ACKNOWLEDGEMENTS

North Carolina Building Code Council
Building Code Chapters 1-15 Ad-Hoc Committee

Dan Austin
NC Department of Insurance
Administrative Building
Raleigh, NC 27603

Betsy Bailey
Carolinas Association of General Contractors
6115 Park South Drive, Suite 350
Charlotte, NC 28210

Robbie Davis
Turn-Key Contractors
5998 Dortches Boulevard
Rocky Mount NC 27804

Wayne Hamilton
Asheville Fire Service
PO Box 7148
Asheville NC 28802

Jeff Johnson
Jeff Johnson Consulting, Inc.
225 Red Hill Lane
New Hill, NC 27562

Carl P. Martin
NC Department of Insurance
Administrative Building
Raleigh, NC 27603

Robbie M. Pate (Retired)
3620 Joyner Rd.
Elm City, NC 27822

Daniel Priest
Priest Architecture
PO Box 5295
Charlotte NC 28299

Bryan Robinson
City of Raleigh
One Exchange Plaza
Raleigh, NC 27602

Dan Tingen
Tingen Construction Company, Inc.

8411-101 Garvey Drive
Raleigh, NC 27616

CHAPTER 1
SCOPE AND ADMINISTRATION

[A] 101.1 Title.
These regulations shall be known as the *North Carolina Building Code* ~~of [NAME OF JURISDICTION], hereinafter referred to as "this code."~~ as adopted by the North Carolina Building Code Council on [DATE OF ADOPTION] to be effective [DATE OF ADOPTION]. References to the International Code shall mean *North Carolina Codes*. The North Carolina amendments to the *International Code* are underlined.

[A] 101.2 Scope.
The provisions of this code shall apply to the construction, *alteration*, relocation, enlargement, replacement, *repair*, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exceptions: If any of the following apply the building or structure is exempt from the provisions of this code:

1. Detached one- and two-family *dwellings* and multiple single-family *dwellings (townhouses)* not more than three *stories above grade plane* in height with a separate *means of egress*, and their accessory structures not more than three *stories above grade plane* in height, shall comply with the *International Residential Code*.

2. Farm *buildings* located outside of the buildings rules jurisdiction of any municipality.

   Exception: All buildings used for sleeping purposes shall conform to the provisions of the technical codes.

3. The design construction, location, installation or operation of equipment for storing, handling and transporting liquefied petroleum gases for fuel purposes up to the outlet of the first stage pressure regulator, anhydrous ammonia or other liquid fertilizer.

4. The design construction, location, installation or operation of equipment or facilities of a public utility, as defined in NC G.S. 62-3, or electric or telephone membership corporation, including without limitation poles, towers and other structures supporting electric or communication lines from the distribution network up to the meter location.

   Note: All *buildings* owned and operated by a public utility or an electric or telephone membership corporation shall meet the provisions of this code.

5. The Storage and Handling of Hazardous Chemicals Right to Know Act, Article 18 of Chapter 95 of the North Carolina General Statutes.

[A] 101.2.1 Appendices.
Provisions in the appendices shall not apply unless specifically adopted or referenced in this code.

[A] 101.4.4 Property maintenance. Deleted.
~~The provisions of the *International Property Maintenance Code* shall apply to existing~~

~~structures and premises; equipment and facilities; light, ventilation, space heating, sanitation, life and fire safety hazards; responsibilities of *owners*, operators and occupants; and occupancy of existing premises and structures.~~

101.5 Requirements of other State agencies, occupational licensing boards or commissions.
The North Carolina State Building Codes do not include all additional requirements for *buildings* and structures that may be imposed by other State agencies, occupational licensing boards and commissions. It shall be the responsibility of a permit holder, registered design professional, contractor or occupational licensing holder to determine whether any additional requirements exist.

[A] 102.6 Existing structures.
The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the *International Existing Building Code*, ~~the *International Property Maintenance Code*~~ or the *International Fire Code*.

[A] 102.6.2 Buildings previously occupied.
The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as otherwise specifically provided in this code, the *International Fire Code* ~~or *International Property Maintenance Code*~~, or as is deemed necessary by the *building official* for the general safety and welfare of the occupants and the public.

SECTION 103
DEPARTMENT OF BUILDING SAFETY

Deleted. See the North Carolina Administrative Code and Policies.
~~**[A] 103.1 Creation of enforcement agency.**~~
~~The Department of Building Safety is hereby created and the official in charge thereof shall be known as the *building official*.~~

~~**[A] 103.2 Appointment.**~~
~~The *building official* shall be appointed by the chief appointing authority of the jurisdiction.~~

~~**[A] 103.3 Deputies.**~~
~~In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the *building official* shall have the authority to appoint a deputy building official, the related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the *building official*. For the maintenance of existing properties, see the *International Property Maintenance Code*.~~

SECTION 104
DUTIES AND POWERS OF BUILDING OFFICIAL

Deleted. See the North Carolina Administrative Code and Policies.
~~**[A] 104.1 General.**~~
~~The *building official* is hereby authorized and directed to enforce the provisions of this code. The *building official* shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such~~

interpretations, policies and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

[A] 104.2 Applications and permits.

The *building official* shall receive applications, review *construction documents* and issue *permits* for the erection, and *alteration*, demolition and moving of buildings and structures, inspect the premises for which such *permits* have been issued and enforce compliance with the provisions of this code.

[A] 104.2.1 Determination of substantially improved or substantially damaged existing buildings and structures in flood hazard areas.

For applications for reconstruction, rehabilitation, *repair*, *alteration*, *addition* or other improvement of existing buildings or structures located in *flood hazard areas*, the *building official* shall determine if the proposed work constitutes substantial improvement or *repair* of *substantial damage*. Where the *building official* determines that the proposed work constitutes *substantial improvement* or *repair* of *substantial damage*, and where required by this code, the *building official* shall require the building to meet the requirements of Section 1612.

[A] 104.3 Notices and orders.

The *building official* shall issue necessary notices or orders to ensure compliance with this code.

[A] 104.4 Inspections.

The *building official* shall make the required inspections, or the *building official* shall have the authority to accept reports of inspection by *approved agencies* or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such *approved agency* or by the responsible individual. The *building official* is authorized to engage such expert opinion as deemed necessary to report upon unusual technical issues that arise, subject to the approval of the appointing authority.

[A] 104.5 Identification.

The *building official* shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

[A] 104.6 Right of entry.

Where it is necessary to make an inspection to enforce the provisions of this code, or where the *building official* has reasonable cause to believe that there exists in a structure or upon a premises a condition that is contrary to or in violation of this code that makes the structure or premises unsafe, dangerous or hazardous, the *building official* is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the *building official* shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry. If entry is refused, the *building official* shall have recourse to the remedies provided by law to secure entry.

[A] 104.7 Department records.

The *building official* shall keep official records of applications received, *permits* and

certificates issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for the period required for retention of public records.

[A] 104.8 Liability.

The *building official*, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be civilly or criminally rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.

[A] 104.8.1 Legal defense.

Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the jurisdiction until the final termination of the proceedings. The *building official* or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

[A] 104.9 Approved materials and equipment.

Materials, equipment and devices *approved* by the *building official* shall be constructed and installed in accordance with such approval.

[A] 104.9.1 Used materials and equipment.

The use of used materials that meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless *approved* by the *building official*.

[A] 104.10 Modifications.

Where there are practical difficulties involved in carrying out the provisions of this code, the *building official* shall have the authority to grant modifications for individual cases, upon application of the *owner* or the owner's authorized agent, provided that the *building official* shall first find that special individual reason makes the strict letter of this code impractical, the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, *accessibility*, life and fire safety or structural requirements. The details of action granting modifications shall be recorded and entered in the files of the department of building safety.

[A] 104.10.1 Flood hazard areas.

The *building official* shall not grant modifications to any provision required in *flood hazard areas* as established by Section 1612.3 unless a determination has been made that:

1. A showing of good and sufficient cause that the unique characteristics of the size, configuration or topography of the site render the elevation standards of Section 1612 inappropriate.

2. A determination that failure to grant the variance would result in exceptional hardship by rendering the lot undevelopable.

3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, cause fraud on or victimization of the public, or conflict with existing laws or ordinances.

4. A determination that the variance is the minimum necessary to afford relief, considering the flood hazard.

5. Submission to the applicant of written notice specifying the difference between the *design flood elevation* and the elevation to which the building is to be built, stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced floor elevation, and stating that construction below the *design flood elevation* increases risks to life and property.

[A] 104.11 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved* where the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, *fire resistance*, durability and safety. Where the alternative material, design or method of construction is not *approved*, the *building official* shall respond in writing, stating the reasons why the alternative was not *approved*.

[A] 104.11.1 Research reports.
Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from *approved* sources.

[A] 104.11.2 Tests.
Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the *building official* shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the *building official* shall approve the testing procedures. Tests shall be performed by an *approved agency*. Reports of such tests shall be retained by the *building official* for the period required for retention of public records.

SECTION 105
PERMITS

Deleted. See the North Carolina Administrative Code and Policies.

[A] 105.1 Required.
Any *owner* or owner's authorized agent who intends to construct, enlarge, alter, *repair*, move, demolish or change the occupancy of a building or structure, or to erect, install, enlarge, alter, *repair*, remove, convert or replace any electrical, gas, mechanical or plumbing

system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the *building official* and obtain the required *permit*.

[A] 105.1.1 Annual permit.
Instead of an individual *permit* for each *alteration* to an already *approved* electrical, gas, mechanical or plumbing installation, the *building official* is authorized to issue an annual *permit* upon application therefor to any person, firm or corporation regularly employing one or more qualified tradepersons in the building, structure or on the premises owned or operated by the applicant for the *permit*.

[A] 105.1.2 Annual permit records.
The person to whom an annual *permit* is issued shall keep a detailed record of *alterations* made under such annual *permit*. The *building official* shall have access to such records at all times or such records shall be filed with the *building official* as designated.

[A] 105.2 Work exempt from permit.
Exemptions from *permit* requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. *Permits* shall not be required for the following:

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area is not greater than 120 square feet (11 m^2).

2. Fences not over 7 feet (2134 mm) high.

3. Oil derricks.

4. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids.

5. Water tanks supported directly on grade if the capacity is not greater than 5,000 gallons (18 925 L) and the ratio of height to diameter or width is not greater than 2:1.

6. Sidewalks and driveways not more than 30 inches (762 mm) above adjacent grade, and not over any basement or *story* below and are not part of an *accessible route*.

7. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

8. Temporary motion picture, television and theater stage sets and scenery.

9. Prefabricated *swimming pools* accessory to a Group R-3 occupancy that are less than 24 inches (610 mm) deep, are not greater than 5,000 gallons (18 925 L) and are installed entirely above ground.

10. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.

11. Swings and other playground equipment accessory to detached one- and two-family *dwellings*.

12. Window awnings in Group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1372 mm) from the *exterior wall* and do not require additional support.

13. Nonfixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches (1753 mm) in height.

Electrical:

Repairs and maintenance: Minor repair work, including the replacement of lamps or the connection of *approved* portable electrical equipment to *approved* permanently installed receptacles.

Radio and television transmitting stations: The provisions of this code shall not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for a power supply and the installations of towers and antennas.

Temporary testing systems: A *permit* shall not be required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

Gas:

1. Portable heating appliance.

2. Replacement of any minor part that does not alter approval of equipment or make such equipment unsafe.

Mechanical:

1. Portable heating appliance.

2. Portable ventilation equipment.

3. Portable cooling unit.

4. Steam, hot or chilled water piping within any heating or cooling equipment regulated by this code.

5. Replacement of any part that does not alter its approval or make it unsafe.

6. Portable evaporative cooler.

7. Self-contained refrigeration system containing 10 pounds (4.54 kg) or less of refrigerant and actuated by motors of 1 horsepower (0.75 kW) or less.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe, provided, however, that if any concealed trap, drain pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a *permit* shall be obtained and inspection made as provided in this code.

2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

[A] 105.2.1 Emergency repairs.
Where equipment replacements and repairs must be performed in an emergency situation, the *permit* application shall be submitted within the next working business day to the *building official*.

[A] 105.2.2 Repairs.
Application or notice to the *building official* is not required for ordinary *repairs* to structures, replacement of lamps or the connection of *approved* portable electrical equipment to *approved* permanently installed receptacles. Such *repairs* shall not include the cutting away of any wall, partition or portion thereof, the removal or cutting of any structural beam or load-bearing support, or the removal or change of any required *means of egress*, or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include *addition* to, *alteration* of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety.

[A] 105.2.3 Public service agencies.
A *permit* shall not be required for the installation, *alteration* or repair of generation, transmission, distribution or metering or other related equipment that is under the ownership and control of public service agencies by established right.

[A] 105.3 Application for permit.
To obtain a *permit*, the applicant shall first file an application therefor in writing on a form furnished by the department of building safety for that purpose. Such application shall:

1. Identify and describe the work to be covered by the *permit* for which application is made.

2. Describe the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate the proposed building or work.

3. Indicate the use and occupancy for which the proposed work is intended.

4. Be accompanied by *construction documents* and other information as required in Section 107.

5. State the valuation of the proposed work.

6. Be signed by the applicant, or the applicant's authorized agent.

7. Give such other data and information as required by the *building official*.

[A] 105.3.1 Action on application.
The *building official* shall examine or cause to be examined applications for *permits* and amendments thereto within a reasonable time after filing. If the application or the *construction documents* do not conform to the requirements of pertinent laws, the *building official* shall reject such application in writing, stating the reasons therefor. If the *building official* is satisfied that the proposed work conforms to the requirements of this code and laws and ordinances applicable thereto, the *building official* shall issue a *permit* therefor as soon as practicable.

[A] 105.3.2 Time limitation of application.
An application for a *permit* for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been pursued in good faith or a *permit* has been issued; except that the *building official* is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and justifiable cause demonstrated.

[A] 105.4 Validity of permit.
The issuance or granting of a *permit* shall not be construed to be a *permit* for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. *Permits* presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a *permit* based on *construction documents* and other data shall not prevent the *building official* from requiring the correction of errors in the *construction documents* and other data. The *building official* is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

[A] 105.5 Expiration.
Every *permit* issued shall become invalid unless the work on the site authorized by such *permit* is commenced within 180 days after its issuance, or if the work authorized on the site by such *permit* is suspended or abandoned for a period of 180 days after the time the work is commenced. The *building official* is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated.

[A] 105.6 Suspension or revocation.
The *building official* is authorized to suspend or revoke a *permit* issued under the provisions of this code wherever the *permit* is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or regulation or any of the provisions of this code.

[A] 105.7 Placement of permit.
The building *permit* or copy shall be kept on the site of the work until the completion of the project.

SECTION 106
FLOOR AND ROOF DESIGN LOADS

Deleted. See the North Carolina Administrative Code and Policies.

[A] 106.1 Live loads posted.
In commercial or industrial buildings, for each floor or portion thereof designed for *live loads* exceeding 50 psf (2.40 kN/m^2), such design *live loads* shall be conspicuously posted by the owner or the owner's authorized agent in that part of each *story* in which they apply, using durable signs. It shall be unlawful to remove or deface such notices.

[A] 106.2 Issuance of certificate of occupancy.
A certificate of occupancy required by Section 111 shall not be issued until the floor load signs, required by Section 106.1, have been installed.

[A] 106.3 Restrictions on loading.
It shall be unlawful to place, or cause or permit to be placed, on any floor or roof of a building, structure or portion thereof, a load greater than is permitted by this code.

SECTION 107
SUBMITTAL DOCUMENTS

Deleted. See the North Carolina Administrative Code and Policies.

[A] 107.1 General.
Submittal documents consisting of *construction documents*, statement of *special inspections*, geotechnical report and other data shall be submitted in two or more sets with each *permit* application. The *construction documents* shall be prepared by a *registered design professional* where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the *building official* is authorized to require additional *construction documents* to be prepared by a *registered design professional*.

> **Exception:** The *building official* is authorized to waive the submission of *construction documents* and other data not required to be prepared by a *registered design professional* if it is found that the nature of the work applied for is such that review of *construction documents* is not necessary to obtain compliance with this code.

[A] 107.2 Construction documents.
Construction documents shall be in accordance with Sections 107.2.1 through 107.2.6.

[A] 107.2.1 Information on construction documents.
Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted to be submitted where *approved* by the *building official*. *Construction documents* shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations, as determined by the *building official*.

[A] 107.2.2 Fire protection system shop drawings.
Shop drawings for the *fire protection system(s)* shall be submitted to indicate conformance to this code and the *construction documents* and shall be *approved* prior to the start of system installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9.

[A] 107.2.3 Means of egress.
The *construction documents* shall show in sufficient detail the location, construction, size and character of all portions of the *means of egress* including the path of the *exit discharge* to the *public way* in compliance with the provisions of this code. In other than occupancies in Groups R-2, R-3, and I-1, the *construction documents* shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces.

[A] 107.2.4 Exterior wall envelope.
Construction documents for all buildings shall describe the *exterior wall envelope* in sufficient detail to determine compliance with this code. The *construction documents* shall provide details of the *exterior wall envelope* as required, including flashing, intersections with dissimilar materials, corners, end details, control joints, intersections at roof, eaves or parapets, means of drainage, water-resistive membrane and details around openings.

The *construction documents* shall include manufacturer's installation instructions that provide supporting documentation that the proposed penetration and opening details described in the *construction documents* maintain the weather resistance of the *exterior wall envelope*. The supporting documentation shall fully describe the *exterior wall* system that was tested, where applicable, as well as the test procedure used.

[A] 107.2.5 Site plan.
The *construction documents* submitted with the application for *permit* shall be accompanied by a site plan showing to scale the size and location of new construction and existing structures on the site, distances from *lot lines*, the established street grades and the proposed finished grades and, as applicable, *flood hazard areas*, *floodways*, and *design flood elevations*; and it shall be drawn in accordance with an accurate boundary line survey. In the case of demolition, the site plan shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot. The *building official* is authorized to waive or modify the requirement for a site plan where the application for *permit* is for *alteration* or *repair* or where otherwise warranted.

[A] 107.2.5.1 Design flood elevations.
Where *design flood elevations* are not specified, they shall be established in accordance with Section 1612.3.1.

[A] 107.2.6 Structural information.
The *construction documents* shall provide the information specified in Section 1603.

[A] 107.3 Examination of documents.
The *building official* shall examine or cause to be examined the accompanying submittal documents and shall ascertain by such examinations whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances.

[A] 107.3.1 Approval of construction documents.
When the *building official* issues a *permit*, the *construction documents* shall be *approved*, in writing or by stamp, as "Reviewed for Code Compliance." One set of *construction documents* so reviewed shall be retained by the *building official*. The other set shall be returned to the applicant, shall be kept at the site of work and shall be open to inspection by the *building official* or a duly authorized representative.

[A] 107.3.2 Previous approvals.
This code shall not require changes in the *construction documents*, construction or designated occupancy of a structure for which a lawful *permit* has been heretofore issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within 180 days after the effective date of this code and has not been abandoned.

[A] 107.3.3 Phased approval.
The *building official* is authorized to issue a *permit* for the construction of foundations or any other part of a building or structure before the *construction documents* for the whole building or structure have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such *permit* for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that a *permit* for the entire structure will be granted.

[A] 107.3.4 Design professional in responsible charge.
Where it is required that documents be prepared by a *registered design professional*, the *building official* shall be authorized to require the *owner* or the owner's authorized agent to engage and designate on the building *permit* application a *registered design professional* who shall act as the *registered design professional in responsible charge*. If the circumstances require, the *owner* or the owner's authorized agent shall designate a substitute *registered design professional in responsible charge* who shall perform the duties required of the original *registered design professional in responsible charge*. The *building official* shall be notified in writing by the *owner* or the owner's authorized agent if the *registered design professional in responsible charge* is changed or is unable to continue to perform the duties.

The *registered design professional in responsible charge* shall be responsible for reviewing and coordinating submittal documents prepared by others, including phased and deferred submittal items, for compatibility with the design of the building.

[A] 107.3.4.1 Deferred submittals.
Deferral of any submittal items shall have the prior approval of the *building official*. The *registered design professional in responsible charge* shall list the deferred submittals on the *construction documents* for review by the *building official*.

Documents for deferred submittal items shall be submitted to the *registered design professional in responsible charge* who shall review them and forward them to the *building official* with a notation indicating that the deferred submittal documents have been reviewed and found to be in general conformance to the design of the building. The deferred submittal items shall not be installed until the deferred submittal documents have been *approved* by the *building official*.

[A] 107.4 Amended construction documents.
Work shall be installed in accordance with the *approved construction documents*, and any changes made during construction that are not in compliance with the *approved construction documents* shall be resubmitted for approval as an amended set of *construction documents*.

[A] 107.5 Retention of construction documents.
One set of *approved construction documents* shall be retained by the *building official* for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws.

SECTION 108
TEMPORARY STRUCTURES AND USES

Deleted. See the North Carolina Administrative Code and Policies.

[A] 108.1 General.
The *building official* is authorized to issue a *permit* for temporary structures and temporary uses. Such *permits* shall be limited as to time of service, but shall not be permitted for more than 180 days. The *building official* is authorized to grant extensions for demonstrated cause.

[A] 108.2 Conformance.
Temporary structures and uses shall comply with the requirements in Section 3103.

[A] 108.3 Temporary power.
The *building official* is authorized to give permission to temporarily supply and use power in part of an electric installation before such installation has been fully completed and the final certificate of completion has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in NFPA 70.

[A] 108.4 Termination of approval.
The *building official* is authorized to terminate such *permit* for a temporary structure or use and to order the temporary structure or use to be discontinued.

SECTION 109
FEES

Deleted. See the North Carolina Administrative Code and Policies.

[A] 109.1 Payment of fees.
A *permit* shall not be valid until the fees prescribed by law have been paid, nor shall an amendment to a *permit* be released until the additional fee, if any, has been paid.

[A] 109.2 Schedule of permit fees.
On buildings, structures, electrical, gas, mechanical, and plumbing systems or *alterations* requiring a *permit*, a fee for each *permit* shall be paid as required, in accordance with the schedule as established by the applicable governing authority.

