

2015 International Code **INTERPRETATIONS**



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PREFACE

The 2015 International Codes[®] promulgated by the International Code Council[®] (ICC[®]) comprise a comprehensive set of model regulations for the design, construction and maintenance of safe buildings and structures. As a result of the performance nature of the International Codes, interpretations of the code provisions as they apply to a specific situation are sometimes necessary. Interpretation of the International Codes is a regular service offered to ICC members and is intended to be of an advisory nature, with final responsibility resting with the appropriate code official.

In the development of this document, a review of ICC or Legacy Code Committee Interpretations published to date was conducted. Those interpretations that are no longer applicable because of changes in the code text were omitted. Those in which the essential interpretative issue is still relevant to the 2015 editions were edited by ICC technical staff and revised as necessary for applicability.

The interpretations appearing in this book are in consecutive order according to code and section number. Applicable 2015 International Code text is included with each interpretation.

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2015 International Code INTERPRETATIONS

BUILDING

CHAPTER 1

SCOPE AND ADMINISTRATION

SECTION 101 GENERAL

[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.

Exception: Detached one- and two-family *dwelling*s and multiple single-family *dwelling*s (*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*.

Q: Do code provisions apply to fences?

A: Yes. Section 101.2 states that the code shall apply to all buildings and structures. Fences are considered structures, and therefore are included within the scope of the code. The primary safety issue is structural integrity. Fences must be constructed to resist the anticipated live loads and installed in a manner ensuring structural stability. Chapter 33 also contains requirements for fences related to site work, demolition and construction. It should be noted that Section 105.2, Item 2, does exempt fences not over 7 feet high from needing a permit. It does not, however, exempt such fences from complying with the provisions of the *International Building Code*® (IBC®).

[A] 101.4 Referenced codes. The other codes listed in Sections 101.4.1 through 101.4.7 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

[A] 101.4.1 Gas. The provisions of the *International Fuel Gas Code* shall apply to the installation of gas piping from the point of delivery, gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories.

[A] 101.4.2 Mechanical. The provisions of the *International Mechanical Code* shall apply to the installation, *alterations*, *repairs* and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-condition-

ing and refrigeration systems, incinerators and other energy-related systems.

[A] 101.4.3 Plumbing. The provisions of the *International Plumbing Code* shall apply to the installation, *alteration*, *repair* and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system. The provisions of the *International Private Sewage Disposal Code* shall apply to private sewage disposal systems.

[A] 101.4.4 Property maintenance. 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.

[A] 101.4.5 Fire prevention. The provisions of the *International Fire Code* shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, *repair*, *alteration* or removal of fire suppression, *automatic sprinkler systems* and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

[A] 101.4.6 Energy. The provisions of the *International Energy Conservation Code* shall apply to all matters governing the design and construction of buildings for energy efficiency.

[A] 101.4.7 Existing buildings. The provisions of the *International Existing Building Code* shall apply to matters governing the *repair*, *alteration*, change of occupancy, *addition* to and relocation of existing buildings.

Q: Are the specific International Codes® (I-Codes®) referenced in Section 101.4 deemed to be adopted and enforceable by virtue of adoption of the IBC?

A: Yes. When the IBC® is adopted, the specific I-Codes referenced in Sections 101.4.1 through 101.4.7 are deemed to be adopted and enforceable, but only to the extent that the given code is referenced in the IBC. Sections 101.4.1 through 101.4.7 list the applicable codes that contain specific sections referenced throughout the IBC. However, each I-Code must be adopted individually to be enforceable in its entirety.

EXAMPLE 1: Section [F] 904.2.2 in the IBC references the *International Fire Code*® (IFC®) or the *International Mechanical Code*® (IMC®) regarding commercial hoods

and duct systems. The specific sections of the IFC and the IMC that address commercial hoods and duct systems are deemed to be adopted and enforceable, but any other requirements in the IFC and IMC not specifically referenced in the IBC are not adopted and are not enforceable.

EXAMPLE 2: Section [F] 905.1 in the IBC references the IFC regarding fire protection for buildings used for high-piled combustible storage. The specific sections of the IFC that address fire protection for buildings used for high-piled combustible storage are deemed to be adopted and enforceable, but any other requirements in the IFC not specifically referenced in the IBC are not adopted and are not enforceable.

SECTION 104 DUTIES AND POWERS OF BUILDING OFFICIAL

[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.

Q: Is the authority to grant modifications as provided for in Section 104.10 intended to apply only to existing buildings?

A: No. Section 104.10 is included as part of the overall approval authority granted to the code official by Section 104.1 for use in dealing with the application of the IBC. The scope of the IBC includes both new and existing buildings.

[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.

Q: Do Sections 104.7 and 107.3.1 require construction documents to be kept on file with the code official even after construction has been completed?

A: No. Section 104.7 indicates only that the code official shall keep records of applications received, permits and certificates issued, fees collected, reports of inspections and notices and orders issued in the official records for as long as local or state laws require.

Although the code does not require construction documents to be retained, there may be state laws or other ordinances identifying information to be maintained in official records, which may include construction documents.

[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.

Q: In the absence of either specific code provisions dealing with the installation of a product or the mention of the intended applicability in the permit application information, are the manufacturer's instructions and recommendations to be followed?

A: Yes, if the manufacturer's instructions and recommendations form the basis or a part of the basis for the code official's approval. Section 104.9 requires all materials, equipment and devices approved for use by the code official to be constructed and installed in accordance with that approval. The manufacturer's instructions and recommendations are to be followed if the material was approved for use with such consideration.

[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.

Q: Is the authority to grant modifications as provided for in Section 104.10 intended to apply only to existing buildings?

A: No. Section 104.10 is included as part of the overall approval authority granted to the code official by Section 104.1 for use in dealing with the application of the IBC. The scope of the IBC includes both new and existing buildings.

Q: Does the board of appeals, as described in Section 113.2 of the code, have the authority to exempt or waive specific code provisions?

A: No. To appeal a decision of the code official, including when he or she does not grant a modification in

accordance with Section 104.10, the owner of the building or structure, or any other person, may make an application to the board of appeals on the following basis:

1. The true intent of the code or the rules legally adopted thereunder have been incorrectly interpreted;
2. The code provisions do not fully apply; or
3. An equally good or better form of construction can be used.

It is not intended that the board of appeals set aside any code provisions without consideration of one of the above conditions.

SECTION 105 PERMITS

[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*.

Q: When specific code requirements that would be applicable to the work to be performed do not exist, does the adoption of the IBC provide the local jurisdiction with a mandate to require a building permit as stated in Section 105.1?

A: Yes. Section 105.1 applies to the work listed, regardless of the presence or lack of specific code requirements that are applicable to the specific project. There are exceptions where a permit is not required, but none of those exceptions relate to lack of specific applicable provisions. For instance, the demolition of a building is within the scope of the building code and is work requiring a permit as stated in Section 105.1, regardless of the fact that the specific provisions of Section 3303 might not apply to the project under review. This demolition work is still work which comes under the laws or ordinances of the adopting authority that has jurisdiction. The work requires review to ensure public health and safety. Items not specifically listed in the code could, indeed, be of concern to the jurisdiction, including such things as the presence of hazardous materials, such as asbestos, or some other health hazard, the sewer system, and the manner in which demolition operations are designed to ensure the safety of the crew.

Q: Is it the intent of Section 105.1 to require a building permit for the installation of new siding on an existing building?

A: Yes. The code regulates weather protection for buildings in Chapter 14 by setting forth requirements for materials and installation methods of exterior weather-resistant elements. Therefore, a permit is required to provide the code official with the opportunity to evaluate the installation of new siding for conformance to the applicable code requirements.

Q: If the owner of a proposed building or structure does not apply for a building permit, is the owner's registered design professional or contractor required, under Section 105.1, to obtain the permit?

A: Yes. A registered design professional or contractor empowered by the owner or lessee to act as the owner's agent would become one of the parties responsible for the permit application. However, in accordance with Section 105.1, a registered design professional or contractor must be specifically authorized by the owner to act as the owner's agent for taking out permits. If the owner does not empower an agent to act in such capacity, the responsibility remains with the owner.

[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.

Q: Can a code official require compliance with the code, even though the approved construction documents contain information that is in conflict with the code, and a building permit has been issued?

A: Yes. Section 105.4 states that the permit shall not be construed to be a permit for, or an approval of, violation of any of the provisions of this code. Section 105.6 states that "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." This points to the necessity for a comprehensive plan examination from the building

INTERNATIONAL BUILDING CODE INTERPRETATIONS

department to minimize the difficulties this situation creates for both the building owner and code official.

Q: Does the code official have the authority to revisit a job after a final inspection has been made if a violation has been found and then take the necessary steps to have it corrected?

A: Yes. Section 105.4 indicates that a building permit is a license to build and shall not be construed as authority to violate, cancel or set aside any provisions of the code. It shall be unlawful to occupy a building contrary to or in violation of the code. Under no circumstances may the obligation to comply with the code be set aside.

[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.

Q: Is there a certain length of time that a building permit is valid after it has been issued?

A: As long as the authorized work is progressing, there was no intention for a limitation on the length of time that a permit is valid. Section 105.5 specifies that a permit becomes invalid if work is not commenced within 180 days after issuance or if the authorized work is suspended or abandoned for a period of 180 days after it begins.

SECTION 107 SUBMITTAL DOCUMENTS

[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.

Q: Is it required under Sections 107.1 and 107.3.4 that plans for all building types, including single-family dwellings, bear the seal and signature of a registered design professional?

