoke.

RULE 3-5 PROTECTED WOOD FRAME CONSTRUCTION. A building of protected wood frame construction shall have all walls, partitions, floors and roofs of combustible construction protected with noncombustible materials to provide a ¾ hour fireresistance rating from interior and exterior fire exposure.

RULE 4. QUALITY AND TESTS OF MATERIALS

RULE 4 QUALITY AND TESTS OF MATERIALS. All building materials and combinations thereof shall conform to the American Standards for quality and tests of materials and the requirements of accepted engineering practice. Any new material, system or method of construction not specifically provided for and any material of questionable suitability for its proposed use shall be subject to the standard test procedures to determine its quality, serviceability and limitations of use. All materials subject to damage from exposure to weather or from contact with moisture during shipment and storage or after erection or pouring at the site shall be adequately protected.

RULE 4-1 NOMINAL DIMENSIONS. Dimensions and thicknesses specified in these rules are nominal dimensions; actual dimensions may vary from the prescribed minimum in accordance with the American Standards and accepted tolerances in the building industry.

RULE 4-2 CLASSIFICATION OF MATERIALS. All building materials shall be classified as controlled materials and average materials.

RULE 4-3 CONTROLLED MATERIALS. Controlled materials are those which are identified with respect to manufacture and quality by an accredited authoritative agency and are certified by an approved inspection service as to stress-grade and use. The identification shall be accompanied by satisfactory mill or other controlled tests or the strength, stress-grade and use shall be otherwise confirmed to the satisfaction of the building official.

RULE 4-4 AVERAGE MATERIALS. Average materials are those without the grade and quality identification of an accredited authoritative agency. The working stresses of average or ordinary materials shall be limited to the average values specified in RULE 8 but in no case shall such stresses exceed the values specified in the American Standards for the lowest stress-grade of the specific material.

RULE 4-5 MASONRY BEARING WALLS. Materials for masonry bearing walls shall be natural stone, hard-burned brick, mass stone concrete, thoroughly cured concrete units of which the net-cross-sectional area in the plane of the unit parallel to the bearing surface is not less than 75 per cent of the gross cross-sectional area measured in the same plane, or hard-burned, load-bearing structural clay tile, or other material complying with RULE 5.

RULE 4-6 MORTAR AND CONCRETE PROPORTIONS. All unit masonry shall be laid up in mortar with cement, lime and approved aggregates mixed to a workable consistency in the proportions by volume herein specified; except that materials used in preparing gypsum mortar or combinations of gypsum with perlite or vermiculite or other manufactured aggregates shall be measured by weight.

RULE 4-6-1 CEMENT MORTAR. All foundation and other masonry walls in contact with the ground shall be laid up in cement mortar composed of 1 part of approved portland cement and a maximum of 3 parts of approved fine aggregate to which may be added hydrated lime or lime putty not exceeding 25 per cent of the cement content.

RULE 4-6-2 CEMENT - LIME MORTAR. The mortar for all other masonry walls shall be composed of 1 part of approved portland cement, to not more than 1 part of approved lime putty or hydrated lime and a maximum of 6 parts of fine aggregate; or shall be an approved masonry mortar mixed and applied in accordance with the manufacturer's recommendations.

RULE 4-6-3 LIME MORTAR. In masonry walls not more than 35 feet in height, lime mortar may be used above grade, composed of 1 part of approved lime putty or hydrated lime and a maximum of 3 parts of sand aggregate; or cement may replace equal volumes of lime provided the cement gaging is uniformly distributed by thorough mixing.

RULE 4-6-4 GYPSUM MORTAR. All gypsum block masonry partitions shall be laid up in gypsum mortar composed of 1 part of unfibered calcined neat gypsum and not more than 3 parts of sand aggregate.

RULE 4-6-5 MASS CONCRETE. Cast-in-place plain or mass concrete shall be mixed in dry volumetric proportions of 1 part approved portland cement and not more than 7½ parts of graded aggregates with not more than 8 gallons of water to one bag of cement. Allowance shall be made for the water in moist sand and coarse aggregate in gaging the mixture.

RULE 4-6-6 REINFORCED CONCRETE. Concrete for reinforced concrete construction shall be mixed in the dry volumetric proportions of 1 part of approved portland cement to not more than 5½ parts of graded aggregates and not more than 7½ gallons of water to one bag of cement, except when controlled concrete is used.

RULE 4-6-7 VENEER MORTAR BASE. The mortar setting beds for clay tile and similar veneers on vertical surfaces shall be composed of not less than 1 part of approved portland cement to 1 part of hydrated lime and from 4 to 7 parts of fine aggregate.

RULE 4-7 LUMBER. All lumber and timber structural members shall be sound, free from rot and large or loose knots and damaging diagonal or spiral grain. It shall be of the stress-grade corresponding to the stresses used in design. When average materials are used, and the grade is not identified, the maximum allowable working stresses shall not exceed the lowest stress value in the standards for the species of lumber used. Lumber sizes specified in these rules are nominal size. The safe loads shall be based on the dressed sizes conforming to the American Lumber Standards. Except when used in composite or built-up integrated sections, or when approved after test by the building official, no floor joist, roof rafter, stud or framing member shall be less than 2 inches in thickness.

RULE 4-8 BRICK. Clay, shale or concrete brick for use in masonry walls shall be hard, sound, and free from cracks with a minimum compressive strength of 2500 lbs. sq. in. for use in exterior walls and 1500 lbs. sq. in. for interior construction.

RULE 4-9 CONCRETE BLOCK. Hollow load-bearing concrete blocks shall have a compressive strength of not less than 1200 lbs. sq. in. on the gross area. All concrete blocks shall be well cured and at least 30 days old before installation in the wall.

RULE 4-10 STRUCTURAL CLAY TILE. Load-bearing wall tile shall be hard-burned with a minimum compressive strength of 1500 lbs. sq. in. when tested with cells vertical and not less than 750 lbs. sq. in. when tested with cells horizontal on the gross area.

RULE 5. NEW MATERIAL AND METHOD OF CONSTRUCTION

RULE 5 NEW MATERIALS AND METHODS OF CONSTRUCTION. New materials and their integrated assemblies and methods of construction and new service equipment not provided for in these rules and any material or system of questioned suitability proposed for use in the construction or service equipment of a building shall be approved on the basis of ability to perform the specified or necessary functions of its use through tests or analysis in accordance with established engineering practice as prescribed in SEC. B-606 of the Standard Building Code.

RULE 5-1 INTEGRATED ASSEMBLIES. Approved wall, floor or roof panels and other integrated assemblies fabricated of dimension lumber with wood stress-coverings and structural units of metal-covered or molded plywood or other approved plastics formed into prefabricated load-bearing units shall be permitted for use in walls, partitions, floors, ceilings and roof when designed in accordance with accepted engineering practice or meeting the test requirements of the Standard Building Code.

RULE 5-2 TESTS. Tests shall simulate the actual conditions which occur in normal use and shall be made at an accredited laboratory at the expense of the applicant. The building official may accept duly authenticated reports from recognized authoritative sources or may refer such applications to the State Board of Standards for approval. Every structural assembly shall sustain without failure 2½ times the required live load.

RULE 5-3 APPROVALS. A record of all material approvals with the conditions and limitations of their use shall be kept on file by the building official and shall be open for public inspection during business hours. If the evidence and proof are not sufficient to justify approval in the opinion of the building inspector, the applicant may appeal from such action to the State Board of Standards for a final decision.

RULE 5-4 IDENTIFICATION OF PRODUCT. All new materials and prefabricated assemblies approved for use under these rules shall be identified by the approved label, grade mark, trade mark and manufacturer's identification symbol. A drawing of the official identification marks shall be kept on file in the office of the building official for reference.

RULE 5-5 PREFABRICATION. Prefabricated assemblies delivered complete to the building site shall be subjected to the same tests required for at-site construction methods and shall be subjected to the supervision required by RULE 623 governing prefabricated construction.

RULE 6. EXIT REQUIREMENTS

RULE 6 EXIT REQUIREMENTS. All buildings and structures shall be provided with means of egress complying with these rules; and such means of exit shall be maintained in an accessible and safe condition at all times. In no case, shall the length of travel to an exit stairway or other approved means of egress exceed 75 feet from the most remote point of every habitable floor area or room.

RULE 6-1 ONE AND TWO-FAMILY DWELLINGS. At least one interior fixed stairway, constructed as required in RULE 6-6, shall be provided between any two floors which contain habitable rooms or spaces, to a habitable attic and to every basement. In addition to the primary stairway exit, emergency escape openings shall be provided from every habitable room, which shall be located not more than 4 feet above the floor level. In two-family dwellings, a second stairway or other approved secondary means of egress shall be provided. Basement recreation rooms shall be provided with a secondary exit to a yard, court or street; or in lieu thereof, the basement ceiling and the basement stairway shall be constructed and enclosed with material of not less than ¾ hour fire-resistance rating.

RULE 6-2 PRIVATE SANITARIUMS AND CONVALESCENT HOMES. Not less than 2 separate and remote means of egress shall be provided from each floor of a private sanitarium or a convalescent home, as defined in these rules, at least one of which shall be an interior stairway. The second means of egress may be an approved fire-escape or other direct exit down to a yard, street or court. The common corridor leading to the exitway from individual rooms and the interior exit stairway shall be protected with ¾ hour fireresistive construction.

RULE 6-3 PRIVATE SCHOOLS AND NURSERIES. Private schools and nurseries as defined in these rules, shall be provided with not less than 2 separate means of egress. In buildings more than one story in height, at least one exit shall be an interior stairway enclosed in ¾ hour fire-resistive construction. In no case shall attics of such schools or nurseries be used for habitable occupancy and the ceiling of the second story shall have a ¾ hour fire-resistance rating.

RULE 6-4 MIXED OCCUPANCY. In all buildings of the residential use group covered by these rules, in which retail stores or other business uses are conducted in the first story, subject to the restrictions of the zoning laws, the ceilings and enclosing partitions between the business and dwelling areas and the exitways from the dwelling areas shall be protected with construction having not less than a ¾ hour fireresistance rating.

RULE 6-5 PRIVATE GARAGES. Class A private garages of wood frame construction shall be limited to one story in height, without attic or living quarters. Class B private garages shall be at least of protected wood frame construction, not more than 2½ stories in height, and may have living quarters in the second story provided all walls, ceilings and stairway from the residence area are protected with construction having a ¾ hour fireresistance rating.

RULE 6-6 EXIT STAIRWAY AND DOOR CONSTRUCTION. All stairways in residence buildings shall be not less than 3 feet wide except uninhabitable attic, basement and cellar stairs. The steps shall have a uniform rise of not more than 8¼ inches and a uniform tread width of not less than 9 inches exclusive of nosing; except that in winding stairs, the tread shall be not less than 9 inches wide at a point 18 inches from the wall side. When platforms are required, they shall be at least as wide in the direction of travel as the stairway and shall extend not less than the full width of any exit doors opening thereon. The stairway, landing and platform shall be protected with a continuous wall or guard rails and shall have a hand-rail on at least one side, projecting not more than 3½ inches into the stair width. The height of the hand-rail shall be not less than 30 inches, nor more than 33 inches above the nosing of the treads. The exit doors to enclosed stairways shall swing in the direction of travel and have a minimum width of 30 inches. The door between the dwelling and the garage area of an attached garage shall be either a 1¾" solid core wood door or a panel door protected with No. 24 U.S. gage metal on the garage side or may be constructed of any material to afford a ½ hour fireresistance rating on the garage side. All stairways shall have not less than 6 feet 8 inches continuous clear headroom measured vertically from the front edge of the tread to a line parallel to the stair run.

RULE 6-7 CONSTRUCTION OF FIRE-ESCAPES. Fire-escapes shall only be accepted as a secondary means of egress in existing buildings not adequately supplied with exit facilities. They shall be located within the lot lines and preferably within recesses or courts and shall be constructed to comply with SEC. B-417 of the Standard Building Code.

RULE 6-8 FIRESTOPPING OF STAIRWAYS. All stairs of combustible construction shall be fire-stopped as provided in RULE 11-8.

RULE 6-9 LIGHTING OF STAIRWAYS AND EXITWAYS. All stairways and connecting hallways shall provided with windows, skylights or artificial light of sufficient intensity to provide safe passage and ascent or descent of stairs through each story.

RULE 7. LIGHT AND VENTILATION REQUIREMENTS

RULE 7 LIGHT AND VENTILATION REQUIREMENTS. Every habitable room or space shall be of adequate size, furnished with means for light and ventilation to insure safe and livable occupancy.

RULE 7-1 HABITABLE ROOMS AND SPACES. Every habitable room or space above and below grade, not including bath or toilet rooms, laundries, pantries, foyers, and communicating corridors, shall have the following minimum dimensions:

RULE 7-1-1 CLEAR CEILING HEIGHT. The minimum clear ceiling height of habitable spaces shall be not less than 7 feet in the basement, not less than 7 feet 6 inches in the first story and and not less than 7 feet 4 inches in upper stories. Rooms in half-stories shall provide the minimum height specified in at least one-half the area. In computing the area of rooms in half stories, all portions less than 5 feet in height shall be disregarded.

RULE 7-1-2 MINIMUM ROOM SIZE. Habitable rooms shall have a minimum dimensions of 7 feet and the following minimum areas, exclusive of closet and storage space:

Living Room not less than 130 square feet;

Living Room with Dining Space not less than 160 square feet;

Living Room with Dining and Cooking space not less than 210 square feet;

Kitchen not less than 70 square feet;

Kitchen with Dining space not less than 90 square feet;

Bed Room not less than 90 square feet.

RULE 7-2 NATURAL LIGHT AND VENTILATION. Every habitable room or space designed for human occupancy, except those specified in RULE 7-1 and as provided in RULE 4-4, shall have windows, skylights, monitors, transoms, transparent or translucent wall or roof panels or other light-transmitting media open to the outer air on yards or courts on the same lot or other open public spaces complying with the provisions of the zoning laws. The light-transmitting media shall provide an amount of light equivalent to that transmitted through clear glass having an aggregate area of not less than 1/10 of the floor area served thereby. Whenever any part of the room or space exceeds 2 times the clear ceiling height in distance from the only natural lighting source, or when the required window in any wall is located more than 8 feet from an intersecting wall, the area of the light-transmitting media shall be increased to 1/6 of the room area. The aggregate openable area of windows or other ventilating media shall be not less than 1/20 of the floor area served; except that when the only source of ventilation is located in a room or space which exceed two times the clear ceiling height in distance from the only natural ventilating source, or when the required natural ventilation is located in any wall, distant more than 8 feet from the intersecting wall, the openable area for ventilation shall be increased to 1/12 of the room area. In lieu of windows, the glass area in exterior doors may be accepted for 100 per cent of the light requirement but not more than 25 per cent of the ventilation requirement.