[A] 109.3 Building permit valuations.
The applicant for a *permit* shall provide an estimated *permit* value at time of application. *Permit* valuations shall include total value of work, including materials and labor, for which the *permit* is being issued, such as electrical, gas, mechanical, plumbing equipment and permanent systems. If, in the opinion of the *building official*, the valuation is underestimated on the application, the *permit* shall be denied, unless the applicant can show detailed estimates to meet the approval of the *building official*. Final building *permit* valuation shall be set by the *building official*.

[A] 109.4 Work commencing before permit issuance.
Any person who commences any work on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary *permits* shall be subject to a fee established by the *building official* that shall be in addition to the required *permit* fees.

[A] 109.5 Related fees.
The payment of the fee for the construction, *alteration*, removal or demolition for work done in connection to or concurrently with the work authorized by a building *permit* shall not relieve the applicant or holder of the *permit* from the payment of other fees that are prescribed by law.

[A] 109.6 Refunds.
The *building official* is authorized to establish a refund policy.

SECTION 110
INSPECTIONS

Deleted. See the North Carolina Administrative Code and Policies.

[A] 110.1 General.
Construction or work for which a *permit* is required shall be subject to inspection by the *building official* and such construction or work shall remain accessible and exposed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the *owner* or the owner's authorized agent to cause the work to remain accessible and exposed for inspection purposes. Neither the *building official* nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

[A] 110.2 Preliminary inspection.
Before issuing a *permit*, the *building official* is authorized to examine or cause to be examined buildings, structures and sites for which an application has been filed.

[A] 110.3 Required inspections.
The *building official*, upon notification, shall make the inspections set forth in Sections 110.3.1 through 110.3.10.

[A] 110.3.1 Footing and foundation inspection.
Footing and foundation inspections shall be made after excavations for footings are complete and any required reinforcing steel is in place. For concrete foundations, any required forms shall be in place prior to inspection. Materials for the foundation shall be on the job, except where concrete is ready mixed in accordance with ASTM C 94, the concrete need not be on the job.

[A] 110.3.2 Concrete slab and under-floor inspection.
Concrete slab and under-floor inspections shall be made after in-slab or under-floor reinforcing steel and building service equipment, conduit, piping accessories and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor.

[A] 110.3.3 Lowest floor elevation.
In *flood hazard areas*, upon placement of the lowest floor, including the *basement*, and prior to further vertical construction, the elevation certification required in Section 1612.5 shall be submitted to the *building official*.

[A] 110.3.4 Frame inspection.
Framing inspections shall be made after the roof deck or sheathing, all framing, *fireblocking* and bracing are in place and pipes, chimneys and vents to be concealed are complete and the rough electrical, plumbing, heating wires, pipes and ducts are *approved*.

[A] 110.3.5 Lath, gypsum board and gypsum panel product inspection.
Lath, gypsum board and gypsum panel product inspections shall be made after lathing, gypsum board and gypsum panel products, interior and exterior, are in place, but before any plastering is applied or gypsum board and gypsum panel product joints and fasteners are taped and finished.

Exception: Gypsum board and gypsum panel products that are not part of a fire-resistance-rated assembly or a shear assembly.

[A] 110.3.6 Fire- and smoke-resistant penetrations.
Protection of joints and penetrations in *fire-resistancerated* assemblies, *smoke barriers* and smoke partitions shall not be concealed from view until inspected and *approved*.

[A] 110.3.7 Energy efficiency inspections.
Inspections shall be made to determine compliance with Chapter 13 and shall include, but not be limited to, inspections for: envelope insulation R- and U-values, fenestration U-value, duct system R-value, and HVAC and water-heating equipment efficiency.

[A] 110.3.8 Other inspections.
In addition to the inspections specified in Sections 110.3.1 through 110.3.7, the *building official* is authorized to make or require other inspections of any construction work to ascertain compliance with the provisions of this code and other laws that are enforced by the department of building safety.

[A] 110.3.9 Special inspections.
For *special inspections*, see Chapter 17.

[A] 110.3.10 Final inspection.
The final inspection shall be made after all work required by the building *permit* is completed.

[A] 110.3.10.1 Flood hazard documentation.
If located in a *flood hazard area*, documentation of the elevation of the lowest floor as required in Section 1612.5 shall be submitted to the *building official* prior to the final inspection.

[A] 110.4 Inspection agencies.
The *building official* is authorized to accept reports of *approved* inspection agencies, provided such agencies satisfy the requirements as to qualifications and reliability.

[A] 110.5 Inspection requests.
It shall be the duty of the holder of the building *permit* or their duly authorized agent to notify the *building official* when work is ready for inspection. It shall be the duty of the *permit* holder to provide access to and means for inspections of such work that are required by this code.

[A] 110.6 Approval required.
Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the *building official*. The *building official*, upon notification, shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or notify the *permit* holder or his or her agent wherein the same fails to comply with this code. Any portions that do not comply shall be corrected and such portion shall not be covered or concealed until authorized by the *building official*.

SECTION 111
CERTIFICATE OF OCCUPANCY

Deleted. See the North Carolina Administrative Code and Policies.

[A] 111.1 Use and occupancy.
A building or structure shall not be used or occupied, and a change in the existing use or occupancy classification of a building or structure or portion thereof shall not be made, until the *building official* has issued a certificate of occupancy therefor as provided herein. Issuance of a certificate of occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction.

Exception: Certificates of occupancy are not required for work exempt from *permits* in accordance with Section 105.2.

[A] 111.2 Certificate issued.
After the *building official* inspects the building or structure and does not find violations of the provisions of this code or other laws that are enforced by the department of building safety, the *building official* shall issue a certificate of occupancy that contains the following:

1. The building *permit* number.

2. The address of the structure.

3. The name and address of the *owner* or the owner's authorized agent.

4. A description of that portion of the structure for which the certificate is issued.

5. A statement that the described portion of the structure has been inspected for compliance with the requirements of this code for the occupancy and division of occupancy and the use for which the proposed occupancy is classified.

6. The name of the *building official*.

7. The edition of the code under which the *permit* was issued.

8. The use and occupancy, in accordance with the provisions of Chapter 3.

9. The type of construction as defined in Chapter 6.

10. The design *occupant load*.

11. If an *automatic sprinkler system* is provided, whether the sprinkler system is required.

12. Any special stipulations and conditions of the building *permit*.

[A] 111.3 Temporary occupancy.
The *building official* is authorized to issue a temporary certificate of occupancy before the completion of the entire work covered by the *permit*, provided that such portion or portions shall be occupied safely. The *building official* shall set a time period during which the temporary certificate of occupancy is valid.

[A] 111.4 Revocation.
The *building official* is authorized to, in writing, suspend or revoke a certificate of occupancy or completion issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.

SECTION 112
SERVICE UTILITIES

Deleted. See the North Carolina Administrative Code and Policies.

[A] 112.1 Connection of service utilities.
A person shall not make connections from a utility, source of energy, fuel or power to any building or system that is regulated by this code for which a *permit* is required, until released by the *building official*.

[A] 112.2 Temporary connection.
The *building official* shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel or power.

[A] 112.3 Authority to disconnect service utilities.
The *building official* shall have the authority to authorize disconnection of utility service to the building, structure or system regulated by this code and the referenced codes and standards set forth in Section 101.4 in case of emergency where necessary to eliminate an immediate hazard to life or property or where such utility connection has been made without the approval required by Section 112.1 or 112.2. The *building official* shall notify the serving utility, and wherever possible the *owner* and occupant of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnecting, the *owner* or occupant of the building, structure or service system shall be notified in writing, as soon as practical thereafter.

SECTION 113
BOARD OF APPEALS

Deleted. See the North Carolina Administrative Code and Policies.

[A] 113.1 General.
In order to hear and decide appeals of orders, decisions or determinations made by the *building official* relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business.

[A] 113.2 Limitations on authority.
An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The board shall not have authority to waive requirements of this code.

[A] 113.3 Qualifications.
The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.

SECTION 114
VIOLATIONS

Deleted. See the North Carolina Administrative Code and Policies.

[A] 114.1 Unlawful acts.
It shall be unlawful for any person, firm or corporation to erect, construct, alter, extend, *repair*, move, remove, demolish or occupy any building, structure or equipment regulated by

this code, or cause same to be done, in conflict with or in violation of any of the provisions of this code.

[A] 114.2 Notice of violation.
The *building official* is authorized to serve a notice of violation or order on the person responsible for the erection, construction, *alteration*, extension, *repair*, moving, removal, demolition or occupancy of a building or structure in violation of the provisions of this code, or in violation of a *permit* or certificate issued under the provisions of this code. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation.

[A] 114.3 Prosecution of violation.
If the notice of violation is not complied with promptly, the *building official* is authorized to request the legal counsel of the jurisdiction to institute the appropriate proceeding at law or in equity to restrain, correct or abate such violation, or to require the removal or termination of the unlawful occupancy of the building or structure in violation of the provisions of this code or of the order or direction made pursuant thereto.

[A] 114.4 Violation penalties.
Any person who violates a provision of this code or fails to comply with any of the requirements thereof or who erects, constructs, alters or repairs a building or structure in violation of the *approved construction documents* or directive of the *building official*, or of a *permit* or certificate issued under the provisions of this code, shall be subject to penalties as prescribed by law.

SECTION 115
STOP WORK ORDER

Deleted. See the North Carolina Administrative Code and Policies.

[A] 115.1 Authority.
Where the *building official* finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or dangerous or unsafe, the *building official* is authorized to issue a stop work order.

[A] 115.2 Issuance.
The stop work order shall be in writing and shall be given to the *owner* of the property involved, the owner's authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted to resume.

[A] 115.3 Unlawful continuance.
Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law.

SECTION 116
UNSAFE STRUCTURES AND EQUIPMENT

Deleted. See the North Carolina Administrative Code and Policies.

~~**[A] 116.1 Conditions.**~~

~~Structures or existing equipment that are or hereafter become unsafe, insanitary or deficient because of inadequate *means of egress* facilities, inadequate light and ventilation, or that constitute a fire hazard, or are otherwise dangerous to human life or the public welfare, or that involve illegal or improper occupancy or inadequate maintenance, shall be deemed an unsafe condition. Unsafe structures shall be taken down and removed or made safe, as the *building official* deems necessary and as provided for in this section. A vacant structure that is not secured against entry shall be deemed unsafe.~~

~~**[A] 116.2 Record.**~~

~~The *building official* shall cause a report to be filed on an unsafe condition. The report shall state the occupancy of the structure and the nature of the unsafe condition.~~

~~**[A] 116.3 Notice.**~~

~~If an unsafe condition is found, the *building official* shall serve on the *owner*, agent or person in control of the structure, a written notice that describes the condition deemed unsafe and specifies the required repairs or improvements to be made to abate the unsafe condition, or that requires the unsafe structure to be demolished within a stipulated time. Such notice shall require the person thus notified to declare immediately to the *building official* acceptance or rejection of the terms of the order.~~

~~**[A] 116.4 Method of service.**~~

~~Such notice shall be deemed properly served if a copy thereof is (a) delivered to the *owner* personally; (b) sent by certified or registered mail addressed to the *owner* at the last known address with the return receipt requested; or (c) delivered in any other manner as prescribed by local law. If the certified or registered letter is returned showing that the letter was not delivered, a copy thereof shall be posted in a conspicuous place in or about the structure affected by such notice. Service of such notice in the foregoing manner upon the owner's agent or upon the person responsible for the structure shall constitute service of notice upon the *owner*.~~

~~**[A] 116.5 Restoration.**~~

~~Where the structure or equipment determined to be unsafe by the *building official* is restored to a safe condition, to the extent that repairs, *alterations* or *additions* are made or a change of occupancy occurs during the restoration of the structure, such *repairs*, *alterations*, *additions* and change of occupancy shall comply with the requirements of Section 105.2.2 and the *International Existing Building Code*.~~

CHAPTER 2
DEFINITIONS

ACCEPTED ENGINEERING PRACTICE. Design analysis and testing methods that are used in developing design solutions for compliance with the requirements of this code. Accepted engineering practice is the level at which the average, prudent designer in a given community would practice.

[A] APPROVED. Acceptable to the *building code official* for compliance with the provisions of the applicable code or referenced standard.

BED AND BREAKFAST HOME. A detached single family dwelling occupied by the dwelling owner and containing eight or fewer guest rooms for rent for a period of less than one week.

[BS] COASTAL A ZONE. Area within a *special flood hazard area*, landward of a V zone or landward of an open coast without mapped *coastal high hazard areas*. In a coastal A zone, the principal source of flooding must be astronomical tides, storm surges, seiches or tsunamis, not riverine flooding. During the base flood conditions, the potential for breaking wave height shall be greater than or equal to $1^1/_2$ feet (457 mm). The inland limit of the coastal A zone is ~~(a)~~ the Limit of Moderate Wave Action if delineated on a FIRM~~, or (b) designated by the authority having jurisdiction~~.

COOPERATIVE INNOVATIVE HIGH SCHOOL PROGRAM. A program to supplement the required curriculum for high school students that may require attendance at a college, community college or university.

ELECTRICAL CIRCUIT PROTECTIVE SYSTEM. A specific construction of devices, materials, or coatings installed as a fire-resistive barrier system applied to electrical system components~~, such as cable trays, conduits and other raceways, open run cables and conductors, cables, and conductors~~.

EXIT ACCESS STAIRWAY. A *stairway* ~~with~~ within the exit access portion of the means of egress system.

FIBER-REINFORCED POLYMER (FRP).
~~A polymeric composite material consisting of reinforcement fibers, such as glass, impregnated with a fiber-binding polymer which is then molded and hardened. Fiber-reinforced polymers are permitted to contain cores laminated between fiber-reinforced polymer facings.~~
A polymeric composite material consisting of reinforcement fibers, impregnated with a fiber-binding polymer, such as glass, carbon, aramid, or hybrid combinations of these fiber types; which are then molded and hardened. Fiber-reinforced polymers are permitted to contain cores laminated between fiber-reinforced polymer facings.

[F] FIREWORKS. Any composition or device for the purpose of producing a visible or audible effect for entertainment purposes by combustion, *deflagration* or *detonation* that meets the definition of 1.4G fireworks or 1.3G fireworks.

Fireworks, 1.3G. Large fireworks devices, which are explosive materials, intended for use in fireworks displays and designed to produce audible or visible effects by combustion, *deflagration* or *detonation*. Such 1.3G fireworks include, but are not limited to, firecrackers containing more than 130 milligrams (2 grains) of explosive composition, aerial shells containing more than 40 grams of pyrotechnic composition, and other display pieces which exceed the limits for classification as 1.4G fireworks. Such 1.3G fireworks are also described as fireworks, UN0335 by the DOTn.

Fireworks, 1.4G. ~~Small fireworks devices containing restricted amounts of pyrotechnic composition designed primarily to produce visible or audible effects by combustion. Such 1.4G fireworks which comply with the construction, chemical composition and labeling regulations of the DOTn for Fireworks, UN 0336, and the U.S. Consumer Product Safety Commission as set forth in CPSC 16 CFR Parts 1500 and 1507, are not *explosive materials* for the purpose of this code. (Formerly known as Class C Common Fireworks.)~~
North Carolina General Statute 14-414. The following fireworks are allowed to be sold, used or possessed without a permit:

1. Explosive caps designed to be fired in toy pistols, provided that the explosive mixture of the explosive caps shall not exceed twenty-five hundredths (0.25) of a gram for each cap;
2. Snake and glow worms composed of pressed pellets of a pyrotechnic mixture that produce a large, snake-like ash when burning;
3. Smoke devices consisting of tube or sphere containing a pyrotechnic mixture that produce white or colored smoke;
4. Trick noise makers which produce a small report designed to surprise the user which include:
   - 4.1 A party popper, which is a small plastic or paper item containing not in excess of 16 milligrams of explosive mixture. A string protruding from the device is pulled to ignite the device, expelling paper streamers and producing a small report.
   - 4.2 A string popper, which is small tube containing not in excess of 16 milligrams of explosive mixture with a string protruding from both ends. The strings are pulled to ignite the friction-sensitive mixture, producing a small report.
   - 4.3 A snapper or drop pop, which is a small paper-wrapped item containing no more than 16 milligrams of explosive mixture coated on small bits of sand. When dropped, the device produces a small report.
5. Wire sparklers consisting of wire or stick coated with nonexplosive mixture that produces a shower of sparks upon ignition. These items must not exceed 100 grams of mixture per item;
6. Other sparkling devices which emit showers of sparks and sometimes a whistling or crackling effect when burning, do not detonate or explode, do not spin, are hand-held or ground-based, cannot propel themselves through the air and contain not more than 75 grams of chemical compound per tube or not more than 200 grams of chemical compound if multiple tubes are used.

FIXED SEATING. Furniture or fixture designed and installed for the use of sitting and permanently secured in place including bench-type seats and seats with or without backs or arm rests.

LADDER. As described by OSHA standard 29 CFR 1910 – General Industry, Part 1910.27 – Fixed Ladders.

LODGING HOUSE. ~~A one-family dwelling where one or more occupants are primarily permanent in nature and rent is paid for guest rooms.~~ See definition of *Bed and Breakfast Home*.

NIGHTCLUB. An A-2 occupancy meeting all of the following conditions:

1. The aggregate floor area of concentrated use and standing space that is used for dancing and/or viewing of performers exceeds 10 percent of the Group A-2 fire area, excluding adjacent lobby areas; and
2. Provides live or recorded entertainment by performing artist; and
3. Allows alcoholic beverages consumption.

NURSING HOMES. Facilities that provide care on a 24-hour basis, including both intermediate care facilities and skilled nursing facilities where any of the persons are *incapable of self-preservation*.

OPEN AIR CAMP CABIN. A single-story residential building that has three walls consisting of at least twenty percent (20%) screened openings with a maximum height of 44 inches above the finished floor to the bottom of the openings, has no heating or cooling system, is occupied for no more than 150 days within any rolling 365-day time span.

[A] REGISTERED DESIGN PROFESSIONAL. An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the state or *jurisdiction* in which the project is to be constructed. Design by a registered design professional is not required where exempt under the registration or license law.

RESPITE CARE FACILITY. A facility that provides overnight, temporary custodial care to no more than 6 individuals who are elderly, have physical disability or mental impairment. Not to exceed 14 consecutive calendar days and 60 total days annually per recipient.

TEMPORARY OVEFLOW SHELTER. A shelter that provides Temporary Overflow accommodations from an approved homeless shelter in accordance with Section 427.

[A] TOWNHOUSE. A single-family *dwelling unit* constructed in a group of three or more attached units separated by property lines in which each unit extends from the foundation to roof and with open space on at least two sides.

[BS] WIND-BORNE DEBRIS REGION. ~~Areas within hurricane-prone regions located:~~

~~1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed, V_{ult}, is 130 mph (58 m/s) or greater; or~~

~~2. In areas where the ultimate design wind speed is 140 mph (63.6 m/s) or greater.~~

~~For *Risk Category* II buildings and structures and *Risk Category* III buildings and structures, except health care facilities, the wind-borne debris region shall be based on Figure 1609.3.(1). For *Risk Category* IV buildings and structures and *Risk Category* III health care facilities, the windborne debris region shall be based on Figure 1609.3(2).~~

Areas within hurricane-prone regions defined as that area east of the inland water-way from the North Carolina/South Carolina state line north to Beaufort Inlet and from that point to include the barrier islands to the North Carolina/Virginia state line.

CHAPTER 3
USE AND OCCUPANCY CLASSIFICATION

304.1 Business Group B.
Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers

Ambulatory care facilities

Animal hospitals, kennels and pounds

Banks

Barber and beauty shops

Car wash

Civic administration

Clinic, outpatient

Dry cleaning and laundries: pick-up and delivery stations and self-service

Educational occupancies for students above the 12th grade

Electronic data processing

Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities not more than 2,500 square feet (232 m^2) in area.

Laboratories: testing and research

Motor vehicle showrooms

Post offices

Print shops

Professional services (architects, attorneys, dentists, physicians, engineers, etc.)

Radio and television stations

Telephone exchanges

Training and skill development not in a school or academic program (this shall include, but not be limited to, tutoring centers, martial arts studios, gymnastics and similar uses regardless of the ages served, and where not classified as a Group A occupancy).

Educational occupancies for high school students participating in *Cooperative Innovative High School Programs* taught at colleges, community colleges or universities.

305.1.2 Cooperative innovative high school programs. Educational occupancies for high school students participating in Cooperative Innovative High School Programs taught at colleges, community colleges or universities shall be classified as Group B occupancies.

305.1.2 Drop-in/short-term child care. Drop-in/short-term child care facility as defined in North Carolina G.S. 110-86(2)(d) & (d1) shall be classified as Group E.

308.3.1 Condition 1 (Ambulatory).
This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

308.3.2 Condition 2 (Nonambulatory).
This occupancy condition shall include buildings in which there are any persons receiving custodial care who require ~~limited~~ verbal or physical assistance while responding to an emergency situation to complete building evacuation.

308.6 Institutional Group I-4, day care facilities.
Institutional Group I-4 occupancy shall include buildings and structures occupied by more than five persons of any age who receive *custodial care* for fewer than 24 hours per day by persons other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

Adult day care

Child day care

Respite Care Facility licensed as I-4 day care facilities

308.6.5 Drop-in/short-term child care. Drop-in/short-term child care facility as defined in North Carolina G.S. 110-86(2)(d) & (d1) shall be classified as Group E.

310.3 Residential Group R-1.
Residential Group R-1 occupancies containing *sleeping units* where the occupants are primarily *transient* in nature, including:

Boarding houses (*transient*) with more than 10 occupants

Congregate living facilities (*transient)* with more than 10 occupants

Hotels (*transient*)

Motels (*transient*)

Open air camp cabin (transient) with 17 to 36 occupants

310.4 Residential Group R-2.
Residential Group R-2 occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses

Boarding houses (nontransient) with more than 16 occupants

Congregate living facilities (nontransient) with more than 16 occupants

Convents

Dormitories

Fraternities and sororities

Hotels (nontransient)

Live/work units

Monasteries

Motels (nontransient)

Open air camp cabin (nontransient) with 17 to 36 occupants

Vacation timeshare properties

310.5 Residential Group R-3.
Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two *dwelling units*

Boarding houses (nontransient) with 16 or fewer occupants

Boarding houses (*transient*) with 10 or fewer occupants

Adult Day Care facilities that provide accommodations for five or fewer persons receiving care

Child Day Care facilities that provide accommodations for eight or fewer persons with no more than five for a preschool for less than 24 hours.