A: No. The necessity for a registered design professional's signature and seal on the plans would depend on whether special engineering details or computations were required. As stated in Section 107.1, it would also depend on registration and licensing laws of the state. Because many states employ different regulations, such as minimum building size, building use group, cost, etc., the professional registration laws must be reviewed to determine when a professional's seal and signature are required.

Q: Do the provisions of Section 107.1 require the design of a structural element, such as a floor or roof truss, to be performed only by a registered structural engineer?

A: No. Section 107.1 requires all engineering plans and computations to be signed by a registered design professional in accordance with the applicable state professional registration or licensing laws. The code does not specify the category of professional registration. The requirements of the state registration and licensing laws must be followed because they differ from state to state as to which category of registered design professional can perform various engineering functions. Some states do not have a registration category for structural engineers that is separate from other engineering disciplines.

[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.

Q: Do Sections 104.7 and 107.3.1 require construction documents to be kept on file with the code official even after construction has been completed?

A: No. Section 104.7 indicates only that the code official shall keep records of applications received, permits and certificates issued, fees collected, reports of inspections

and notices and orders issued in the official records for as long as local or state laws require.

[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.

Q: Is it required under Sections 107.1 and 107.3.4 that plans for all building types, including single-family dwellings, bear the seal and signature of a registered design professional?

A: No. The necessity for a registered design professional's signature and seal on the plans would depend on whether special engineering details or computations were required. As stated in Section 107.1, it would also depend on registration and licensing laws of the state. Because many states employ different regulations, such as minimum building size, building use group, cost, etc., the professional registration laws must be reviewed to determine when a professional's seal and signature are required.

[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*.

Q: Section 107.4 requires all work to conform to the approved construction documents, and any approved amendments, for which the permit was issued. Does this mean it is the code official's responsibility to ensure that all construction aspects conform to the approved plans, including those not related to health and safety and, therefore, not regulated by the code?

A: No. Section 105.3.1 stipulates, in part, that a permit is issued when the code official is satisfied that the proposed work conforms to code requirements. Many aspects of construction are not related to public health and safety and thus not regulated by the code, and are outside the domain of the code official. Section 101.3 further stipulates that the intent of the code is to establish the minimum requirements to safeguard the public health, safety and general welfare insofar as they are affected by building construction. Section 104.1 specifically states, "The building official is hereby authorized and directed to enforce the provisions of this code." Beyond the code requirements, the code official has no expressed responsibility.

SECTION 113 BOARD OF APPEALS

[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.

Q: Does the board of appeals, as described in Section 113.2 of the code, have the authority to exempt or waive specific code provisions?

A: No. To appeal a decision of the code official, including when he or she does not grant a modification in accordance with Section 104.10, the owner of the building or structure, or any other person, may make an application to the board of appeals on the following basis:

1. The true intent of the code or the rules legally adopted thereunder have been incorrectly interpreted;
2. The code provisions do not fully apply; or
3. An equally good or better form of construction can be used.

It is not intended that the board of appeals set aside any code provisions without consideration of one of the above conditions.

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CHAPTER 2

DEFINITIONS

SECTION 202 DEFINITIONS

AREA, BUILDING. The area included within surrounding *exterior walls* (or *exterior walls* and *fire walls*) exclusive of vent *shafts* and *courts*. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above.

Q: Is the definition of “Area, building” intended to include the thicknesses of a building’s exterior walls to determine compliance with height and area limitations?

A: No. Building area is intended to include only such area within or between surrounding exterior walls or exterior walls and fire/party walls. However, any area contained within the maximum horizontally projected area due to the story above is to be included. Where the roof or other architectural projections extend past the exterior wall, the area below shall also be considered a building area if the space is classified in one of the occupancies listed in Section 302.1. Height and area limitations are a function of both the occupancy hazard and fire-resistance-rated construction contained within the building rather than in the exterior shell itself.

[A] BUILDING. Any structure used or intended for supporting or sheltering any use or occupancy.

Q: Would a structure consisting of a roof supported by columns and having no exterior walls be considered a building for code application purposes?

A: Yes. Based on the definitions of “Building,” and “Area, building” the above described structure is a building. Section 302.1 requires all buildings to be classified with respect to occupancy in one of the 10 listed groups. If the intended use is not specifically provided for in the code, the building or structure must be classified in the group that the occupancy use most closely resembles. The building must then comply with all code requirements based on that occupancy classification. The definition of “Area, building” specifically addresses how the area of a building without surrounding walls is determined for purposes of height and area limitations.

[BS] DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:

1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground.
2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under service loads.

REFERENCED SECTION:

SECTION 202 DEFINITIONS

[BS] FACTORED LOAD. The product of a *nominal load* and a *load factor*.

[BS] NOMINAL LOADS. The magnitudes of the *loads* specified in Chapter 16 (dead, live, soil, wind, snow, rain, *flood* and earthquake).

Q: Is the term “service loads” as used in the definition of “dangerous” synonymous with the definition of “nominal loads”?

A: Yes. The intent is to address loads that a building is likely to experience and precludes consideration of a “factored load,” which applies to limit state or strength design.

FLOOR AREA, GROSS. The floor area within the inside perimeter of the *exterior walls* of the building under consideration, exclusive of vent *shafts* and *courts*, without deduction for *corridors*, *stairways*, *ramps*, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding *exterior walls* shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include *shafts* with no openings or interior *courts*.

Q: Does “gross floor area” apply to all areas under the roof, including eaves and overhangs?

A: No. The gross floor area is the area within the inside perimeter of the exterior walls exclusive of areas open and unobstructed to the sky.

HABITABLE SPACE. A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

Q: Are prison and jail cells considered “habitable spaces” and therefore required to comply with the code provisions regarding habitable spaces?

A: No. The requirements for habitable spaces are intended to apply to residential occupancies and not to incarceration facilities. Although a prison or jail cell can accommodate occupancies generally found in a habitable space, both the functions and needs differ, and the application of the requirements can be counterproductive to the implied objectives. The construction of such facilities is usually deemed adequate when in compliance with the jurisdiction’s requirements.

Q: When an existing basement or cellar area in a single-family dwelling unit is altered to create a “recreation room” do code requirements for “habitable spaces” apply?

A: Yes. Habitable spaces include areas used for living, sleeping, eating or cooking purposes. Recreation rooms can be characterized as being used for living purposes. If the area is used for sleeping purposes, the emergency escape and rescue requirements of Section 1030 of the *International Building Code*® (IBC®) and Section R310 of the *International Residential Code*® (IRC®) would also apply.

HEIGHT, BUILDING. The vertical distance from *grade plane* to the average height of the highest roof surface.

Q: In determining the height of a building with a gabled roof, is it permissible to use the centroid of the projected triangular shape of the roof as the “average height”?

A: No. Although the centroid of the projected triangular shape would result in a less-restrictive building height, the ordinarily accepted meaning of “average height” would be the distance midway between the extremes. For a gable roof configuration, the building height would be the distance measured from the grade plane to one-half the distance between the eave and ridge of the gable end.

[A] LABEL. An identification applied on a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material and the name and identification of an *approved*

agency, and that indicates that the representative sample of the product or material has been tested and evaluated by an *approved agency* (see Section 1703.5, “Manufacturer’s designation” and “Mark”).

Q: Is the certificate of compliance verifying testing and analyzing of designated seismic system components required to be prepared by an approved agency?

A: Yes. The system/component manufacturer must submit the certificate of compliance, but the testing must be performed by an approved agency. The manufacturer must also apply the required label to the product.

MEANS OF EGRESS. A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a *public way*. A means of egress consists of three separate and distinct parts: the *exit access*, the *exit* and the *exit discharge*.

Q: Are exterior stairways that are located anywhere between a building and the public way considered a part of the means of egress from a building?

A: Yes. The path of travel from the exit discharge doors to a public way is considered exit discharge in accordance with the definitions of “Means of egress” and “Exit discharge.” Any stairway constituting a portion of this path of travel would be considered an exit discharge stairway.

MEZZANINE. An intermediate level or levels between the floor and ceiling of any *story* and in accordance with Section 505.

Q: Assume a building is equipped with storage racks that have a 36-inch-wide walkway located 8 feet above the ground between racks. The racks and shelves are used for storage, and the walkway provides access to the upper shelves. The racks, which are not considered a structural part of the building, are erected by the owner after occupancy. Would this walkway be considered a “mezzanine”?

A: No. Such a walkway is not considered a mezzanine, because the shelves and racks do not represent a structural element of the building and the use of the walkway is limited to servicing the building contents.

[A] OWNER. Any person, agent, operator, entity, firm or corporation having any legal or equitable interest in the property; or recorded in the official records of the state, county or municipality as holding an interest or title to the property; or otherwise having possession or control of the property, including the guardian of the estate of any such person, and the executor or administrator of the estate of such person if ordered to take possession of real property by a court.

Q: Does “owner” include a corporation that has a legally binding land lease or easement agreement with the land owner or the land owner’s predecessor, and who within that legally binding lease or easement area constructs structures that are wholly owned, operated, and the responsibility of that corporation?

A: Yes. The “owner” is the person or legal entity who is responsible for the building and its compliance with code requirements. The code does not address land lease agreements where the “owner” of the building is different than the “owner” of the land. This is a legal contractual agreement between the “building owner,” and the “land owner,” which is outside the scope of the IBC.

A: No. The provisions in Section 1612.1 apply only to new construction to the extent indicated. As defined in Section 202 of the IBC, a structure constructed prior to the effective date established in Section 1612.3 is considered an existing structure. Additions (improvements) to an existing building that does not equal or exceed 50 percent of the market value of the existing structure before the improvement is not a substantial improvement and is not required to comply with the provisions of Section 1612.1 for the effects of flood hazards and flood loads.