RULE 7-3 ARTIFICIAL LIGHT AND VENTILATION. In place of the natural light and ventilation requirements, alternate arrangements of openings to the outer air, or of artificial lighting and mechanical ventilation that meet the requirements of SEC. B-504 of the Standard Building Code shall be permitted. When means of artificial lighting or mechanical ventilation are required, the applicant shall establish to the adequacy of the mechanical system to be installed.

RULE 7-4 BASEMENT AND CELLAR ROOMS. No room which has less than one-half its clear ceiling height above the average adjoining finish grade shall be occupied as a habitable room except basement recreation rooms. The glazed window area in basement habitable rooms shall comply with RULE 7-2. All other spaces located in basements or cellars shall be adequately lighted and ventilated.

RULE 7-5 ATTIC SPACES. All attic spaces for other than human occupancy between top floor ceilings and roofs shall be ventilated by windows, louvers, vents or approved mechanical means. The total clear area of vent or louver openings shall be not less than 1/3 of one per cent of the horizontally projected roof area.

RULE 7-6 CRAWL SPACES. In all parts of buildings and structures which are erected without basements or cellars, except as provided in RULE 9-6 for floating mat foundations, a crawl space shall be provided under the first floor not less than 18 inches in depth, vented with screened openings having a clear area of not less than 1/3 of one per cent of the enclosed building area, or shall be provided with other means of ventilation approved by the building official. When the crawl space is used to accommodate piping or other conduit work, the space shall be not less than 24 inches deep. Where the level of the crawl space is below the established grade, the enforcing authority may grant a variation from these requirements. An access opening of not less than 2 feet by 2 feet shall be provided for inspection and repair of piping, ducts and other mechanical installations and the surface of the ground shall be covered with a concrete slab or other protection against moisture. The underside of the first floor construction of wood, metal, gypsum slabs or other materials subject to deterioration or decay shall be insulated, dampproofed or treated with an approved preservative process.

RULE 7-7 BATHROOMS AND WATER-CLOSET COMPARTMENTS. Bathrooms and water closet compartments shall be lighted and ventilated by windows, skylights, vents, ducts or mechanical ventilation as provided in SEC. B-507.3 and SEC. E-202.13 of the Standard Building Code.

RULE 7-8 YARDS AND COURTS. All yards and courts required to serve rooms for light and ventilation purposes shall comply with the requirements of the zoning laws and shall remain unobstructed for the required area and full height except for permissible projections and automobile parking as specified in SEC. B-512 of the Standard Building Code.

RULE 8 DESIGN LOADS AND WORKING STRESSES

RULE 8-6 AVERAGE REINFORCED CONCRETE. The working stresses for average materials without controlled procedure shall be based on the following proportions by dry volumetric measurement and maximum water content per sack of cement:

TABLE 8-6 CONCRETE MIXES

MIX	GALLONS WATER	28-DAY STRENGTH LBS. SQ. IN.
Class A - 1:4 1/2	6 3/4	2500
Class B - 1:5 1/2	7 1/2	2000

RULE 8-6-1 ALLOWABLE WORKING STRESS FOR AVERAGE REINFORCED CONCRETE:

TABLE 8-6-1 AVERAGE CONCRETE STRESSES

DESCRIPTION	LBS. SQUARE INCH	
	Class A	Class B
Extreme Fiber Stress	900	750
Shear in Beams:		
without web reinforcement	50	40
with anchorage of long. steel	75	60
with web reinforcement	125	100
with web reinforcement and anchorage	180	150
Shear Flat Slabs at Capital or Drop	75	60
Shear in Footings:		
without anchorage	50	40
with anchorage	75	60
Bonds:		
plain bars	100	80
deformed bars	125	100
Bearing	625	500
Column Compression	625	500
Ratio (n)	12	15
Tension in Steel Reinforcement:		
All grades	18,000	18,000

RULE 8-7 LUMBER AND TIMBER. The allowable working stresses for yard lumber which is not readily identified as to species or grade shall not exceed the values in Table 8-7:

TABLE 8-7 AVERAGE LUMBER STRESSES

TYPE OF STRESS	LBS. SQ. IN
Extreme Fiber Stress in Bending	1,000
Horizontal Shear	60
Compression Across Grain	250
Compression with Grain (Short Column)	750
Modulus of Elasticity	1,000,000
Compression (Long Columns):	
$\frac{l}{d} = 30$	400
25	450
20	500
15	550
12	600
10	650
5	750

RULE 8 DESIGN LOADS AND WORKING STRESSES. Every part of all buildings and structures shall be of adequate strength to support the superimposed live and wind loads herein prescribed, in addition to the dead loads of the construction. For residential occupancy, a live load of 40 lbs. per square foot shall be assumed on the first floor, 30 lbs. on the second floor and habitable attic floors and 20 lbs. on all other attic floors. The building and structure shall also be designed to withstand a horizontal wind pressure of 20 lbs. per square foot due to wind blowing in any direction. All foundation walls shall be designed to resist lateral soil pressure together with vertical superimposed loads and with due allowance for hydrostatic pressure and uplift in water-bearing soils. Roof framing shall be anchored to walls and wall framing to foundations to resist wind uplift and sliding in excess of 2/3 of the dead load resistance of the structure.

RULE 8-1 CONTROLLED MATERIAL WORKING STRESSES. When the material is identified with respect to manufacture and strength or stress-grade as defined in RULE 4-3, the design and allowable working stresses shall conform to the respective standard of accepted engineering practice listed in the Manual of the Standard Building Code.

RULE 8-2 AVERAGE MATERIAL WORKING STRESSES. For average materials without grade identification in the allowable working stresses shall not exceed the values herein specified.

RULE 8-3 NATURAL AVERAGE MORTARS. Mortars for masonry construction shall develop the following 28-day compressive strength:

Type A - 1:3	Cement mortar	2500 lbs. sq. in.
Type B - 1:1:6	Cement-lime mortar	1000 lbs. sq. in.
Type C - 1:3	Lime mortar	750 lbs. sq. in.

RULE 8-4 NATURAL STONE MASONRY. The allowable compressive stress in lbs. sq. in. for natural stone masonry shall be:

TABLE 8-4 STONE MASONRY STRESSES

MATERIAL	MORTARS	
	Type A	Type B
Granite (dressed beds)	1,000	500
Gneiss " "	1,000	500
Slate " "	1,000	500
Limestone " "	700	400
Marble " "	600	300
Sandstone " "	400	250
Field Stone (Rubble Masonry)	150	100

RULE 8-5 AVERAGE BRICK, CONCRETE AND TILE MASONRY. The allowable compressive stress in lbs. sq. in. shall be for average materials:

TABLE 8-5 MASONRY STRESSES

MATERIAL	Type A	Type B	Type C
Brick and Solid Clay Units	175	140	75
Solid Concrete Units	125	100	*----
Hollow Concrete Units-			
Vertical cells	100	75	-----
Horizontal cells	75	50	-----
Structural Clay Tile Units			
Vertical cells	100	60	-----
Horizontal cells	60	30	-----
Cavity and Hollow Walls			
Solid units	125	100	-----
Hollow units	75	50	-----
Poured concrete	250	*-----	-----
Solid Mass Concrete			
1:5 1/2 mix - 7½ gals water	500	-----	-----
1:7 1/2 mix - 8 gals. water	350	-----	-----
Neat Portland Cement Grout in thin layers	1,000	-----	-----

*Not allowed.

RULE 8-8 STRUCTURAL AND REINFORCING STEEL. When rolled structural steel sections are not identified as to manufacture and certified by mill test or otherwise to the satisfaction of the building official, the allowable stresses in the standard for the design, fabrication and erection of structural steel listed in the Manual shall be reduced 10 per cent. The working stress in steel reinforcement for reinforced concrete construction which is not rolled with raised symbol, letter or other identification mark impressed on the bars to identify the manufacturing mill with accompanying tensile mill tests shall be subject to the same reduction herein specified and as shown in TABLE 8-6-1.

RULE 8-9 LIGHT GAGE STEEL. The allowable working stresses for light gage formed steel structural members, not otherwise identified as to grade, shall be based on the use of flat-rolled carbon steel sheets with a yield point of 25,000 lbs. sq. in. as regulated by the design specifications for light gage steel construction listed in the Manual.

RULE 9. EXCAVATIONS AND FOUNDATIONS

RULE 9 EXCAVATIONS AND FOUNDATIONS. Foundations and footings shall be designed, constructed and protected as herein provided to insure a minimum of differential settlements and without unsafe deformation of any part of the building or structure.

RULE 9-1 SAFEGUARDING EXCAVATIONS. Excavations made for a building operation under an approved permit or for any other purpose such as removal of soil, earth or any other material from a lot shall be conducted so as to prevent injury to neighboring properties and municipal streets and to safeguard the general public welfare during and after completion of the operation. Until permanent supports have been provided, temporary retaining walls, sheet-piling, bracing or other approved safeguards shall be employed. When deemed necessary for safety by the building official, the premises shall be protected with guard rails, fences or other means to prevent trespassing. All materials and equipment required in a construction operation shall be stored and placed so as not to endanger the adjoining orpublic property or people or to interfere with the use of the public streets.

RULE 9-2 REGULATION AND DRAINAGE OF LOTS. When a building has been demolished and no new building has been projected or approved, the vacant lot shall be filled, graded and maintained in conformity to the established street grades. The lot shall be maintained free from the accumulation of standing water and rubbish and from any unsafe or hazardous condition which would endanger the public life and health. When a new building is projected, the grades of the lot and location of the structure shall be established to avoid standing of surface water on the lot or drainage towards new and existing foundations. When work under a building permit is suspended for any reason, or a building permit is revoked, excavations and foundations already installed shall be filled in to the established street grades.

RULE 9-3 DEPTH OF FOUNDATIONS. Wall, pier and column foundations shall bear on undisturbed solid ground, hard pan or bed rock or on piles driven to satisfactory bearing strata except as herein provided for water-front and temporary small structures and for exterior accessory extensions.

RULE 9-3-1 FROST LINE. Except when supported on hard pan or solid rock. or on a floating mat as provided in RULE 9-6, all permanent foundations shall be installed below the frost line but in no case less than 3 feet below the finished grade. Greater or less depths may be approved by the enforcing official when supported by adequate information.

RULE 9-3-2 SMALL STRUCTURES. Temporary one-story buildings of wood frame or light gage steel construction not exceeding 500 square feet in area and exterior steps, terraces and similar attached structures may have footings at a depth of not less than 2 feet below grade, securely anchored or tied to the main building foundation wall.

RULE 9-3-3 WATER-FRONT STRUCTURES. Wood frame structures erected over submerged or marsh lands may be supported on timber footings placed entirely below permanent water level. When used as capping over wood piles, all exposed portions shall be treated by an approved creosote pressure process or other approved preservative treatment acceptable to the building official.

RULE 9-4 BEARING VALUES AND TESTS OF SOILS. When required by the building official, the application for a new building or enlargement of an existing building shall be accompanied by a statement describing the soil in the ultimate bearing strata with sufficient data to establish the character and bearing capacity of the foundation materials.

RULE 9-4-1 PRESUMPTIVE BEARING VALUES. Mud, organic silt or unprepared fill shall be assumed to have no bearing capacity. Except when determined by soil tests, the maximum allowable pressure on supporting strata under spread footings at or near the grade surface shall not exceed the values in the following table:

TABLE 9-4-1 SOIL BEARING VALUES

CLASS OF MATERIALS	TONS SQ. FT.
Class 1 - Crystalline Bed Rock	40
Class 2 - Sedimentary Rock or Cemented Conglomerates	20
Class 3 - Soft or Broken Bed Rock	10
Class 4 - Natural Cemented and Compacted Sand - Gravels	8
Class 5 - Gravel and Sand-Gravel Mixtures	5
Class 6 - Hard Dry Clay or Confined Coarse Sand	4
Class 7 - Compacted Fine Sand or Loose Gravel	3
Class 8 - Loose Confined Sand or Stiff Clay	2
Class 9 - Soft Wet Clay or Permanent Water-Bearing Sand	1

RULE 9-4-2 BORINGS AND TESTS. When inspection discloses doubtful soil conditions and the available information is inadequate to determine the soil bearing capacity, the applicant shall make at his own expense such investigations, borings, test pits or load tests at such locations and to the depths that the building official may direct. All soil load tests shall be conducted and evaluated as provided in SEC. B-612 of the Standard Building Code.

RULE 9-4-3 VARYING FOUNDATION MATERIALS. When the foundation soils under a structure are of varying bearing values and the weaker material is more than one class below the stronger material as established in TABLE 9-4-1, the bearing value on the weaker material shall be reduced by 1/2.

RULE 9-5 FOOTINGS. Masonry footings for walls, columns or piers shall consist of plain or reinforced concrete. Where soil conditions prevent sharp-cut trenches for footings, side forms shall be used. Where footings overlay filled trenches or other similar disturbed soil, they shall be adequately reinforced with steel beams or other reinforcement.

RULE 9-5-1 STEEL IN FOOTINGS. When steel is incorporated in a foundation, it shall be protected from corrosion by paint, asphalt or concrete as approved by the building official. Steel grillage beams shall be entirely encased in not less than 3 inches of concrete and when used on yielding soils shall rest on concrete beds not less than 12 inches thick.

RULE 9-5-2 CONCRETE FOOTINGS. When poured under or in the presence of water, the concrete shall be deposited by tremie or other approved means to insure negligible segregation of the mixture or turbulence of the water and never in the presence of flowing water. They shall be protected from freezing during deposition and for a period of not less than 5 days thereafter.

RULE 9-5-3 SIZE OF FOOTINGS. Concrete footings for walls, piers, columns and chimneys shall be of adequate dimensions and strength to distribute the load uniformly on the foundation materials but in no case less than the following minimum sizes:

Under Walls - 8 inches wider than the wall and 8 inches thick,

Under Piers and Columns - 4 square feet in area and 12 inches thick,

Under Chimneys - 6 inch projection on all sides and 12 inches thick,

Pile Capping - 12 inches above and 4 inches below cut-off.