Congregate living facilities (nontransient) with 16 or fewer occupants

Congregate living facilities (*transient*) with 10 or fewer occupants

Lodging houses *(Bed and Breakfast)* with ~~five~~ eight or fewer *guest rooms*

Licensed Small Residential Care Facilities complying with Section 428.3

Open air camp cabin with 16 or fewer occupants

Respite Care Facilities licensed as Small Residential Care Facilities

310.5.1 Care facilities within a dwelling.
Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or Section P2904 of the *International Residential Code*.

Exception: Respite Care Facilities shall be provided with a NFPA 13 sprinkler system complying with Section 903.3.1.1.

310.5.2 Lodging houses.
Owner-occupied *lodging houses* with ~~five~~ eight or fewer *guest rooms* shall be permitted to be constructed in accordance with the *International Residential Code*.

310.6 Residential Group R-4.
Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive *custodial care*. Buildings of Group R-4 shall be classified as one of the occupancy conditions specified in Section 310.6.1 or 310.6.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

Group homes

Halfway houses

Large Residential Care Facilities complying with Section 428.5

Adult Day Care facilities, less than 24-hour basis

Child Day Care facilities, less than 24-hour basis

Residential board and care facilities

Respite Care Facilities licensed as Large Residential Care Facilities

Social rehabilitation facilities

312.1 General.
Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings

Aircraft hangars, accessory to a one- or two-family residence (see Section 412.5)

Barns

Carports

Fences more than 6 feet (1829 mm) in height

Grain silos, accessory to a residential occupancy

Greenhouses

Livestock shelters

Photovoltaic panel system (mounted at grade)

Private garages

Retaining walls

Sheds

Stables

Tanks

Towers

CHAPTER 4
SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

[F] 404.3 Automatic sprinkler protection.
An *approved automatic sprinkler system* shall be installed throughout the entire building.

Exceptions:

1. That area of a building adjacent to or above the *atrium* need not be sprinklered provided that portion of the building is separated from the *atrium* portion by not less than 2-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both.

2. Where the ceiling of the *atrium* is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the *atrium* is not required.

3. Sprinkler protection is not required for atriums that connect only two stories unless required by other sections of this code.

404.5 Smoke control.
A smoke control system shall be installed in accordance with Section 909.

Exception: In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for *atriums* that connect only two *stories*. Stories that are separated from the atrium by the requirements of Section 707.4 for shafts and have no penetrations or openings are not considered connected to the atrium. The total quantity of stories penetrated by the atrium are to be considered when determining the shaft rating.

407.1 General.
Occupancies in Group I-2 shall comply with the provisions of Sections 407.1 through ~~407.10~~ 407.12 and other applicable provisions of this code.

407.6.1 Dry-pipe sprinkler system.
When dry-pipe sprinkler systems are installed, upon activation, a full flow of water shall be delivered to the most remote point of the system in no more than 60 seconds.

[F] 407.8 Automatic fire detection.
Corridors in Group I-2, ~~Condition 1, occupancies~~ and spaces permitted to be open to the *corridors* by Section 407.2 shall be equipped with an automatic fire detection system.

~~Group I-2, Condition 2, occupancies shall be equipped with smoke detection as required in Section 407.2.~~

Exceptions:

1. *Corridor* smoke detection is not required in smoke compartments that contain patient sleeping units where sleeping rooms are provided with *smoke detectors* that comply with UL 268. Such detectors shall provide a visual display on the

corridor side of each sleeping room and an audible and visual alarm at the care provider's station attending each unit.

2. *Corridor* smoke detection is not required in smoke compartments that contain patient sleeping units where sleeping room doors are equipped with automatic door-closing devices with integral *smoke detectors* on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

407.11 Locks and latches.
Door-locking arrangements shall be permitted in Group I-2 where the clinical or security needs of the patients require specialized locking measures for their safety or the safety of others, provided keys are carried at all times by staff that are responsible for the evacuation of the occupants within the locked building unit(s). Provisions for remote locking and unlocking of occupied rooms are required where more than ten locks are necessary to be unlocked in order to move occupants from one smoke compartment to another smoke compartment. These locks may include mechanical locks, electromagnetic locks and other approved locking devices.

407.12 Special locking arrangements for Licensed Group I-2 and large residential care facilities as described in Section 428.5.
Buildings protected throughout by an automatic fire detection system or automatic sprinkler system and in compliance with the following may be equipped with approved, listed locking devices:

1. Doors shall unlock upon actuation of the automatic fire detection system or automatic sprinkler system.

2. Doors shall unlock upon loss of power controlling the locking device.

   Exception: Independent standby power is acceptable as long as the automatic fire detection system, or automatic sprinkler system, when activated has precedence over the standby power and unlocks the door. If a nonemergency situation occurs such as a power outage, the door shall be allowed to remain locked until detection system(s) operate, provided that the power outage does not disable these detection systems. If any of the detection systems are disabled in any way, standby power controlling the locking devices will be interrupted.

3. A special locking system of electromagnetic locks may be utilized when all of the following requirements are met:

   3.1 These types of locks may be used only in wards and wings or other portions of a facility that requires security provisions for the protection of its patients.

   An on/off emergency release switch(es) must be capable of interrupting power to all electromagnetically locked doors within the ward, wing, or other portions of the facility. Release switch(es) shall be located and identified at each nurses/staff station serving the locked ward, wing, or other portions of the facility and any other control situation responsible for the evacuation of the occupants of the locked units which are manned 24 hours.

3.2 These systems may be used provided not more than one such system is located in any egress path.

3.3 A wiring diagram and system components location map shall be provided under glass adjacent to the fire alarm panel.

3.4 An additional on/off emergency release switch shall be provided for each locked door and located within 3 feet (914mm) of the door and shall not depend on relays or other devices to cause the interruption of power.

3.5 Any required emergency release switch shall interrupt the power to the locking device(s). If any required emergency release switch is of the locking type, all staff that are responsible for the evacuation of the occupants of the locked unit must carry emergency release switch keys. Additional convenience release devices may be provided.

4. Each special locking installation shall be approved by the appropriate fire and building inspection authority prior to installation, after installation, and prior to initial use and reviewed periodically thereafter.

5. Emergency lighting shall be provided on the egress side of each door such that it illuminates the locking controls involved in the special locking arrangement.

408.8.5 Padded cell doors.
Padded cell doors that are required to be 45-minute rated must meet the requirements of Section 715.4.1 except that a closer is not required. Doors without a closer must have a permanent label adjacent to the door strike on the nonsecure side of the door indicating: FIRE DOOR – KEEP CLOSED.

412.4.7 Posted Information.
Information required to be posted by Sections 412.4.7.1 and 412.4.7.2 shall be posted on an approved sign.

412.4.7.1 Allowable wing height.
Where unit heaters are provided in accordance with exception 1 of Section 412.4.4 the maximum wing height shall be posted.

412.4.7.2 Allowable fuel capacity.
The maximum allowable fuel quantity for a hangar shall be posted. Where multiple hangars are located within a fire area the maximum allowable fuel quantity for the fire area will be posted in each hanger.

412.4.7.3 Location.
Information required to be posted by Sections 412.4.7.1 and 412.4.7.2 shall be located on the interior side and adjacent to the door provided for the aircraft entrance.

423.3 Critical emergency operations. (Deleted)
~~In areas where the shelter design wind speed for tornados in accordance with Figure 304.2(1) of ICC 500 is 250 MPH, 911 call stations, emergency operation centers and fire,~~

~~rescue, ambulance and police stations shall have a storm shelter constructed in accordance with ICC 500.~~

~~**Exception:** Buildings meeting the requirements for shelter design in ICC 500.~~

423.4 Group E occupancies. (Deleted)

~~In areas where the shelter design wind speed for tornados is 250 MPH in accordance with Figure 304.2(1) of ICC 500, all Group E occupancies with an aggregate occupant load of 50 or more shall have a storm shelter constructed in accordance with ICC 500. The shelter shall be capable of housing the total occupant load of the Group E occupancy.~~

~~**Exceptions:**~~

~~1. Group E day care facilities.~~

~~2. Group E occupancies accessory to places of religious worship.~~

~~3. Buildings meeting the requirements for shelter design in ICC 500.~~

SECTION 427
TEMPORARY OVERFLOW EMERGENCY SHELTERS FOR THE HOMELESS

427.1 General.
Existing A-2 and A-3 Occupancies shall be permitted to provide facilities for temporary overflow emergency shelters for the homeless provided that all of the following conditions are met and approved by the local code official and fire marshal:

427.1.1 Occupant load and age.
The maximum number of homeless occupants is 20 individuals who are ambulatory. The homeless occupants must be 18 years of age or older.

Exception: Occupants may be less than 18 years of age if the temporary shelter meets all of the following conditions:

1. Is intended to serve homeless families with children and their parents or other legal guardian;
2. Consists of a group of churches or other nonprofit religious entities that have agreed to host the shelter occupants on the premises of each church or religious entity on a rotating basis; and
3. Equipped with smoke detectors meeting applicable code provisions for such devices in all sleeping areas.

427.1.2 Construction Type.
The building must be of Type I, II, or III construction.

427.1.3 Staff.
The temporary overflow emergency shelter must be staffed by a minimum of two individuals of 21 years of age or older trained in accordance with Chapter 4 of the NC Fire Code and at least one trained individual shall be awake to monitor the sleeping room and restrooms throughout the time the facility is occupied by the homeless.

427.1.4 Fire alarm and detection systems.
Functioning smoke detection and a local fire alarm system per 907.2.8 shall be provided throughout the sleeping room and exit access corridors and stairs of the temporary overflow emergency shelter.

Building Owner shall submit documentation illustrating that the fire alarm system is approved and that all emergency batteries have been tested and are operational.

427.1.5 Means of egress.
There shall be a minimum of two separate code compliant means of egress serving the temporary overflow emergency shelter. An evacuation route approved by the local building and fire code officials shall be posted and be in compliance with Sections 403, 404, and 406 of the NC Fire Code.

427.1.5.1 Illumination.
The temporary overflow emergency shelter sleeping room and exit access corridors and stairs shall have unswitched illumination and emergency powered illumination with a duration of not less than 90-minutes.

427.1.6 Automatic sprinkler system.
No fire protection sprinkler system is required per 903.2.8, Exception #2.

427.1.7 Ventilation and temperature control.
Heating, cooling, and ventilation must be provided by equipment installed and approved for such use. Use of space heaters shall be prohibited.

427.1.8 Fire extinguishers.
There must be an adequate number of fire extinguishers to serve the temporary overflow emergency shelter as determined by the local fire marshal. Travel distance to an approved fire extinguisher shall not exceed 50 feet. Minimum rating of extinguishers shall be 3A40BC.

427.1.9 Occupant restrictions.
No smoking is permitted in the temporary overflow emergency shelter.

427.1.10 Permits.
Temporary overflow emergency shelters must be approved by the local code official for Occupancy by issuance of an approved Occupancy Permit. Drawings of the temporary overflow emergency shelter sealed by a NC licensed architect or engineer must be provided for local code official review and approval.

Occupancy of a temporary overflow emergency shelter shall be for a maximum of 150 calendar days within any 365 day time span

427.1.11 Accessibility.
For temporary overflow emergency shelters compliance with Chapter 11 and Section 1007 is not required provided that the local jurisdiction has other shelter facilities that are accessible by the disabled.

SECTION 428
LICENSED RESIDENTIAL CARE FACILITY

428.1 General.
Buildings in which more than three people are harbored for medical, charitable or other care or treatment shall be classified as residential care facilities. The state agency having jurisdiction shall classify the facility, small nonambulatory care facility or large residential care facility.

428.1.1 Fire extinguishers.
Fire extinguishers shall be installed in licensed residential care facilities in accordance with the North Carolina Fire Prevention Code.

428.1.2 Means of egress.
Where two means of egress exits are required, the exits or exit access doors shall be so located and constructed to minimize the possibility that both may be blocked by any one fire or other emergency condition.

428.2 Residential care homes.
Homes keeping no more than six adults or six unrestrained children who are able to respond and evacuate the facility without assistance, determined by the state agency having jurisdiction to be licensable, shall be classified as single-family residential (North Carolina Residential Code).

428.2.1 Means of egress.
Each normally occupied story of the facility shall have two remotely located means of egress exits.

428.2.2 Smoke Detection Systems.
Smoke detectors shall be provided on all levels per the North Carolina Residential Code.

428.2.3 Interior finishes.
Interior wall and ceiling finishes shall be Class A, B or C.

428.2.4 Heating appliances.
Unvented fuel-fired heaters and portable electric heaters shall be prohibited.

428.3 Licensed Small Residential Care Facilities.
The following facilities when determined by the State Agency having jurisdiction to be licensable, shall be classified as Single-Family Residential.

1. Residential Care Facilities keeping no more than six adults or six unrestrained children with no more than three who are unable to respond and evacuate without assistance.

2. Residential Care Facilities keeping no more than five adults or five children who are unable to respond and evacuate without assistance, when certifiable for Medicaid reimbursement, and when staffed 24-hours per day with at least two staff awake at all times.

3. Residential Care Facilities keeping no more than nine adults or nine children who are able to respond and evacuate without assistance.

428.3.1 Construction type.
The building shall be of one-hour fire resistant construction including all walls, partitions, floors and ceilings and bedroom doors shall be 1.75 inches solid wood core.

> **Exception:** No rating shall be required if the building is NFPA 13D sprinklered with a wet pipe system with a 30-minute water supply. Bathrooms, toilets, closets, pantries, storage and utility spaces shall be sprinklered. The sprinkler system shall be monitored per Section 903.4 (Section 903.4, Exception 1 is not applicable in this occupancy)

428.3.2 Building height and area.
Buildings shall not exceed two stories in height or the area limitations for Group R-4. For purposes of this section attics and basements used as habitable spaces shall be counted as stories.

428.3.3 Quantity of exits.
Each normally occupied story of the facility shall have two remotely located exits.

428.3.4 Egress stairs.
Required facility egress stairways shall be either exterior unenclosed or interior enclosed on each level with one-hour fire barriers and ~~a~~ self-closing 20-minute labeled ~~door~~ doors. Other interior stairways shall be enclosed on one floor level with one-hour fire resistant walls and self-closing 20-minute labeled doors.

428.3.5 Smoke and heat detectors.
Smoke detectors shall be provided on all levels per the North Carolina Residential Code. Heat detectors shall be installed in all attic spaces. The heat detectors shall be connected to the fire alarm and detection system.

428.3.6 Incidental accessory occupancies.
Any incidental use area (as defined by Table 508.2.5) shall be enclosed with one-hour fire barriers and self-closing 20-minute labeled door or provided with an automatic sprinkler system and smoke resistant separation from other areas.

428.3.7 Fire alarm systems.
A building fire alarm system shall be provided in accordance with NFPA 72. Provisions shall be made to activate the internal evacuation alarm at all required exits.

428.3.8 Interior finishes.
Interior wall and ceiling membranes shall be gypsum wallboard, plaster or other non-combustible material.

428.3.9 Heating appliances.
Unvented fuel-fired heaters, floor furnaces, and portable electric heaters shall not be installed.

428.3.10 Occupants.
Occupants younger than six-years of age shall sleep on the level of exit discharge with adult supervision.

428.4 Small non-ambulatory care facilities.

Facilities keeping no more than six adults or six children who are unable to respond and evacuate without assistance, when determined by the State Agency having jurisdiction to be licensable shall comply with the requirements for Small Residential Care Facilities.

428.4.1 Automatic sprinkler systems.
The building shall be sprinklered with a wet pipe system in accordance with NFPA 13D with a 30-minute water supply including bathrooms, toilets, closets, pantries, storage and utility spaces. The sprinkler system shall be monitored per Section 903.4 (Section 903.4, Exception 1 is not applicable in this occupancy.)

428.5 Large residential care facilities.
Facilities keeping no more than twelve residents, when determined by the State Agency having jurisdiction to be licensable shall be classified as Group R-4, residential (North Carolina Building Code).

428.5.1 Construction type.
The building shall be of one-hour fire resistant construction.

428.5.2 Automatic sprinkler system.
A wet pipe system in accordance with NFPA 13R including bathrooms, toilets, closets, pantries, storage and utility spaces shall be required. The sprinkler system shall be monitored per Section 903.4 (Section 903.4, Exception 1 is not applicable in this occupancy.)

428.5.3 Building height.
The building shall be a maximum of 1-story.

428.5.4 Means of egress. (items 428.5.2 thru 428.5.6 below become 428.5.4.1 thru 428.5.4.5)

428.5.2 Exit quantity.
The facility shall have two remotely located exits.

428.5.3 Door width.
All door openings subject to use by residents shall have ~~an~~ a minimum ~~egress~~ clear width of 32-inches.

428.5.4 Egress width.
Required corridors, ramps, and passageways shall have a minimum clear width of 6-feet when serving as part of the means of egress from resident areas.

428.5.5 Corridors continuity.
Buildings may have spaces open to the corridor provided:

1. Each area does not exceed 250 square feet.
2. The spaces are not used for patient sleeping rooms, treatment rooms, or incidental use areas as defined in Table 508.2.5.
3. The area is equipped with smoke detectors.

4. Not more than one such area is permitted in any one smoke compartment or building if smoke compartments are not required.

5. The area is arranged not to obstruct access to required exits.

428.5.6 Corridor protection.
Unless required otherwise by Section 425.5.8, corridor partitions and doors in corridor partitions need not have a fire resistance rating but shall be designed to resist the passage of smoke. Doors shall be equipped with approved latches that will keep the door tightly closed. All doors except those to patient sleeping rooms shall be self-closing or automatic closing by smoke detection. Interior wall and ceiling finish shall be gypsum wallboard, plaster or other non-combustible material.

428.5.5 Fire alarm and detection systems. (Items 428.5.7 and 428.5.9 below become 428.5.5.1 and 428.5.5.2)

428.5.7 Smoke and heat detectors.
Corridors shall be provided with smoke detectors. Heat detectors shall be installed in all attic spaces. The heat detectors shall be connected to the fire alarm and detection system.

428.5.8 Incidental uses.
Any incidental use area shall comply with the requirements of Table 508.2.5.

428.5.9 Fire alarm systems.
A building fire alarm system shall be provided in accordance with NFPA 72. Provisions shall be made to activate the internal evacuation alarm at all required exits.

SECTION 429
LICENSED ADULT AND CHILD DAY CARE

429.1 Means of egress.

429.1.1 Location.
Rooms where occupants receive care in I-4 and R-3 adult and child day care facilities shall be on the level of exit discharge.

429.1.2 Quantity of Exits.
Group E and Group R-4 adult and child day care facilities shall have a minimum two remote means of egress.

Exception: Rooms where occupants receive care are located on the level of exit discharge and each of these rooms has an exit door directly to the exterior.

429.1.3 Walls and Ceilings.
All walls and ceilings in rooms which are used for day care purposes and are part of the exiting path shall have interior membranes of noncombustible construction such as but not limited to plaster or gypsum wallboard or shall comply with Section 803.

429.2 Ventilation.

Rooms where occupants receive care in R-4 adult and child day care facilities shall comply with the ventilation requirements of Section 1203 of this code.

429.3 Portable Fire Extinguishers.
In R-3 and R-4 adult and child day care facilities, at least one 2-A:10-B:C fire extinguisher shall be provided per floor with a maximum of 40 feet travel distance to the extinguisher.

SECTION 430
PRIVATE AND PUBLIC SCHOOLS

430.1 Boiler rooms in public schools.
Every fuel storage room and boiler room shall be separated 2-hour fire-resistance rated construction. Door openings shall be to the exterior and all penetrations to the interior of the building shall be protected.

430.2 Open flame heating appliances in public schools.
Every comfort heating appliance installed within a building which produces an unprotected open flame shall be separated by 2-hour fire-resistance rated construction.

> **Exception:** Direct vent tubular infrared heaters installed in gymnasiums at a minimum height of 20 feet, measured from the finished floor to the bottom of the unit, shall be permitted.

430.3 Group E in churches, private schools and public schools.
Rooms used for first grade children and younger shall be located on the level of exit discharge. Rooms used for second grade children shall not be located more than one story above the level of exit discharge.

CHAPTER 5
GENERAL BUILDING HEIGHTS AND AREAS

[F] 501.2 Address identification.
New and existing buildings shall be provided with *approved* address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be a minimum of ~~4~~ 6 inches (~~102~~ 152.4 mm) high with a minimum stroke width of ~~1/2~~ ¾ inch (~~12.7~~ 19.05 mm). Where required by the fire *code official*, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other approved sign or means shall be used to identify the structure. Address identification shall be maintained.

TABLE 504.3[a]
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	SEE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A, B, E, F, M, S, U[b]	NS[b]	UL	160	65	65	65	65	65	50	40
	S	UL	180	85	75	85	75	85	70	60
H-1, H-2, H-3, H-5	NS[c, d]	UL	160	65	65	65	65	65	50	40
	S									
H-4	NS[c, d]	UL	160	65	65	65	65	65	50	40
	S	UL	180	85	75	85	75	85	70	60
I-1 Condition 1, I-3	NS[d, e]	UL	160	65	65	65	65	65	50	40
	S	UL	180	85	75	85	75	85	70	60
I-1 Condition 2, I-2	NS[d, f, e]	UL	160	65	65	65	65	65	50	40
	S	UL	180	85						
I-4	NS[d, g]	UL	160	65	65	65	65	65	50	40
	S	UL	180	85	75	85	75	85	70	60
R	NS[d, h]	UL	160	65	65	65	65	65	50	40
	S13R	60	60	60	60	60	60	60	60	60
	S	UL	180	85	75	85	75	85	70	60

For SI: 1 foot = 304.8 mm.
Note: UL = Unlimited; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.
a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

c. New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
d. The NS value is only for use in evaluation of existing building height in accordance with the *International Existing Building Code.*
e. New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies Condition 1, see Exception 1 of Section 903.2.6.
f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code.*
g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
i. See Table C102.1 in Appendix C for Group U agricultural buildings.