[BS] SUBSTANTIAL IMPROVEMENT. Any *repair*, reconstruction, rehabilitation, *alteration*, *addition* or other improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained *substantial damage*, any *repairs* are considered substantial improvement regardless of the actual *repair* work performed. The term does not, however, include either:

1. Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the *building official* and that are the minimum necessary to assure safe living conditions.
2. Any *alteration* of a historic structure provided that the *alteration* will not preclude the structure’s continued designation as a historic structure.

Q: An existing building constructed prior to the effective date established in Section 1612.3 is located within a flood hazard area.

Is an addition (to the existing building) that is not defined as a substantial improvement required to comply with the provisions of Section 1612.1 of the IBC for new construction?



CHAPTER 3

USE AND OCCUPANCY CLASSIFICATION

SECTION 303 ASSEMBLY GROUP A

303.1 Assembly Group A. Assembly Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering of persons for purposes such as civic, social or religious functions; recreation, food or drink consumption or awaiting transportation.

303.1.1 Small buildings and tenant spaces. A building or tenant space used for assembly purposes with an *occupant load* of less than 50 persons shall be classified as a Group B occupancy.

303.1.2 Small assembly spaces. The following rooms and spaces shall not be classified as Assembly occupancies:

1. A room or space used for assembly purposes with an *occupant load* of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.
2. A room or space used for assembly purposes that is less than 750 square feet (70 m²) in area and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

303.1.3 Associated with Group E occupancies. A room or space used for assembly purposes that is associated with a Group E occupancy is not considered a separate occupancy.

303.1.4 Accessory to places of religious worship. Accessory religious educational rooms and religious auditoriums with *occupant loads* of less than 100 per room or space are not considered separate occupancies.

303.2 Assembly Group A-1. Group A-1 occupancy includes assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:

Motion picture theaters
Symphony and concert halls
Television and radio studios admitting an audience
Theaters

303.3 Assembly Group A-2. Group A-2 occupancy includes assembly uses intended for food and/or drink consumption including, but not limited to:

Banquet halls
Casinos (gaming areas)
Nightclubs
Restaurants, cafeterias and similar dining facilities
(including associated commercial kitchens)
Taverns and bars

303.4 Assembly Group A-3. Group A-3 occupancy includes assembly uses intended for worship, recreation or amusement

and other assembly uses not classified elsewhere in Group A including, but not limited to:

Amusement arcades
Art galleries
Bowling alleys
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)
Indoor *swimming pools* (without spectator seating)
Indoor tennis courts (without spectator seating)
Lecture halls
Libraries
Museums
Places of religious worship
Pool and billiard parlors
Waiting areas in transportation terminals

303.5 Assembly Group A-4. Group A-4 occupancy includes assembly uses intended for viewing of indoor sporting events and activities with spectator seating including, but not limited to:

Arenas
Skating rinks
Swimming pools
Tennis courts

303.6 Assembly Group A-5. Group A-5 occupancy includes assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

Amusement park structures
Bleachers
Grandstands
Stadiums

Q: Is a building or facility used for the showing, auctioning and selling of nonhazardous merchandise classified as a Group A Assembly Occupancy?

A: Yes. Any building or facility, or any room or space within a building or facility, used for the gathering of a prescribed number of people for amusement or recreation meets the definition for a Group A occupancy. The use of a room or facility where people assemble for the purpose of conducting an auction is classified as a Group A-3 Assembly Occupancy.

Q: What characteristics of an assembly occupancy serve to make Group A-2 nightclubs an appropriate occupancy classification?

A: The common factor in nightclub life losses has been high occupant densities. However, a large occupant load, by itself, does not provide the sole basis to distinguish between the level of hazard associated with a Group A-2 occupancy and any other assembly or educational occupancy.

The unique hazard level results from the presence of the following attributes of a nightclub-type occupancy:

1. Lighting levels
2. Entertainment type
3. Operation hours
4. Seating characteristics, including table sizes
5. Dance area
6. Service facilities

The low lighting level, loud sound and associated activity, late hours, dense seating with ill-defined aisles and beverage service have all combined to delay fire recognition, confuse the appropriate response, increase egress time and contribute to extensive life losses.

SECTION 307 HIGH-HAZARD GROUP H

[F] 307.1 High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in *control areas* complying with Section 414, based on the maximum allowable quantity limits for *control areas* set forth in Tables 307.1(1) and 307.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section, the requirements of Section 415 and the *International Fire Code*. Hazardous materials stored, or used on top of roofs or canopies, shall be classified as outdoor storage or use and shall comply with the *International Fire Code*.

REFERENCED SECTION:

INTERNATIONAL FIRE CODE CHAPTER 6 BUILDING SERVICES AND SYSTEMS

603.3 Fuel oil storage systems. Fuel oil storage systems shall be installed in accordance with this code. Fuel-oil piping systems shall be installed in accordance with the *International Mechanical Code*.

603.3.1 Fuel oil storage in outside, above-ground tanks.

Where connected to a fuel-oil piping system, the maximum amount of fuel oil storage allowed outside above ground without additional protection shall be 660 gallons (2498 L). The storage of fuel oil above ground in quantities exceeding 660 gallons (2498 L) shall comply with NFPA 31.

603.3.2 Fuel oil storage inside buildings. Fuel oil storage inside buildings shall comply with Sections 603.3.2.1 through 603.3.2.5 or Chapter 57.

603.3.2.1 Quantity limits. One or more fuel oil storage tanks containing Class II or III *combustible liquid* shall be permitted in a building. The aggregate capacity of all such tanks shall not exceed 660 gallons (2498 L).

Exception: The aggregate capacity limit shall be permitted to be increased to 3,000 gallons (11 356 L) of Class II or III liquid for storage in protected above-ground tanks complying with Section 5704.2.9.7, where all of the following conditions are met:

1. The entire 3,000-gallon (11 356 L) quantity shall be stored in protected above-ground tanks.
2. The 3,000-gallon (11 356 L) capacity shall be permitted to be stored in a single tank or multiple smaller tanks.
3. The tanks shall be located in a room protected by an *automatic sprinkler system* complying with Section 903.3.1.1.

603.3.2.2 Restricted use and connection. Tanks installed in accordance with Section 603.3.2 shall be used only to supply fuel oil to fuel-burning or generator equipment installed in accordance with Section 603.3.2.4. Connections between tanks and equipment supplied by such tanks shall be made using closed piping systems.

603.3.2.3 Applicability of maximum allowable quantity and control area requirements. The quantity of *combustible liquid* stored in tanks complying with Section 603.3.2 shall not be counted towards the maximum allowable quantity set forth in Table 5003.1.1(1), and such tanks shall not be required to be located in a *control area*.

603.3.2.4 Installation. Tanks and piping systems shall be installed and separated from other uses in accordance with Section 915 and Chapter 13, both of the *International Mechanical Code*, as applicable.

Exception: Protected above-ground tanks complying with Section 5704.2.9.7 shall not be required to be separated from surrounding areas.

603.3.2.5 Tanks in basements. Tanks in *basements* shall be located not more than two stories below grade plane.

603.3.3 Underground storage of fuel oil. The storage of fuel oil in underground storage tanks shall comply with NFPA 31.

**INTERNATIONAL FIRE CODE
CHAPTER 57
FLAMMABLE AND COMBUSTIBLE LIQUIDS**

5701.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

Items 1 through 3 not shown.

4. Storage and use of fuel oil in tanks and containers connected to oil-burning equipment. Such storage and use shall be in accordance with Section 603. For abandonment of fuel oil tanks, this chapter applies.

Items 5 through 11 not shown.

Q: Where multiple buildings are located on a single lot, one of the detached buildings is dedicated to and contains a diesel-powered fire sprinkler pump provided to service the multiple associated buildings on the lot. The detached building containing the diesel-powered fire sprinkler pump is designed as a single fire area. The diesel-powered fire sprinkler pump is connected by a piping system to the diesel fuel stored within the building containing the fire sprinkler pump. The quantity of diesel fuel stored in the dedicated fire sprinkler pump building does not exceed the quantity of hazardous material allowed in Table 307.1(1) for a fire area. Is the building required to be classified High-Hazard Group H occupancy, and therefore subject to the provisions of the *International Building Code*® (IBC®) and the *International Fire Code*® (IFC®) for the storage of hazardous materials?

A: No. A detached building dedicated to and housing a diesel-engine-powered fire sprinkler pump, and the amount of diesel fuel stored within the building not exceeding the quantity allowed in Table 307.1(1) for a single fire area, would not be classified as a Group H occupancy. Note i with Table 307.1(1) of the IBC and Table 5003.1.1(1) of the IFC applies to the storage of fuel connected to a piping system for fuel-oil-fired equipment within the building, which includes diesel engines. The provisions of the note are further confirmed in Section 5701.2, Item 4, and Section 603.3.2 of the IFC.

**SECTION 308
INSTITUTIONAL GROUP I**

308.5 Institutional Group I-3. Institutional Group I-3 occupancy shall include buildings and structures that are inhabited by more than five persons who are under restraint or security. A Group I-3 facility is occupied by persons who are generally *incapable of self-preservation* due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

Correctional centers
Detention centers
Jails
Prerelease centers
Prisons
Reformatories

Buildings of Group I-3 shall be classified as one of the occupancy conditions specified in Sections 308.5.1 through 308.5.5 (see Section 408.1).