RULE 9-6 FLOATING FOUNDATION MAT. When the bearing stratum is of uniform load capacity and the superimposed loads can be arranged to result in reasonably balanced application, a reinforce concrete slab or other approved foundation may be used under one and two-family dwellings and accessory structures. The soil under the slab shall be levelled and compacted and covered with a drainage layer of broken stone or gravel not less than 6 inches thick. Means shall be provided to prevent seeping of cement mortar into the voids of the drainage bed during pouring of the concrete slab. The structural slab shall be not less than 4 inches thick of reinforced concrete complying with RULES 4, 6 and 17. The reinforcement shall be in addition to any piping for radiant heat or other purposes, but in no case less than 6x 6 inch mesh of No. 6 U.S. gage steel wire with special reinforcement under concentrations. The slab shall be damp-proofed and water-proofed, and soil drainage as provided in RULE 10-1 shall be provided. When radiant heating is installed, the perimeter of the slab shall be insulated with a waterproof and vermin proof material as approved by the building official. In rodent infected locations, a rat-proof apron shall be constructed as specified in RULE 10-4.

RULE 9-7 ISOLATED FOUNDATION PIERS. Isolated solid masonry or mass concrete piers shall not exceed 8 times the least dimension in unsupported height above grade and when of hollow masonry units not more than 4 times the least dimensions unless filled solidly with approved concrete. Reinforced concrete piers shall not exceed 10 times the least dimension in unsupported height. All reinforcement shall be protected below grade with not less than 3 inches of concrete and the minimum vertical reinforcement shall be 1/2 of one per cent and the horizontal reinforcement 1/4 of one per cent of the area of the pier.

RULE 9-7-1 BUTTRESSES AND PILASTERS. All wall buttresses and pilasters shall be built into the wall with a masonry bond complying with RULE 13-3. Pilasters shall project not less than 2 inches with a minimum area of 24 square inches and shall be provided under girder bearings when the clear span is 12 feet or more and at intervals of 12 feet in all 8-inch hollow block foundations walls, unless transverse bracing walls are provided.

RULE 9-8 FOUNDATION WALLS. Foundation walls shall be constructed of stone, brick, or concrete block masonry laid up in portland cement or other approved bagged masonry mortars, or of mass or reinforced concrete complying with these rules. Foundation and sub-grade walls shall extend to the floor level nearest grade but in no case less than 8 inches above the level of the earth in contact with or retained by the wall. The foundation shall be not less in thickness than the wall supported thereon, but in no case less than herein specified for the type of wall construction.

RULE 9-8-1 RUBBLE STONE. Foundation walls of rubble stone masonry shall be not less than 16 inches thick laid on the natural bed and bonded to comply with RULE 13.

RULE 9-8-2 BRICK, BLOCK AND MASS CONCRETE. Foundation walls of clay or concrete brick, concrete bock or of mass concrete shall be not less than 8 inches thick for a height of not more than 8 feet; 10 inches thick for a height of 10 feet; and 12 inches thick for heights greater than 10 feet. The top of block foundation walls shall be filled solid or be reinforced with solid masonry for a depth of not less than 4 inches and shall be strengthened with pilasters or buttresses under concentrated loads.

RULE 9-8-3 REINFORCED CONCRETE. When reinforced concrete is required to resist all stresses from vertical and lateral foundation loads, the walls shall be not less than 8 inches thick reinforced with not less than 1/2 inch vertical rods spaced 12 inches on centers and 1/2 inch horizontal rods spaced 24 inches on centers where supported laterally at the top and bottom. For all other conditions of support, the reinforcement shall be designed in accordance with accepted engineering analysis.

RULE 9-8-4 VENEERED WALLS. Under brick veneered-wood frame and under 10 inch cavity walls, which are not more than 20 feet in height including the gables, foundation walls may be 8 inches thick provided 2 inch corbels are constructed to furnish bearing for the full thickness of the superstructure wall and no corbel projects more than 1/3 the height of the masonry unit.

RULE 9-9 RETAINING WALLS. Walls built to retain or permanently support adjoining soil shall be constructed of approved masonry, mass or reinforced concrete and shall be designed to resist superimposed vertical loads and full hydrostatic pressure unless provision is made to drain off the water. Footings shall be provided to keep the soil pressure under the wall within the safe bearing capacity specified in these rules. All retaining walls shall be protected by coping, unless serving as the structural support of upper walls.

RULE 9-10 PILE FOUNDATIONS. Building foundations may be constructed of steel, concrete or timber piles or piles of other approved structural materials resistant to moisture and destructive attack, within the limitations of design and allowable working stresses of the Standard Building Code. The load shall not exceed the capacity of the pile designed as a long or short column in accordance with accepted engineering practice. For small structures located on submerged or marsh land, timber piles may have a minimum diameter of 4 inches at the point and 6 inches at the butt, with the top 5 feet exposed above high water level for visual inspection. The tops of timber piles shall be cut off in a horizontal plane below mean water level or lowest ground water level unless treated by an approved pressure process. Creosoted wood piles shall be cut off below the ground surface but may extend above the ground water level.

RULE 10. WATERPROOFING, RATPROOFING AND TERMITE PROTECTION

RULE 10 WATERPROOFING, RATPROOFING AND TERMITE PROTECTION. Interior and exterior structural elements at and below grade shall be protected against decay, disintegration or attack of destructive agencies and to insure a dry, livable basement cellar.

RULE 10-1 SOIL DRAINAGE. The foundations of a building erected on soil which is water-bearing at any season of the year shall be constructed so that ground and surface water will drain away from the structure and prevent penetration into basement and cellar. To minimize water pressure on walls and around the perimeter of floating mat foundations in non-porous soil, a drainage ditch of drain tile or porous concrete pipe shall be provided with the drain tile covered with 6 inches of gravel or stone. Tight-joint tile or other drains shall be provided to convey the water to dry wells, storm sewers or other disposal as regulated by local ordinance and the rules of the N. J. State Department of Health.

RULE 10-2 WATERPROOFING. When the physical topography and ground water conditions are apt to result in water seepage or dampness, walls below ground level enclosing habitable and occupied spaces and the basement and cellar floors shall be waterproofed and, where necessary, reinforced to withstand hydraulic pressure. Block foundation walls shall be protected on the exterior with two coats of portland cement mortar having a total thickness of not less than ½ inch from the ground level to the outside edge of the footing, covered with not less than one coat of hot tar or asphalt; or waterproofed by other approved method.

RULE 10-3 PROTECTION OF LUMBER. Heavy wood girders framing into masonry walls shall have ¼ inch air space around the embedded sides and ends to prevent decay or shall be protected with approved preservative processes. Wood posts in basements or cellars shall be supported on concrete pedestals not less than 3 inches above the finished basement floor.

RULE 10-4 RATPROOFING. When not provided with a continuous masonry foundation wall, and where required for protection against rodents, a masonry or reinforced concrete apron not less than 4 inches thick, shall be installed around the entire perimeter of the building. The apron shall extend not less than 24 inches below grade. All wall openings in the apron and in concrete grade floor slabs shall be protected with corrosion-resistive shields, collars, screens or other guards. In such cases when the superstructure walls are of wood-frame construction, the space between studs shall be filled to a height of one foot above grade with concrete or other material indestructible by rats.

RULE 10-5 PROTECTION AGAINST TERMITES. When evidenced by records of local conditions, all wood sills and plates on top of foundation walls shall be impregnated with an approved preservative and termite-proof treatment. When acceptable to the building official, in place of the preservative treatment, a continuous metal shield, without open joints or other openings, of aluminum, copper or other corrosion-resistive materials shall be installed on top of the foundation wall, extending 2 inches beyond both faces of the wall and bent downward at an angle of 45 degrees to form a protective hood.

RULE 10-6 BACK-FILL. No loose wood, form material or other debris subject to decomposition shall be buried around foundation walls or left under floors of porches. The back fill against foundation walls shall be well-compacted earth, free from impervious debris, frozen soil, or any material that may disintegrate or result in settlement that would interfere with proper drainage.

RULE 11. FIRE SAFETY AND FIRE PROTECTION

RULE 11 FIRE SAFETY AND FIRE PROTECTION. Buildings shall be constructed and located so as to restrict the internal spread of fire, the communication of fire to and from adjoining buildings and to provide safe means of egress in the event of fire.

RULE 11-1 FIRE DISTRICTS. The municipal authority shall establish fire district limits to include areas of the municipality in which highly congested business, commercial and public assembly uses are located or projected. such areas shall be designated as "Fire Limits." No building of wood frame construction shall be erected, moved from outside to within or extended in height or area within the Fire Limits except as provided in SEC. B-307 to SEC. B-309 of the Standard Building Code.

RULE 11-2 LOT LINE SEPARATION AND FIRE EXPOSURE. The exterior walls of all wood frame buildings erected less than 6 feet from interior lot lines shall be of ¾ hour fireresistive construction including opening protectives except for store fronts and window and door openings in one and two-family dwellings, but in no case shall the walls of a wood frame or light gage unprotected steel constructed building be located less than 3 feet from interior lot lines.

RULE 11-3 FIRERESISTANCE RATINGS. When any type of construction is required to have a definite fireresistance rating for walls, floors, partitions, ceilings or opening protectives, such rating shall be determined by the Standard Fire Test cited in the Manual; but in no case shall such requirements be deemed to decrease or waive any strength provisions or any other requirements of these rules respecting structural safety.

RULE 11-3-1 ROOF COVERINGS. Roof coverings shall be tested in a complete assembly of roof deck and roofing, constructed as applied in practice and evaluated as specified in SEC. B-702 of the Standard Building Code. Class 1 and Class 2 roofings shall be permitted on buildings of all types of construction defined in RULE 3; Class 3 roofings shall be permitted in ordinary, light gage steel and protected wood frame buildings; and class 4 roofings shall be limited to wood frame buildings outside of the Fire Limits. The standards and accepted practice of the Underwriters' Laboratories, Inc., governing Classes A, B and C roofings, or of other accredited testing authorities, shall be deemed to meet the requirements of these rules for their recommended and approved use.

RULE 11-4 FIRE AND PARTY WALLS. Except as herein provided for wood frame buildings, bearing and non-bearing fire and party walls shall be constructed of solid or hollow unit masonry, or of mass or reinforced concrete or any other approved noncombustible materials or forms of construction and shall extend continuously from foundations to and above the roof. When the roof is of fireproof construction, fire and party walls shall be built up tightly to the underside of the roof slab.

RULE 11-4-1 FRAME BUILDINGS. In one and two-family dwellings of wood frame construction, party walls may be constructed of wood studs filled in and protected on both sides with noncombustible component materials to develop a fireresistance rating of ¾ hours and shall extend through intersecting walls of frame construction to the outside of all combustible wall and roof sheathing. No wood planking, sheathing or combustible roof decking shall extend over or through any party or fire wall.

RULE 11-4-2 HOLLOW FIRE WALLS. When combustible members frame into hollow fire walls or fire walls of hollow units, all hollow spaces shall be filled in solidly for the full thickness of the wall and for a depth of not less than 4 inches, above, below and between the floor and roof joists with noncombustible materials approved for fire-stopping in RULE 11-8.

RULE 11-4-3 OPENINGS IN FIREWALLS. Required openings in fire walls shall be protected on both sides with approved 1½ hour fire doors. No communicating openings shall be permitted in party walls of two-family dwellings or semi-detached one-family dwellings.

RULE 11.5 FIRE DIVISIONS, STAIR AND SHAFT ENCLOSURES. Partitions, floors and other construction separating two dwelling units shall have a fireresistance rating of not less than ¾ hours and in ordinary and wood frame buildings may be constructed of an assembly of wood framing members protected with noncombustible component materials that meet the Standard Fire Test. Stairways and passageways serving in common two dwelling units as the only means of exit shall be enclosed in ¾ hour fireresistive construction. All such fire divisions, including any shaft enclosure for venting or other purpose shall form a continuous smoke and fire barrier. Vertical fire divisions extending below the grade floor shall be constructed of masonry having a fireresistance rating of not less than 2 hours.

RULE 11-6 OPENING PROTECTIVES. Approved assemblies of fire doors, fire windows and fire curtains or shutters shall be constructed of solid or hollow metal sections, metal-covered wood, fire-retardant wood or any other type of approved construction that passes the Standard Fire Test.

RULE 11-7 FIRE PROTECTION. The structural elements of all buildings required to be fire protected shall conform to RULE 14 for fire-proof construction. In wood frame construction, the assemblies herein listed will be accepted as providing a ¾ hour fireresistance rating.

RULE 11-7-1 FIRE RESISTANT CEILINGS. On wood floor joist:

3/8 inch perforated gypsum lath with 3 inch metal strips on joints and 3/8 inch gypsum plaster.
3/8 inch perforated gypsum lath with ½ inch perlite or vermiculite plaster.
3.4 lb. metal lath with ½ inch perlite or vermiculite plaster.
3.4 lb. metal lath with ¾ inch gypsum plaster.
3.4 lb. metal lath with 7/8 inch portland cement plaster.
1/4 inch asbestos wallboard or ½ inch gypsum board covered with No. 24 U.S. gage metal.

RULE 11-7-2 FIRE RESISTIVE WOOD STUD PARTITIONS. Both sides of wood studs covered with:

1/2 inch gypsum board with 3/8 inch gypsum plaster.
3/8 inch gypsum board with cover of 3/16 inch cement asbestos board.
3/4 inch wood fiber board with 3/8 inch gypsum plaster.
5/8 inch gypsum board (no plaster) and mineral wool fill.
1/2 inch plywood with mineral wool fill.
3.4 lb. metal lath with ¾ inch gypsum or 7/8 inch portland cement plaster.