TABLE 504.4[a, b]
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	EE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	JL	5	3	2	3	2	3	2	1
	S	JL	6	4	3	4	3	4	3	2
A-2	NS	JL	11	3	2	3	2	3	2	1
	S	JL	12	4	3	4	3	4	3	2
A-3	NS	JL	11	3	2	3	2	3	2	1
	S	JL	12	4	3	4	3	4	3	2
A-4	NS	JL	11	3	2	3	2	3	2	1
	S	JL	12	4	3	4	3	4	3	2
A-5	NS	JL	JL	JL	JL	JL	JL	UL	JL	JL
	S	JL	JL	JL	JL	JL	JL	UL	JL	JL
B	NS	JL	11	5	3	5	3	5	3	2
	S	JL	12	6	4	6	4	6	4	3
E	NS	JL	5	3	2	3	2	3	1	1
	S	JL	6	4	3	4	3	4	2	2
F-1	NS	JL	11	4	2	3	2	4	2	1
	S	JL	12	5	3	4	3	5	3	2
F-2	NS	JL	11	5	3	4	3	5	3	2
	S	JL	12	6	4	5	4	6	4	3
H-1	NS[c, d]	1	1	1	1	1	1	1	1	NP
	S									
H-2	NS[c, d]	JL	3	2	1	2	1	2	1	1
	S									
H-3	NS[c, d]	JL	6	4	2	4	2	4	2	1
	S									
H-4	NS[c, d]	JL	7	5	3	5	3	5	3	2
	S	JL	8	6	4	6	4	6	4	3
H-5	NS[c, d]	4	4	3	3	3	3	3	3	2
	S									
I-1 Condition 1	NS[d, e]	JL	9	4	3	4	3	4	3	2

	S	UL	10	5	4	5	4	5	4	3
I-1 Condition 2	NS[d, e]	UL	9	4	3	4	3	4	3	2
	S	UL	10	5						
I-2	NS[d, f]	UL	4	2	1	1	NP	1	1	NP
	S	UL	5	3						
I-3	NS[d, e]	UL	4	2	1	2	1	2	2	1
	S	UL	5	3	2	3	2	3	3	2
I-4	NS[d, g]	UL	5	3	2	3	2	3	1	1
	S	UL	6	4	3	4	3	4	2	2
M	NS	UL	11	4	2	4	2	4	3	1
	S	UL	12	5	3	5	3	5	4	2

(continued)

TABLE 504.4[a, b]—continued
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	TYPE OF CONSTRUCTION									
	EE FOOTNOTES	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
R-1	NS[d, h]	UL	11	4	4	4	4	4	3	2
	S13R	4	4						4	3
	S	UL	12	5	5	5	5	5	4	3
R-2	NS[d, h]	UL	11	4	4	4	4	4	3	2
	S13R	4	4	4					4	3
	S	UL	12	5	5	5	5	5	4	3
R-3	NS[d, h]	UL	11	4	4	4	4	4	3	3
	S13R	4	4						4	4
	S	UL	12	5	5	5	5	5	4	4
R-4	NS[d, h]	UL	11	4	4	4	4	4	3	2
	S13R	4	4						4	3
	S	UL	12	5	5	5	5	5	4	3
S-1	NS	UL	11	4	2	3	2	4	3	1
	S	UL	12	5	3	4	3	5	4	2
S-2	NS	UL	11	5	3	4	3	4	4	2
	S	UL	12	6	4	5	4	5	5	3
U[i]	NS	UL	5	4	2	3	2	4	2	1
	S	UL	6	5	3	4	3	5	3	2

Note: UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.

c. New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
d. The NS value is only for use in evaluation of existing building height in accordance with the *International Existing Building Code.*
e. New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6 and Section 1103.5 of the *International Fire Code.*
g. For new Group I-4 occupancies, see Exceptions 2 and 3 of Section 903.2.6.
h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.
i. See Table C102.1 in Appendix C for Group U agricultural buildings.

TABLE 506.2[a, b]
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		YPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	45,000	34,500	18,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1									
	SM									
B	NS	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	50,000	92,000	14,000	76,000	44,000	72,000	36,000
	SM	UL	UL	12,500	69,000	85,500	57,000	08,000	54,000	27,000
E	NS	UL	UL	26,500	14,500	23,500	14,500	25,500	18,500	9.500
	S1	UL	UL	06,000	58,000	94,000	58,000	02,000	74,000	38,000
	SM	UL	UL	79,500	43,500	70,500	43,500	76,500	65,500	28,500
F-1	NS	UL	UL	25,000	15,500	19,000	12,000	33,500	14,000	8.500
	S1	UL	UL	00,000	62,000	76,000	48,000	34,000	56,000	34,000
	SM	UL	UL	75,000	46,500	57,000	36,000	00,500	42,000	25,500
F-2	NS	UL	UL	37,500	23,000	28,500	18,000	50,500	21,000	13,000
	S1	UL	UL	50,000	92,000	14,000	72,000	02,000	84,000	52,000
	SM	UL	UL	12,500	69,000	85,500	54,000	51,500	63,000	39,000
H-1	NS[c]	1,000	16,500	11,000	7,000	9.500	7,000	10,500	7,500	NP
	S1									
H-2	NS[c]	1,000	16,500	11,000	7,000	9.500	7,000	10,500	7,500	3,000

	S1									
	SM									
H-3	NS[c]	UL	60,000	26,500	14,000	17,500	13,000	25,500	10,000	5,000
	S1									
	SM									
H-4	NS[c, d]	UL	UL	37,500	17,500	28,500	17,500	36,000	18,000	6,500
	S1	UL	UL	50,000	70,000	14,000	70,000	44,000	72,000	26,000
	SM	UL	UL	12,500	52,500	85,500	52,500	08,000	54,000	19,500
H-5	NS[c, d]	UL	UL	37,500	23,000	28,500	19,000	36,000	18,000	9,000
	S1	UL	UL	50,000	92,000	14,000	76,000	44,000	72,000	36,000
	SM	UL	UL	12,500	69,000	85,500	57,000	108000	54,000	27,000

(continued)

TABLE 506.2[a, b]—continued
ALLOWABLE AREA FACTOR (A_t = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION								
		TYPE I		TYPE II		TYPE III		YPE IV	TYPE V	
		A	B	A	B	A	B	HT	A	B
I-1	NS[d, e]	UL	5,000	9,000	0,000	6,500	0,000	8,000	0,500	4,500
	S1	UL	20,000	6,000	0,000	6,000	0,000	2,000	2,000	8,000
	SM	UL	65,000	7,000	0,000	9,500	0,000	4,000	1,500	3,500
I-2	NS[d, f]	UL	UL	5,000	1,000	2,000	NP	2,000	,500	NP
	S1	UL	UL	0,000	4,000	8,000	NP	8,000	8,000	NP
	SM	UL	UL	5,000	3,000	6,000	NP	6,000	8,500	NP
I-3	NS[d, e]	UL	UL	5,000	0,000	0,500	7,500	2,000	,500	,000
	S1	UL	UL	5,000	0,000	2,000	0,000	8,000	0,000	0,000
	SM	UL	UL	5,000	0,000	1,500	2,500	6,000	2,500	5,000
I-4	NS[d, g]	UL	0.500	6,500	3,000	3,500	3,000	5,500	8,500	,000
	S1	UL	21,000	06,000	2,000	4,000	2,000	02,000	4,000	6,000
	SM	UL	31,500	9,500	9,000	0,500	9,000	6,500	5,500	7,000
M	NS	UL	UL	1,500	2,500	8,500	2,500	0,500	4,000	,000
	S1	UL	UL	6,000	0,000	4,000	0,000	2,000	6,000	6,000
	SM	UL	UL	4,500	7,500	5,500	7,500	1,500	2,000	7,000
R-1	NS[d, h]	UL	UL	4,000	6,000	4,000	6,000	0,500	2,000	,000
	S13R									
	S1	UL	UL	6,000	4,000	6,000	4,000	2,000	8,000	8,000
	SM	UL	UL	2,000	8,000	2,000	8,000	1,500	6,000	1,000
R-2	NS[d, h]	UL	UL	4,000	6,000	4,000	6,000	0,500	2,000	,000
	S13R									
	S1	UL	UL	6,000	4,000	6,000	4,000	2,000	8,000	8,000
	SM	UL	UL	2,000	8,000	2,000	8,000	1,500	6,000	1,000

R-3	NS[d, h]	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S13R									
	S1									
	SM									
R-4	NS[d, h]	UL	UL	4,000	6,000	4,000	6,000	0,500	2,000	,000
	S13R									
	S1	UL	UL	6,000	4,000	6,000	4,000	2,000	8,000	8,000
	SM	UL	UL	2,000	8,000	2,000	8,000	1,500	6,000	1,000
S-1	NS	UL	8,000	6,000	7,500	6,000	7,500	5,500	4,000	,000
	S1	UL	2,000	04,000	0,000	04,000	0,000	02,000	6,000	6,000
	SM	UL	4,000	8,000	2,500	8,000	2,500	6,500	2,000	7,000
S-2	NS	UL	9,000	9,000	6,000	9,000	6,000	8,500	1,000	3,500
	S1	UL	6,000	56,000	04,000	56,000	04,000	54,000	4,000	4,000
	SM	UL	7,000	17,000	8,000	17,000	8,000	15,500	3,000	0,500
U	NS	UL	5,500	9,000	3,500	4,000	3,500	8,000	,000	,500
	S1	UL	2,000	6,000	4,000	6,000	4,000	2,000	6,000	2,000
	SM	UL	06,500	7,000	5,500	2,000	5,500	4,000	7,000	6,500

Note: UL = Unlimited; NP = Not permitted;

For SI: 1 square foot = 0.0929 m^2.

NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

a. See Chapters 4 and 5 for specific exceptions to the allowable height in this chapter.
b. See Section 903.2 for the minimum thresholds for protection by an automatic sprinkler system for specific occupancies.
c. New Group H occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.5.
d. The NS value is only for use in evaluation of existing building area in accordance with the *International Existing Building Code.*
e. New Group I-1 and I-3 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6. For new Group I-1 occupancies, Condition 1, see Exception 1 of Section 903.2.6.
f. New and existing Group I-2 occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.6~~ and Section 1103.5 of the *International Fire Code*~~.
g. New Group I-4 occupancies see Exceptions 2 and 3 of Section 903.2.6.
h. New Group R occupancies are required to be protected by an automatic sprinkler system in accordance with Section 903.2.8.

507.4 Sprinklered, one-story buildings.

The area of a Group A-4 building no more than one *story above grade plane* of other than Type V construction, or the area of a Group B, F, M or S building no more than one story above grade plane of any construction type, shall not be limited where the building is provided with an *automatic sprinkler system* throughout in accordance with Section 903.3.1.1 and is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width. Unseparated mixed use is applicable to these occupancy classifications.

TABLE 508.4
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)

OCCUPANCY	A, E		I-1[a], I-3, I-4		I-2		R[a]		F-2, S-2[b], U		B[e], F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1[a], I-3, I-4	—	—	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	—	—	—	—	N	N	—	—	—	—	—	—	NP	NP	3	NP	2	NP	2	NP
R[a]	—	—	—	—	—	—	—	—	—	—	—	—	NP	NP	3	NP	2	NP	2	NP
F-2, S-2[b], U	—	—	—	—	—	—	—	—	—	—	—	—	NP	NP	3	4	2	3	2	NP
B[e], F-1, M, S-1	—	—	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2	1	NP
H-1	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP	1	NP
H-3, H-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	d	NP	1	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

REPLACE WITH NC TABLE

OCCUPANCY		A[d]	B[e]	E	F-1	F-2	H-1	H-2	H-3	H-4	H-5	I-1[a]	I-2	I-3	I-4	M	R[a]	S-1	S-2[b]	U
A[d]	S	2[e,f]	1	1	1	N	NP	3	2	2	2	1	2	1	1	1	1	1	N	N
	NS	2[e,f]	2	2	2	1	NP	4	3	3	3	2	NP	2	2	2	2	2	1	1
B[e]	S	1	2[e]	1	2	1	NP	2	1	1	1	1	2	1	1	1	1	1	1	1
	NS	2	2[e]	2	3	2	NP	3	2	2	2	2	NP	2	2	2	2	2	2	2
E	S	1	1	2[e]	1	N	NP	3	2	2	2	1	2	1	1	1	1	1	N	N
	NS	2	2	2[e]	2	1	NP	4	3	3	3	2	NP	2	2	2	2	2	1	1
F-1	S	1	2	1	3[e]	1	NP	2	1	1	1	1	2	1	1	2	1	2	1	1
	NS	2	3	2	3[e]	2	NP	3	2	2	2	2	NP	2	2	3	2	3	2	2
F-2	S	N	1	N	1	2[e]	NP	3	2	2	2	1	2	1	1	1	1[c]	1	1	1
	NS	1	2	1	2	2[e]	NP	4	3	3	3	2	NP	2	2	2	2[c]	2	2	2
H-1	S	NP	NP	NP	NP	NP	4[e]	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	NS	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
H-2	S	3	2	3	2	3	NP	4[e]	1	1	1	3	3	3	3	2	3	2	3	3
	NS	4	3	4	3	4	NP	NP	NP	NP	NP	NP	NP	NP	NP	3	NP	3	4	4
H-3	S	2	1	2	1	2	NP	1	3[e]	1	1	2	2	2	2	1	2	1	2	2
	NS	3	2	3	2	3	NP	NP	NP	NP	NP	NP	NP	NP	NP	2	NP	2	3	3
H-4	S	2	1	2	1	2	NP	1	1	2[e]	1	2	2	2	2	1	2	1	2	2
	NS	3	2	3	2	3	NP	NP	NP	NP	NP	NP	NP	NP	NP	2	NP	2	3	3
H-5	S	2	1	2	1	2	NP	1	1	1	2[e]	2	2	2	2	1	2	1	2	2
	NS	3	2	3	2	3	NP	NP	NP	NP	NP	NP	NP	NP	NP	2	NP	2	3	3
I-1[a]	S	1	1	1	1	1	NP	3	2	2	2	2[e]	2	1	1	1	1	1	1	1
	NS	2	2	2	2	2	NP	NP	NP	NP	NP	2[e]	NP	2	2	2	NP	2	2	2
I-2	S	2	2	2	2	2	NP	3	2	2	2	2	2[e]	2	2	2	2	2	2	2
	NS	NP	NP	Np	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
I-3	S	1	1	1	1	1	NP	3	2	2	2	1	2	2[e]	1	1	1	1	1	1
	NS	2	2	2	2	2	NP	NP	NP	NP	NP	2	NP	NP	2	2	NP	2	2	2
I-4	S	1	1	1	1	1	NP	3	2	2	2	1	2	1	2[e]	1	1	1	1	1
	NS	2	2	2	2	2	NP	NP	NP	NP	NP	2	NP	2	NP	2	NP	2	2	2
M	S	1	1	1	2	1	NP	2	1	1	1	1	2	1	1	2[e]	1	1	1	1
	NS	2	2	2	3	2	NP	3	2	2	2	2	NP	2	2	2[e]	2	2	2	2
R[a]	S	1	1	1	1	1[c]	NP	3	2	2	2	1	2	1	1	1	2[e,g]	1	1[c]	1[c]
	NS	2	2	2	2	2[c]	NP	NP	NP	NP	NP	NP	NP	NP	NP	2	2[e,g]	2	2[c]	2[c]
S-1	S	1	1	1	2	1	NP	2	1	1	1	1	2	1	1	1	1	3[e]	1	1
	NS	2	2	2	3	2	NP	3	2	2	2	2	NP	2	2	2	2	3[e]	2	2
S-2[b]	S	N	1	N	1	1	NP	3	2	2	2	2	2	1	1	1	1[c]	1	2[e]	1
	NS	1	2	1	2	2	NP	4	3	3	3	3	NP	2	2	2	2[c]	2	2[e]	2
U	S	N	1	N	1	1	NP	3	2	2	2	1	2	1	1	1	1[c]	1	1	1[e]
	NS	1	2	1	2	2	NP	4	3	3	3	2	NP	2	2	2	2[c]	2	2	1[e]

S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

NS = Buildings not equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

N = No separation requirement.

NP = Not permitted.

a See Section 420.

b. The required separation from areas used only for private or pleasure vehicles shall be reduced by 1 hour but not to less than 1 hour.
c. See Section 406.3.4.
d. Separation is not required between occupancies of the same classification unless fire area separation is required.
e. See Section 422.2 for ambulatory care facilities.
f. A-1, A-2, A-3, A-4 & A-5 must be separated by the designated fire-resistance rating unless they are to be nonseparated mixed use.
g. R-1, R-2, R-3 & R-4 must be separated by the designated fire-resistance rating unless they are to be nonseparated mixed use.

TABLE 509
INCIDENTAL USES

ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower[a]	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Incinerator rooms	2 hours and automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
In Group I-2, laundries equal to or less than 100 square feet	Smoke resistant construction and doors
In Group I-2, commercial kitchens	Smoke resistant construction and doors
In Group I-2, rooms or spaces that contain fuel-fired heating equipment	Smoke resistant construction and doors
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour

Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons for flooded lead-acid, nickel cadmium or VRLA, or more than 1,000 pounds for lithium-ion and lithium metal polymer used for facility standby power, emergency power or uninterruptable power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.
Fuel storage rooms in public schools and boiler rooms in public schools	2 hours (see Section 430.1)
Storage rooms underneath grandstands or bleacher seats containing combustible or flammable materials	1 hour

For SI: 1 square foot = 0.0929 m^2, 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m^3.

a. Boilers that are part of a manufacturing process and are open to the manufacturing floor that the boiler services is not required to be separated.

CHAPTER 6
TYPES OF CONSTRUCTION

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A[g]	B	A[g]	B	HT	A[g]	B
Primary structural frame[f] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[e, f] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[d]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[b]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.

a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.

b. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

d. Not less than the fire-resistance rating required by other sections of this code.

e. Not less than the fire-resistance rating based on fire separation distance (see Table 602).

f. Not less than the fire-resistance rating as referenced in Section 704.10.

g. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Table 506.2 or an allowable height increase in accordance with Tables 504.3 or 504.4. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.

603.1 Allowable materials.

Combustible materials shall be permitted in buildings of Type I or II construction in the following applications and in accordance with Sections 603.1.1 through 603.1.3:

1. *Fire-retardant-treated wood* shall be permitted in:

1.1. Nonbearing partitions where the required *fire-resistance rating* is 2 hours or less.

1.2. Nonbearing *exterior walls* where fire-resistance-rated construction is not required.

1.3. Roof construction, including girders, trusses, framing and decking.

Exception: In buildings of Type IA construction exceeding two *stories above grade plane*, *fire-retardant-treated wood* is not permitted in roof construction where the vertical distance from the upper floor to the roof is less than 20 feet (6096 mm).

2. Thermal and acoustical insulation, other than foam plastics, having a *flame spread index* of not more than 25.

Exceptions:

1. Insulation placed between two layers of noncombustible materials without an intervening airspace shall be allowed to have a *flame spread index* of not more than 100.

2. Insulation installed between a finished floor and solid decking without intervening airspace shall be allowed to have a *flame spread index* of not more than 200.

3. Foam plastics in accordance with Chapter 26.

4. Roof coverings that have an A, B or C classification.

5. *Interior floor finish* and floor covering materials installed in accordance with Section 804.

6. Millwork such as doors, door frames, window sashes and frames.

7. *Interior wall and ceiling finishes* installed in accordance with Sections 801 and 803.

8. *Trim* installed in accordance with Section 806.

9. Where not installed greater than 15 feet (4572 mm) above grade, show windows, nailing or furring strips and wooden bulkheads below show windows, including their frames, aprons and show cases.

10. Finish flooring installed in accordance with Section 805.

11. Partitions dividing portions of stores, offices or similar places occupied by one tenant only and that do not establish a *corridor* serving an *occupant load* of 30 or more shall be permitted to be constructed of *fire-retardant-treated wood*, 1-hour fire-resistance-rated construction or of wood panels or similar light construction up to 6 feet (1829 mm) in height.

12. Stages and platforms constructed in accordance with Sections 410.3 and 410.4, respectively.

13. Combustible *exterior wall coverings*, balconies and similar projections and bay or oriel windows in accordance with Chapter 14.

14. Blocking such as for handrails, millwork, cabinets and window and door frames.

15. Light-transmitting plastics as permitted by Chapter 26.

16. Mastics and caulking materials applied to provide flexible seals between components of *exterior wall* construction.

17. Exterior plastic veneer installed in accordance with Section 2605.2.

18. Nailing or furring strips as permitted by Section 803.11.

19. Heavy timber as permitted by Note c to Table 601 and Sections 602.4.7 and 1406.3.

20. Aggregates, component materials and admixtures as permitted by Section 703.2.2.

21. Sprayed fire-resistant materials and intumescent and mastic fire-resistant coatings, determined on the basis of *fire resistance* tests in accordance with Section 703.2 and installed in accordance with Sections 1705.14 and 1705.15, respectively.

22. Materials used to protect penetrations in fire-resistance-rated assemblies in accordance with Section 714.

23. Materials used to protect joints in fire-resistance-rated assemblies in accordance with Section 715.

24. Materials allowed in the concealed spaces of buildings of Types I and II construction in accordance with Section 718.5.

25. Materials exposed within plenums complying with Section 602 of the *International Mechanical Code*.

26. Wall construction of freezers and coolers of less than 1,000 square feet (92.9 m^2), in size, lined on both sides with noncombustible materials and the building is protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

27. Wood nailers for parapet flashing and roof cants.

CHAPTER 7
FIRE AND SMOKE PROTECTION FEATURES

703.7 Marking and identification.
Where there is an accessible concealed floor, floor-ceiling or *attic* space, *fire walls*, *fire barriers*, *fire partitions*, *smoke barriers* and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling in the concealed space. Such identification shall:

1. Be located within 15 feet (4572 mm) of the end of each wall and at intervals not exceeding 30 feet (9144 mm) measured horizontally along the wall or partition.

2. Include lettering not less than ~~3~~ 2 inches (~~76~~ 50.8 mm) in height with a minimum ~~3/8~~ ¼-inch (~~9.5~~ 6.35 mm) stroke in a contrasting color incorporating the suggested wording, "FIRE AND/OR SMOKE BARRIER—PROTECT ALL OPENINGS," or other wording.