Q: Do Sections 308.5 and 408.2 require a room or building that is not used for sleeping purposes in a penal facility to be classified as a Group I-3 occupancy if some of the occupants are controlled for security reasons?

A: No. The five occupancy conditions listed in Sections 308.5.1 through 308.5.5 are specific to "sleeping areas" "activity spaces" and other "occupied areas within the smoke compartments." However, penal facilities are often a complex that does not necessarily have a Group I-3 classification in each building but still requires high levels of security throughout the structure. Section 408.2 specifically acknowledges that a mixed use condition may exist in penal facilities. The code requires that each portion of a building be classified according to its occupancy as long as the applicable provisions for mixed occupancies are met and the required means of egress is provided.

Section 1010.1.9.5, Exception 1, provides for maintaining inmate confinement at all other times. Buildings in a penal facility where the movements of occupants must be controlled for security reasons and that are primarily residential in usage must be classified as Group I-3. Other buildings within the complex must be classified according to their actual nonresidential uses, such as recreational, business, educational or industrial.

**TABLE 307.1(1)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD^{a, j, m, n, p}
(Remainder of Table and Footnotes not shown for Clarity)**

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE ^b			USE-CLOSED SYSTEMS ^b			USE-OPEN SYSTEMS ^b	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible liquid ^{c, i}	II	H-2 or H-3	NA	120 ^{d, e}	NA	NA	120 ^d	NA	NA	30 ^d
	IIIA	H-2 or H-3		330 ^{d, e}			330 ^d			80 ^d
	IIIB	NA		13,200 ^{e, f}			13,200 ^f			3,300 ^f

i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 603.3.2 of the *International Fire Code*.

Section 1010.1.9.5, Exception 1, only permits locked means of egress doors for security reasons for other buildings within a penal facility. Chapter 3 and Section 408.2 must be used to classify properly nonresidential buildings according to their occupancy versus whether the means of egress doors are locked in accordance with Section 1010.1.9.5, Exception 1.

SECTION 309 MERCANTILE GROUP M

309.1 Mercantile Group M. Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

- Department stores
- Drug stores
- Markets
- Motor fuel-dispensing facilities
- Retail or wholesale stores
- Sales rooms

Q: Is a Group M occupancy the appropriate classification for a building in which auction sales or other highly concentrated occupant load sales activities are conducted?

A: Yes. Section 309.1 describes mercantile buildings as those occupied for display and sales purposes involving stocks of goods, wares or merchandise that is incidental to such purposes, as well as accessible to the public. Although buildings housing auction sales do not sell goods by conventional retail methods, the merchandise is available for viewing prior to sale in areas accessible to the general public. Therefore, these types of buildings must comply with the criteria for a Group M occupancy. The presence of highly concentrated occupant loads does not, in itself, mandate an assembly use classification.

SECTION 312 UTILITY AND MISCELLANEOUS GROUP U

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
- Private garages
- Retaining walls
- Sheds
- Stables
- Tanks
- Towers

Q: Are accessory occupancies classified as a Group U occupancy subject to the same snow load requirements as buildings of other occupancy classifications?

A: Yes. The code does not make a distinction between accessory and principal occupancies relative to structural load requirements for the building. Section 312.1 establishes that occupancies classified as utility and miscellaneous structures shall be constructed, equipped and maintained to conform to the code requirements that are commensurate with the fire and life hazards incidental to their occupancy. The structural design requirements for roofs are the minimum deemed necessary to withstand such elements. To allow construction of a building with an accessory occupancy that could reasonably be expected to collapse under the snow loads known to prevail in a fire area is not in the best interest of public safety.

CHAPTER 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

SECTION 402 COVERED MALL AND OPEN MALL BUILDINGS

402.4.2.1 Tenant separations. Each tenant space shall be separated from other tenant spaces by a *fire partition* complying with Section 708. A tenant separation wall is not required between any tenant space and the *mall*.

Q: A kiosk is located in a covered mall with 10-foot clearance on each side. Is a 1-hour tenant separation required for the kiosk?

A: No. Separation is not required between a tenant space and mall. Therefore, the tenant separation is not required, since the kiosk is surrounded on all four sides by the mall.

Q: Is a large furniture display permitted in a covered mall, provided there is 10-foot clearance on each side?

A: Yes. The furniture display is no different than any of the other Mercantile occupancies located in the covered mall building. The display would be considered the same as a kiosk.

402.4.2.2 Anchor building separation. An *anchor building* shall be separated from the *covered or open mall building* by *fire walls* complying with Section 706.

Exceptions:

1. *Anchor buildings* of not more than three *stories above grade plane* that have an occupancy classification the same as that permitted for tenants of the *mall building* shall be separated by 2-hour fire-resistance-rated *fire barriers* complying with Section 707.
2. The exterior walls of *anchor buildings* separated from an *open mall building* by an *open mall* shall comply with Table 602.

402.4.2.2.1 Openings between anchor building and mall. Except for the separation between Group R-1 *sleeping units* and the *mall*, openings between *anchor buildings* of Type IA, IB, IIA or IIB construction and the *mall* need not be protected.

Q: Is a fire wall required in a covered mall building between a tenant space and an anchor store?

A: Yes. Section 402.4.2.2 specifically requires a fire wall. However, the exception allows a fire-resistive

reduction under certain conditions to a 2-hour fire-resistive fire barrier.

Q: A covered mall building constructed in accordance with Section 402 is attached to a multistory anchor store. Is it the intent of Section 705.8.6 to require exterior opening protectives for the windows in the anchor store that are adjacent to and located above the roof of the covered mall building?

A: No. Although the anchor store is not considered part of the covered mall building, it is the intent of Section 402.4.2.2.1 to permit unprotected openings between the anchor store and the pedestrian area of the mall. It would be inconsistent to allow unprotected openings between the mall area and the anchor store and, at the same time, require exterior opening protectives in windows located in the anchor store above the roof of the covered mall building.

402.6.2 Kiosks. Kiosks and similar structures (temporary or permanent) located within the *mall* of a *covered mall building* or within the perimeter line of an *open mall building* shall meet the following requirements:

1. Combustible kiosks or other structures shall not be located within a *covered or open mall* unless constructed of any of the following materials:
 - 1.1. *Fire-retardant-treated wood* complying with Section 2303.2.
 - 1.2. Foam plastics having a maximum heat release rate not greater than 100 kW (105 Btu/h) when tested in accordance with the exhibit booth protocol in UL 1975 or when tested in accordance with NFPA 289 using the 20 kW ignition source.
 - 1.3. Aluminum composite material (ACM) meeting the requirements of Class A *interior finish* in accordance with Chapter 8 when tested as an assembly in the maximum thickness intended.
2. Kiosks or similar structures located within the *mall* shall be provided with *approved automatic sprinkler system* and detection devices.
3. The horizontal separation between kiosks or groupings thereof and other structures within the *mall* shall be not less than 20 feet (6096 mm).
4. Each kiosk or similar structure or groupings thereof shall have an area not greater than 300 square feet (28 m²).

REFERENCED SECTIONS:

SECTION 202
DEFINITIONS

COVERED MALL BUILDING. A single building enclosing a number of tenants and occupants, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, passenger transportation terminals, offices and other similar uses wherein two or more tenants have a main entrance into one or more malls. *Anchor buildings* shall not be considered as a part of the covered mall building. The term “covered mall building” shall include *open mall buildings* as defined below.

Mall. A roofed or covered common pedestrian area within a *covered mall building* that serves as access for two or more tenants and not to exceed three levels that are open to each other. The term “mall” shall include open malls as defined below.

Open mall. An unroofed common pedestrian way serving a number of tenants not exceeding three levels. Circulation at levels above grade shall be permitted to include open exterior balconies leading to *exits* discharging at grade.

Open mall building. Several structures housing a number of tenants, such as retail stores, drinking and dining establishments, entertainment and amusement facilities, offices, and other similar uses, wherein two or more tenants have a main entrance into one or more open malls. *Anchor buildings* are not considered as a part of the open mall building.

[F] 402.5 Automatic sprinkler system. *Covered and open mall buildings* and buildings connected shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, which shall comply with all of the following:

1. The *automatic sprinkler system* shall be complete and operative throughout occupied space in the *mall building* prior to occupancy of any of the tenant spaces. Unoccupied tenant spaces shall be similarly protected unless provided with *approved* alternative protection.
2. Sprinkler protection for the *mall* of a *covered mall building* shall be independent from that provided for tenant spaces or *anchor buildings*.
3. Sprinkler protection for the tenant spaces of an *open mall building* shall be independent from that provided for *anchor buildings*.
4. Sprinkler protection shall be provided beneath exterior circulation balconies located adjacent to an *open mall*.
5. Where tenant spaces are supplied by the same system, they shall be independently controlled.

Exception: An *automatic sprinkler system* shall not be required in spaces or areas of *open parking garages* separated from the *covered or open mall building* in accordance with Section 402.4.2.3 and constructed in accordance with Section 406.5.

Q: Is the maximum area of 300 square feet for a grouping of kiosks, as indicated in Item 4 of Section 402.6.2, calculated using the aggregate gross area of the individual kiosks within the grouping plus the area of the open space between the individual kiosks within the grouping?

A: No. The maximum area for a grouping of kiosks within the mall is the gross aggregate area of all individual kiosks within the grouping that does not comply with the 20-foot separation requirement in Item 3 of Section 402.6.2. The open areas adjacent to and between individual kiosks are not considered part of the maximum allowable area of a kiosk or a grouping of kiosks.