RULE 11-8 FIRESTOPPING. Firestopping shall be designed and constructed to close all concealed draft openings and for form effectual fire barriers against the spread of fire and smoke between stories of the building and laterally through open structural spaces in any one story. The firestopping shall consist of approved noncombustible materials including asbestos, brick, terra cotta, concrete, fibrous glass, gypsum, mineral wool, steel, iron, metal lath and plaster, formed steel of not less than No. 20 U.S. gage or other approved material securely fastened in place. In wood frame partitions, 4 inch mineral wool packed 12 inches high above the floor and between the beams at each story level shall be deemed an acceptable fire stop. Two thicknesses of 1-inch lumber with broken lap joints or one thickness of 2-inch lumber, installed with tight joints, shall be accepted as a fire stop in wood frame construction. No firestopping shall be concealed or covered from view until inspected and approved by the building official. All draft openings shall be firestopped including the following:

RULE 11-8-1 Steel beams or wood joist floors with open spaces between finished floor and ceiling in area not exceeding 3,000 square feet;

RULE 11-8-2 Stud walls and partitions;

RULE 11-8-3 Furred spaces of masonry walls;

RULE 11-8-4 Top, bottom and middle of each run of enclosed stairs of combustible construction;

RULE 11-8-5 Concealed wall pockets of sliding doors;

RULE 11-8-6 Attic spaces between ceilings and roofs in areas of not more than 3,000 sq. ft.;

RULE 11-8-7 The space between combustible framing and chimneys; and

RULE 11-8-8 Openings for pipes or ducts passing through combustible partitions with close-fitting collars, shutters or other approved fire stops.

RULE 11-9 FLOOR JOISTS. Floor joists framing on masonry walls shall be cut to a level of not less than 3 inches in the depth and shall project no more than 4 inches into the wall and embedded ends of adjacent beams passing from opposite sides shall be separated by not less than 4 inches of masonry.

RULE 11-10 INTERIOR TRIM AND FINISH. In one and two-family dwellings, the interior trim and finish materials shall have a flame spread rating when tested under the standard procedures specified in SEC. MB 703 of the Manual of not more than 300; except in boiler and utility rooms as provided in RULE 12-7. Flame spread restrictions shall not apply to interior finish materials such as paper or other materials having no greater fire hazard than paper and which are not more than 1/28 inches thick.

RULE 11-11 EXTERIOR TRIM. In other than buildings of ordinary and wood frame construction, all exterior projecting construction shall be of metal, or metal-covered wood or other approved noncombustible materials.

RULE 11-11-1 ORDINARY CONSTRUCTION. In buildings of ordinary construction, cornices may be constructed of wood, provided they are firestopped at 20 foot intervals. Half-timbering and similar architectural decorations may be of wood, provided such material is backed up solidly in the masonry wall.

RULE 11-11-2 WOOD FRAME CONSTRUCTION. In wood frame and protected wood frame buildings, cornices, gutters and leaders may be of wood construction or of other materials of similar combustible character.

RULE 11-12 COMBUSTIBLE LIMITATIONS OF STRUCTURAL MEMBERS. In fireproof and light gage steel frame buildings and wherever structural members are required to be noncombustible, the material shall neither ignite or support combustion when subjected to fire and shall show a flame spread rating not exceeding 25 under the test procedures prescribed in SEC. MB 703 of the Manual. In buildings of all other types of construction, the flame spread rating of structural members shall not exceed 200.

RULE 12. CHIMNEYS AND HEATING EQUIPMENT

RULE 12 CHIMNEYS AND HEATING EQUIPMENT. The building permit shall not be required to cover the installation, alteration, extension or removal of a heating boiler or furnace in one and two-family dwelling, except as to foundations and construction of chimneys, flues and connections thereto and the fire protection of adjacent structural elements. Chimneys shall be constructed of approved masonry, reinforced concrete or other approved noncombustible materials as specified in these rules and may be erected as free-standing or as an integral part of and bonded to a masonry wall complying with RULE 13. When located in party walls, the flues shall not extend beyond the lot line.

RULE 12-1 CHIMNEY CLASSIFICATION. For the purpose of these rules, chimneys for solid, liquid or or gas-fired equipment shall be classified in accordance with the temperature of the products of combustion at the point of entrance to the chimney during normal operation as: Low temperature, not exceeding 1000° F, and High temperature in excess of 1000° F or serving heating equipment having a manufacturer's gross rating of 500,000 B.T.U. per hour or more.

RULE 12-2 LOW TEMPERATURE CHIMNEYS. When constructed of masonry, the walls shall be not less than 8 inches thick, or 4 inches thick with a fire clay flue lining, or of approved alternate construction as specified in RULE 12-4. When constructed of reinforced concrete, the walls shall be not less than 6 inches thick, or 4 inches thick with a fire clay flue lining. When constructed of coursed, dressed stone, the walls shall be not less than 8 inches thick or of rubble stone masonry 12 inches thick, securely bonded and tied at the corners. When constructed of hollow tile units, the walls shall be 8 inches thick, two-unit construction with tile flue lining.

RULE 12-3 FLUE LINING. Flue lining shall consist of fire clay not less than 5/8 inches thick, capable of withstanding the action of flue gases and of resisting temperatures in excess of 2000° F without softening, cracking or disintegrating. It shall be constructed in advance of the masonry flue and the masonry built around each section with all spaces between masonry and lining completely filled and and shall be set in full mortar beds with joints struck off smoothly on the inside surfaces. It shall be supported on solid brick offsets at the bottom and shall start below the inlet of the smokepipe, distant not less than the diameter from such inlet. It shall extend not less than 2 inches above the top of the chimney and be capped with a 2-inch wash of portland cement mortar or otherwise capped with stone, concrete, terra cotta tile or other approved material. All chimneys shall extend not less than 3 feet above flat roofs and 2 feet above any roof ridge located within 10 feet thereof. No chimney shall be corbelled from a building wall less than 12 inches thick and the corbeling shall comply with RULE 13-7.

RULE 12-3-1 NUMBER OF FLUES. No more than 2 flues shall be enclosed in a single chimney unless each pair is separated from the adjoining pair by not less than 4 inches of masonry or reinforced concrete bonded into the chimney walls and the individual flues separated from each other by not less than one inch mortar withes in addition to the flue lining.

RULE 12-3-2 CLEANOUTS. Cleanouts or other approved devices shall be provided at the base of all chimneys to enable the flues to be maintained clean and left smooth on the inside surfaces.

RULE 12-3-3 CLEARANCE FROM COMBUSTIBLES. Combustible framing shall be trimmed away and no combustible material shall be placed within 2 inches of any chimney nor within 6 inches of any inlet opening to such chimney.

RULE 12-4 ALTERNATE CHIMNEY CONSTRUCTION. In lieu of masonry chimneys for solid, liquid or gas-fuel fired equipment in one and two-family dwellings, alternate chimney or flue assemblies tested, approved and labeled by the Underwriters' Laboratories Inc., or by other authoritative agencies which meet the requirements of these rules may be approved by the building official. Alternate chimney construction as herein described shall be supported on concrete filled pipe columns or hung from attic or ceiling joists of adequate strength protected with component materials to afford a fireresistance rating of not less than ¾ hours provided all clearances are maintained as prescribed in these rules and the vents are supported on corrosion-resistive metal brackets of not less than No. 16 U.S. gage.

RULE 12-5 SMOKEPIPE AND CONNECTIONS. Smoke pipes, breeching and vent connectors from the heating equipment to the flue shall be constructed of galvanized iron or other corrosion-resistive metal or of masonry with a melting point of not less than 2000° F and of the equivalent strength of the galvanized steel specified in the following table:

TABLE 12-5. THICKNESS OF METAL SMOKE PIPES

DIAMETER OR GREATEST DIMENSION INCHES	U.S. GAGE NO.
Less than 6	30
6 - 12	26
13 - 20	22
More than 20	18

The smoke pipe shall enter the side of the chimney through a fire clay or metal thimble or flue ring of masonry with a tight fit, but shall not project beyond the inside face of the flue. Two or more smoke pipes may be joined to a single flue connection provided that the connection and flue are of sufficient aggregate area to service all of the appliances thus connected. If the length of a vent or smoke pipe exceeds 4 feet, it shall pitch upward to the flue with a gradient of not less than ¼ inch per foot. No smoke pipe shall pass through a floor or ceiling of combustible construction. The clearance of smoke pipes and gas vent connectors from unprotected combustible construction shall be not less than 18 inches and not less than 9 inches when the construction is protected to afford not less than a ¾ hour fire resistance rating. Gas-fired appliances requiring vent connections to the flue shall comply with SEC. MB 716 of the Manual.

RULE 12-6 FIREPLACES. The back and jambs of fireplaces shall be constructed of solid masonry or reinforced concrete not less than 8 inches thick with a lining of fire brick or other approved noncombustible material not less than 2 inches thick. When the solid masonry or reinforced concrete is not less than 12 inches thick or the equivalent insulation is provided integrally in approved heating equipment or firing devices with air-circulating chambers, the firebrick lining may be omitted. Every fireplace flue shall be constructed with a smoke chamber and be equipped with an approved damper.

RULE 12-6-1 FIREPLACE HEARTHS. Every fireplace shall be constructed with a hearth of brick, stone, concrete, tile or other noncombustible material which extends not less than 20 inches in front of and not less than 8 inches on each side of the fireplace opening, supported on masonry trimmer arches not less than 4 inches thick or equally strong and fireresistive construction.

RULE 12-6-2 FIREPLACE CLEARANCES. Wood or other combustible material shall not be installed less than 6 inches from the fireplace opening and combustible material located within the 12 inch boundary of the opening shall project not more than 1/8 inch from the face of the masonry for each one inch distance from the opening.

RULE 12-6-3 FIREPLACE HEATERS. No heating device shall be placed in a fireplace unless it is of an approved type with flue connection.

RULE 12-7 BOILER AND UTILITY ROOMS. Unless the clearances specified in RULE 12-7-2 are provided, boilers located in the basement or cellar of a one- or two-family dwelling shall be enclosed with partitions and ceilings of not less than ¾ hour fireresistance rating or the ceilings shall be protected not less than 3 feet on all sides of the heating equipment with ½ inch plaster boards or a double thickness of 3/8 inch plaster boards with broken joints, or the equivalent. A central heating gas-fired furnace may be located in utility rooms in the first story when mounted on a 4 inch concrete foundation and enclosed with not less than ¾ hour fireresistive partitions and ceiling, with not less than 9 inch clearance from protected combustible construction.

RULE 12-7-1 AIR SUPPLY. Boiler and utility rooms shall be provided with gravity or mechanical ventilation to the outer air adequate to prevent the accumulation of hot air over or around the heating appliance and to furnish sufficient fresh air supply for proper combustion. For solid or liquid fuel-fired equipment, the air supply inlets shall have a net area of not less than 2 square inches for 1000 B.T.U. input rating plus one square inch for each additional 1000 B.T.U. or fraction thereof. For gas-fired equipment, the ventilating opening shall be not less than one square inch net clear area for each 1000 B.T.U. input per hour.

RULE 12-7-2 CLEARANCES. The boiler or furnace shall be installed with clearances of 3 feet from walls and partitions of unprotected combustible construction and 4 feet from ceilings and one-half these clearances from protected combustible construction with ¾ hour fireresistance rating, unless the equivalent protection is provided in appliances having integrally insulated walls approved by recognized authorities and installed in accordance with the recommended specifications of such approval.

RULE 12-8 FURNACE AND BOILER FOUNDATIONS. All boilers and furnaces and all other heat producing equipment shall be mounted on foundations complying with RULE 9.

RULE 12-9 INCINERATORS. Domestic or portable type incinerators of less than 2 square foot grate area and having a fire box or charging compartment of not over 5 cubic feet capacity may be installed in one and two-family dwellings with connectors to a separate flue. They shall be an approved type insulated with a jacket or lined with refractory materials capable of withstanding internal temperatures of 2000° F without cracking or failure and equipped with a tightly fitting door. The minimum size of flue shall be 12 inches by 12 inches and the smoke pipe connection shall be constructed of not less than No. 20 U.S. gage galvanized steel unless the equipment is so designed and vented to prevent external temperatures in excess of 250° F.

RULE 12-10 SPARK ARRESTORS. All incinerator stacks and other flues which emit sparks, when required by the building official, shall be equipped with spark arrestors of galvanized steel or other non-combustible construction with not more than ¾ inch mesh openings.

RULE 12-11 WARM AIR HEATING SYSTEMS. Warm air furnaces shall be automatically fired or equipped with a temperature actuated control which will shut off the fuel supply or cause the damper regulator to check the fire whenever the air temperature exceeds a maximum of 250° F.

RULE 12-11-1 REGISTERS. Registers shall be constructed and insulated as provided in SEC. MB-720 of the Manual.

RULE 12-11-2 HOT AND COLD AIR DUCTS. Hot and cold air ducts shall be constructed entirely of noncombustible material equivalent in strength and durability to the material specified in the following table:

TABLE 12-11-2. MINIMUM THICKNESS AND WEIGHT OF DUCTS

DIAMETER OR DIAGONAL DIMENSION INCHES	TIN WEIGHT PER SQUARE IN LBS.	GALVANIZED STEEL - U.S. GAGE	ALUMINUM B & S GAGE
Less than 12	IC 107	30	26
12-18	IX 135	28	26
18 and over	IX 135	26	24

Only approved noncombustible exterior coverings shall be used on hot air ducts. Clearances of one inch shall be maintained from combustible construction unless the exposed construction is protected to afford not less than ¾ hour fireresistance. Cold air ducts with temperatures not exceeding 170° F shall comply with all the provisions governing hot air supply ducts except in respect to heat insulation and clearances from combustible construction.

RULE 12-11-3 WALL AND CEILING HEATING PANELS. Air chambers or enclosed spaces in walls, partitions or ceilings used as heat exchangers shall be installed only with automatic temperature limit controls set to operate at not more than 200° F. Such panels shall be entirely enclosed with noncombustible materials and where hung from wall or floor construction, the bases, hangers and other supports shall be of metal or other approved noncombustible materials.

RULE 12-12 STEAM AND HOT WATER SYSTEMS. Steam and hot water pipes in systems which are not automatically controlled to prevent temperatures in excess of 200° F shall have a minimum clearance of one inch from combustible construction unless insulated, and when such pipes pass through combustible floors or partitions, the openings shall be protected with metal or other noncombustible sleeves and collars. Concealed heating pipes located in exterior walls shall be protected against freezing.

RULE 12-13 HOT WATER HEATERS. All range boilers, hot water heaters and storage tanks shall be equipped with approved automatic temperature controls, pressure relief valves and relief outlet waste valves. Temperature relief valves, shall be capable of discharging sufficient hot water at 210° F without any further rise in temperature.