705.12 Soffit in Group R.
In Group R buildings of combustible construction the soffit material shall be securely attached to framing members and shall be constructed using one of the following methods:

1. Non-combustible soffit material,

2. Fire retardant treated soffit material,

3. Vinyl soffit installed over 3/4-inch wood sheathing,

4. Vinyl soffit installed over 5/8-inch gypsum board,

5. Aluminum soffit installed over 3/4-inch wood sheathing, or

6. Aluminum soffit installed over 5/8-inch gypsum board.

Venting requirements shall apply to both soffit and underlayment and shall be per Section 1203.2. Vent openings shall not be located within 5 feet horizontally of any unprotected wall opening located within 3 feet vertically below the soffit.

Exceptions:
1. Vinyl and aluminum soffit material may be installed without wood sheathing or gypsum backing board if the exterior wall finish is noncombustible for a minimum distance of 10 feet above finished grade.

2. Location of vent openings in soffits shall not be limited in buildings equipped throughout with an automatic sprinkler system complying with Section 903.3.1.1.

706.2 Structural stability.
Fire walls shall be designed and constructed to allow collapse of the structure on either side without collapse of the wall under fire conditions. Fire walls designed and constructed in accordance with NFPA 221 shall be deemed to comply with this section.

Exception: For *fire walls* separating Group R-2 from Group S-2 buildings of different construction types per footnotes c and d of Table 706.4, the structural wall of the S-2 building shall be permitted to serve as the *fire wall* between the Group R-2 and Group S-2 buildings and shall be permitted to be laterally supported by floor construction of the same rating as the wall.

TABLE 706.4
FIRE WALL FIRE-RESISTANCE RATINGS

GROUP	FIRE-RESISTANCE RATING (hours)
A, B, E, H-4, I, R-1, R-2[c,d], U	3[a]
F-1, H-3[b], H-5, M, S-1	3
H-1, H-2	4[b]
F-2, S-2[c,d], R-3, R-4	2

a. In Type II or V construction, walls shall be permitted to have a 2-hour fire-resistance rating.
b. For Group H-1, H-2 or H-3 buildings, also see Sections 415.7 and 415.8.
c. Where *fire walls* are used to separate R-2 buildings of Type V construction from S-2 buildings of Type IB construction, a 2-hour exterior wall of the Type IB S-2 structure shall be permitted to satisfy the requirements of Section 706.2 and Table 706.4 without requiring a *fire wall* on the R-2 building. The floor construction of the S-2 structure shall have a fire-resistance rating equal to or greater than the exterior walls of the S-2 structure when the floor provides lateral stability to the vertical construction.
d. Where *fire walls* are used to separate R-2 buildings of Type III construction from S-2 buildings of Type IA construction, a 3-hour exterior wall of the Type IA S-2 structure shall be permitted to satisfy the requirements of Section 706.2 and Table 706.4 without requiring a *fire wall* on the R-2 building. The floor construction of the S-2 structure shall have a fire-resistance rating equal to or greater than the exterior walls of the S-2 structure when the floor provides lateral stability to the vertical construction.

707.3.10 Fire areas.

The *fire barriers* or *horizontal assemblies*, or both, separating a single ~~occupancy~~ or multiple occupancies into different *fire areas* shall have a *fire-resistance rating* of not less than that indicated in Table ~~707.3.10~~ 508.4. ~~The *fire barriers* or *horizontal assemblies*, or both, separating *fire areas* of mixed occupancies shall have a *fire-resistance rating* of not less than the highest value indicated in Table 707.3.10 for the occupancies under consideration.~~

~~**TABLE 707.3.10**~~
~~**FIRE-RESISTANCE RATING REQUIREMENTS FOR FIRE BARRIER ASSEMBLIES OR HORIZONTAL ASSEMBLIES BETWEEN FIRE AREAS**~~

~~OCCUPANCY GROUP~~	~~FIRE-RESISTANCE RATING (hours)~~
~~H-1, H-2~~	~~4~~
~~F-1, H-3, S-1~~	~~3~~
~~A, B, E, F-2, H-4, H-5,~~	~~2~~

~~I, M, R, S-2~~	
~~U~~	~~1~~

707.9 Voids at intersections.
The voids created at the intersection of a *fire barrier* and a nonfire-resistance-rated roof assembly or a nonfire-resistance-rated exterior wall assembly shall be filled. ~~An approved~~ A material or system tested in accordance with ASTM E 814 and ASTM E 119, or batts or blankets of mineral wool or mineral fiber shall be used to fill the void, and shall be securely installed in or on the intersection for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases. Batts or blankets of mineral wool or fiber mineral may be used to fill voids up to 2 inches (50.8 mm) when the entire width of the fire barrier is filled. The maximum void width for other approved materials shall not be greater than ½ inch (12.7 mm) unless the installation instructions of the material used in the void allows the fill of larger voids.

708.1 General.
The following wall assemblies shall comply with this section.

1. Separation walls as required by Section 420.2 for Groups I-1, R-1, R-2 and R-3.

2. Walls separating tenant spaces in *covered and open mall buildings* as required by Section 402.4.2.1+.

3. Corridor walls as required by Section 1020.1.

4. Elevator lobby separation as required by Section 3006.2.

5. Egress balconies as required by Section 1019.2

6. Walls separating tenant spaces as described in footnote f of Table 1020.1.

711.2.3 Supporting construction.
The supporting construction shall be protected to afford the required fire-resistance rating of the horizontal assembly supported.

Exception: In buildings of Type IIB, IIIB or VB construction, the construction supporting the horizontal assembly is not required to be fire-resistance rated at the following:

1. Horizontal assemblies at the separations of incidental uses as specified by Table 509 provided the required fire-resistance rating does not exceed 1 hour.

2. Horizontal assemblies at the separations of dwelling units and sleeping units as required by Section 420.3.

3. Horizontal assemblies at smoke barriers constructed in accordance with Section 709.

4. Horizontal assemblies constructed solely for the purpose of satisfying the requirements of footnote f of Table 1020.1.

711.2.4.2 Separating fire areas.
Where the horizontal assembly separates a single occupancy into different fire areas, the assembly shall have a fire-resistance rating of not less than that required by Section ~~707.3.10~~ 508.4.

TABLE 716.3
MARKING FIRE-RATED GLAZING ASSEMBLIES[a]

FIRE TEST STANDARD	MARKING	DEFINITION OF MARKING
ASTM E 119 or UL 263	W	Meets wall assembly criteria.
NFPA 257 or UL 9	OH	Meets fire window assembly criteria including the hose stream test.
NFPA 252 or UL 10B or UL 10C	D H T	Meets fire door assembly criteria. Meets fire door assembly hose stream test. Meets 450ºF temperature rise criteria for 30 minutes
	XXX	The time in minutes of the fire resistance or fire protection rating of the glazing assembly.

For SI: ºC = [(ºF) - 32]/1.8.
a. Includes wire glass.

716.5.5.1 Glazing in doors.
Fire-protection-rated glazing in excess of 100 square inches (0.065 m^2) is not permitted. Fire-resistance-rated glazing in excess of 100 square inches (0.065 m^2) shall be permitted in ~~door~~ *fire doors.* Listed fire-resistance-rated glazing in a fire door shall have a maximum transmitted temperature rise in accordance with Section 716.5.5 when the fire door is tested in accordance with NFPA 252, UL 10B or UL 10C.

716.5.9 Door closing.
Fire doors shall be latching and self- or automatic-closing in accordance with this section.

Exceptions:

1. *Fire doors* located in common walls separating *sleeping units* in Group R-1 shall be permitted without automatic- or *self-closing* devices.

2. The elevator car doors and the associated hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.

3. Group I-3 padded cell door closing complying with Section 408.8.5.

722.6.3 Design of fire-resistant exposed wood members.

The *fire-resistance rating*, in minutes, of timber beams and columns with a minimum nominal dimension of 6 inches (152 mm) is equal to:

Beams: $2.54Zb\,[4 - 2(b/d)]$ for beams which may be exposed to fire on four sides. **(Equation 7-18)**

$2.54Zb\,[4 - (b/d)]$ for beams which may be exposed to fire on three sides. **(Equation 7-19)**

Columns: $2.54Zb\,[3 - (b/d)]$ for columns which may be exposed to fire on four sides. **(Equation 7-20)**

$2.54Zb\,[3 - (b/2d)]$ for columns which may be exposed to fire on three sides. **(Equation 7-22)**

where:

b = The breadth (width) of a beam or larger side of a column before exposure to fire (inches).

d = The depth of a beam or smaller side of a column before exposure to fire (inches).

Z = Load factor, based on Figure 722.6.3(1).

722.6.3.1 Equation 7-21. Equation 7-21 applies only where the unexposed face represents the smaller side of the column. If a column is recessed into a wall, its full dimension shall be used for the purpose of these calculations.

722.6.3.2 Allowable loads. Allowable loads on beams and columns are determined using design values given in ANSI/AWC NDS.

721.6.3.3 Fastener protection. Where minimum 1-hour fire resistance is required, connectors and fasteners shall be protected from fire exposure by 1 ½ inches (38 mm) of wood, or other approved covering or coating for a 1-hour rating. Typical details for commonly used fasteners and connectors are shown in AITC Technical Note 7.

721.6.3.4 Minimum size. Wood members are limited to dimensions of 6 inches (152 mm) nominal or greater. Glued-laminated timber beams utilize standard laminating combinations except that a core lamination is removed. The tension zone is moved inward and the equivalent of an extra nominal 2-inch-thick (51 mm) outer tension lamination is added.

ADD FIGURES 721.6.3(1) & 721.6.3(2) FROM THE 2012 NCBC

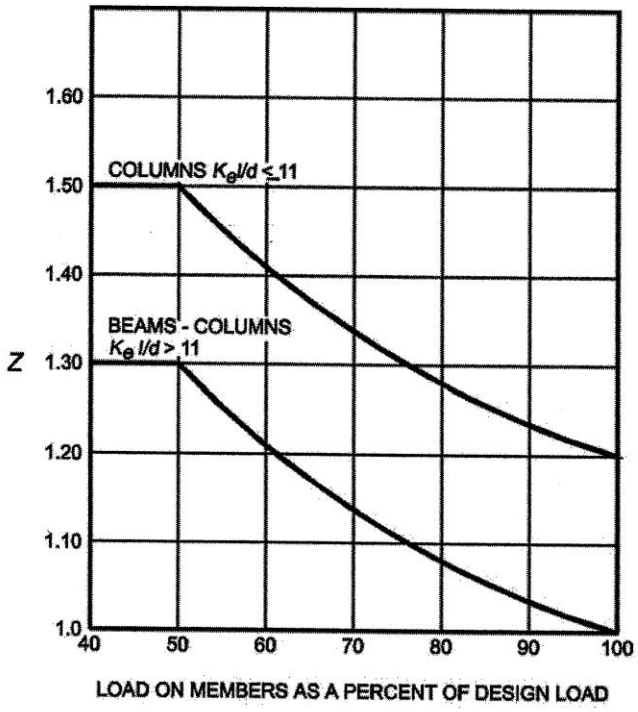

FIGURE 721.6.3(1)
LOAD FIGURE

K_e = The effective length factor as noted in Figure 721.6.3(2).
l = The unsupported length of columns (inches).

BUCKLING MODES						
THEORETICAL K_e VALUE	0.5	0.7	1.0	1.0	2.0	2.0
RECOMMENDED DESIGN K_e WHEN IDEAL CONDITIONS APPROXIMATED	0.65	0.80	1.2	1.0	2.10	2.4
END CONDITION CODE	ROTATION FIXED, TRANSLATION FIXED ROTATION FREE, TRANSLATION FIXED ROTATION FIXED, TRANSLATION FREE ROTATION FREE, TRANSLATION FREE					

FIGURE 721.6.3(2)
EFFECTIVE LENGTH FACTORS

CHAPTER 9
FIRE PROTECTION SYSTEMS

901.6 Supervisory service. (Deleted)
~~Where required, *fire protection systems* shall be monitored by an approved supervising station in accordance with NFPA 72.~~

~~**901.6.1 Automatic sprinkler systems.**~~
~~*Automatic sprinkler systems* shall be monitored by an *approved* supervising station.~~

~~**Exceptions:**~~

~~1. A supervising station is not required for *automatic sprinkler systems* protecting one and two family dwellings.~~

~~2. Limited area systems serving fewer than 20 sprinklers.~~

~~**901.6.2 Fire alarm systems.**~~
~~Fire alarm systems required by the provisions of Section 907.2 of this code and Sections 907.2 and 907.9 of the *International Fire Code* shall be monitored by an *approved* supervising station in accordance with Section 907.6.6.~~

~~**Exceptions:**~~

~~1. Single and multiple station smoke alarms required by Section 907.2.11.~~

~~2. Smoke detectors in Group I-3 occupancies.~~

~~3. Supervisory service is not required for *automatic sprinkler systems* in one and two family dwellings.~~

~~**901.6.3 Group H.**~~
~~Supervision and monitoring of emergency alarm, detection and automatic fire-extinguishing systems in Group H occupancies shall be in accordance with the *International Fire Code*.~~

901.7 Fire areas.
Where buildings, or portions thereof, are divided into *fire areas* so as not to exceed the limits established for requiring a *fire protection system* in accordance with this chapter, such *fire areas* shall be separated by *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both, having a *fire-resistance rating* of not less than that determined in accordance with Section ~~707.3.10~~ 508.4.

902.1 Definitions.
The following terms are defined in Chapter 2:

[F] ALARM NOTIFICATION APPLIANCE.

[F] ALARM SIGNAL.

[F] ALARM VERIFICATION FEATURE.

[F] ANNUNCIATOR.

[F] AUDIBLE ALARM NOTIFICATION APPLIANCE.

[F] AUTOMATIC.

[F] AUTOMATIC FIRE-EXTINGUISHING SYSTEM.

[F] AUTOMATIC SMOKE DETECTION SYSTEM.

[F] AUTOMATIC SPRINKLER SYSTEM.

[F] AUTOMATIC WATER MIST SYSTEM.

[F] AVERAGE AMBIENT SOUND LEVEL.

[F] CARBON DIOXIDE EXTINGUISHING SYSTEMS.

[F] CEILING LIMIT.

[F] CLEAN AGENT.

[F] COMMERCIAL MOTOR VEHICLE.

[F] CONSTANTLY ATTENDED LOCATION.

[F] DELUGE SYSTEM.

[F] DETECTOR, HEAT.

[F] DRY-CHEMICAL EXTINGUISHING AGENT.

[F] ELECTRICAL CIRCUIT PROTECTIVE SYSTEM.

[F] ELEVATOR GROUP.

[F] EMERGENCY ALARM SYSTEM.

[F] EMERGENCY VOICE/ALARM COMMUNICATIONS.

[F] FIRE ALARM BOX, MANUAL.

[F] FIRE ALARM CONTROL UNIT.

[F] FIRE ALARM SIGNAL.

[F] FIRE ALARM SYSTEM.

FIRE AREA.

[F] FIRE COMMAND CENTER.

[F] FIRE DETECTOR, AUTOMATIC.

[F] FIRE PROTECTION SYSTEM.

[F] FIRE SAFETY FUNCTIONS.

[F] FOAM-EXTINGUISHING SYSTEM.

[F] HALOGENATED EXTINGUISHING SYSTEM.

[F] INITIATING DEVICE.

[F] MANUAL FIRE ALARM BOX.

[F] MULTIPLE-STATION ALARM DEVICE.

[F] MULTIPLE-STATION SMOKE ALARM.

NIGHTCLUB.

[F] NOTIFICATION ZONE.

[F] NUISANCE ALARM.

PRIVATE GARAGE.

[F] RECORD DRAWINGS.

[F] SINGLE-STATION SMOKE ALARM.

[F] SMOKE ALARM.

[F] SMOKE DETECTOR.

[F] SMOKEPROOF ENCLOSURE.

[F] STANDPIPE SYSTEM, CLASSES OF.

Class I system.

Class II system.

Class III system.

[F] STANDPIPE, TYPES OF.

Automatic dry.

Automatic wet.

Manual dry.

Manual wet.

Semiautomatic dry.

[F] SUPERVISING STATION.

[F] SUPERVISORY SERVICE.

[F] SUPERVISORY SIGNAL.

[F] SUPERVISORY SIGNAL-INITIATING DEVICE.

[F] TIRES, BULK STORAGE OF.

[F] TROUBLE SIGNAL.

[F] VISIBLE ALARM NOTIFICATION APPLIANCE.

[F] WET CHEMICAL EXTINGUISHING SYSTEM.

[F] WIRELESS PROTECTION SYSTEM.

[F] ZONE.

[F] ZONE, NOTIFICATION.

[F] 903.2.1 Group A.
An *automatic sprinkler system* shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. For Group A-1, A-2, A-3 and A-4 occupancies, the *automatic sprinkler system* shall be provided throughout ~~the story where~~ the *fire area* containing the Group A-1, A-2, A-3 or A-4 occupancy and any fire area traversed to the entrance of an exit ~~is located~~, and throughout all stories from the Group A occupancy to, and including, the *levels of exit discharge* serving the Group A occupancy. For Group A-5 occupancies, the *automatic sprinkler system* shall be provided in the spaces indicated in Section 903.2.1.5.

[F] 903.2.1.2 Group A-2.
An *automatic sprinkler system* shall be provided for *fire areas* containing Group A-2 occupancies and intervening floors of the building where one of the following conditions exists:

1. The *fire area* exceeds 5,000 square feet (464.5 m^2).
2. The *fire area* has an *occupant load* of 100 or more. The *fire area* has an occupant load of ~~100~~ 300 or more, except 100 or more for nightclubs.
3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

[F] 903.2.1.3 Group A-3.
An *automatic sprinkler system* shall be provided for *fire areas* containing Group A-3

occupancies and intervening floors of the building where one of the following conditions exists:

1. The *fire area* exceeds 12,000 square feet (1115 m^2).

2. The *fire area* has an *occupant load* of 300 or more.

   Exceptions:
   1. This requirement shall not apply to assembly occupancies used primarily for worship with fixed seating and part of a separated use.

   2. This requirement shall not apply to assembly occupancies used primarily for worship consisting of a single multipurpose room that are not used for exhibition or display and are part of a separated use.

3. The *fire area* is located on a floor other than a *level of exit discharge* serving such occupancies.

[F] 903.2.1.6 Assembly occupancies on roofs.
Where an occupied roof has an assembly occupancy with an *occupant load* exceeding 100 for Group A-2 nightclubs and 300 for other Group A occupancies, all floors between the occupied roof and the *level of exit discharge* shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.

Exception: Open parking garages of Type I or Type II construction.

903.2.1.7 Multiple fire areas.
An *automatic sprinkler system* shall be provided where multiple fire areas of Group A-1, A-2, A-3 or A-4 occupancies share exit or exit access components and the combined *occupant load* of ~~theses~~ these fire areas is 300 or more.

[F] 903.2.2 Ambulatory care facilities.
An *automatic sprinkler system* shall be installed throughout the fire area ~~entire floor~~ containing an *ambulatory care facility* where either of the following conditions exist at any time:

1. Four or more care recipients are incapable of self preservation, whether rendered incapable by staff or staff has accepted responsibility for care recipients already incapable.

2. One or more care recipients that are incapable of self-preservation are located at other than the level of exit discharge serving such a facility.

In buildings where ambulatory care is provided on levels other than the *level of exit discharge*, an *automatic sprinkler system* shall be installed throughout the fire area containing an ambulatory care facility ~~entire floor~~ where such care is provided and any fire area traversed to the entrance to an exit as well as all floors below, and all floors between the level of ambulatory care and the nearest *level of exit discharge*, including the *level of exit discharge*.

[F] 903.2.4 Group F-1.
An *automatic sprinkler system* shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 *fire area* exceeds 12,000 square feet (1115 m^2).
2. A Group F-1 *fire area* is located more than three stories above *grade plane*.
3. The combined area of all Group F-1 *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).

~~4. A Group F-1 occupancy used for the manufacture of upholstered furniture or mattresses exceeds 2,500 square feet (232 m^2).~~

~~**[F] 903.2.4.1** Woodworking operations.~~
~~An *automatic sprinkler system* shall be provided throughout all Group F-1 occupancy *fire areas* that contain woodworking operations in excess of 2,500 square feet (232 m^2) in area that generate finely divided combustible waste or use finely divided combustible materials.~~

903.2.6.1 Dry pipe system.
When dry pipe sprinkler systems are installed, upon activation a full flow of water shall be delivered to the most remote point of the system in no more than 60 seconds.

[F] 903.2.7 Group M.
An *automatic sprinkler system* shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M *fire area* exceeds 12,000 square feet (1115 m^2).
2. A Group M *fire area* is located more than three stories above *grade plane*.
3. The combined area of all Group M *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. ~~A Group M occupancy used for the display and sale of upholstered furniture or mattresses exceeds 5,000 square feet (464 m^2).~~ Delete

[F] 903.2.8 Group R.
An *automatic sprinkler system* installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*, except as provided for in Section 903.2.8.5.

Exceptions:
1. An *automatic sprinkler system* is not required in new adult and child day care

facilities located in existing Group R-3 and R-4 occupancies.

2. An *automatic sprinkler system* is not required in *temporary overflow shelters*.

3. An *automatic sprinkler system* is not required in camping units located within a campground where all of the following conditions exist.

3.1. The camping unit is limited to one story in height,

3.2. The camping unit is less than 400 square feet (37 m^2) in area.

3.3. The camping unit does not have a kitchen

4. An automatic sprinkler system is not required in an *Open Air Camp Cabin* that complies with the following:

4.1. The open air camp cabin shall have at least two remote unimpeded exits. Lighted exit signs shall not be required.

4.2 The open air camp cabin shall not be required to have plumbing or electrical systems, but if the cabin has these systems, then the provisions of the Code otherwise applicable to those systems shall apply.

4.3 Smoke detectors and portable fire extinguishers may be required as otherwise provided in the Code.

903.2.8.1 Group R-3.
An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be permitted in Group R-3 occupancies.

Exception: An automatic sprinkler system installed in accordance with Section 903.3.1.1 shall be installed in all Licensed Respite Care Facilities.