Q: As indicated in Item 4 of Section 402.6.2, the maximum area for a grouping of kiosks is limited to 300 square feet. Is there a maximum allowable area for any individual kiosk within the grouping provided the aggregate area of all the kiosks within the grouping does not exceed the maximum area of 300 square feet?

A: No. The maximum area for a grouping of kiosks is the gross aggregate area of all individual kiosks within the grouping that does not comply with the 20-foot separation requirement in Item 3 of Section 402.6.2. There is no limitation on the relative size (square feet area) of individual kiosks within the maximum area of 300 square feet.

Q: In accordance with the provisions of Items 3 and 4 of Section 402.6.2, where a single grouping of kiosks contains multiple individual kiosks, is the grouping of kiosks required to be considered a single tenant (owner and/or operation) for all kiosks within the grouping?

A: No. There are no provisions to regulate legal ownership or management of individual spaces within a building, such as a covered mall. The provisions in the *International Building Code*® (IBC®) are to establish the minimum construction requirements for life safety within and appurtenant to the buildings.

Q: In accordance with the provisions of Item 3 of Section 402.6.2, the minimum horizontal separation between kiosks and other structures within the mall shall be 20 feet. Do “other structures” include building elements such as structural columns, building features and furnishings such as noncombustible landscape planters, benches, fountains and noncombustible free-standing signs and displays?

A: No. The intent of the 20-foot minimum horizontal separation between kiosks and other (similar) structures, as required in Item 3 of Section 402.6.2, is to minimize the potential for the spread of fire from kiosks located within the mall to other kiosks or other structures also located within the mall with similar fire expo-

sure hazard. Other structures such as benches, planters and noncombustible elements that do not pose a fire exposure hazard equivalent to that of the kiosks are permitted to be located within the 20-foot horizontal separation distance. The requirements in Item 3 of Section 402.6.2 address the spread of fire and apply to kiosks and other similar structures located within the mall. This separation distance is not specifically related to the minimum width requirements of Section 402.8.1.1. The requirements in Section 402.8.1.1 provide the minimum width for means of egress and would include elements such as landscape planters, benches, fountains and noncombustible freestanding signs and displays.

Q: Are store fixtures that are located in the mall area of a covered mall building with no superstructure around them considered kiosks?

A: Yes. The intent of Section 402.6.2 is to regulate the distribution of combustibles within the mall. The fuel load is traditionally located in a "kiosk." is defined in Webster's Dictionary as, "a small, light structure with one or more open sides." When a substantial fuel load is located within a mall without being enclosed in a kiosk, it is still necessary to limit the maximum area of the fuel load to 300 square feet and the horizontal separation between arrangements of combustibles to 20 feet. While the code does not require that a kiosk be enclosed, it is appropriate to apply the same limitations as specified in the code for kiosks to such an arrangement.

Q: Are temporary displays, such as a "Santa house," a stage for choirs, a model home for a house and flower show and other similar displays, required to comply with Section 402.6.2?

A: Yes. Whether for retail, decorative or other use, it is appropriate for groups of combustible materials to be regulated in a consistent manner and planned for in the design of the mall area.

Q: A kiosk located within an open mall is constructed in accordance with the provisions of Section 402.6.2 does not have a roof, trellis or other covering above it, and is not located beneath an exterior circulation balcony. Is automatic sprinkler protection required to be provided for the kiosk?

A: No. An "open mall" is defined as an unroofed common pedestrian way serving the tenants of an open mall building. Since the open mall is open to the air above (without a roof), there is no requirement to sprinkler the open-air area of the open mall except as specifically indicated in Section 402.5, Item 4 for beneath exterior circulation balconies located adjacent to an open mall.

Consequently, kiosks, regardless of whether they have roofs, trellises or other coverings, are not required to be provided with automatic sprinkler protection. While the construction, location and area of kiosks need to be in compliance with the applicable provisions of Section 402.6.2, the specific sprinkler requirements Section 402.6.2, Item 2 are only applicable to kiosks located within the "mall" of a covered mall building.

402.8.1 Mall width. For the purpose of providing required egress, *malls* are permitted to be considered as *corridors* but need not comply with the requirements of Section 1005.1 of this code where the width of the *mall* is as specified in this section.

Q: Does Section 402.8.1 regulate the construction of fixed benches, trash containers and similar items in the mall area of a covered mall building?

A: No. Benches, trash containers and similar fixtures are considered furnishings and not part of the building or structure. Therefore, construction materials would not be regulated, provided they do not constitute an unusual fire hazard. However, Section 402.8.1 regulates the placement of furniture with regard to possible obstruction to the means of egress.

402.8.1.1 Minimum width. The aggregate clear egress width of the *mall* in either a *covered* or *open mall building* shall be not less than 20 feet (6096 mm). The *mall* width shall be sufficient to accommodate the *occupant load* served. No portion of the minimum required aggregate egress width shall be less than 10 feet (3048 mm) measured to a height of 8 feet (2438 mm) between any projection of a tenant space bordering the *mall* and the nearest kiosk, vending machine, bench, display opening, *food court* or other obstruction to *means of egress* travel.

Q: In accordance with the provisions of Item 3 of Section 402.6.2, the minimum horizontal separation between kiosks and other structures within the mall shall be 20 feet. Do "other structures" include building elements such as structural columns, building features and furnishings such as noncombustible landscape planters, benches, fountains and noncombustible freestanding signs and displays?

A: No. The intent of the 20-foot minimum horizontal separation between kiosks and other (similar) structures, as required in Item 3 of Section 402.6.2, is to minimize the potential for the spread of fire from kiosks located within the mall to other kiosks or other structures also located within the mall with similar fire exposure hazard. Other structures such as benches,

planters and noncombustible elements that do not pose a fire exposure hazard equivalent to that of the kiosks are permitted to be located within the 20-foot horizontal separation distance. The requirements in Item 3 of Section 402.6.2 address the spread of fire and apply to kiosks and other similar structures located within the mall. This separation distance is not specifically related to the minimum width requirements of Section 402.8.1.1. The requirements in Section 402.8.1.1 provide the minimum width for means of egress and would include elements such as landscape planters, benches, fountains and noncombustible free-standing signs and displays.

402.8.7 Service areas fronting on exit passageways.

Mechanical rooms, electrical rooms, building service areas and service elevators are permitted to open directly into *exit passageways*, provided the *exit passageway* is separated from such rooms with not less than 1-hour *fire barriers* constructed in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. The *fire protection rating* of openings in the *fire barriers* shall be not less than 1 hour.

Q: Can electrical, plumbing and mechanical equipment such as wiring, conduit, water supply or DWV piping, and supply and exhaust air ductwork penetrate and be located within the exit passageways of covered mall buildings, if all penetrations are protected as required by Chapter 7 and the required egress width within the exit passageway is maintained?

A: No. Exit passageways are generally treated similarly to exit stairways (shafts) in that only openings from normally occupied spaces are permitted as specified in Section 713.8.1. This would prohibit doors or utility penetrations to such mechanical/electrical rooms in an exit stairway enclosure.

The specific provisions of Section 402.8.7 were simply provided to allow access to rooms such as mechanical rooms and electrical rooms from the exit passageway. It was not intended for mechanical equipment such as wiring, conduit, water supply or other building utilities to be located within the exit passageway itself. It should be noted that such wiring, conduit, water supply and similar utilities could be located next to or above the exit passageway but would be required to be separated by a 1-hour fire barrier or horizontal assembly as any other portion of the building would be required. The intent is that they are not within the same space.

SECTION 403 HIGH-RISE BUILDINGS

403.1 Applicability. *High-rise buildings* shall comply with Sections 403.2 through 403.6.

Exception: The provisions of Sections 403.2 through 403.6 shall not apply to the following buildings and structures:

1. Airport traffic control towers in accordance with Section 412.3.
2. *Open parking garages* in accordance with Section 406.5.
3. The portion of a building containing a Group A-5 occupancy in accordance with Section 303.6.
4. Special industrial occupancies in accordance with Section 503.1.1.
5. Buildings with:
 - 5.1. A Group H-1 occupancy;
 - 5.2. A Group H-2 occupancy in accordance with Section 415.8, 415.9.2, 415.9.3 or 426.1; or,
 - 5.3. A Group H-3 occupancy in accordance with Section 415.8.

Q: When a building consists of seven stories, each 12 feet in height, for a total building height of 84 feet, each story being habitable or occupiable, and grade is level at all elevations, must this building conform to the high-rise building provisions of Section 403?

A: No. The applicability criteria for the high-rise building provisions of Section 403 are based on buildings having occupied floors located more than 75 feet above the lowest level of vehicle access for fire departments in accordance with Section 403.1. The topmost occupiable floor level of the building described is 72 feet above the level of vehicle access and, therefore, the building is not subject to high-rise provisions.

Q: What or where is the lowest reference point used to determine the level that is 75 feet above the lowest level of vehicle access for fire departments?

A: The intent of Section 403.1 is to base the application of high-rise building provisions on the lowest level at which a fire department vehicle could be staged at the exterior for carrying out fire-fighting operations. It is not intended to be measured as 75 feet from the highest point of an aerial ladder, but rather taken from the lowest ground level on which the vehicle would be located.

Q: Does Exception 5 prohibit Group H-3 occupancies from being located within high-rise buildings?

A: No. Similar to the occupancies addressed in the other exceptions, Group H-1, H-2 and H-3 occupancies typically require special design considerations to build such structures. While these occupancies may potentially require significant heights depending upon the nature of the use involving hazardous materials associated with these occupancies, they are not typical of the type of occupancies the high-rise provisions were intended to regulate. Exception 5 is not intended to prohibit a properly separated and protected Group H-3 occupancy from being located within a high-rise building.