RULE 12-14 FUEL OIL SYSTEMS. Before any oil burning heating system is installed, an application for a permit accompanied by a fee of_____ dollars shall be filed with the building official, stating the size of storage tanks, the type of equipment and the kind of fuel oil to be used. The application shall include a diagram showing the location of storage tanks with relation to the heating equipment and the building structure and all necessary details of the installation. All burners shall be of an approved type complying with RULE 12-15.

RULE 12-14-1 FUEL OIL TANKS. A tank for the storage of 6 gallons or less of fuel oil shall be considered an integral part of the burner equipment and shall be included in the approval of the burner. All tanks of more than 6 gallons capacity shall be constructed of tank steel plates, welded, riveted and caulked or riveted and welded to meet standard test requirements as specified in SEC. MB-720.0-M. The tank shall have permanently and prominently attached thereto a metal plate certifying that it has been tested and approved, the gage and thickness of the metal and the tank capacity and weight. All tanks to be buried under ground shall be protected with red lead, hot tar, asphaltum or other approved rust-resisting coating. Interior storage tanks of not more than 275 gallons capacity may be installed above the basement or cellar floors of a building when mounted on noncombustible supports and located at least 10 feet from any boiler, furnace, stove or other exposed flame; and when enclosed in masonry walls not less than 4 inches thick extending 6 inches above the top of the tank, such tanks may be located 4 feet from the exposed flame. Not more than 2 tanks of 275 gallons capacity shall be installed in any building unless protected as provided for larger tanks. Storage tanks of more than 275 gallons capacity located within a building shall be installed in the cellar or basement protected with reinforced concrete or masonry walls not less than 6 inches thick or buried with the top not less than 2 feet below the floor level or covered with a reinforced concrete slab not less than 4 inches thick. Such tanks shall be of an approved underground type and shall be located not less than 15 feet from the burner and 3 feet from any foundation wall or footing. Oil storage tanks located outside of a building or structure shall be installed below ground in the manner specified for interior large tanks. When necessitated by ground water pressure, underground tanks either exterior or interior, shall be anchored to a foundation of sufficient weight to prevent floating.

RULE 12-14-2 VENT AND FILLER PIPES. Fuel oil storage tanks shall be equipped with a relief vent designed to prevent abnormal pressure. The building official may require an additional emergency relief to prevent excessive internal pressure in the event of fire. The vent and fill shall be not less than 2 inch steel pipe and the vent shall terminate outside the building with the discharge and not less than 2 feet vertically above the finished grade and 2 feet horizontally from any window or door opening. The top of the vent shall be protected with a weatherproof hood.

RULE 12-14-3 FEED PIPES. Feed pipes shall be of steel or copper tubing and shall be run under the cellar floor or shall be encased in 2 inches of concrete.

RULE 12-14-4 FUEL OIL PREHEATERS. When fuel oil preheaters are installed they shall be of an approved type equipped with a relief valve regulated to discharge at 1½ times the working pressure of the system.

RULE 12-15 OIL BURNERS. Fuel oil burners and burning appliances shall be of an approved and labeled type installed in accordance with accepted engineering practice. The oil burner shall be identified with a permanently attached metal plate bearing the name of the manufacturer or distributor, the number of the appliance, the hourly B.T.U. output and the grade of the fuel oil for which it is approved. Complete printed instructions for igniting, operating, maintenance and shut-down procedure shall accompany the burner.

RULE 12-15-1 SAFETY CONTROLS. All oil burner systems shall be equipped with safeguards and protective devices controlling high pressure, high temperature, high and low water levels and shut-off when ignition fails. A remote control shall be provided at the head of the cellar stairs to shut off the burner.

RULE 12-16 BOTTLED GAS. Liquified petroleum gases delivered in cylinders for use in heating and cooking in one and two-family dwellings may be installed outside of buildings above ground in tanks not exceeding 125 gallon capacity, erected on steel or other noncombustible supports. The containers shall be tested and approved by an accredited testing authority and shall be labeled and identified in accordance with the Interstate Commerce Commission regulations. Not more than two such containers may be installed against the wall of the building, not nearer than 5 feet to any window or door opening with the space underneath ventilated directly to the outer air. The containers shall be so arranged that they can be replaced without shutting off the flow of gas to the equipment. The gas service connections to the building shall be above ground with a shut-off valve located in a readily accessible location on the interior of the wall. Flexible connections, piping, regulator relief valves and safety devices shall be installed in accordance with accepted engineering standards listed in the Manual. Above ground containers with a capacity of more than 125 and less than 500 gallons may be placed outside of the building on suitable foundations, located not less than 10 feet from the building and from lot lines and 5 feet from any driveway when approved by the building official.

RULE 13. MASONRY CONSTRUCTION

RULE 13 MASONRY CONSTRUCTION. All masonry constructed of individual units shall be laid up in any one of the mortars described in RULE 4-6. No frozen materials shall be used, nor shall frozen materials be built upon. New masonry shall be protected against freezing for not less than 48 hours after construction and shall not be undertaken below 28° F on rising temperatures, or 35° F on falling temperature unless temporary heated enclosures and heated materials or other adequate precautions are exercised to prevent freezing. No lumber or other combustible materials shall be incorporated in masonry walls except nailing blocks or exposed ornamental timber where permitted under RULE 11-11, or where combustible aggregates or other component materials are approved after test of the complete assembly of fireresistive construction. All masonry shall be bonded and intersecting walls shall be securely tied together as required in RULE 13-3.

RULE 13-1 EXTERIOR WALL THICKNESS AND HEIGHT. The thickness of masonry bearing walls in ordinary and fireproof construction with a clear span between walls or other supports of not more than 26 feet shall be not less than 8 inches; except that in one-family dwellings, private garages and similar accessory buildings which are not more than 1½ stories nor more than 15 feet in height to the peak of the gable, 6 inch walls may be permitted. When the span exceeds 26 feet, the wall thickness shall be determined by the building official.

RULE 13-1-1 HOLLOW BLOCK WALLS. The minimum thickness of hollow block bearing walls not exceeding 2½ stories in height shall be 8 inches.

RULE 13-1-2 CAVITY WALLS. Both the facing and backing of cavity walls shall be not less than 4 inches thick and the total thickness of wall shall be not less than 10 inches in buildings not more than 25 feet in height. When the height exceeds 25 feet, the inner withe shall be not less than 8 inches thick and the total wall thickness not less than 14 inches. Less thicknesses may be permitted if approved after tests for strength, fireresistance and heat conductance.

RULE 13-1-3 RUBBLE STONE WALLS. The thickness of rubble stone walls shall be not less than 16 inches.

RULE 13-1-4 MASS CONCRETE WALLS. Mass concrete walls with not more than 0.2 percent of temperature reinforcement shall be not less than 8 inches thick, except where 6 inch masonry walls are permitted in 1½ story dwellings and private garages.

RULE 13-1-5 REINFORCED CONCRETE WALLS. When not more than 25 feet in height the thickness of reinforced concrete walls shall be not less than 6 inches and shall be increased one inch for each additional 10 feet in height.

RULE 13-1-6 FACED WALLS. Faced walls constructed of hollow and solid units shall be not less in thickness than the maximum required for walls of hollow block masonry.

RULE 13-1-7 VENEERED WALLS. The backing of veneered walls shall be of the minimum required thickness for solid or hollow unit construction. The veneer shall not be included in determination of the required wall thickness, unless constructed and bonded as required in RULE 13-3.

RULE 13-1-8 NON-BEARING WALLS AND PARTITIONS. The thickness of interior non-bearing walls of masonry may be 4 inches less than prescribed for bearing walls but in no case less than 8 inches, except as herein provided for non-bearing subdividing partitions. Interior non-bearing partitions of terra cotta, gypsum or other approved materials, exclusive of plaster, shall be of the following minimum thickness unless reinforced or approved after test:

TABLE 13-1-8 NON-BEARING PARTITIONS

THICKNESS INCHES	UNSUPPORTED HEIGHT FEET
3	8
4	12
6	15
8	20

Solid partitions of metal lath and plaster may be 2 inches in thickness for heights up to 12 feet, and increased ½ inch for each additional 4 feet in height.

RULE 13-2 LATERAL BRACING. All masonry bearing walls shall be braced laterally by floor or roof framing at intervals of not more than 20 times the wall thickness and 18 times the wall thickness when of hollow unit or cavity wall construction. The length of bearing wall between reinforcing columns, piers, buttresses, cross-walls or other equivalent vertical bracing shall not exceed 50 times the wall thickness.

RULE 13-3 BONDING OF MASONRY. Walls of approved masonry shall be bonded as herein required.

RULE 13-3-1 SOLID MASONRY. Facing and backing shall be bonded together with not less than one header course in each 7 courses of brick or not less than one full-length header in each 1½ square feet of wall surface. The distance between adjacent full-length headers shall not exceed 20 inches either vertically or horizontally.

RULE 13-3-2 HOLLOW MASONRY. Walls of hollow structural clay, tile, concrete or other approved hollow masonry units, when erected with more than one unit in the wall thickness shall be bonded with a stretcher course in every 5 courses, but not exceeding vertical intervals of 36 inches when lapping not less than 3¾ inches over the unit below, or vertical intervals of not more than 18 inches when lapping with units of not less than ½ greater thickness than the unit below. Hollow walls of solid units shall have a masonry bond equivalent to solid walls and the facing and backing shall be bonded together with not less than one header unit in each 3 square feet of wall surface. The inner and outer withes of cavity walls shall be tied together with not less than 3/16 inch rounds or 1/8 by 3/4 inch flats of approved corrosion resistive metal, with not less than one tie to each 3 square feet of wall surface and similar ties shall be provided around the perimeter of all wall openings.

RULE 13-3-3 HOLLOW UNIT WALL CONSTRUCTION. In all hollow unit masonry bearing walls, a top course of solid units, consisting of not less than 2 inches of brick, or the top course filled solidly with concrete, or the equivalent shall be provided for joist, beam and girder concentrations. When walls of hollow masonry units are decreased in thickness, the top course of the lower units shall be filled solidly with concrete or capped with suitable noncombustible materials.

RULE 13-3-4 FACED WALLS. The facing and backing shall be bonded together with headers or stretchers not less than 4 inches thicker than the facing to the equivalent extent of 1/7 the surface area of the wall as provided in RULE 13-3-1. Dressed natural or cast stone ashlar shall extend not less than 4 inches into the backing. Bond stones shall be uniformly distributed throughout the wall. When alternate courses are not full bond courses, stone which is not bond stone shall be anchored to the backing with one corrosion-resistive metal anchor to each 3 square feet of surface wall area.

RULE 13-3-5 RUBBLE STONE. In all rubble stone walls which are less than 24 inches thick, there shall be not less than one through header for each 9 square feet of surface wall area.

RULE 13-3-6 INTERSECTING WALLS. Where two structural walls intersect, they shall be bonded together by not less than ½ the masonry units when the walls are laid up together; and, when carried up separately, the intersection shall be toothed with approved spear anchors at vertical intervals of not more than 4 feet. When necessary, enclosure walls shall be temporarily braced during erection.

RULE 13-4 BUTTRESS AND PIERS. All buttresses and piers in superstructure walls shall be incorporated with a masonry bond. Isolated piers of other than mass concrete shall be bonded as required for masonry walls of the same thickness and shall be not less than 12 inches square nor more than 10 times the least dimension in height. When of unfilled hollow unit masonry construction, they shall be not more than 4 times the least dimension in height and shall be capped with a stone or steel bearing plate of the full dimensions of the pier.

RULE 13-5 CHASES AND ALCOVES. No chase or alcove in bearing walls shall exceed 1/3 the wall thickness in depth and the maximum horizontal projection shall be not more than 4 feet in length. Chases or recesses in hollow block walls shall be built in with the wall. Continuous horizontal chases may be constructed for the bearing of reinforced concrete floor and roof slabs, provided reinforcing anchors and ties are installed below and above the slab to resist bending and uplift in the wall.

RULE 13-6 ARCHES AND LINTELS. All openings in masonry walls shall be spanned by plain or reinforced masonry arches, steel lintels or other approved noncombustible structural members with not less than 4 inch bearing at each end. The supports shall be of sufficient strength to carry the load with a deflection of not more than 1/360 of the span and arches shall be designed to resist the lateral thrust. In buildings of ordinary construction, timber lintels may be placed on the inside of the wall over openings to serve as centers for masonry arches.

RULE 13-7 CORBELS AND PROJECTING MASONRY. Masonry walls may be corbelled with a maximum horizontal projection of 1/3 the wall thickness and a maximum projection of each layer of not more than 1/3 the height of the masonry unit. Corbelling of hollow walls shall be prohibited.

RULE 13-8 VENEERS. Exterior veneers for other than frame construction shall have the following minimum thickness set in a waterproof cement mortar float coat on a ¾ inch mortar base complying with RULE 4-6-7.

TABLE 13-8 VENEERS ON MASONRY

Architectural Terra Cotta (Flat Slab)	1¼"
Brick and Natural Stone	2"
Cast Stone	1½"
Clay Tile (vitreous or glazed)	1¾"
Ceramic or Porcelain Tile	¼"
Marble Slabs	1"
Structural Glass	11/32"
Aluminum Sheets	0.03"
Other Noncorrosive Metal	No. 28 U.S. Gage

RULE 13-8-1 STRUCTURAL GLASS VENEERS. No individual panels shall exceed 10 square feet in area with a corrosion - resistive metal framing anchored to the backing. Waterproof expansion joints shall be provided at end and intermediate sections and the base coat shall be reinforced with metal lath.

RULE 13-8-2 METAL VENEERS. Metal veneers shall be fabricated from corrosion-resistive metals or shall be faced with porcelain enamel or otherwise treated to render the metal resistant to corrosion. Such veneers shall be attached to metal framing or in buildings of ordinary construction may be supported on wood studs and furring strips treated with an approved preservative process. All joints and edges of metal veneer exposed to the weather shall be caulked to prevent penetration of moisture.

RULE 13-8-3 PLASTIC VENEERS. Only weather resistive and flame resistant types shall be approved, installed directly on a cement mortar base coat and applied with approved weather and fire resistive adhesives. Individual plastic veneer sections shall not exceed 4 square feet in area and all joints shall be sealed to be moisture proof.