[F] 903.2.8.2 Group R-4 Condition 1.
An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be permitted in Group R-4 Condition 1 occupancies.

Exception: An automatic sprinkler system installed in accordance with Section 903.3.1.1 shall be installed in all Licensed Respite Care Facilities.

[F] 903.2.8.3 Group R-4 Condition 2.
An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group R-4 Condition 2 occupancies. Attics shall be protected in accordance with Section 903.2.8.3.1 or 903.2.8.3.2.

Exception: An automatic sprinkler system installed in accordance with Section 903.3.1.1 shall be installed in all Licensed Respite Care Facilities.

[F] 903.2.8.4 Care facilities. (Deleted)
~~An *automatic sprinkler system* installed in accordance with Section 903.3.1.3 shall be permitted in care facilities with five or fewer individuals in a single-family dwelling.~~

[F]903.2.8.5 Group R Migrant Housing. Group R-2 buildings housing farm workers and their families located outside of a municipality's building rules jurisdiction may install a 13D multipurpose sprinkler system where all of the following conditions exist:

1. Building cannot exceed two stories in height;
2. Building cannot exceed 2500 square feet (232 m^2) in area; and
3. Building shall have two remote means of egress.

903.2.8.5.1 Group R Migrant Housing. Migrant housing as defined by GS 95-223 shall be exempt when all of the following conditions exist:

1. Building is not more than one story in height.
2. Building meets all of the requirements of GS 95-222 through GS 95-229.1 (Chapter 95, Article 19) and 29 CFR 1910.142, as amended.

903.2.8.6 Emergency Service Sleeping Area. Group R-2 *fire areas* in fire stations may install a 13D sprinkler system in accordance with Section 903.3.5.1 when separated from other occupancies by a *fire wall* where all of the following conditions exist.

1. Building cannot exceed one story in height,
2. Fire area cannot exceed 2500 square feet (232 m^2) in area.
3. Fire area has two remote means of egress.

[F] 903.2.9 Group S-1.
An *automatic sprinkler system* shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 *fire area* exceeds 12,000 square feet (1115 m^2).
2. A Group S-1 *fire area* is located more than three stories above *grade plane*.
3. The combined area of all Group S-1 *fire areas* on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).
4. A Group S-1 *fire area* used for the storage of commercial motor vehicles where the *fire area* exceeds 5,000 square feet (464 m^2).

~~5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m^2).~~

903.2.11.7 Woodworking operations.
An *automatic sprinkler system* shall be provided throughout *fire areas* that contain woodworking operations in excess of 2,500 square feet in area (232 m^2) that generate finely divided combustible waste or use finely divided combustible materials.

903.2.11.8 Manufacture of upholstered furniture or mattresses.
An *automatic sprinkler system* shall be provided throughout *fire areas* that contain manufacturing operations for upholstered furniture of mattresses in excess of 2,500 square feet in area (232 m^2).

[F] 903.3.1.2 NFPA 13R sprinkler systems.
Automatic sprinkler systems in Group R occupancies up to and including four stories in height in buildings not exceeding 60 feet (18 288 mm) in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R.

Exception: Respite Care Facilities shall be provided with a NFPA 13 sprinkler system complying with Section 903.3.1.1.

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from the horizontal assembly creating separate buildings.

[F] 903.3.1.3 NFPA 13D sprinkler systems.
Automatic sprinkler systems installed in one- and two-family *dwellings*; Group R-3, Group R-4 Condition 1 and *townhouses* shall be permitted to be installed throughout in accordance with NFPA 13D or Section P2904 of the International Residential Code.

Exception: Respite Care Facilities shall be provided with a NFPA 13 sprinkler system complying with Section 903.3.1.1.

[F] 903.4.1 Monitoring.
Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an *approved* supervising station or, where *approved* by the fire code official, shall sound an audible signal at a *constantly attended location*.

Exceptions:

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.

2. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies

required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

3. A group R-2 building sprinklered in accordance with NFPA 13R where sprinklers are provided for porches, balconies, corridors and stairs that are open and attached and supervised in accordance with Section 903.4. At a minimum an approved audible alarm device shall be provided on every sprinklered R-2 building in accordance with Section 903.4.2. No on-site supervision is required at a constantly attended location.

[F] 907.2 Where required—new buildings and structures.
An *approved* fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed when a manual fire alarm system is required. ~~Not fewer than~~ A minimum of one manual fire alarm box shall be provided in an *approved* location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. ~~Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.~~

Exceptions:

1. The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.

2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.

[F] 907.2.1 Group A.
A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 300 or more. Group A occupancies not separated from one another in accordance with ~~Section~~ Sections 707.3.10 and 711.2.4 shall be considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

[F] 907.2.3 Group E.
A manual fire alarm system that initiates the occupant notification signal utilizing an

emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When *automatic sprinkler systems* or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. In other than licensed day care centers complying with Section 428, a ~~A~~ manual fire alarm system is not required in Group E occupancies with an *occupant load* of 50 or less.

2. Emergency voice/alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group E occupancies with occupant loads of 100 or less, provided that activation of the manual fire alarm system initiates an *approved* occupant notification signal in accordance with Section 907.5.

3. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:

   3.1. Interior *corridors* are protected by smoke detectors.

   3.2. Auditoriums, cafeterias, gymnasiums and similar areas are protected by *heat detectors* or other *approved* detection devices.

   3.3. Shops and laboratories involving dusts or vapors are protected by *heat detectors* or other *approved* detection devices.

4. Manual fire alarm boxes shall not be required in Group E occupancies where all of the following apply:

   4.1. The building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1.

   4.2. The emergency voice/alarm communication system will activate on sprinkler waterflow.

   4.3. Manual activation is provided from a normally occupied location.

[F] 907.2.6.2 Group I-2.
An automatic smoke detection system shall be installed in *corridors* in Group I-2 ~~Condition 1~~ facilities and spaces permitted to be open to the *corridors* by Section 407.2. The system shall be activated in accordance with Section 907.4. Group I-2 ~~Condition 2~~ occupancies shall be equipped with an automatic smoke detection system as required in Section 407.

Exceptions:

1. Corridor smoke detection is not required in smoke compartments that contain sleeping units where such units are provided with smoke detectors that comply with UL 268. Such detectors shall provide a visual display on the corridor side of each sleeping unit and shall provide an audible and visual alarm at the care providers' station attending each unit.

2. Corridor smoke detection is not required in smoke compartments that contain sleeping units where sleeping unit doors are equipped with automatic door-closing devices with integral smoke detectors on the unit sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.

907.2.9.3 Group R-2 college and university buildings.
An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group R-2 occupancies operated by a college or university for student or staff housing in all of the following locations:

1. Common spaces outside of *dwelling units* and *sleeping units.*

2. ~~Laundry rooms, mechanical equipment rooms and storage~~ Storage rooms.

3. All interior corridors serving *sleeping units* or *dwelling units*.

Exception: An automatic smoke detection system is not required in buildings that do not have interior *corridors* serving *sleeping units* or *dwelling units* and where each s*leeping unit* or *dwelling unit* either has a *means of egress* door opening directly to an exterior *exit access* that leads directly to an *exit* or a *means of egress* door opening directly to an *exit*.

Required smoke alarms in *dwelling units* and *sleeping units* in Group R-2 occupancies operated by a college or university for student or staff housing shall be interconnected with the fire alarm system in accordance with NFPA 72.

907.2.10.1.1 Adult and child day care in Group R-4.
A manual fire alarm system listed for residential use shall be installed in new adult or child day care facilities in existing R-4 occupancies.

[F] 907.2.14 Atriums connecting more than two stories.
A fire alarm system shall be installed in occupancies with an atrium that connects more than two *stories*, with smoke detection installed in locations required by ~~a rational analysis in~~ Section 909.4 and in accordance with the system operation requirements in Section 909.17. The system shall be activated in accordance with Section 907.5. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication system complying with the requirements of Section 907.5.2.2.

[F] 907.5.2.1 Audible alarms.
Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm.

Exceptions:

1. Audible alarm notification appliances are not required in critical care areas of Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.

2. A visible alarm notification appliance installed in a nurses' control station or other continuously attended staff location in a Group I-2 Condition 2 suite shall be an acceptable alternative to the installation of audible alarm notification appliances throughout the suite in Group I-2 Condition 2 occupancies that are in compliance with Section 907.2.6, Exception 2.

3. Where provided, audible notification appliances located in each occupant evacuation elevator lobby in accordance with Section 3008.9.1 shall be connected to a separate notification zone for manual paging only.

4. In Group I-2 occupancies, Group B ambulatory health care facilities and licensed large residential care facilities as per Section 428.5 where occupants are incapable of evacuating themselves because of age, physical or mental disabilities, or physical restraint, audible notification appliances shall be permitted to meet the private operating mode requirements of NFPA 72 in patient care and treatment areas.

[F] 909.4 Analysis.
A rational analysis performed by the registered design professional and *approved* by the *fire code official* supporting the types of smoke control systems to be employed, the methods of their operations, the systems supporting them and the methods of construction to be utilized shall accompany the *construction documents* submission and include, but not be limited to, the items indicated in Sections 909.4.1 through 909.4.7.

910.5 Maintenance. (Deleted)
~~Smoke and heat vents and mechanical smoke removal systems shall be maintained in accordance with the *International Fire Code*.~~

SECTION 915
CARBON MONOXIDE ALARM AND DETECTION SYSTEMS

[F] 915.1 General.
Carbon monoxide detection shall be installed in new buildings in accordance with Sections 915.1.1 through 915.6. ~~Carbon monoxide detection shall be installed in existing buildings in accordance with Chapter 11 of the *International Fire Code*.~~

SECTION 917
FIRE APPARATUS ACCESS ROADS

917.1 General.

Fire apparatus access roads shall be provided for all new buildings in accordance with Section 503 of the International Fire Code.

CHAPTER 10
MEANS OF EGRESS

[F] 1001.3 Maintenance. (Deleted)

~~*Means of egress* shall be maintained in accordance with the *International Fire Code*.~~

TABLE 1004.1.2
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT[c]

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR[a]
Accessory storage areas, mechanical equipment room	300 gross
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal Baggage claim Baggage handling Concourse Waiting areas	 20 gross 300 gross 100 gross 15 gross
Assembly Gaming floors (keno, slots, etc.) Exhibit gallery and museum	 11 gross 30 net
Assembly with fixed seats	See Section 1004.4
Assembly without fixed seats Concentrated (chairs only—not fixed) Standing space and queuing lines Unconcentrated (tables and chairs)	 7 net 5 net 15 net[b]
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for additional areas	7 net
Business areas	100 gross[b]
Courtrooms—other than fixed seating areas	40 net
Day care	35 net
Dormitories	50 gross
Educational Classroom area Shops and other vocational room areas	 20 net 50 net
Exercise rooms Without exercise equipment With exercise equipment	~~50 gross~~ 35 net 50 gross

Group H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas Inpatient treatment areas Outpatient areas Sleeping areas Kitchens, commercial	 240 gross 100 gross 120 gross 200 gross
Library Reading rooms Stack area	 50 net 100 gross
Locker rooms	50 gross
Mall buildings—covered and open	See Section 402.8.2
Mercantile Storage, stock, shipping areas	60 gross 300 gross

Parking garages	200 gross
Residential	200 gross
Skating rinks, swimming pools, recreational courts Rink ,~~and~~ pool, and recreational court Decks	50 gross 15 gross
Stages and platforms	15 net
Warehouses, repair garages	500 gross
Piers and docks	See Section 3606.8

For SI: 1 square foot = 0.0929 m^2, 1 foot = 304.8 mm.

a. Floor area in square feet per occupant.

b. An assembly occupancy conference room that is accessory to a Group B office occupancy and meeting the requirements of Section 303.1, exception 2, shall be calculated at 100 square feet per occupant for determining the overall occupant load of the associated floor. The assembly occupancy shall be calculated at 15 square feet per occupant for the purpose of determining egress from the room containing the assembly occupancy.

c. For mixed uses sum all loads before rounding up to the next whole number.

1004.3 Posting of occupant load.

~~Every room or space that is an assembly occupancy shall have the *occupant load* of the room or space posted in a conspicuous place, near the main *exit* or *exit access doorway* from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or the owner's authorized agent.~~

Posting of occupant loading shall be in accordance with Section 204.11.2 of the NC Administrative Code and Policies.

1005.7.1 Doors.

Doors, when fully opened, shall not reduce the required width by more than 7 inches

(178 mm). Doors in any position shall not reduce the required width by more than one-half.

Exceptions:

1. Surface-mounted latch release hardware shall be exempt from inclusion in the 7-inch maximum (178 mm) encroachment where both of the following conditions exist:

   1.1. The hardware is mounted to the side of the door facing away from the adjacent wall where the door is in the open position.

   1.2. The hardware is mounted not less than 34 inches (865 mm) nor more than 48 inches (1219 mm) above the finished floor.

2. The restrictions on door swing shall not apply to ~~doors within individual *dwelling units* and *sleeping units* of Group R-2 occupancies and *dwelling units* of Group R-3 occupancies.~~ the following locations:

   2.1. Within individual dwelling units and sleeping units of Group R-2 occupancies;

   2.2. Dwelling units of Group R-3 occupancies;

   2.3. Janitor closets 15 square feet or less; and

   2.4. Mechanical rooms that do not include storage.

TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)		
		Without Sprinkler System (feet)		With Sprinkler System (feet)
		Occupant Load		
		OL ≤ 30	OL > 30	
A[c], E[g], M	49	75	75	75[a]
B	49	100	75	100[a]
F	49	75	75	100[a]
H-1, H-2, H-3	3	NP	NP	25[b]
H-4, H-5	10	NP	NP	75[b]
I-1, I-2[d], I-4	10	NP	NP	75[a]
I-3	10	NP	NP	100[a]

R-1	10	NP	NP	75[a]
R-2	10	NP	NP	125[a]
R-3[e]	10	NP	NP	125[a]
R-4[e]	10	75	75	125[a]
S[f]	29	100	75	100[a]
U	49	100	75	75[a]

For SI: 1 foot = 304.8 mm.
NP = Not Permitted

a. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where *automatic sprinkler systems* are permitted in accordance with Section 903.3.1.2.
b. Group H occupancies equipped throughout with an *automatic sprinkler system* in accordance with Section 903.2.5.
c. For a room or space used for assembly purposes having *fixed seating*, see Section 1029.8.
d. For the travel distance limitations in Group I-2, see Section 407.4.
e. The length of *common path of egress travel* distance in a Group R-3 occupancy located in a mixed occupancy building or within a Group R-3 or R-4 *congregate living facility*.
f. The length of *common path of egress travel* distance in a Group S-2 *open parking garage* shall be not more than 100 feet.
g. Day care maximum occupant load is 10.

1006.3.2(2)
STORIES WITH ONE EXIT OR ACCESS TO ONE EXIT FOR OTHER OCCUPANCIES

STORY	OCCUPANCY	MAXIMUM OCCUPANT LOAD PER STORY	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)
First story above or below grade plane	A, B[b], E F[b], M, U	49	75
	H-2, H-3	3	25
	H-4, H-5, I, R-1, R-2[a, c], R-4[e]	10	75
	S[b, d]	29	75
Second story above grade plane	B, F, M, S[d]	29	75
Third story above grade plane and higher	NP	NA	NA

For SI: 1 foot = 304.8 mm.
NP = Not Permitted.
NA = Not Applicable.

a. Buildings classified as Group R-2 equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with *emergency escape and rescue openings* in accordance with Section 1030.

b. Group B, F and S occupancies in buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 shall have a maximum *exit access* travel distance of 100 feet.
c. This table is used for R-2 occupancies consisting of *sleeping units*. For R-2 occupancies consisting of *dwelling units*, use Table 1006.3.2(1).
d. The length of *exit access* travel distance in a Group S-2 *open parking garage* shall be not more than 100 feet
e. R-4 adult and child day care facilities shall have two exits or the rooms where the occupants receive care shall be located on the level of exit discharge and each of these rooms shall have an exit door directly to the exterior.

1009.4 Elevators.
In order to be considered part of an accessible *means of egress*, an elevator shall comply with the emergency operation and signaling device requirements of Section 2.27 of ASME A17.1. Standby power shall be provided in accordance with Chapter 27 and Section 3003. Wiring and cables shall be protected in accordance with Section 3008.8.1. The elevator shall be accessed from an *area of refuge* complying with Section 1009.6.

Exceptions:

1. *Areas of refuge* are not required at the elevator in *open parking garages*.

2. *Areas of refuge* are not required in buildings and facilities equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

3. *Areas of refuge* are not required at elevators not required to be located in a shaft in accordance with Section 712.

4. *Areas of refuge* are not required at elevators serving *smoke-protected assembly seating* areas complying with Section 1029.6.2.

5. *Areas of refuge* are not required for elevators accessed from a refuge area in conjunction with a *horizontal exit*.

1009.7.2 Separation.
Exterior walls separating the exterior area of assisted rescue from the interior of the building shall have a minimum *fire-resistance rating* of 1 hour, rated for exposure to fire from the inside. The fire-resistance-rated exterior wall construction shall extend horizontally 10 feet (3048 mm) beyond the landing on either side of the landing or equivalent fire-resistance-rated construction is permitted to extend out perpendicular to the exterior wall 4 feet (1220 mm) minimum on the side of the landing. The *fire-resistance-rated* construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower. Openings within such *fire-resistance-rated* exterior walls shall be protected in accordance with Section 716.

Exception: Areas for assisted rescue that are located 10 feet (3048 mm) or more from the exterior face of a building are not required to be separated from the building by fire-resistance rated walls or protected openings.

1010.1.9.3 Locks and latches.
Locks and latches shall be permitted to prevent operation of doors where any of the following exist:

1. Places of detention or restraint.

2. In buildings in occupancy Group A having an *occupant load* of ~~300~~ 100 or less~~,~~ and Groups B, F, M and S~~, and in *places of religious worship*~~, the main door or doors are permitted to be equipped with a thumb bolt or key-operated locking devices from the egress side provided:

   2.1. The locking device is readily distinguishable as locked and provided with a thumb bolt or key that cannot be removed when locked from the egress side.

   2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.

   2.3. The use of the thumb bolt or key-operated locking device is revokable by the *building official* for ~~due cause~~ violation of Section 1008.1.9.3.

3. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts does not have a doorknob or surface-mounted hardware.

4. Doors from individual *dwelling* or *sleeping units* of Group R occupancies having an *occupant load* of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

5. *Fire doors* after the minimum elevated temperature has disabled the unlatching mechanism in accordance with *listed fire door* test procedures.

1010.1.9.6 Controlled egress doors in Groups I-1 and I-2.

1010.1.9.6.1 Groups ~~I-1 and I-2~~ I-1.

Electric locking systems, including electro-mechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group I-1 ~~or I-2~~ occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The door locks shall unlock on actuation of the *automatic sprinkler system* or *automatic fire detection system*.

2. The door locks shall unlock on loss of power controlling the lock or lock mechanism.

3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the *fire command center*, a nursing station or other approved location. The switch shall directly break power to the lock.

4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an exit.

5. The procedures for unlocking the doors shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the *International Fire Code*.

6. All clinical staff shall have the keys, codes or other means necessary to operate the locking systems.

7. Emergency lighting shall be provided at the door.

8. The door locking system units shall be listed in accordance with UL 294.

Exceptions:

1. Items 1 through 4 shall not apply to doors to areas occupied by persons who, because of clinical needs, require restraint or containment as part of the function of a psychiatric treatment area.

2. Items 1 through 4 shall not apply to doors to areas where a *listed* egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 hospital.

1010.1.9.6.2 Group I-2.
See Sections 407.11 and 407.12.

1010.1.9.7 Delayed egress.
Delayed egress locking systems shall be permitted to be installed on doors serving any occupancy except Group A, E and H in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved automatic smoke* or *heat detection system* installed in accordance with Section 907. The locking system shall be installed and operated in accordance with all of the following:

1. The delay electronics of the delayed egress locking system shall deactivate upon actuation of the *automatic sprinkler system* or *automatic fire detection system*, allowing immediate, free egress.

2. The delay electronics of the delayed egress locking system shall deactivate upon loss of power controlling the lock or lock mechanism, allowing immediate free egress.

3. The delayed egress locking system shall have the capability of being deactivated at the f*ire command center* and other *approved* locations. If a fire command center is not required by this code, the door locks shall have the capability of being unlocked by a signal from a location approved by the fire code official.

4. An attempt to egress shall initiate an irreversible process that shall allow such egress in not more than 15 seconds when a physical effort to exit is applied to the egress side door hardware for not more than 3 seconds. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the delay electronics have been deactivated, rearming the delay electronics shall be by manual means only.

   Exception: Where approved, a delay of not more than 30 seconds is permitted on a delayed egress door.

5. The egress path from any point shall not pass through more than one delayed egress locking system.

   Exception: In Group I-2 or I-3 occupancies, the egress path from any point in the building shall pass through not more than two delayed egress locking systems provided the combined delay does not exceed 30 seconds.

6. A sign shall be provided on the door and shall be located above and within 12 inches (305 mm) of the door exit hardware:

   6.1. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

   6.2. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.

   6.3. The sign shall comply with the visual character requirements in ICC A117.1.

   Exception: Where approved, in Group I occupancies, the installation of a sign is not required where care recipients who because of clinical needs require restraint or containment as part of the function of the treatment area.

   7. Emergency lighting shall be provided on the egress side of the door.

   8. The delayed egress locking system units shall be listed in accordance with UL 294.

1010.1.9.11 Stairway doors.
Interior *stairway means of egress* doors shall be openable from both sides without the use of a key or special knowledge or effort.

Exceptions:

1. *Stairway* discharge doors shall be openable from the egress side and shall only be locked from the opposite side.

2. This section shall not apply to doors arranged in accordance with Section 403.5.3.

3. In *stairways* serving not more than four stories, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon a signal from the *fire command center*, if present, or a signal by emergency personnel from a single location inside the main entrance to the building.

4. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group B, F, M and S occupancies where the only interior access to the tenant space is from a single *exit stairway* where permitted in Section 1006.3.2.