403.2.1 Reduction in fire-resistance rating. The *fire-resistance-rating* reductions listed in Sections 403.2.1.1 and 403.2.1.2 shall be allowed in buildings that have sprinkler control valves equipped with supervisory initiating devices and water-flow initiating devices for each floor.

Q: If sprinklers are omitted from bathrooms and closets in a high-rise building with an occupancy in Group R-1, do the automatic sprinkler system alternatives of Section 403.3 still apply?

A: Yes. Whether or not sprinkler alternatives are utilized by the designer and owner, Sections 403.3 and 403.2.1 require the system to be designed in accordance with Sections 8.15.8.1.1 and 8.15.8.2 (NFPA 13), which permit the omission of sprinklers from guestroom bathrooms not exceeding 55 square feet in area and from guestroom closets not exceeding 24 square feet in area.

SECTION 404 ATRIUMS

404.1 General. In other than Group H occupancies, and where permitted by Section 712.1.7, the provisions of Sections 404.1 through 404.10 shall apply to buildings or structures containing vertical openings defined as “Atriums.”

Q: Section 8.15.4 of NFPA 13 specifies requirements for draftstops and sprinklers around unenclosed floor openings. Is this section applicable to an atrium or other unenclosed floor openings for conformance to the requirements of Sections 404.1 and 712.1.7?

A: No. Section 102.4 specifies that when differences occur between specific code provisions and a referenced standard, code provisions shall apply. Sections 404 and 712.1.7 clearly establish mandatory requirements for the protection of either atriums or other unenclosed floor openings. Therefore, specific code

provisions take precedence over Section 8.15.4 of NFPA 13.

404.6 Enclosure of atriums. *Atrium* spaces shall be separated from adjacent spaces by a 1-hour *fire barrier* constructed in accordance with Section 707 or a *horizontal assembly* constructed in accordance with Section 711, or both.

Exceptions:

1. A *fire barrier* is not required where a glass wall forming a smoke partition is provided. The glass wall shall comply with all of the following:
 - 1.1. Automatic sprinklers are provided along both sides of the separation wall and doors, or on the room side only if there is not a walkway on the *atrium* side. The sprinklers shall be located between 4 inches and 12 inches (102 mm and 305 mm) away from the glass and at intervals along the glass not greater than 6 feet (1829 mm). The sprinkler system shall be designed so that the entire surface of the glass is wet upon activation of the sprinkler system without obstruction;
 - 1.2. The glass wall shall be installed in a gasketed frame in a manner that the framing system deflects without breaking (loading) the glass before the sprinkler system operates; and
 - 1.3. Where glass doors are provided in the glass wall, they shall be either *self-closing* or *automatic-closing*.
2. A *fire barrier* is not required where a glass-block wall assembly complying with Section 2110 and having a $\frac{3}{4}$ -hour *fire protection rating* is provided.
3. A *fire barrier* is not required between the *atrium* and the adjoining spaces of any three floors of the *atrium* provided such spaces are accounted for in the design of the smoke control system.

Q: Are spaces adjacent to a two-story atrium permitted to not be separated from the atrium, in accordance with Exception 3 to Section 404.6 of the IBC, when smoke control is not provided in accordance with Section 404.5?

A: Yes. Exception 3 to Section 404.6 permits a maximum of three stories of an atrium to be open to adjacent spaces without separation from the rest of the building. The reference to the design of the smoke control system in Exception 3 is to require the designer to address adjacent spaces where a smoke control system is required in accordance with the provisions of Section 404.5. Because the exception to Section 404.5 exempts smoke control for a two-story atrium, Exception 3 can be applied without requiring smoke control.

Q: Is it the intent of Exception 1 to Section 404.6 to require a deluge sprinkler system to protect glass walls separating an atrium from adjacent spaces?

A: No. The specially designed sprinkler system located at the glass wall is intended to protect the glazing material from breakage as a result of thermal shock. It is not necessary to activate all of the sprinklers along the glazing material to provide such protection so long as the entire surface of the glazed panel is wetted by the sprinkler system.

Q: What design criteria are required for such sprinklers?

A: NFPA 13 provides two design options: pipe schedule sizing and hydraulically designed systems. Hydraulically designed systems should be evaluated to determine if the most hydraulically remote area occurs adjacent to the glazing as a result of the closer spacing of sprinklers at this wall. In accordance with Section 11.2.2.3 of NFPA 13, the use of pipe schedule designed systems is limited to new installations of 5,000 square feet or less or for additions or modifications to existing pipe schedule systems.

SECTION 407 GROUP I-2

407.3.1 Corridor doors. *Corridor* doors, other than those in a wall required to be rated by Section 509.4 or for the enclosure of a vertical opening or an *exit*, shall not have a required *fire protection rating* and shall not be required to be equipped with *self-closing* or automatic-closing devices, but shall provide an effective barrier to limit the transfer of smoke and shall be equipped with positive latching. Roller latches are not permitted. Other doors shall conform to Section 716.5.

REFERENCED SECTIONS:

407.3 Corridor wall construction. *Corridor* walls shall be constructed as smoke partitions in accordance with Section 710.

710.5.2.2 Smoke and draft control doors. Where required elsewhere in the code, doors in smoke partitions shall meet the requirements for a smoke and draft control door assembly tested in accordance with UL 1784. The air leakage rate of the door assembly shall not exceed 3.0 cubic feet per minute per square foot [$0.015424 \text{ m}^3/(\text{s} \cdot \text{m}^2)$] of door opening at 0.10 inch (24.9 Pa) of water for both the ambient temperature test and the elevated temperature exposure test. Installation of smoke doors shall be in accordance with NFPA 105.

Q: Does Section 407.3.1 require the nonrated corridor doors that are to “provide an effective barrier to limit the

spread of smoke” to be designed as “smoke and draft control door(s)” in compliance with Section 710.5.2.2?

A: No. The door assemblies need only be capable of limiting the passage of smoke. Since Section 407.3.1 contains a specific set of requirements for the corridor doors in Group I-2 occupancies, the provisions of this section must be followed versus the provisions of Section 710.5.2.2. Section 407.3.1 does not require a seal material around the door leaf to seal the joint to limit the passage of smoke. The doors must have some measure that provides an effective limit to the passage of smoke, including any opening through the door or around the door. The door must have positive latching. Roller latches are not considered to provide positive latching.

SECTION 408 GROUP I-3

408.2 Other occupancies. Buildings or portions of buildings in Group I-3 occupancies where security operations necessitate the locking of required *means of egress* shall be permitted to be classified as a different occupancy. Occupancies classified as other than Group I-3 shall meet the applicable requirements of this code for that occupancy where provisions are made for the release of occupants at all times.

Means of egress from detention and correctional occupancies that traverse other use areas shall, as a minimum, conform to requirements for detention and correctional occupancies.

Exception: It is permissible to exit through a *horizontal exit* into other contiguous occupancies that do not conform to detention and correctional occupancy egress provisions but that do comply with requirements set forth in the appropriate occupancy, as long as the occupancy is not a Group H use.

Q: Do Sections 308.5 and 408.2 require a room or building that is not used for sleeping purposes in a penal facility to be classified as a Group I-3 occupancy if some of the occupants are controlled for security reasons?

A: No. The five occupancy conditions listed in Sections 308.5.1 through 308.5.5 are specific to “sleeping areas,” “activity spaces” and other “occupied areas within the smoke compartments.” However, penal facilities are often a complex that does not necessarily have a Group I-3 classification in each building but still requires high levels of security throughout the structure. Section 408.2 specifically acknowledges that a mixed use condition may exist in penal facilities. The code requires that each portion of a building be classified according to its occupancy as long as the applicable provisions for

mixed occupancies are met and the required means of egress is provided.

Section 1010.1.9.5, Exception 1, provides for maintaining inmate confinement at all other times. Buildings in a penal facility, where the movements of occupants must be controlled for security reasons and that are primarily residential in usage, must be classified as Group I-3. Other buildings within the complex must be classified according to their actual nonresidential uses, such as recreational, business, educational or industrial. Section 1010.1.9.5, Exception 1, only permits locked means of egress doors for security reasons for other buildings within a penal facility. Chapter 3 and Section 408.2 must be used to classify properly nonresidential buildings according to their occupancy versus whether the means of egress doors are locked in accordance with Section 1010.1.9.5, Exception 1.

SECTION 414 HAZARDOUS MATERIALS

[F] 414.2.2 Percentage of maximum allowable quantities.

The percentage of maximum allowable quantities of hazardous materials per *control area* permitted at each floor level within a building shall be in accordance with Table 414.2.2.

Q: Given a nonsprinklered, multistory building of Type IIB construction. The building is used for the storage of hazardous materials that do not exceed the maximum allowable quantity per control area in accordance with [F] Table 307.1(1) and [F] Table 307.1(2) of the IBC. The building contains no fire walls, interior fire barriers, or fire-resistance-rated horizontal assemblies. The entire building is defined as a single control area.

Are the provisions of Section [F] 414.2.2 of the IBC, which limit the percentage of the maximum allowable

quantity of hazardous materials for any floor, applicable to a multistory building consisting of a single control area?

A: Yes. When the quantity of hazardous material stored in the building is equal to or less than the maximum allowable quantity per control area in [F] Table 307.1(1) and [F] Table 307.1(2), the entire building would be considered the control area. When the entire building is the control area, the maximum allowable quantity of material may be located anywhere in the building subject to the per-floor limitations of [F] Table 414.2.2.