RULE 13-8-4 MASONRY VENEER. Masonry veneers not included in the required masonry wall thickness shall be bonded by full length headers or with corrosion-resistive metal wall ties spaced not more than 32 inches horizontally and 16 inches vertically. Units of thin marble and vitreous or nonvitreous tile or terra cotta veneers shall be set in the waterproofed cement mortar float coat on the ¾ inch mortar base, with all joints grouted and painted with an approved waterproofed cement compound. Such veneers shall not be included in the required wall thickness unless bonded to comply with RULE 13-3.

RULE 13-8-5 STUCCO ON MASONRY WALLS. When portland cement stucco is applied directly to masonry or monolithic concrete, the surfaces shall be keyed, roughened, hacked or bush-hammered. The stucco shall be at least 2-coat work kept damp for at least 2 days before application of succeeding stucco coats. At all times during application and for a period of not less than 48 hours after application of each coat, provision shall be made to keep stucco work above 50° F. All sills, coping and projecting courses shall be flashed and provided with drips to avoid water damage.

RULE 13-9 PARAPETS. All masonry exterior and division walls in buildings more than one story in height shall be constructed with parapet walls extending not less than 2 feet above flat roofs except when such structures have overhanging roofs, cornices and gutters and except as required for fire walls in RULE 11-4. Masonry parapet walls shall be not less than 8" thick and when the height exceeds 4 times the thickness, they shall be laterally supported by noncombustible bracing or masonry buttresses. The top of the wall shall be coped with approved noncombustible and weather-resisting material.

RULE 13-10 STEPS AND TERRACES. Exterior steps, terraces and similar outside extensions shall be constructed of stone, concrete, hard burned brick, paving brick or other approved weatherproof and durable materials, with footings and foundations specified in RULE 9-3-2.

RULE 3-11 ERECTION PRECAUTIONS. All walls shall be temporarily braced during construction when necessary and no wall shall be erected more than 25 feet in advance of intersecting walls.

RULE 14. FIREPROOF CONSTRUCTION

RULE 14 FIREPROOF CONSTRUCTION. When buildings or structures for one and two-family dwellings are designated as fireproof, all structural elements shall be protected to develop the following fire resistance ratings with the minimum thickness of materials herein specified, or any other material or assemblies thereof which meet the Standard Fire Test requirements for the rating specified.

RULE 14-1 EXTERIOR AND INTERIOR BEARING WALLS ..... 2 hours

8 inch brick or hollow tile or block
8 inch combination wall
10 inch cavity wall
8 inch mass concrete
6 inch reinforced concrete

RULE 14-2 NONBEARING MASONRY WALLS AND FIRE DIVISION PARTITIONS ..... 1½ hours

4 inch clay tile plastered
6 inch concrete blocks
6 inch mass concrete
4 inch reinforced concrete
3 inch solid gypsum
4 inch gypsum blocks

RULE 14-3 COLUMNS, GIRDERS, TRUSSES AND BEAMS ..... 1½ hours

2 inch clay tile units
2 inch concrete units
3 inch hollow gypsum units
2 inch solid gypsum units
2¼ inch brick
1½ inch poured concrete
1½ inch poured gypsum
1 inch metal lath and gypsum plaster
¾ inch metal lath and vermiculite or perlite plaster
1½ inch metal lath and cement mortar

All beams shall be solidly encased in the required fireproofing except when protected with a fire resistive ceiling complying with RULE 11-7-1.

RULE 14-4 FLOORS AND ROOFS ..... ¾ hours

3 inch reinforced stone, gravel, slag or cinder concrete, ¾ inch protection
4 inch flat or segmented brick arches
6 inch flat or segmented terra cotta arches.
6 inch tile fillers with 2 inch concrete ribs.
2 inch reinforced top slab of concrete or gypsum on steel framing with fireresistive ceiling

RULE 14-5 USE OF COMBUSTIBLES IN FIREPROOF BUILDINGS. In buildings and spaces of fireproof construction, wood and other materials of similar combustible characteristics may be used as herein provided.

RULE 14-5-1 SLEEPERS, BUCKS AND GROUNDS. Floor sleepers, bucks nailing blocks and grounds may be of combustible materials provided the space between the fireproof floor and the flooring is firestopped in areas of not over 3000 square feet and such open spaces do not extend under or through permanent partitions or walls or the sleepers are solidly embedded in noncombustible materials.

RULE 14-5-2 FINISH FLOORING. Wood finish flooring may be directly attached to the embedded or firestopped sleepers. Flooring and wearing surfaces of other approved materials not more than ½ inch thick, including cork, rubber, composition, linoleum, asphalt and plastic tiles, shall be permitted when cemented directly to the fireproof floor construction or to a sub-floor of wood, with all hollow spaces firestopped as specified in RULE 14-5-1.

RULE 14-5-3 DOOR AND WINDOW SASH. When approved fire opening protectives are not required by the Standard Building Code or these Rules, wood doors, windows and their trim, frames and casings shall be permitted when applied to or backed up solidly with noncombustible materials.

RULE 14-5-4 INTERIOR TRIM. Free standing mouldings, chair rails, baseboards, wainscoting and similar nonbearing elements may be constructed of wood or similar combustible materials which comply with RULE 11-10.

RULE 14-5-5 SURFACE FINISHES. Paint and other surface finishes having no greater fire hazard than paper and which are not more than 1/20 inch thick and do not generate excessive smoke or toxic fumes when subjected to fire may be applied to walls and ceilings.

RULE 15. STRUCTURAL STEEL CONSTRUCTION

RULE 15 STRUCTURAL STEEL CONSTRUCTION. Design, fabrication, transportation, erection and workmanship of structural steel buildings shall conform to accepted engineering practice as regulated by the standard listed in the Manual. The design plans shall be drawn to appropriate scale showing the size, section and relative location of all structural members with floor levels, column centers and all offsets fully dimensioned. Complete shop drawings shall be prepared in conformity to the best modern practice and shall clearly designate shop and field rivets, bolts and welds in all connections and details.

RULE 15-1 PROTECTION OF EXPOSED STEEL. After fabrication and before shipment to the site all structural steel members, except those parts which are to be field welded or encased in approved concrete of noncorrosive aggregates or when specifically approved for members fabricated from corrosion-resistive alloys, shall be thoroughly cleaned and given a coat of approved paint. Exterior steel columns and girders before embedded in masonry shall be protected from moisture with a parging coat of cement mortar or other approved waterproofing.

RULE 15-2 HIGH TENSILE BOLTS. High tensile steel bolts in reamed holes shall be permitted as a substitute for riveted connections when field or shop inspected by a licensed engineer, registered architect or authorized testing agency in accordance with the standard listed in the Manual.

RULE 16. LIGHT GAGE STEEL CONSTRUCTION

RULE 16 LIGHT GAGE STEEL CONSTRUCTION. Formed light gage steel members as defined in RULE 3-3 and steel joists used alone or in combination with component materials in floor, roof and wall panels or with structural steel members, shall be fabricated and designed of the sections and sectional properties specified in the standard listed in the Manual.

RULE 16-1 MINIMUM THICKNESS OF METAL. The minimum thickness of formed steel members shall be as follows:

TABLE 16-1. LIGHT GAGE STEEL THICKNESS

Wall Siding and Sheathing	No. 28 U.S. Gage
Steel Floor Plates	No. 18 U.S. Gage
Ribbed-steel Roof panels	No. 22 U.S. Gage
Columns, posts, studs, joists, purlings and other structural members	No. 18 U.S. Gage

All connections shall be rigidly welded to the primary steel supports or securely anchored to the masonry wall construction. Steel joists may be used in floor and roof construction except around stairwells, shafts and other floor openings exceeding 2 feet square and when used to support partitions, they shall be designed to support the dead load of the partition in addition to all other imposed dead end live loads. When not subject to accepted engineering analysis, the assembly shall meet the load test, requirements of RULE 5.

RULE 16-2 ROOF DECKING. Steel roof decking with ribs not more than 6 inches on centers shall not be used on spans exceeding 10 feet and shall be designed as of simple span unless the units extend continuously over 3 or more spans or are rigidly welded to each support.

RULE 16-3 SIDING. Exposed steel siding and sheathing shall be fabricated of corrosion-resistive metals or otherwise protected against the weather to the satisfaction of the building official.

RULE 16-4 PROTECTION. All individual structural members shall be protected with an acceptable shop coat of rust resisting paint or enamel or by dipping approved hot or cold asphalt, or by galvanizing. After erection, except when encased in concrete, galvanized or otherwise adequately protected, an additional coat of approved paint shall be applied.

RULE 17. REINFORCED CONCRETE CONSTRUCTION

RULE 17 REINFORCED CONCRETE CONSTRUCTION. Any system of reinforced concrete construction that is not covered by or conflicts with the standards listed in the Manual, may be approved by the building official when it is demonstrated by satisfactory experience records and tests that the methods of construction satisfies all of the strength requirements of these rules.

RULE 17-1 FIREPROOF PROTECTION. When required to be fireproof, all structural elements shall be protected with approved concrete coverings but in no case less than the thickness herein prescribed.

RULE 17-1-1 COLUMNS. Rectangular columns shall have a minimum dimension of 10 inches and round columns, a minimum diameter of 12 inches; except that noncontinuous posts, one story in height, may have a minimum dimension or diameter of 6 inches. The concrete protective covering, included in the gross dimension, shall be not less than 1½ inches on interior columns and 2 inches when exposed to the weather.

RULE 17-1-2 PROTECTION OF BEAMS, GIRDERS AND TRUSSES. The reinforcement in beams, girders, and trusses shall be protected with not less than one inch of concrete when not exposed directly to the weather and 1½ inches when exposed.

RULE 17-1-3 FLOOR AND ROOF SLABS. Reinforced concrete floor and roof slabs shall not be less than 2 inches thick of approved aggregates on spans up to 24 inches and the reinforcement shall be protected with not less than ¾ inches of a concrete.

RULE 17-1-4 CINDER CONCRETE. Cinder concrete shall not be used for structural members except as fireproof protection when mixed in the proportion of 1 part cement to not more than 10 parts of fine and coarse aggregate measured separately.

RULE 18. ORDINARY CONSTRUCTION

RULE 18 ORDINARY CONSTRUCTION. The exterior and interior bearing walls of masonry construction shall comply with RULE 13; or interior supports may be provided on an unprotected structural steel or reinforced concrete frame.

RULE 18-1 INTERIOR PARTITIONS. Interior non-bearing partitions may be of wood-stud construction with the required fire resistance when serving as enclosures of stairwells or shafts or other required fire divisions.

RULE 18-2 FLOOR AND ROOF FRAMING. Wood floor beams and roof joists framing into masonry walls shall be cut to a bevel of 3 inches in the depth and shall bear not less than 4 inches and be anchored to the walls with tee anchors embedded not less than 8 inches in the masonry. All floor and roof framing shall be braced laterally at intervals of not more than 8 feet with lines of bridging as specified as in RULE 19-5-3 Roof framing shall be tied to the walls with metal anchors not less than 0.4 square inches in cross-section, extending not less than 16 inches vertically in the wall and spaced not more than 6 feet on centers. Heavy wood girders framing into masonry walls shall be supported in ventilated pockets or in self-releasing metal boxes or otherwise installed to minimize destruction of the wall in the event of fire. Steel beams or girders shall rest on steel bearing plates and be anchored to the wall with government anchors.

RULE 18-3 CONTINUITY OF FLOOR FRAMING. Floor framing shall be constructed to provide continuity across the building structure. The ends of beams or joists resting on girders shall bear not less than 4 inches or shall be supported on approved metal stirrups or on wood clips or ribbon strips. When framing on opposite sides of a girder, the beams shall either lap not less than 6 inches, securely bolted or spiked togetheror when framing end to end they shall be tied together with approved metal ties or straps on every third beam or joist. All details of interior wood framing shall conform to the requirements of RULE 19 for wood joist construction.

RULE 18-4 PLASTERING. All exterior masonry walls in habitable space which are plastered shall be furred with 2 inch clay furring tile or with one inch wood or ¾ inch metal furring strips or bars spaced 16 inches on centers.

RULE 19. WOOD FRAME CONSTRUCTION

RULE 19 WOOD FRAME CONSTRUCTION. All wood framing shall consist of exterior and interior bearing walls and partitions of wood studs or posts, sills, caps, girts and ribbon strips, braced at all angles and sheathed as herein required and with wood floor joists and roof rafters. Wood frame buildings may be constructed at either the balloon braced or platform-frame types and finished with a weather resisting boarding. All nailing of connections, sheathing, flooring and roofing shall comply with RULE 19-17.

RULE 19-1 All lumber and timber shall comply with RULE 4-5.

RULE 19-2 WALLS, PARTITIONS AND POSTS. The load capacity of isolated posts, struts or studs shall be based on the column value for the unsupported length and in frame walls and partitions, due allowance shall be made for the lateral bracing of sheathing and girts. In bearing walls and partitions 2 inch by 4 inch studs shall be required, spaced 16 inches on centers and 24 inches on centers in non-bearing partitions, unless otherwise approved after test complying with RULE 5. In nonbearing partitions the studs may be placed with the long dimension parallel to the partition. Wood posts in basements shall have concrete pedestals which extend not less than 3 inches above the finished floor level designed as columns for their unsupported length. The load on wood stud bearing walls faced with sheathing or plastering on both sides shall not exceed the values in the following table:

TABLE 19-2. SAFE LOADS FOR WOOD FRAME WALLS

In Thousand Pounds Per Foot					
2" x 4" Studs 16" on Centers	Unsupported Height in Feet				
	8	10	12	14	16
	2	1.5	1.0	0.75	0.5

RULE 19-2-1 WALL SILLS AND PLATES. Except over platform construction, sills shall be at least the equivalent of two 2 inch by 6 inch studs and shall be anchored to foundation walls when required by RULE 8. Cap plates in exterior walls shall be not less than two 2 inch by 4 inch studs. In non-bearing partitions, at least one top and bottom plate shall be provided of the same width as studs.

RULE 19-2-2 LEDGER AND RIBBON BOARDS. Ledger and ribbon boards supporting floor joists shall be not less than 1 by 4 inches, cut into and securely nailed to each stud.

RULE 19-2-3 CUTTING AND NOTCHING. In girders, beams or joists, cuts and bore holes shall be not more than 2 inches in depth or diameter or width across grain, nor extend more than 1/5 the beam or girder depth and shall not be located nearer to the end of the span than three times the beam depth, nor within the center third of the span. In studs of bearing walls or partitions, notches made to receive piping, duct work or for other fabrication purposes shall be cut not more than 1/3 the depth of the stud or the studs shall be doubled or otherwise reinforced. In no case shall framing members be cut or notched so as to seriously affect the strength.