5. *Stairway exit* doors shall be openable from the egress side and shall only be locked from the opposite side in Group R-2 occupancies where the only interior access to the *dwelling unit* is from a single *exit stairway* where permitted in Section 1006.3.2.

6. In other than high-rise, *stairways* serving floors above a 3-hour horizontal building separation, doors are permitted to be locked from the side opposite the egress side, provided they are openable from the egress side and capable of being unlocked simultaneously without unlatching upon activation of the building fire alarm system.

1010.1.10 Panic and fire exit hardware.
Doors serving a Group H occupancy and doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than *panic hardware* or *fire exit hardware*.

Exceptions:

1. A main *exit* of a Group A occupancy shall be permitted to be locking in accordance with Section 1010.1.9.3, Item 2.

2. Doors serving a Group A or E occupancy shall be permitted to be electromagnetically locked in accordance with Section 1010.1.9.9.

3. Doors serving a Group A or E occupancy in an I-2 facility shall be permitted to be locked in accordance with Section 407.11 or 407.12 where the clinical or security needs of the patients require specialized locking measures for their safety or the safety of others.

4. Outdoor swimming pool barrier gates where the barrier height is a maximum of 48 inches when the area served by the gate has a calculated occupant load less than 300.

See the NC Electrical Code, Article 110 for electrical room egress hardware requirements.

~~Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with *exit* or *exit access doors*, shall be equipped with *panic hardware* or *fire exit hardware*. The doors shall swing in the direction of egress travel.~~

1011.4 Walkline.
The walkline across *winder* treads shall be concentric to the direction of travel through the turn and located 12 inches (305 mm) horizontally from the handrail that is adjacent to the side where the *winders* are narrower. The 12-inch (305 mm) dimension shall be measured ~~from the widest point of the clear *stair* width at the walking surface of the *winder*~~ perpendicular from the handrail surface that faces the walkline. ~~Where *winders* are adjacent within the *flight*, the point of the widest clear *stair* width of the adjacent *winders* shall be used.~~

1011.12.2 Roof access.
Where a stairway is provided to a roof, access to the roof shall be provided through a penthouse complying with Section 1510.2.

Exception: In buildings without an occupied roof, access to the roof shall be permitted to be a roof hatch or trap door not less than 16 square feet (1.5 m^2) in area and having a minimum dimension of 2 feet (610 mm). A minimum clearance perpendicular to the ladder or alternating tread device stringer shall be 30 inches (762 mm).

1011.13 Guards.
Guards shall be provided along stairways and landings where required by Section 1015 and shall be constructed in accordance with Section 1015. Where the roof hatch opening providing the required access is located within ~~10~~ 6 feet (~~3049~~ 1829 mm) of the roof edge, such roof access or roof edge shall be protected by guards installed in accordance with Section 1015.

1011.15 Ships ladders.
Ships ladders are permitted to be used in Group I-3 as a component of a *means of egress* to and from control rooms or elevated facility observation stations not more than 250 square feet (23 m^2) with not more than three occupants and for access to unoccupied roofs. The minimum clear width at and below the *handrails* shall be 20 inches (508 mm). The maximum width to the outside of the handrails shall be of 30 inches (762 mm). The vertical rise between floor levels or landings shall not exceed 20 feet (6096 mm)

1011.15.1 Handrails of ships ladders.
1¼-inch (31.75 mm) pipe *handrails* ~~*Handrails*~~ shall be provided on both sides of ships ladders.

1011.15.2 Treads of ships ladders.
Ships ladders shall have a~~minimum tread depth of 5 inches (127 mm). The tread shall~~

~~be projected such that the total of the tread depth plus the *nosing* projection is not less than 8 1/2 inches (216 mm). The maximum riser height shall be 9 1/2 inches (241 mm).~~

1. Pitch of 60 to 75 degrees,

2. Minimum tread depth of 5 inches, and

3. Riser height of 9-1/2 inches to 12 inches,

1013.2 Floor-level exit door signs in Group R-1.
Where exit signs are required in Group R-1 occupancies by Section 1013.1, additional low-level exit signs shall be provided in all areas serving guest rooms in Group R-1 occupancies and shall comply with Section 1013.5.

The bottom of the sign shall be not less than 10 inches (254 mm) nor more than 12 inches (305 mm) above the floor level. The sign shall be flush mounted to the door or wall. Where mounted on the wall, the edge of the sign shall be within 4 inches (102 mm) of the door frame on the latch side.

1013.3 Illumination.
Exit signs shall be internally or externally illuminated.

~~Exception~~ Exceptions:

1. Tactile signs required by Section 1013.4 need not be provided with illumination.

2. Lighted exit signs are not required for Group R *open air cabins*.

1014.6 Handrail extensions.
Handrails shall return to a wall, *guard* or the walking surface or shall be continuous to the handrail of an adjacent *flight* of *stairs* or *ramp* run. Where *handrails* are not continuous between *flights*, the *handrails* shall extend horizontally not less than 12 inches (305 mm) beyond the top riser and continue to slope for the depth of one tread beyond the bottom riser. At *ramps* where *handrails* are not continuous between runs, the *handrails* shall extend horizontally above the landing 12 inches (305 mm) minimum beyond the top and bottom of *ramp* runs. The extensions of *handrails* shall be in the same direction of the *flights* of *stairs* at *stairways* and the *ramp* runs at *ramps*.

Exceptions:

1. *Handrails* within a *dwelling unit* that is not required to be *accessible* need extend only from the top riser to the bottom riser.

2. *Handrails* serving aisles in rooms or spaces used for assembly purposes are permitted to comply with the handrail extensions in accordance with Section 1029.15.

3. *Handrails* for *alternating tread devices* and ships ladders are permitted to terminate at a location vertically above the top and bottom risers. *Handrails* for

alternating tread devices are not required to be continuous between *flights* or to extend beyond the top or bottom risers.

4. Extensions into a path of travel may return along the face of a continuing wall or column.

1015.2 Where required.
Guards shall be located along open-sided walking surfaces, including *mezzanines*, *equipment platforms*, *aisles*, *stairs*, *ramps*, ~~and~~ landings and retaining walls that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. See Section 3606.6 for piers, docks, catwalks, gangways and floating docks and Section 3607.1.3 for bulkheads. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.8.

Exception: *Guards* are not required for the following locations:

1. On the loading side of loading docks or piers.
2. On the audience side of *stages* and raised *platforms*, including *stairs* leading up to the *stage* and raised *platforms*.
3. On raised *stage* and *platform* floor areas, such as runways, *ramps* and side *stages* used for entertainment or presentations.
4. At vertical openings in the performance area of *stages* and *platforms*.
5. At elevated walking surfaces appurtenant to *stages* and *platforms* for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross aisles in accordance with Section 1029.16.2.
8. At retaining walls where the walking surface is more than 6 feet from the adjacent open face of the retaining wall or the retaining wall is in the public right-of-way.

1015.4 Opening limitations.
Required *guards* shall not have openings that allow passage of a sphere 4 inches (102 mm) in diameter from the walking surface to the required *guard* height. The sphere shall not pass through the opening with a minimum of 50 psf applied horizontally to the sphere from the direction of the walking surface that is being protected. A bottom rail or curb shall be provided that will reject the passage of a 2-inch-diameter (51mm) sphere.

Exceptions:

1. From a height of 36 inches (914 mm) to 42 inches (1067 mm), *guards* shall not have openings that allow passage of a sphere 43/8 inches (111 mm) in diameter.

2. The triangular openings at the open sides of a *stair*, formed by the riser, tread and bottom rail shall not allow passage of a sphere 6 inches (152 mm) in diameter.

3. At elevated walking surfaces for access to and use of electrical, mechanical or plumbing systems or equipment, *guards* shall not have openings that allow passage of a sphere 21 inches (533 mm) in diameter.

4. In areas that are not open to the public within occupancies in Group I-3, F, H or S, and for *alternating tread devices* and ships ladders, *guards* shall not have openings that allow passage of a sphere 21 inches (533 mm) in diameter.

5. In assembly seating areas, *guards* required at the end of aisles in accordance with Section 1029.16.4 shall not have openings that allow passage of a sphere 4 inches (102 mm) in diameter up to a height of 26 inches (660 mm). From a height of 26 inches (660 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, *guards* shall not have openings that allow passage of a sphere 8 inches (203 mm) in diameter.

6. Within individual *dwelling units* and *sleeping units* in Group R-2 and R-3 occupancies, *guards* on the open sides of *stairs* shall not have openings that allow passage of a sphere 43/8 (111 mm) inches in diameter.

1015.6 Mechanical equipment, systems and devices.
Guards shall be provided where various components that require service are located within ~~10~~ 6 feet (~~3048~~ 1829 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The *guard* shall extend not less than 30 inches (762 mm) beyond each end of such components. The *guard* shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter.

Exception: *Guards* are not required where permanent fall arrest/restraint anchorage connector devices that comply with ANSI/ASSE Z 359.1 are affixed for use during the entire roof covering lifetime. The devices shall be reevaluated for possible replacement when the entire roof covering is replaced. The devices shall be placed not more than 10 feet (3048 mm) on center along hip and ridge lines and placed not less than 10 feet (3048 mm) from the roof edge or open side of the walking surface.

1016.2 Egress through intervening spaces.
Egress through intervening spaces shall comply with this section.

1. *Exit access* through an enclosed elevator lobby is permitted. Access to not less than one of the required *exits* shall be provided without travel through the enclosed elevator lobbies required by Section 3006. Where the path of exit access travel passes through an enclosed elevator lobby, the level of protection required for the enclosed elevator lobby is not required to be extended to the *exit* unless direct access to an *exit* is required by other sections of this code.

2. Egress from a room or space shall not pass through adjoining or intervening rooms or areas, except where such adjoining rooms or areas and the area served are

accessory to one or the other, are not a Group H occupancy and provide a discernible path of egress travel to an *exit*.

Exception: *Means of egress* are not prohibited through adjoining or intervening rooms or spaces in a Group H, S or F occupancy where the adjoining or intervening rooms or spaces are the same or a lesser hazard occupancy group.

3. An *exit access* shall not pass through a room that can be locked to prevent egress.

4. *Means of egress* from *dwelling units* or sleeping areas shall not lead through other sleeping areas, toilet rooms or bathrooms.

5. Egress shall not pass through kitchens, storage rooms, closets or spaces used for similar purposes.

Exceptions:

1. *Means of egress* are not prohibited through a kitchen area serving adjoining rooms constituting part of the same *dwelling unit* or *sleeping unit.*

2. *Means of egress* are not prohibited through stockrooms in Group M occupancies where all of the following are met:

2.1. The stock is of the same hazard classification as that found in the main retail area.

2.2. Not more than 50 percent of the *exit access* is through the stockroom.

2.3. The stockroom is not subject to locking from the egress side.

2.4. There is a demarcated, minimum 44-inch-wide (1118 mm) *aisle* defined by full- or partial-height fixed walls or similar ~~construction~~ barrier that will maintain the required width and lead directly from the retail area to the *exit* without obstructions.

1019.5 Construction.
Exit access stairs and ramps may be unenclosed or in unrated enclosures. Exterior exit access stairs and ramps shall not require separation from the building interior.

Exception: Exit access stair and ramp enclosures required by 1019.4.

1020.1 Construction.
Corridors shall be fire-resistance rated in accordance with Table 1020.1. The *corridor* walls required to be fire-resistance rated shall comply with Section 708 for *fire partitions*.

~~**Exceptions:**~~

~~1. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group E where each room that is used for instruction has not less than one door opening directly to the exterior and rooms for assembly purposes have not less than one-~~

~~half of the required *means of egress* doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.~~

~~2. A *fire-resistance rating* is not required for *corridors* contained within a *dwelling unit* or *sleeping unit* in an occupancy in Groups I-1 and R.~~

~~3. A *fire-resistance rating* is not required for *corridors* in *open parking garages*.~~

~~4. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group B that is a space requiring only a single *means of egress* complying with Section 1006.2.~~

~~5. *Corridors* adjacent to the *exterior walls* of buildings shall be permitted to have unprotected openings on unrated *exterior walls* where unrated walls are permitted by Table 602 and unprotected openings are permitted by Table 705.8.~~

TABLE 1020.1
CORRIDOR FIRE-RESISTANCE RATING[e-k]

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B[f,i], E[d,g], F, M, S[i], U	Greater than 30	1	0
R[he]	Greater than 10	Not Permitted	0.5
I-2[a], I-4	All	Not Permitted	0
I-1[h], I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see Sections 407.2 and 407.3.
b. For a reduction in the *fire-resistance rating* for occupancies in Group I-3, see Section 408.8.
c. Buildings equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2 where allowed.
d. Adult and child day care facilities without automatic sprinkler systems shall have 1-hour fire-resistance-rated corridors regardless of occupant load.
e. For residential care facilities requirements see Section 428.
f. Exit access corridors are not required to be rated on any single tenant floor or in any single tenant space, if 1-hour fire-resistance-rated floor/ceiling assemblies are provided in multistory buildings and fire partitions are provided between other tenant spaces on the same floor. The structure supporting such floor/ceiling assemblies and fire partitions is not required to be rated in Types IIB, IIB and VB construction.
g. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group E where each room that is used for instruction has not less than one door opening directly to the exterior and rooms for assembly purposes have not less than one-half of the required *means of egress* doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.
h. A *fire-resistance rating* is not required for *corridors* contained within a *dwelling unit* or *sleeping unit* in Groups I-1 and R.
i. A *fire-resistance rating* is not required for *corridors* in *open parking garages*.

j. A *fire-resistance rating* is not required for *corridors* in an occupancy in Group B which is a space requiring only a single *means of egress* complying with Section 1006.2.

k. *Corridors* adjacent to the *exterior walls* of buildings shall be permitted to have unprotected openings on unrated *exterior walls* where unrated walls are permitted by Table 602 and unprotected openings are permitted by Table 705.8.

TABLE 1020.2
MINIMUM CORRIDOR WIDTH

OCCUPANCY	MINIMUM WIDTH (inches)
Any facilities not listed below	44
Access to and utilization of mechanical, plumbing or electrical systems or equipment	24
In other than Group I-1, I-2 and I-3 with ~~With~~ an occupant load of less than 50	36
Within a *dwelling unit*	36
In Group E with a *corridor* having an occupant load of 100 or more	72
In *corridors* and areas serving stretcher traffic in ambulatory care facilities and resident areas of Group I-1 and I-2	72
Group I-2 in patient areas and in areas where required for bed movement	96

For SI: 1 inch = 25.4 mm.

1020.6 Corridor continuity.
Fire-resistance-rated corridors shall be continuous from the point of entry to an *exit*, and shall not be interrupted by intervening rooms. Where the path of egress travel within a *fire-resistance-rated corridor* to the exit includes travel along unenclosed *exit access stairways* or *ramps*, the *fire-resistance rating* shall be continuous for the length of the *stairway* or *ramp* and for the length of the connecting *corridor* on the adjacent floor leading to the *exit*.

Exceptions:

1. Foyers, lobbies or reception rooms constructed as required for *corridors* shall not be construed as intervening rooms.

2. Enclosed elevator lobbies as permitted by Item 1 of Section 1016.2 shall not be construed as intervening rooms.

3. A toilet room as defined by the NC Plumbing Code that meets all of the following requirements may be included as part of the rated corridor enclosure:

   3.1. The toilet room shall be separated from the remainder of the building by fire-resistant-rated construction meeting the same requirements as the corridor construction;

   3.2. No other rooms open off of the toilet room;

3.3. No gas or electric appliances other than electric point of use water heaters and hand dryers are located in the toilet room; and

3.4. The toilet room is not used for any other purpose.

1023.2 Construction.
Enclosures for *interior exit stairways* and *ramps* shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. *Interior exit stairway* and *ramp* enclosures shall have a *fire-resistance rating* of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the *interior exit stairways* or *ramps* shall include any *basements*, but not any *mezzanines*. *Interior exit stairways* and *ramps* shall have a *fire-resistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours.

Exceptions:

1. *Interior exit stairways* and *ramps* in Group I-3 occupancies in accordance with the provisions of Section 408.3.8.

2. *Interior exit stairways* within an *atrium* enclosed in accordance with Section 404.6.

3. In other than Group H and I occupancies, a maximum of 50 percent of egress stairways serving one adjacent floor are not required to be enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Any two such interconnected floors shall not open to other floors. Unenclosed exit stairways shall be remotely located as required in Section 1007.1.1.

4. In other than Group H and I occupancies, interior egress stairways serving only the first and second stories of a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 are not required to be enclosed, provided at least two means of egress are provided from both floors served by the unenclosed stairways. Such interconnected stories shall not be open to other stories. Unenclosed exit stairways shall be remotely located as required in Section 1007.1.1.

5. Exit access stairs and ramps that are either unenclosed or in allowed unrated enclosures.

1023.8 ~~Discharge identification.~~ Stairway discharge level barrier.
An *interior exit stairway* and *ramp* shall not continue below its *level of exit discharge* unless an *approved* barrier is provided at the *level of exit discharge* to prevent persons from unintentionally continuing into levels below. Directional exit signs shall be provided as specified in Section 1013.

1029.9.5 ~~Dead end aisles.~~ Assembly aisle termination.
Each end of an *aisle* shall be continuous to a cross *aisle*, foyer, doorway, vomitory, concourse or *stairway* in accordance with Section 1029.9.7 having access to an *exit*.

Exceptions:

1. Dead-end *aisles* shall be not greater than 20 feet (6096 mm) in length.

2. Dead-end *aisles* longer than ~~16 rows~~ 20 feet (6096 mm) are permitted where seats beyond the ~~16 rows~~ 20 feet (6096 mm) dead-end *aisle* are not more than 24 seats from another *aisle*, measured along a row of seats having a minimum clear width of 12 inches (305 mm) plus 0.6 inch (15.2 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.

3. For *smoke-protected assembly seating*, the dead end *aisle* length of vertical *aisles* shall not exceed a distance of 21 rows.

4. For *smoke-protected assembly seating*, a longer dead-end *aisle* is permitted where seats beyond the 21-row dead-end *aisle* are not more than 40 seats from another *aisle*, measured along a row of seats having an *aisle* accessway with a minimum clear width of 12 inches (305 mm) plus 0.3 inch (7.6 mm) for each additional seat above seven in the row where seats have backrests or beyond 10 where seats are without backrests in the row.

1029.13.1.3 Edge protection.
Ramped *aisles* shall have edge protection in accordance with Section ~~1012.11~~ 1012.10.

Exception: In assembly spaces with *fixed seating*, edge protection is not required on the sides of ramped *aisles* where the ramped *aisles* provide access to the adjacent seating and *aisle accessways*.

1030.1 General.
In addition to the *means of egress* required by this chapter, provisions shall be made for *emergency escape and rescue openings* in Group E classrooms, Group R-2 occupancies in accordance with Tables 1006.3.2(1) and 1006.3.2(2), Group R-2 occupancies without automatic fire sprinkler systems in accordance with 903.3.1.1 and 903.3.1.2, and Group R-3 occupancies. *Basements* and sleeping rooms below the fourth story above *grade plane* shall have at least one exterior *emergency escape and rescue opening* in accordance with this section. Where *basements* contain one or more sleeping rooms, *emergency escape and rescue openings* shall be required in each sleeping room, but shall not be required in adjoining areas of the *basement*. Such openings shall open directly into a *public way* or to a *yard* or *court* that opens to a *public way*.

Exceptions:
1. *Basements* with a ceiling height of less than 80 inches (2032 mm) shall not be required to have *emergency escape and rescue openings*.

2. ~~*Emergency escape and rescue openings* are not required from~~ Classrooms with 2 means of egress, *basements,* or sleeping rooms that have an *exit* door or *exit access* door that opens directly into a *public way* or to a *yard*, *court* or exterior

exit balcony that opens to a *public way* shall not be required to have *emergency escape and rescue openings*.

3. *Basements* without *habitable spaces* and having not more than 200 square feet (18.6 m^2) in floor area shall not be required to have *emergency escape and rescue openings*.

4. In Group E where the room or space complies with the following:

   4.1 Doors open directly to a corridor with exit access in one direction and provide access through adjacent classrooms or directly to a separate smoke compartment with exit access in the other direction, and

   4.2 The compartments are separated by smoke barriers having a 1-hour fire resistance rating with self-closing or automatic closing doors, and

   4.3 The length of travel to exits along such paths shall not exceed 150 ft. (45 m) and

   4.4 Each communicating door shall be identified, and

   4.5 No locking device shall be allowed on the communicating doors.

5. Group E occupancies located in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

1030.3 Maximum height from floor.
Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) measured from the floor. For classrooms serving children Grade 5 and younger, the bottom of the clear opening shall be not more than 32 inches (810 mm) measured from the floor.

CHAPTER 11
ACCESSIBILITY

1104.1 Site arrival points.
At least one *accessible route* within the *site* shall be provided from public transportation stops, *accessible* parking, *accessible* passenger loading zones, and public streets or sidewalks to the *accessible* building entrance served. The clear width of the exterior accessible path of travel shall be 48 inches (1220 mm) minimum. Where handrails are provided, the measurement shall be between handrails.

Exception: Other than in buildings or *facilities* containing or serving *Type B units*, an *accessible route* shall not be required between *site* arrival points and the building or *facility* entrance if the only means of access between them is a vehicular way not providing for pedestrian access.

1104.2 Within a site.
At least one *accessible route* shall connect *accessible* buildings, *accessible* facilities, *accessible* elements and *accessible* spaces that are on the same *site*. The clear width of the exterior accessible path of travel shall be 48 inches (1220 mm) minimum. Where handrails are provided, the measurement shall be between handrails.

Exceptions:

1. An *accessible route* is not required between *accessible* buildings, *accessible* facilities, *accessible* elements and *accessible* spaces that have, as the only means of access between them, a vehicular way not providing for pedestrian access.

2. An *accessible route* to recreational facilities shall only be required to the extent specified in Section 1110.

1104.4 Multistory buildings and facilities.
At least one *accessible route* shall connect each *accessible story* and *mezzanine* in multilevel buildings and *facilities*.