Q: Given a nonsprinklered multistory building of Type IIB construction. The building is used for the storage of hazardous materials that exceed the maximum allowable quantity permitted for a single control area in accordance with [F] Table 307.1(1) and [F] Table 307.1(2) of the IBC. An interior fire barrier is constructed that spans from the foundation to the roof for the entire height of the building. There are no fire-resistance-rated horizontal assemblies provided between floors. Therefore, the entire building is defined as having two independent multistory control areas.

Are the provisions of Section [F] 414.2.2 of the IBC, which limit the percentage of the maximum allowable quantity of hazardous materials for any floor, applicable to a multistory building consisting of multiple control areas?

A: Yes. When the quantity of hazardous material being stored in each control area is equal to or less than the maximum allowable quantity per control area in [F] Table 307.1(1) and [F] Table 307.1(2), the maximum allowable quantity of material per control area may be located anywhere within a multistory control area, subject to the per-floor limitations of [F] Table 414.2.2.

[F] TABLE 414.2.2
DESIGN AND NUMBER OF CONTROL AREAS

FLOOR LEVEL		PERCENTAGE OF THE MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA ^a	NUMBER OF CONTROL AREAS PER FLOOR	FIRE-RESISTANCE RATING FOR FIRE BARRIERS IN HOURS ^b
Above grade plane	Higher than 9	5	1	2
	7-9	5	2	2
	6	12.5	2	2
	5	12.5	2	2
	4	12.5	2	2
	3	50	2	1
	2	75	3	1
	1	100	4	1
Below grade plane	1	75	3	1
	2	50	2	1
	Lower than 2	Not Allowed	Not Allowed	Not Allowed

a. Percentages shall be of the maximum allowable quantity per control area shown in Tables 307.1(1) and 307.1(2), with all increases allowed in the notes to those tables.

b. Separation shall include fire barriers and horizontal assemblies as necessary to provide separation from other portions of the building.

[F] 414.2.4 Fire-resistance-rating requirements. The required *fire-resistance rating* for *fire barriers* shall be in accordance with Table 414.2.2. The floor assembly of the *control area* and the construction supporting the floor of the *control area* shall have a *fire-resistance rating* of not less than 2 hours.

Exception: The floor assembly of the *control area* and the construction supporting the floor of the *control area* are allowed to be 1-hour fire-resistance rated in buildings of Types IIA, IIIA and VA construction, provided that both of the following conditions exist:

1. The building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1; and
2. The building is three or fewer *stories above grade plane*.

Q: A control area is located within a building that is permitted to be constructed using building elements with a required fire-resistance rating equal to or less than that required by Table 414.2.2. Is the minimum 2-hour fire-resistance-rated construction required in Section 414.2.2 required to include the entire floor structure of the floor on which the control area is located as well as all construction supporting the floor where the control area is located?

A: No. Only the building elements within the load path of the portion of the floor where the control area is located are subject to the provisions of Section 414.2.2. It is not necessary to provide 2-hour fire-resistance-rated construction for the entire floor and supporting structure where the control area is located. The purpose for allowing 2-hour fire-resistance-rated construction to be isolated to the specific building elements providing structural support for a control area permits control areas to be located in buildings with unprotected types of construction, such as IIB, IIIB and VB, without requiring a change of construction type for the entire building.

[F] 414.5.1 Explosion control. Explosion control shall be provided in accordance with the *International Fire Code* as required by Table 414.5.1 where quantities of hazardous materials specified in that table exceed the maximum allowable quantities in Table 307.1(1) or where a structure, room or space is occupied for purposes involving explosion hazards as required by Section 415 or the *International Fire Code*.

Q: Is it the intent of Section 414.5.1 to require the installation of explosion venting and explosion suppression in occupancies containing hazardous materials where flammable liquids are transferred during a container filling operation?

A: No. Section 414.5.1 requires explosion venting and explosion suppression for structures or spaces occupied for purposes "involving explosion hazards." When flammable liquid vapors are present in concentration over one-fourth of their lower flammable limit, an explosion hazard exists. NFPA 30, the referenced standard for flammable and combustible liquids, requires ventilation systems and equipment to limit flammable vapor-air mixtures to prevent a possible explosion hazard. Thus, the presence of an explosion hazard would not exist in a code-complying installation, and the requirements of Section 414.5.1 would not apply.

SECTION [F] 426 COMBUSTIBLE DUSTS, GRAIN PROCESSING AND STORAGE

[F] 426.1.2 Grinding rooms. Every room or space occupied for grinding or other operations that produce combustible dusts in such a manner that the room or space is classified as a Group H-2 occupancy shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 711, or both. The fire-resistance rating of the enclosure shall be not less than 2 hours where the area is not more than 3,000 square feet (279 m²), and not less than 4 hours where the area is greater than 3,000 square feet (279 m²).

Q: Section 426.1.2 requires all grinding rooms exceeding 3,000 square feet in area to have enclosing floors and walls of not less than a 4-hour fire-resistance rating. Are the exterior walls of a grinding room required to have a fire-resistance rating of 4 hours?

A: No. The intent of requiring 4-hour fire-resistance-rated floors and walls is to provide separation of the grinding room from other interior spaces of the building. The exterior walls must comply with the requirements of Table 602 and Section 705.8 for the type of construction, load-bearing capability, occupancy classification and fire separation distance.

CHAPTER 5

GENERAL BUILDING HEIGHTS AND AREAS

SECTION 503 GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

503.1.2 Buildings on same lot. Two or more buildings on the same lot shall be regulated as separate buildings or shall be considered as portions of one building where the *building height*, number of stories of each building and the aggregate *building area* of the buildings are within the limitations specified in Sections 504 and 506. The provisions of this code applicable to the aggregate building shall be applicable to each building.

Q: When two buildings on the same lot are considered portions of one aggregate building in accordance with Section 503.1.2, are the opposing enclosure walls considered exterior walls for fire-resistance-rating purposes?

A: No. When evaluated as a single aggregate building, two enclosure walls facing each other are considered equivalent to a single interior wall, and the required fire-resistance rating should be based on the appropriate requirements of Table 601 regarding interior walls. However, such walls still must comply with the exterior envelope requirements of Chapter 14, providing each building with the required weather protection.

SECTION 505 MEZZANINES AND EQUIPMENT PLATFORMS

505.2.1 Area limitation. The aggregate area of a *mezzanine* or *mezzanines* within a room shall be not greater than one-third of the floor area of that room or space in which they are located. The enclosed portion of a room shall not be included in a determination of the floor area of the room in which the *mezzanine* is located. In determining the allowable *mezzanine* area, the area of the *mezzanine* shall not be included in the floor area of the room.

Where a room contains both a *mezzanine* and an *equipment platform*, the aggregate area of the two raised floor levels shall be not greater than two-thirds of the floor area of that room or space in which they are located.

Exceptions:

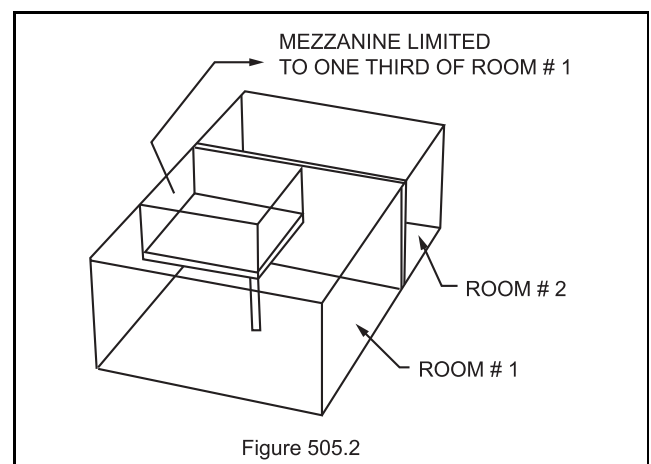
1. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction for special industrial occupancies in accordance with Section 503.1.1 shall be not greater than two-thirds of the floor area of the room.

2. The aggregate area of *mezzanines* in buildings and structures of Type I or II construction shall be not greater than one-half of the floor area of the room in buildings and structures equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1 and an *approved emergency voice/alarm communication system* in accordance with Section 907.5.2.2.

505.2.3 Openness. A *mezzanine* shall be open and unobstructed to the room in which such *mezzanine* is located except for walls not more than 42 inches (1067 mm) in height, columns and posts.

Exceptions:

1. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the *occupant load* of the aggregate area of the enclosed space is not greater than 10.
2. A *mezzanine* having two or more exits or access to exits is not required to be open to the room in which the *mezzanine* is located.
3. *Mezzanines* or portions thereof are not required to be open to the room in which the *mezzanines* are located, provided that the aggregate floor area of the enclosed space is not greater than 10 percent of the *mezzanine* area.
4. In industrial facilities, *mezzanines* used for control equipment are permitted to be glazed on all sides.
5. In occupancies other than Groups H and I, that are no more than two *stories* above *grade plane* and equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1, a *mezzanine* having two or more *means of egress* shall not be required to be open to the room in which the *mezzanine* is located.



Q: A wall that encloses a mezzanine in accordance with Exception 2 of Section 505.2.3 completely subdivides the building as shown in Figure 505.2. Insofar as Exception 2 does not require the mezzanine to be completely open to the room in which it is located, can the allowable size of the mezzanine be determined based on the aggregate floor area of the building?

A: No. In this situation, the building is subdivided into two distinct rooms. Section 505.2.1 limits the allowable size of the mezzanine to one-third of the area of the one room in which it is located. The sole intent of Exception 2 of Section 505.2.3 is to define the conditions by which a mezzanine can be completely enclosed. This exception is not intended to allow a larger mezzanine than permitted by Section 505.2.1.