RULE 19-2-4 MORTISE AND TENON FRAMING. In mortise and tenon framing wall studs shall be not less than 4 inch by 6 inch members designed as columns for their unsupported length.

RULE 19-3 WALL BRACING. In frame buildings more than one story in height, corner posts shall be the equivalent of not less than three 2 inch by 4 inch studs, braced by not less than one 1 inch by 4 inch continuous diagonal braces let into the studs; except that when diagonal sheathing or its equivalent is used as provided in RULE 19-8, diagonal braces may be omitted. In exposed locations when necessary in the opinion of the building official, when the posts and studs are not continuous from sill to roof, all framing members shall be secured together with approved metal clips, splices or other connectors to insure continuity and a well-integrated structure. Sheet metal clamps, ties and clips shall be formed of not less than No. 20 U.S. gage sheet steel for 2 inch framing members and No. 18 U.S. gage for heavier members.

RULE 19-4 FRAMING FOR WALL OPENINGS. All wall and partition openings shall have double studs at jambs, or shall be trussed or framed by other approved methods to support the superimposed loads. Lintels shall consist of not less than double joists as herein specified:

TABLE 19-4. WOOD LINTELS

3 to 4 foot span	Double 2 x 4
4 to 6 foot span	Double 2 x 6
6 to 7 foot span	Double 2 x 8
7 to 8 foot span	Double 2 x 10
More than 8 foot span or as required by the load conditions.	Double 2 x 12

RULE 19-5 FLOOR AND ROOF FRAMING. Floor beams and roof rafters shall be of adequate strength and stiffness to support all dead and live loads and shall be doubled under partitions and around floor and roof openings.

RULE 19-5-1 SPACING OF JOISTS AND RAFTERS. Floor joists shall be spaced not more than 16 inches and roof rafters not more than 24 inches on centers for one inch floor and roof sheathing except for tested and approved integrated assemblies. For heavier plank flooring, floor beams may be spaced 32 times the thickness of the planking and when reinforced with finish flooring, the spacing shall not exceed 48 times the thickness of the plank.

RULE 19-5-2 MAXIMUM SPANS OF FLOOR JOISTS. When the lumber is not identified as provided in RULE 4-5, the following horizontal spans for dwelling units shall not be exceeded with a spacing of 16 inches in floors, ceilings and pitched roofs:

TABLE 19-5-2. WOOD JOIST SPANS

Size	Floors	Ceiling	Roofs
2 x 6	8' - 6"	12' - 0"	10' - 0"
2 x 8	12' - 0"	16' - 0"	13' - 0"
2 x 10	14' - 0"	20' - 0"	16' - 0"
2 x 12	16' - 6"	24' - 0"	20' - 0"
3 x 6	9' - 6"	---------	13' - 6"
3 x 8	12' - 0"	---------	17' - 0"
3 x 10	16' - 0"	---------	22' - 0"
3 x 12	19' - 6"	---------	23' - 0"

RULE 19-5-3 BRIDGING. In all floor, attic, and flat roof framing of wood joists or rafters, not less than one line of bridging shall be provided for each 8 feet of span and the bridging shall be of not less than 1¼ inch by 3 inch lumber, doubled nailed at each end, or of metal bridging of equal rigidity secured at the intersection.

RULE 19-5-4 COLLAR BEAMS. Roof rafters shall be vertically supported at the ridge or adequately trussed and tied together with not less than 1 inch by 6 inches or 2 inch by 4 inch collar beams spaced not more than 5 feet on centers.

RULE 19-5-5 HEADERS AND TRIMMERS. All headers and their trimmers shall be doubled. All tail beams or joists which are 12 feet or more in length shall be hung in approved joist or beam hangers and the trimmer beams shall be spiked together.

RULE 19-6 UNDERFLOORING. Where required, subflooring may be of wood, plywood, concrete or other approved materials as provided in these rules for use with various types of finish flooring.

RULE 19-6-1 FOR WOOD FINISH. Subflooring shall be of 1-inch tongue and groove boards not more than 8 inches wide, laid diagonally and nailed at each bearing, or ½ inch approved moisture-resistant plywood, with the outer ply at right angles to the floor joist.

RULE 19-6-2 FOR LINOLEUM, ASPHALT, RUBBER OR PLASTIC TILE FINISH. Subflooring shall be 1-inch tongue and groove boards, not more than 8 inches wide or 5/8 inch approved moisture-resistant plywood.

RULE 19-6-3 FOR CERAMIC TILE FINISH. Subflooring shall be 3 inches of concrete installed not more than 1 inch below the top of chamfered floor joists, or a bed of 1¼ inches of reinforced cement mortar on a subfloor protected with 15 lb. lining felt, or the tile shall be applied directly to the subfloor by an approved adhesive.

RULE 19-7 FINISH FLOORING. A floor finish or covering shall be provided in all habitable rooms and spaces and in bathrooms, toilet compartments, halls and closets adjacent to habitable rooms as herein provided. Where carpeting is provided, it shall be installed over a concrete floor, hardboard, plywood or other approved hard, durable surface.

RULE 19-7-1 TYPES OF FINISH. The finish may consist of kiln-dried hard or soft wood, linoleum, cork, asphalt, rubber or plastic tiles, paint or any other approved durable material. Concrete slabs in basement habitable spaces shall be finished with wood flooring set in bituminous adhesive, wood flooring on sleepers treated with a pressure preservative process, or approved asphalt, cork, or rubber tile, or other approved material.

RULE 19-7-2 BATHROOM AND TOILET COMPARTMENTS. The floors and walls where subject to water exposure shall be made watertight to an adequate height with clay or plastic tile or by other approved method. Unless the wall tile is set in a reinforced cement mortar base coat, it shall be applied to the wall surface with an approved waterproof adhesive. In exterior wood frame walls, the studs shall be filled with mineral wool or other insulating material and provided with a vapor barrier of continuous metallic sheets or moisture-proof felt near the inside of the wall.

RULE 19-8 ROOF DECKING. Roof decking shall consist of not less than 1 inch boards or ½ inch approved plywood of the exterior waterproof type and the thickness shown in TABLE 19-8 when open deck sheathing is used for wood shingles on pitched roofs, it shall consist of not less than 1 inch by 4 inch roofers spaced not more than 6 inches on centers, or other approved construction.

TABLE 19-8. PLYWOOD ROOF DECKING

SPECIES	Rafter Spacing Inches O. C.	Thickness in Inches: Roof Pitch 3" in 12" or less	Thickness in Inches: Roof Pitch over 3" in 12"
Douglas Fir	16	3/8	5/16
	20	3/8	3/8
	24	1/2	3/8
Western Soft Wood	16	3/8	5/16
	20	1/2	3/8
	24	5/8	1/2

RULE 19-9 WALL SHEATHING. All enclosed wood frame buildings, unless back-plastered stucco construction is used shall be sheathed with one of the following types or any other material of equal strength and durability approved by the building official:

1 inch reinforced cement mortar

1 inch wood sheathing

5/16 inch approved exterior waterproof type plywood with 16 inch stud spacing

5/8 inch approved exterior waterproof type plywood with 24 inch stud spacing

1/2 inch approved core-treated water repellent gypsum boards

3/4 inch approved type impregnated fibre board

The bracing of the frame specified in RULE 19-3 may be omitted when 1 inch diagonal wood sheathing, 5/16 inch approved plywood or other sheathing approved by the building official is applied in vertical panels not less than 4 feet wide and full story height, with approved nailing complying with RULE 19-17. Approved gypsum sheathing shall be of the asphalted gypsum core type complying with Federal Specifications SS-S276 and A.S.T.M. specification C 79-54.

RULE 19-9-1 SHEATHING PAPER. Except over exterior type plywood, water-repellent gypsum board and waterproof impregnated fibre board, all sheathing shall be protected with a layer of 15 lb. waterproofed saturated asphalt felt or paper and behind all exterior trim at wall openings, at vertical corner joints and at horizontal joints between boards of fibre or gypsum which are not interlocked by tongue and groove or V-type construction.

RULE 19-10 EXTERIOR WEATHER BOARDING AND VENEERS. To secure weather-tightness and moisture resistance in framed walls and other hollow structural spaces, the exterior wall shall be faced with approved weather-resisting coverings and cellular spaces shall be ventilated and when required by the building official, interior non-corrodible vapor-tight berriers shall be installed. Exterior wall coverings shall be approved moisture and weather-resisting material securely attached to resist wind and rain. The following materials shall be approved as weather coverings of the nominal thickness specified:

TABLE 19-10. VENEERS ON WOOD FRAMING

BRICK AND STONE VENEERS	2 inches
CLAY TILE VENEERS	¾ inches and under
STUCCO OR EXTERIOR PLASTER	¾ inches
WOOD SIDING	½ inch
ABESTOS SHINGLES	5/32 inch
ASBESTOS CEMENT BOARDS	1/8 inch
WOOD SHINGLES	3/8 inch
ALUMINUM CLAPBOARD	0.030 inches
FORMED STEEL SIDING	No. 28 U.S. Gage

When wood siding is applied over impregnated fiber sheathing, it shall be of the long length type nailed directly to the wood studs with the heads of the nails set. Shingles and other weather coverings attached to the sheathing less than 1 inch thick shall be secured with approved mechanically bonding nails or with common nails on furring strips directly nailed to the studs. Nails shall be aluminum, copper, nickel, zinc or zinc-coated complying with the manufacturer's recommendations.

RULE 19-10-1 MASONRY VENEERS. Veneers of unit masonry shall be attached to the wood frame over sheathing felt with corrosion resistive anchors at vertical intervals of not more than 16 inches and horizontal intervals of not more than 32 inches or directly anchored to a reinforced cement mortar base. All masonry veneers shall extend one course lower than the wood sills. When masonry veneers are applied over gypsum sheathing, a 1 inch clear intervening space shall be provided, and the masonry ties shall be nailed into the studs.

RULE 19-10-2 METAL VENEERS. Metal veneers shall be fabricated from corrosion resistive alloys or shall be protected front and back with porcelain enamel. They shall be mounted on wood or metal furring strips or approved sheathing. When other than wood sheathing is used, the ties shall be secured directly to the studs of the structural frame.

RULE 19-11 PLYWOOD. All approved plywood used for structural purposes shall be identified as to type, grade, species and recommended use by the manufacturer or other approved inspection agency in conformity to the accepted commercial standards listed in the Manual. When moisture resistant plywood for interior use as underlaying or finish and for exterior use as waterproof sheathing or siding is not identified by the grade-mark of the manufacturer or other approved testing authority, the thicknesses specified in these rules shall be not less than the following:

Underflooring	3/4 inch
Wall Sheathing	1/2 inch
Roof Sheathing	5/8 inch

RULE 19-12 FLASHING. Approved waterproof and corrosion-resistive flashing of 16 oz. copper, 26 U.S. gage galvanized sheet metal, stainless steel, 24 B & S gage aluminum, 40 lb. coated terne plate, reinforced water retardant metal-clad paper or other materials shall be installed in such manner as to be leakproof in the following situations and wherever necessary to prevent moisture penetration:

At heads and sills of all openings in wood frame walls;
At openings in masonry-veneered or stuccoed wood frame;
Wherever necessary to prevent water penetration behind veneers of natural or artificial stone;
Under masonry copings with projecting lips on both sides;
At intersection of chimneys or other masonry, with frame or stuccoed walls and roofs; and
In all roof valleys.

RULE 19-13 EXTERIOR STUCCO. All stucco on wood frame or when installed on a masonry base which is coated with bituminous surfacing shall be 3-coat work with approved metal lath or wire fabric reinforcement. The reinforcing fabric shall be zinc-coated or manufactured from corrosion resistive alloys.

TABLE 19-13. LATH FOR STUCCO

TYPE	MIN. U.S. GAGE NO.	MAXIMUM MESH INCHES	MINIMUM WEIGHT LBS. SQ. YD.
Metal Lath	-----	-----	3.4
Expanded Metal	-----	-----	1.8
Woven Wire	18	1	1.74
Woven Wire	16	2	1.47
Welded Wire	18	4 sq. ins.	0.67
Welded Wire	16	4 sq. ins.	1.10

When applied over wood sheathing, a covering of 14 lb. water proof felt shall be first attached. When back plastered with the stucco penetrating 5/8 inches back of lath, the waterproof paper may be omitted. All metal reinforcement shall be furred away from the sheathing not less than ¼ inch with self-furring lath, metal-furring or approved furring nails. The temperature of the work during application shall be maintained above 40° F.

RULE 19-14 BASEMENT AND CELLAR SLABS. Where local ground conditions require, slabs that are ground supported shall have a minimum thickness of 4 inches of stone or gravel concrete over a 4-inch thick bed of clean, graded gravel, crushed stone or cinders. When inspection discloses evidence of water pressure or probable water seepage, basement and cellar walls and floors shall be waterproofed in accordance with accepted engineering practice.

RULE 19-15 ROOF COVERINGS. Class 1, 2, 3 and 4 roofings shall be permitted on wood-frame one and two-family dwellings with the limitations herein prescribed; shingle, slate and tile roofings with a pitch of not less than 4 in 12; gravel or slag built up roofings with a pitch not more than 3 in 12. Asphalt shingles shall have an underlay of 15-lb. asphalt-saturated felt and shall be secured with No. 12 gage roofing nails, 1¼ inches long with deformed or barbed shanks and heads not less than 3/8 inch in diameter. The number and pattern of nails shall be in accordance with the manufacturer's recommendations. Asbestos cement shingles shall have an underlay of 15 lb. asphalt-saturated asbestos or rag felt. Slate shingles and tile roofing shall have an underlay of 30-lb. asphalt-saturated felt. Wood shingles, where permitted, shall be approved edge-grain cedar shingles installed on spaced roof boards, without underlay. When shingles are applied to plywood or fibre board sheathing, the nails shall be of a type providing equivalent withdrawal strength from one inch wood board sheathing.