Exceptions:

1. An *accessible route* is not required to *stories* and *mezzanines* that have an aggregate area of not more than 3,000 square feet (278.7 m^2) and are located above and below *accessible* levels. This exception shall not apply to:

    1.1. Multiple tenant facilities of Group M occupancies containing five or more tenant spaces used for the sales or rental of goods and where at least one such tenant space is located on a floor level above or below the *accessible* levels;

    1.2. *Stories* or *mezzanines* containing offices of health care providers (Group B or I);

1.3. Passenger transportation facilities and airports (Group A-3 or B); or

1.4. ~~Government buildings.~~ All buildings of state, county, or municipal government or any government agencies, including publicly owned schools, colleges, university buildings, and publicly owned dormitories, ~~two or more stories in height~~.

2. *Stories* or *mezzanines* that do not contain *accessible* elements or other spaces as determined by Section 1107 or 1108 are not required to be served by an *accessible route* from an *accessible* level.

3. In air traffic control towers, an *accessible route* is not required to serve the cab and the floor immediately below the cab.

4. Where a two-story building or facility has one *story* or *mezzanine* with an *occupant load* of five or fewer persons that does not contain *public use* space, that *story* or *mezzanine* shall not be required to be connected by an *accessible route* to the *story* above or below.

1107.6.2.2.1 Type A units.
In Group R-2 occupancies containing ~~more than 20~~ 11 or more *dwelling units* or *sleeping unit*s, at least ~~2~~ 5 percent but not less than one of the units shall be a *Type A unit*. For a site with more than 100 units, at least 2 percent of the number of units exceeding 100 shall be Type A units. All Group R-2 units on a *site* shall be considered to determine the total number of units and the required number of *Type A units*. *Type A units* shall be dispersed among the various classes of units. Bedrooms in monasteries and convents shall be counted as *sleeping units* for the purpose of determining the number of units. Where the *sleeping units* are grouped into suites, only one *sleeping unit* in each suite shall count towards the number of required *Type A units*.

Exceptions:

1. The number of *Type A units* is permitted to be reduced in accordance with Section 1107.7.

2. *Existing structures* on a *site* shall not contribute to the total number of units on a *site*.

1107.6.2.3.1 Accessible units.
Accessible dwelling units and *sleeping unit*s shall be provided in accordance with Table 1107.6.1.1.

Exception: Condominiums.

1109.1 General.
Accessible building features and facilities shall be provided in accordance with Sections 1109.2 through 1109.15.

Exception: *Accessible units*, *Type A units* and *Type B units* shall comply with Section 1109.4 and with Chapter 10 of ICC A117.1.

1109.2.1 Family or assisted-use toilet and bathing rooms.
In assembly and mercantile occupancies, an *accessible* family or assisted-use toilet room shall be provided where an aggregate of six or more male and female water closets is required. In buildings of mixed occupancy, only those water closets required for the assembly or mercantile occupancy shall be used to determine the family or assisted-use toilet room requirement. In recreational facilities where separate-sex bathing rooms are provided, an *accessible* family or assisted-use bathing room shall be provided. Fixtures located within family or assisted-use toilet and bathing rooms shall be included in determining the number of fixtures provided in an occupancy.

Exceptions:
1. Where each separate-sex bathing room has only one shower or bathtub fixture, a family or assisted-use bathing room is not required.
2. In an Assembly occupancy that meets the definition of a nightclub in 902.1, the family or assisted-use toilet room is not required.

1109.4 Kitchens and kitchenettes.
Where kitchens and kitchenettes are provided in *accessible* spaces or rooms, they shall be *accessible*.

1. A minimum 60-inch (1524 mm) clear turning space shall be provided within the kitchen of a Type A unit.
2. A maximum 6-inch (150 mm) deep by minimum 9-inch (230 mm) high toe space beneath a cabinet shall be permitted to provide part of the clear floor area on one side only.

1109.13 Controls, operating mechanisms and hardware.
Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation and electrical convenience outlets, in *accessible* spaces, along *accessible routes* or as parts of *accessible* elements shall be *accessible*.

Exceptions:

1. Operable parts that are intended for use only by service or maintenance personnel shall not be required to be *accessible*.

2. Electrical or communication receptacles serving a dedicated use shall not be required to be *accessible*.

3. Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to be *accessible*.

4. Floor electrical receptacles shall not be required to be *accessible*.

5. HVAC diffusers shall not be required to be *accessible*.

6. Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to be *accessible*.

7. Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to comply with ~~Section 1008.1.9.2.~~ the Exception to Section 1010.1.9.2.

1110.2 Facilities serving Group R-2, R-3 and R-4 occupancies.
Recreational facilities that serve Group R-2, R-3 and Group R-4 occupancies shall comply with Sections 1110.2.1 through 1110.2.3, as applicable.

Exception: Swimming pools for single or multiple Group R-2 and Group R-3 occupancy buildings intended for use by residents only.

1110.4.9 Recreational boating facilities.
~~Boat slips required to be *accessible* by Sections 1110.4.9.1 and 1110.4.9.2 and boarding piers at boat launch ramps required to be *accessible* by Section 1110.4.9.3 shall be on an *accessible route*.~~
The minimum required number of accessible berths shall be provided as per Table 1110.4.9.1.

~~**1110.4.9.1 Boat slips.**~~
~~*Accessible* boat slips shall be provided in accordance with Table 1110.4.9.1. All units on the site shall be combined to determine the number of *accessible* boat slips required. Where the number of boat slips is not identified, each 40 feet (12 m) of boat slip edge provided along the perimeter of the pier shall be counted as one boat slip for the purpose of this section.~~

~~**Exception:** Boat slips not designed for embarking or disembarking are not required to be *accessible* or be on an *accessible route*.~~

1110.4.9.1 Number of boat slips not identified.
Where the number of boat slips is not identified, for example, along the edge of a long side-tie dock, each 40 feet of linear dock edge, or fraction thereof, shall be counted as one boat slip.

Exception: Boat slips not designed for embarking or disembarking are not required to be *accessible* or be on an *accessible route*.

TABLE 1110.4.9.1
~~BOAT SLIPS~~
Minimum Required
Number of Accessible Berths

TOTAL NUMBER OF BOAT SLIPS ~~PROVIDED~~	MINIMUM NUMBER ~~OF REQUIRED ACCESSIBLE BOAT SLIPS~~
1 to 25	1
26 to 50	2
51 to 100	3
101 to 150	4
151 to 300	5

301 to 400	6
401 to 500	7
501 to 600	8
601 to 700	9
701 to 800	10
801 to 900	11
901 to 1000	12
1001 and over	12, plus 1 for every 100, or fraction thereof, over 1,000

~~**1110.4.9.2 Dispersion.**~~
~~*Accessible* boat slips shall be dispersed throughout the various types of boat slips provided.Where the minimum number of *accessible* boat slips has been met, no further dispersion shall be required.~~

1110.4.9.2 Calculated total number of boat slips. The total number of berths in a marina facility shall include all single berths, double berths, side-tie berths, end-tie berths, open berths and covered berths, as well as berths that are components of courtesy landings, visitor *docks*, fuel *docks*, sewage pumpout *docks*, harbor master office *docks*, haul out and repair *docks*, etc.

~~**1110.4.9.3 Boarding piers at boat launch ramps.**~~
~~Where boarding piers are provided at boat launch ramps, at least 5 percent, but not less than one, of the boarding piers shall be *accessible*.~~

1110.4.13 Swimming pools, wading pools, hot tubs and spas.
Swimming pools, wading pools, hot tubs and spas shall be *accessible* and be on an *accessible route*.

Exceptions:

1. Catch pools or a designated section of a pool used as a terminus for a water slide flume shall not be required to provide an *accessible* means of entry, provided that a portion of the catch pool edge is on an *accessible route*.

2. Where spas or hot tubs are provided in a cluster, at least 5 percent, but not less than one spa or hot tub in each cluster, shall be *accessible* and be on an *accessible route*.

3. Swimming pools, wading pools, spas and hot tubs that are required to be *accessible* by Sections 1110.2.2 and 1110.2.3 are not required to provide *accessible* means of entry into the water.

4. Swimming pools for single or multiple Group R-2 and Group R-3 occupancy buildings intended for use by residents only.

1111.1 Signs.
Required *accessible* elements shall be identified by the International Symbol of Accessibility at the following locations.

1. *Accessible* parking spaces required by Section 1106.1. Location and design of signage shall comply with the requirements of North Carolina General Statutes 20-37-6 and 136-30, and the NCDOT Manual on Uniform Traffic Control Devices.

   Exception: Where the total number of parking spaces provided is four or less, identification of *accessible* parking spaces is not required.

2. *Accessible* parking spaces required by Section 1106.2. Location and design of signage shall comply with the requirements of North Carolina General Statutes 20-37-6 and 136-30, and the NCDOT Manual on Uniform Traffic Control Devices.

   Exception: In Group I-1, R-2, R-3 and R-4 facilities, where parking spaces are assigned to specific *dwelling units* or *sleeping units*, identification of *accessible* parking spaces is not required.

3. *Accessible* passenger loading zones.

4. *Accessible* rooms where multiple single-user toilet or bathing rooms are clustered at a single location.

5. *Accessible* entrances where not all entrances are *accessible*.

6. *Accessible* check-out aisles where not all aisles are *accessible*. The sign, where provided, shall be above the check-out aisle in the same location as the checkout aisle number or type of check-out identification.

7. Family or assisted-use toilet and bathing rooms.

8. *Accessible* dressing, fitting and locker rooms where not all such rooms are *accessible*.

9. *Accessible* areas of refuge in accordance with Section 1007.9.

10. Exterior areas for assisted rescue in accordance with Section 1007.9.

11. In recreational facilities, lockers that are required to be *accessible* in accordance with Section 1109.9.

CHAPTER 12
INTERIOR ENVIRONMENT

1203.2 Ventilation required.
Enclosed *attics* and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilation openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. An airspace of not less than 1 inch (25 mm) shall be provided between the insulation and the roof sheathing. The net free ventilating area shall be not less than $^{1}/_{150}$ of the area of the space ventilated. Ventilators shall be installed in accordance with manufacturer's installation instructions.

Exception: The net free cross-ventilation area shall be permitted to be reduced to $^{1}/_{300}$ provided ~~both of the following conditions are met:~~

~~1. In Climate Zones 6, 7 and 8, a Class I or II vapor retarder is installed on the warm-in-winter side of the ceiling.~~

~~2. At~~ at least 40 percent and not more than 50 percent of the required venting area is provided by ventilators located in the upper portion of the *attic* or rafter space. Upper ventilators shall be located not more than 3 feet (914 mm) below the ridge or highest point of the space, measured vertically, with the balance of the *ventilation* provided by eave or cornice vents. Where the location of wall or roof framing members conflicts with the installation of upper ventilators, installation more than 3 feet (914 mm) below the ridge or highest point of the space shall be permitted.

1203.3 Unvented attic and unvented enclosed rafter assemblies.
Unvented *attics* and unvented enclosed roof framing assemblies created by ceilings applied directly to the underside of the roof framing members/rafters and the structural roof sheathing at the top of the roof framing members shall be permitted where all the following conditions are met:

1. The unvented *attic* space is completely within the *building thermal envelope*.

2. No interior Class I vapor retarders are installed on the ceiling side (*attic* floor) of the unvented *attic* assembly or on the ceiling side of the unvented enclosed roof framing assembly.

3. Where wood shingles or shakes are used, a minimum $^{1}/_{4}$-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing.

4. In Climate ~~Zones 5, 6, 7 and 8,~~ Zone 5 any air-impermeable insulation shall be a Class II vapor retarder or shall have a Class III vapor retarder coating or covering in direct contact with the underside of the insulation.

5. Insulation shall be located in accordance with the following:

    5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing.

        5.1.1. Where only air-impermeable insulation is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.

        5.1.2. Where air-permeable insulation is provided inside the building thermal envelope, it shall be installed in accordance with Item 5.1. In addition to the air-permeable insulation installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the R values in Table 1203.3 for condensation control.

        5.1.3. Where both air-impermeable and air-permeable insulation are provided, the *air-impermeable insulation* shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the R values in Table 1203.3 for condensation control. The *air-permeable insulation* shall be installed directly under the *air-impermeable insulation*.

        5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.

    5.2. Where preformed insulation board is used as the *air-permeable insulation* layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.

Exceptions:

1. Section 1203.3 does not apply to special use structures or enclosures such as swimming pool enclosures, data processing centers, hospitals or art galleries.

2. Section 1203.3 does not apply to enclosures in Climate ~~Zones 5 through 8~~ Zone 5 that are humidified beyond 35 percent during the three coldest months.

TABLE 1203.3
INSULATION FOR CONDENSATION CONTROL

CLIMATE ZONE	MINIMUM R-VALUE OF AIR-IMPERMEABLE INSULATION[a]
~~2B and 3B tile roof only~~	~~0 (none required)~~
~~1, 2A, 2B, 3A, 3B, 3C~~	~~R-5~~
~~4C~~	~~R-10~~
4A~~, 4B~~	R-15
5	R-20
~~6~~	~~R-25~~
~~7~~	~~R-30~~
~~8~~	~~R-35~~

a. Contributes to, but does not supersede, thermal resistance requirements for attic and roof assemblies in Section C402.2.1 of the *International Energy Conservation Code*.

1208.2 Minimum ceiling heights.
Occupiable spaces, *habitable spaces* and *corridors* shall have a ceiling height of not less than 7 feet 6 inches (2286 mm). Bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms shall have a ceiling height of not less than 7 feet (2134 mm).

Exceptions:

1. In one- and two-family *dwellings*, beams or girders spaced not less than 4 feet (1219 mm) on center shall be permitted to project not more than 6 inches (152 mm) below the required ceiling height.

2. If any room in a building has a sloped ceiling, the prescribed ceiling height for the room is required in one-half the area thereof. Any portion of the room measuring less than 5 feet (1524 mm) from the finished floor to the ceiling shall not be included in any computation of the minimum area thereof.

3. The height of *mezzanines* and spaces below *mezzanines* shall be in accordance with Section 505.1.

4. Corridors contained within a *dwelling unit* or *sleeping unit* in a Group R occupancy shall have a ceiling height of not less than 7 feet (2134 mm).

5. Ceiling mounted electrical fixtures shall be a minimum of 80 inches above the finished floor unless mounted over a barrier that prevents occupants from traveling under the fixture.

1210.2.1 Floors and wall bases.
In other than *dwelling units*, toilet, bathing and shower room floor finish materials shall have a smooth, hard, nonabsorbent surface. The intersections of such floors with walls shall have a smooth, hard, nonabsorbent vertical base that extends upward onto the walls not less than ~~4 inches (102 mm)~~ 3 inches (76mm).

[P] 1210.3 Privacy.
Privacy at water closets and urinals shall be provided in accordance with Sections 1210.3.1 and 1210.3.2.

[P] 1210.3.1 Water closet compartment.
Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

Exceptions:

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.

~~2. Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.~~

2. In toilet rooms in child care facilities in areas used exclusively by children five years of age and under, the following is permitted:

   2.1. Toilet stall enclosures, toilet stall doors and partitions between toilets may be omitted.

   2.2 Doors into toilet rooms may be omitted.

   2.3 Walls enclosing toilet rooms may be full height with vision panels, or may be partial height at least 42 inches (1067 mm) high in areas for children four and five years of age and 36 inches (914 mm) high in areas for children under four years of age.

3. This provision is not applicable to toilet areas located within Group I-3 occupancy housing areas.

CHAPTER 14
EXTERIOR WALLS

1405.3.1 Class I and II vapor retarders.
~~Class I and II vapor retarders shall not be provided on the interior side of frame walls in Zones 1 and 2.~~ Class I vapor retarders shall not be provided on the interior side of frame walls in Zones 3 and 4. Class I or II vapor retarders shall be provided on the interior side of frame walls in ~~Zones 5, 6, 7, 8 and Marine 4~~ Zone 5. The appropriate zone shall be selected in accordance with Chapter 3 of the *International Energy Conservation Code*.

Exceptions:

1. Basement walls.
2. Below-grade portion of any wall.
3. Construction where moisture or its freezing will not damage the materials.
4. Conditions where Class III vapor retarders are required in Section 1405.3.2.

TABLE 1405.3.2
CLASS III VAPOR RETARDERS

ZONE	CLASS III VAPOR RETARDERS PERMITTED FOR:[a]
~~Marine 4~~	~~Vented cladding over wood structural panels~~ ~~Vented cladding over fiberboard~~ ~~Vented cladding over gypsum~~ ~~Insulated sheathing with *R*-value ≥ R2.5 over 2 × 4 wall~~ ~~Insulated sheathing with *R*-value ≥ R3.75 over 2 × 6 wall~~
5	Vented cladding over wood structural panels Vented cladding over fiberboard Vented cladding over gypsum Insulated sheathing with *R*-value ≥ R5 over 2 × 4 wall Insulated sheathing with *R*-value ≥ R7.5 over 2 × 6 wall
~~6~~	~~Vented cladding over fiberboard~~ ~~Vented cladding over gypsum~~ ~~Insulated sheathing with *R*-value ≥ R7.5 over 2 × 4 wall~~ ~~Insulated sheathing with *R*-value ≥ R11.25 over 2 × 6 wall~~
~~7 and 8~~	~~Insulated sheathing with *R*-value ≥ R10 over 2 × 4 wall~~ ~~Insulated sheathing with *R*-value ≥ R15 over 2 × 6 wall~~

For SI: 1 pound per cubic foot = 16 kg/m^3.

a. Spray foam with a minimum density of 2 lbs/ft^3 applied to the interior cavity side of wood structural panels, fiberboard, insulating sheathing or gypsum is deemed to meet the insulating sheathing requirement where the spray foam *R*-value meets or exceeds the specified insulating sheathing *R*-value.

1405.14.2 Flame Spread.

Vinyl siding and vinyl soffit materials when used in Group R buildings shall have a Flame Spread Index of 25 or less as tested in accordance with ASTM E-84.

CHAPTER 15
ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

1507.2.2 Slope.
Asphalt shingles shall only be used on roof slopes of two units vertical in 12 units horizontal (17-percent slope) or greater. For roof slopes ~~from~~ of two units vertical in 12 units horizontal (17-percent slope) up to but less than four units vertical in 12 units horizontal (33-percent slope), double underlayment application is required in accordance with Section 1507.2.8.

~~**1512.1 Photovoltaic panels and modules.**~~
~~*Photovoltaic panels* and *modules* installed upon a roof or as an integral part of a roof assembly shall comply with the requirements of this code and the *International Fire Code*.~~

[F] 1512.1 Solar photovoltaic power systems.
Solar photovoltaic power systems shall be installed in accordance with Sections 1512.2 through 1512.3, the *International Building Code, International Fire Code*, and NFPA 70.

[F] 1512.2 Access and pathways.
Roof access, pathways, and spacing requirements shall be provided in accordance with Sections 1512.2.1 through 1512.2.3.

Exceptions:

1. Detached, non-habitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises, and similar structures.

2. Roof access, pathways, and spacing requirements need not be provided where the fire chief has determined that rooftop operations shall not be employed.

[F] 1512.2.1 Roof access points.
Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors, and located at strong points of building construction in locations where the access point does not conflict with overhead obstructions such as tree limbs, wires, or signs.

[F] 1512.2.2 Solar photovoltaic systems for Group R-3 buildings.
Solar photovoltaic systems for Group R-3 buildings shall comply with Sections 1512.2.2.1 through 1512.2.2.5.

Exception: These requirements shall not apply to one and two family dwelling and townhomes.

[F] 1512.2.2.1 Size of solar photovoltaic array.
Each photovoltaic array shall be limited to 150 feet (45 720 mm) by 150 feet (45 720 mm). Multiple arrays shall be separated by a 3-foot-wide (914 mm) clear access pathway.

[F] 1512.2.2.2 Hip roof layouts.
Panels and modules installed on Group R-3 buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from

the eave to the ridge on each roof slope where panels and modules are located. The access pathway shall be at a location on the building capable of supporting the fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

[F] 1512.2.2.3 Single-ridge roofs.
Panels and modules installed on Group R-3 buildings with a single ridge shall be located in a manner that provides two, 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels and modules are located.

Exception: This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

[F] 1512.2.2.4 Roofs with hips and valleys.
Panels and modules installed on Group R-3 buildings with roof hips and valleys shall not be located closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

[F] 1512.2.2.5 Allowance for smoke ventilation operations.
Panels and modules installed on Group R-3 buildings shall be located not less than 3 feet (914 mm) from the ridge in order to allow for fire department smoke ventilation operations.

Exception: Panels and modules shall be permitted to be located up to the roof ridge where an alternative ventilation method *approved* by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques shall not be employed.

[F] 1512.2.3 Other than Group R-3 buildings.
Access to systems for buildings, other than those containing Group R-3 occupancies, shall be provided in accordance with Sections 1512.2.3.1 through 1512.2.3.3.

Exception: Where it is determined by the fire code official that the roof configuration is similar to that of a Group R-3 occupancy, the residential access and ventilation requirements in Sections 1512.2.2.1 through 1512.2.2.5 shall be permitted to be used.

[F] 1512.2.3.1 Access.
There shall be a minimum 6 foot-wide (1829 mm) clear perimeter around the edges of the roof.

Exception: Where either axis of the building is 250 feet (76 200 mm) or less, the clear perimeter around the edges of the roof shall be permitted to be reduced to a minimum 4 foot wide (1290 mm).

[F] 1512.2.3.2 Pathways.
The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting fire fighters accessing the roof.

2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting fire fighters accessing the roof.

3. Pathways shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes or ventilation hatches.

4. Pathways shall provide not less than 4 feet (1290 mm) clear around roof access hatch with not less than one singular pathway not less than 4 feet (1290 mm) clear to a parapet or roof edge.

[F] 1512.2.3.3 Smoke ventilation.
The solar installation shall be designed to meet the following requirements:

1. Arrays shall not be greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.

2. Smoke ventilation options between array sections shall be one of the following:

   2.1 A pathway 8 feet (2438 mm) or greater in width.

   2.2 A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or gravity-operated dropout smoke and heat vents on not less than one side.

   2.3 A 4-foot (1290 mm) or greater in width pathway and bordering all sides of non-gravity-operated dropout smoke and heat vents.

   2.4 A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) “venting cutouts” every 20 feet (6096 mm) on alternating sides of the pathway.