RULE 19-16 INTERIOR LATHING AND PLASTERING. All interior plastering shall be not less than ¾ inch thick on wood lath, 5/8 inches on metal lath and not less than ½ inch thick on gypsum lath or fibreboard or when applied directly to masonry walls. The total thickness of plaster shall be measured from face of fibreboards or gypsum lath or face of masonry bases and from backs of metal and wood lath. All plaster shall be mixed and applied in accordance with the manufacturer's specifications and ready-mix plasters shall be packaged and identified with the approved label.

RULE 19-16-1 PLASTER BASES. Approved plaster bases shall include gypsum lath not less than 5/16 inches thick; 3/8 inch perforated gypsum lath with openings of not less than one ¾ inch hole for each 16 square inches; metal lath of not less than No. 30 U.S. gage sheets of copper-bearing steel or coated with rust-inhibitive paint after cutting or cut from zinc-coated sheets; wire lath fabricated of woven or welded wire of not less than No. 19 U.S. gage; paper backed lath of not less than No. 16 U.S. gage for stucco work; or No. 1 wood lath not less than 5/16 inches by 1 inch spaced not less than ¼ inch nor more than 3/8 inches; or ½ inch fibreboards treated to be flame resistant when used in fireproof construction.

RULE 19-16-2 PLASTERING PRECAUTIONS. All projecting angle corners shall have galvanized corner heads and intersecting wall and ceiling corners shall be lathed with metal lath corner strips projecting not less than 3 inches on each surface. In exterior stucco work, metal lath shall be attached with furring nails or on furring strips. Metal lath without integral treated paper backs when applied directly to wood surfaces, shall have an underlay of waterproofed paper. Gypsum and insulating fibreboard plaster bases shall not exceed 18 inches by 48 inches in area and shall be applied according to manufacturers' specifications. Joints in wood lath shall be broken every 7th lath and the lath shall not extend into walls or partitions or pass through cross-partitions from room to room.

RULE 19-16-3 DRY WALL CONSTRUCTION. Approved wall boards of adequate strength and rigidity, may be used in dry-wall construction when applied in accordance with manufacturer's specifications or approved by test and provision is made to protect the joints between boards against cracks and openings.

RULE 19-17 NAILING. The number and spacing of nails in wood-frame construction shall comply with approved manufacturers' specifications; but in no case less than 25 lbs. of nails of the approved type and length per 1000 boardfeet of lumber. Shingle nails shall penetrate not less than 5/8 inch into nailing strips, wood sheathing or supporting construction except as otherwise provided in RULE 19-9.

RULE 20. PROTECTED WOOD FRAME CONSTRUCTION

RULE 20 PROTECTED WOOD FRAME CONSTRUCTION. Existing wood frame one or two-family dwellings may be converted to boarding, lodging, tourist and convalescent homes, dormitories, private sanitariums, schools or nurseries within the limitations defined in RULE 1 when such uses are permitted under the zoning laws. The walls, partitions, floors, and roofs shall be protected with noncombustible material to afford a ¾ hour fireresistance rating as specified in RULE 11 and adequate means of egress shall be provided to comply with RULE 6. New one and two-family dwellings may be erected of protected wood frame construction within the fire limits.

RULE 21. PLUMBING, WATER SUPPLY AND GAS PIPING

RULE 21 PLUMBING, WATER SUPPLY AND GAS PIPING. All plumbing, water supply and gas piping systems in buildings and structures shall comply with Part E of the Standard Building Code.

RULE 21-1 ROOF DRAINAGE. When no public storm water sewers are provided, the downspout and leaders from roofs of buildings shall discharge on concrete or other impervious splash blocks so located as not to impair foundation walls and not less than 30 inches away from the building walls.

RULE 21-2 PRIVATE SWIMMING POOLS. Private swimming pools may be constructed as an accessory to one or two-family dwellings for the primary use of the occupants and their guests, without compensation. The pool enclosure shall be built of water resistive materials of adequate strength to resist all lateral earth and water pressure. Provisions shall be made for supplying water from acceptable sources and for discharging the water to the public sewer or approved drainage field or for recirculating the supply after filtration or purification as approved by the health official. Private swimming pools shall be safeguarded with protective measures to prevent trespassing and insure public safety in accordance with regulations of local authorities.

RULE 21-3 PRIVATE DISPOSAL SYSTEMS. Where no public sewer is available, individual sewage disposal systems shall be provided to comply with the code of the N.J. State Dept. of Health approved December 14, 1953, subject to the penalties provided in the N.J. R.S. 26:3-70 et seq.

RULE 21-4 GAS - PIPING SYSTEMS. Gas-piping systems shall be designed and installed in conformity with accepted engineering practice to handle sufficient gas to meet the maximum demand and free from health and fire hazards under all conditions of use.

RULE 21-4-1 MAIN SHUT-OFF VALVE. Every gas service connection shall be fitted with a straight-way stopcock or shut-off valve placed in an accessible position immediately inside of the building wall.

RULE 21-4-2 GAS METERS. Meters shall be located as near as practicable to the front entrance of the service and preferably in the cellar or basement.

RULE 21-4-3 GAS BURNER AND PILOT VALVES. The supply line to every gas burner shall be equipped with a hand-operated shut-off valve installed ahead of all automatic controls. The supply line for every pilot light shall be equipped with an independent control ahead of the main shut-off.

RULE 21-4-4 GAS PIPING AND FITTINGS. Gas piping supplying a heating device shall consist of an independent wrought iron or steel pipe line with mallable iron fittings or of copper water tube. All piping shall be pitched as to drain back to the riser and to the meter or inlet. Rubber hose or other flexible pipe or fittings shall be prohibited, except that approved flexible metallic tubing may be used for connecting gas appliances that burn not more than 90 cubic feet of gas per hour. No gas piping shall be incorporated in masonry constructions, but may be installed in recesses and be protected from freezing.

RULE 21-5 INSPECTIONS AND TESTS. All rough piping for gas systems shall be inspected before being covered or concealed and before any fixture or appliance is attached, the system shall be subjected to an air pressure of 50 percent in excess of normal operating pressures. In welded pipe systems, the minimum test pressure shall be 50 pounds per square inch applied for not less than 10 minutes.

RULE 22. ELECTRIC WIRING AND EQUIPMENT

RULE 22 ELECTRIC WIRING AND EQUIPMENT. Except as may be specifically required by the rules for the installation of electrical wiring and equipment in one or two-family dwellings, all electrical work shall conform to the applicable provision of PART F of the Standard Building Code.

RULE 22-1 DOMESTIC ELECTRIC SERVICE. Every dwelling unit in a one or two-family dwelling shall have a system of wiring and accessories to furnish the required electric energy for general lighting purposes and the operation of household appliances in a safe manner.

RULE 22-2 SERVICE ENTRANCE. The service entrance conductors shall have a rated capacity to serve the computed load but in no case less than: 60 amperes for a computed load of 12 KW or less; 100 amperes for loads in excess of 12, but not exceeding 20 KW; and for demands in excess of 20 KW the conductors shall be designed for the total calculated load.

RULE 22-3 CONTROL PANEL. A control panel for each dwelling unit shall be located in a readily accessible and protected location, not less than 5 feet above the floor. It shall be equipped with approved safety devices, means for disconnecting the current and with sufficient circuit breakers or fuses and switches to accommodate all branch circuits and not less than 2 additional circuits for future expansion.

RULE 22-4 GENERAL PURPOSE CIRCUITS. Each dwelling unit shall be provided with not less than 2 general purpose circuits of not less than 15 ampere capacity to serve lighting and small plug-in appliances for the first 500 square feet of floor area, plus one circuit for each additional 500 square feet in area, or fraction thereof, of all habitable rooms, spaces and areas, including the garage, basement and cellar.

RULE 22-5 SERVICE APPLIANCE CIRCUITS. As required by the domestic electric equipment and in accordance with the approved manufacturer's in-put rating not less than two (2) 20 ampere circuits shall be provided for rooms and spaces containing heavy load demand, including kitchen, laundry and service utility areas, for connecting ovens, ranges, clothes washers, water heaters, dryers and air conditioners.

RULE 22-6 LIGHTING OUTLETS. Adequate outlets for fixed lighting fixtures with wall switch control or wall convenience outlets shall be installed in every habitable room.

RULE 22-6-1 EXITWAY LIGHTING. Permanent lighting fixtures shall be provided at top and bottom of main exitways connecting two story levels, controlled by switches at both floors. Basement and cellar stairs shall be adequately lighted with control switches at head of stairway.

RULE 22-6-2 BATHROOM LIGHTING. The switches controlling lights or electric heaters shall not be readily accessible from a tub or shower.

RULE 22-6-3 EXTERIOR LIGHTING. Each main and service entrance shall have an outside permanent fixture with interior wall switch control.

RULE 22-7 CONVENIENCE OUTLETS. Convenience outlets shall be located around the perimeter of every habitable room at not more than 12-foot intervals. Where no ceiling fixture is provided, not less than 3 convenience outlets shall be installed.

RULE 22-7-1 EXTERIOR OUTLETS. Exterior convenience outlets installed on open porches or other locations to serve equipment used by persons in damp locations shall be of the waterproof grounding type.

RULE 22-8 APPROVED PLANS AND INSPECTION. Application for inspections and approvals shall be made to the municipal electrical inspector as provided in SEC. F-200 of the Standard Building Code.

RULE 22-9 CERTIFICATE OF APPROVAL. No electrical supply shall be connected to any installation until a certificate of approval has been issued by the electrical inspector certifying that the system complies with the Standard Building Code and the rules and regulations of the public utility company.

RULE 23. PREFABRICATED CONSTRUCTION

RULE 23 PREFABRICATED CONSTRUCTION. All prefabricated construction, whether shipped to the site in complete assemblies ready for erection or in broken down and packaged form for assembly at the site shall comply with all the requirements of the Standard Building Code and the restrictions of the zoning laws as to location and occupancy.

RULE 23-1 MASTER PLANS. Completely dimensioned drawings to a scale of not less than 1/8 inch to the foot shall be submitted to the building official for approval covering every type of prefabricated structure or building including mechanical, electrical, and all intregral accessories. A plot plan complying with SEC. B-114.5 of the Standard Code shall accompany each application for a specific installation.

RULE 23-2 INSPECTION AND SUPERVISION. Except where all assemblies and sub-assemblies, service equipment and accessories are readily accessible for complete inspection at the site, the licensed engineer or registered architect who supervised the design, fabrication and erection of the prefabricated structure, or the duly authorized and qualified representative of the manufacturer shall furnish a verified report of inspection to the building official upon completion of the work, certifying that the building has been erected in accordance with the Standard Building Code and these rules and in conformity to the approved plans.

RULE 23-3 TESTS AND INSPECTION RECORDS. All required tests and inspection records of prefabricated construction shall be accessible to the building official at all times during the fabrication of the unit or sub-assembly and the erection of the building; and such records as the building official may designate shall be filed with him for each approved installation.

RULE 24. PARKING LOTS AND TRAILER CAMPS

RULE 24 PARKING LOTS AND TRAILER CAMPS. In addition to the permissible parking of private automobiles in yards and courts by occupants of one and two-family dwellings and their guests as permitted by these rules, public parking lots and trailer camps where permitted under the zoning laws shall comply with SEC. MB 802.0-O of the Manual.

RULE 25. HEATING REQUIREMENTS

RULE 25 HEATING REQUIREMENTS. Every dwelling unit shall be equipped with a heating system having an output capacity, after deduction for piping losses, hot-water heaters and any other connected loads, and all other heat losses of the living unit, capable of maintaining a temperature of not less than 70° F within all habitable rooms and spaces when the outdoor temperature is 0° F and a wind velocity of 30 miles per hour.

I N D E X

RULES FOR
THE CONSTRUCTION OF ONE AND TWO-
FAMILY DWELLINGS

EXCAVATIONS AND FOUNDATIONS. 9

EXIT REQUIREMENTS. 6

FIREPROOF CONSTRUCTION. 14

FIRE SAFETY AND FIRE PROTECTION. 11

HEATING REQUIREMENTS. 25

(See: Chimneys and Heating Equipment. 12)

LIGHT GAGE STEEL CONSTRUCTION. 16

PROTECTED WOOD FRAME CONSTRUCTION. 20

QUALITY AND TESTS OF MATERIALS. 4

REINFORCED CONCRETE CONSTRUCTION. 17

SCOPE. MB 802.0-U

STRUCTURAL STEEL CONSTRUCTION. 15

TABLES

TYPES OF CONSTRUCTION. 3

WATERPROOFING, RATPROOFING AND TERMITE PROTECTION. 10

WOOD FRAME CONSTRUCTION. 19

ORDER FORM - STANDARD BUILDING CODE OF NEW JERSEY

Date_____

New Jersey State Department of Conservation and Economic Development
Attention: A. R. Post, Chief, Bureau of Commerce
520 East State Street
Trenton 25, New Jersey

Please mail us the following Standard Building Code Items (postpaid): AMOUNT

STANDARD BUILDING CODE OF NEW JERSEY - Parts A, B, C, D, E, F; including "Rules for the Construction of One and Two Family Dwellings"	Complete Set $7.00	_____

Separate Parts May Be Purchased As Follows:

GENERAL PROVISIONS AND DEFINITIONS Part A
STRUCTURAL, FIRE AND GENERAL SAFETY REQUIREMENTS Part B;
__Code Parts A and B, with MANUAL, in two volumes, at $3.00 per set _____

__Rules for the Construction of One and Two Family Dwellings, at $2.00 _____

__PLUMBING CODE Part E, one volume, at $1.00 per copy _____

ELEVATORS, MOTOR STAIRWAYS (ESCALATORS) AND CONVEYOR EQUIPMENT, Part C;
AIR CONDITIONING, MECHANICAL VENTILATION, AND REFRIGERATION Part D;
ELECTRICAL EQUIPMENT AND WIRING Part F;
__Parts C, D, and F in one volume, at $1.00 per copy _____

TOTAL $_____

Enclosed is remittance of $_____. (In remitting by check or money order, please draw same to the order of "Treasurer, State of New Jersey---CED-BC")

PRINT OR TYPE

Name_____

Attention of_____

Street Address_____

City and State_____

(Send order and remittance to: 520 East State Street, Trenton 25, New Jersey)

DO NOT WRITE IN SPACE BELOW - - - - - - - - - FOR DEPARTMENTAL USE ONLY.

Order No._____ Rec'd_____ Filled_____ Funds $_____

A/R_____ - J -_____

BK. NO.

(Form EC 6-58)