Also note that if the space below the mezzanine is also enclosed, that area must be excluded from the room area used to determine the mezzanine's maximum size (see Section 505.2.1).

Q: Is the maximum allowable area of a mezzanine one-third of the floor area of the open space of the story below the mezzanine?

A: Yes. If you have a one-story building of 5,000 square feet and an open area inside this building of 3,000 square feet, the maximum allowable area of the mezzanine would be one-third of 3,000 square feet, which is 1,000 square feet. The aggregate area of all mezzanines in this 3,000 square feet cannot exceed 1,000 square feet without the mezzanine constituting the second story.

SECTION 507 UNLIMITED AREA BUILDINGS

507.1 General. The area of buildings of the occupancies and configurations specified in Sections 507.1 through 507.12 shall not be limited. Basements not more than one story below grade plane shall be permitted.

507.1.1 Accessory occupancies. Accessory occupancies shall be permitted in unlimited area buildings in accordance with the provisions of Section 508.2, otherwise the requirements of Sections 507.3 through 507.13 shall be applied, where applicable.

507.2 Measurement of open spaces. Where Sections 507.3 through 507.13 require buildings to be surrounded and adjoined by *public ways* and *yards*, those open spaces shall be determined as follows:

1. Yards shall be measured from the building perimeter in all directions to the closest interior *lot lines* or to the

exterior face of an opposing building located on the same *lot*, as applicable.

- 2 Where the building fronts on a *public way*, the entire width of the *public way* shall be used.

507.2.1 Reduced open space. The *public ways* or *yards* of 60 feet (18 288 mm) in width required in Sections 507.3, 507.4, 507.5, 507.6 and 507.12 shall be permitted to be reduced to not less than 40 feet (12 192 mm) in width provided all of the following requirements are met:

1. The reduced width shall not be allowed for more than 75 percent of the perimeter of the building.
2. The *exterior walls* facing the reduced width shall have a *fire-resistance rating* of not less than 3 hours.
3. Openings in the *exterior walls* facing the reduced width shall have opening protectives with a *fire protection rating* of not less than 3 hours.

This interpretation pertains to all subsections addressed in Section 507, Unlimited Area Buildings. Text of the listed sections is presented below:

507.3 Nonsprinklered, one-story buildings.

507.4 Sprinklered, one-story buildings.

507.5 Two-story buildings.

507.6 Group A-3 buildings of Type II construction.

507.7 Group A-3 buildings of Type III and IV construction.

507.8 Group H-2, H-3 and H-4 occupancies.

507.9 Unlimited mixed occupancy buildings with Group H-5.

507.11 Group E buildings.

507.12 Motion picture theaters.

Q: Are structures such as tanks, cooling towers, generators and trash dumpsters permitted within the 60-foot public way or yard that is required to surround and adjoin an unlimited area building?

A: Yes. An unlimited area building must be surrounded by a fire separation distance of not less than 60 feet. The fire separation distance, as defined in Section 702.1, is the distance measured from the face of the unlimited area building to an interior lot line, the centerline of an adjacent street, alley or public way, or to an imaginary line between another building on the same property. No other building is permitted within the 60-foot fire separation distance. The purpose of the fire separation distance is to establish a minimum separation between buildings that will serve to reduce the possibility that a fire in one building can spread to another building. It is not the intent to prohibit elements other than buildings from being located within the fire separation distance.

Q: Is an automotive parking lot permitted within the 60-foot public way or yard that is required to surround and adjoin an unlimited area building?

A: Yes. A public way can contain a street or alley that is specifically dedicated for vehicular circulation and parking. Vehicular circulation and parking are permitted within the portion of the 60-foot fire separation distance that extends beyond the building property and into a public way. Likewise, vehicular circulation and parking are permitted within the portion of the 60-foot fire separation distance that is located within the building property.

Q: Is the 60-foot yard that is required to surround an unlimited area building required to be publicly owned?

A: No. The 60-foot fire separation (open space) must be located on the same property as the building or on property dedicated for public use. The property on which the building is located may be privately owned or publicly owned.

507.3 Nonsprinklered, one-story buildings. The area of a Group F-2 or S-2 building no more than one story in height shall not be limited where the building is surrounded and adjoined by *public ways* or *yards* not less than 60 feet (18 288 mm) in width.

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.

Exceptions:

1. Buildings and structures of Type I or II construction for rack storage facilities that do not have access by the public shall not be limited in height, provided that such buildings conform to the requirements of Sections 507.4 and 903.3.1.1 and Chapter 32 of the *International Fire Code*.
2. The *automatic sprinkler system* shall not be required in areas occupied for indoor participant sports, such as tennis, skating, swimming and equestrian activities in occupancies in Group A-4, provided that both of the following criteria are met:
 - 2.1. *Exit* doors directly to the outside are provided for occupants of the participant sports areas.
 - 2.2. The building is equipped with a *fire alarm system* with *manual fire alarm boxes* installed in accordance with Section 907.

507.4.1 Mixed occupancy buildings with Groups A-1 and A-2. Group A-1 and A-2 occupancies of other than Type V construction shall be permitted within mixed occupancy buildings of unlimited area complying with Section 507.4, provided all of the following criteria are met:

1. Group A-1 and A-2 occupancies are separated from other occupancies as required for separated occupancies in Section 508.4.4 with no reduction allowed in the *fire-resistance rating* of the separation based upon the installation of an *automatic sprinkler system*.
2. Each area of the portions of the building used for Group A-1 or A-2 occupancies shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1.
3. *Exit* doors from Group A-1 and A-2 occupancies shall discharge directly to the exterior of the building.

REFERENCED SECTIONS:

508.2 Accessory occupancies. Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Sections 508.2.1 through 508.2.4.

508.2.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

508.2.2 Allowable building height. The allowable height and number of stories of the building containing accessory occupancies shall be in accordance with Section 504 for the main occupancy of the building.

508.2.3 Allowable building area. The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for nonsprinklered buildings in Table 506.2 for each such accessory occupancy.

508.2.4 Separation of occupancies. No separation is required between accessory occupancies and the main occupancy.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

Q: Is it the intent of Sections 507.3 and 507.4 to apply to one-story buildings without basements or cellars?

A: Yes. Sections 507.3 and 507.4 provide an exception to the height and area provisions of Table 503 relative to one-story buildings. The primary consideration is that the complete perimeter would be open and available for fire department access and operations.

Q: An unlimited area Group M building has an attached outdoor sales area. Customer services are provided in the outdoor sales area that are consistent with those provided inside the building. The sales area is not roofed, but is completely enclosed within a fence. The enclosed outdoor sales area is open to the public and is used for the storage and display of merchandise, both combustible and noncombustible.

Is the enclosed outdoor sales area permitted within the 60-foot open yard required by Section 507.4 for an unlimited area building?

A: No. The outdoor sales area, with or without the enclosing fence, functions as a Group M mercantile occupancy. The area is contiguous to and is an extension of the unlimited area Group M mercantile occupancy. The area is classified as a Group M mercantile occupancy because the use includes the display and sale of merchandise, and involves the stocks of goods, wares or merchandise incidental to the functions of the primary occupancy, and the public has access to the outdoor sales area. The outdoor sales area, as a Group M occupancy, must comply with all applicable provisions of the code.

An open yard is not normally occupied. The requirement for a public way or yard 60 feet in width is intended to maintain the space adjacent to the exterior walls of the building without any buildings, structures or outside storage.

The purpose of the 60-foot open yard or public way is to provide sufficient separation between the unlimited area building and adjacent properties to reduce the risk of fire to adjacent properties inherent with the increased fuel loads associated with unlimited area buildings.

Q: Does Section 507.4.1 permit an accessory Group A-2 occupancy complying with Section 508.2 within an unlimited area Group M building?

A: Yes. An accessory Group A-2 occupancy is permitted to be located within an unlimited area Group M building, without the fire-rated separation required in Section 507.4.1 between the Group A-2 occupancy and the Group M occupancy, subject to the limitations of Section 508.2.

507.5 Two-story buildings. The area of a Group B, F, M or S building no more than two stories above grade plane shall not be limited where the building is equipped throughout with

an *automatic sprinkler system* 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.

Q: Section 507.5 permits a two-story unlimited area building to contain occupancy Groups B, F, M or S. Are each of the occupancy Group B, F, M or S located within the unlimited area building permitted to be unlimited in area?

A: Yes. The provisions in Section 507.5 permit all the listed occupancy groups, or any combination of the listed occupancy groups, to be located within the unlimited area building. There are no area limitations for any of the occupancy groups.

507.8 Group H-2, H-3 and H-4 occupancies. Group H-2, H-3 and H-4 occupancies shall be permitted in unlimited area buildings containing Group F or S occupancies in accordance with Sections 507.4 and 507.5 and the provisions of Sections 507.8.1 through 507.8.4.

507.8.1 Allowable area. The aggregate floor area of Group H occupancies located in an unlimited area building shall not exceed 10 percent of the area of the building or the area limitations for the Group H occupancies as specified in Section 506 based on the perimeter of each Group H floor area that fronts on a *public way* or open space.

Q: The provisions of Section 507.8 of the *International Building Code*® (IBC®) permit limited areas of high-hazard Use Groups H-2, H-3 and H-4 to be located in unlimited area buildings in Group F and/or S.

Can high-hazard Groups H-2, H-3 and/or H-4 be located in a Group F or S unlimited area building that also contains a Group B?

A: Yes. A Group B fire area is permitted, provided the Group H-2, H-3 or H-4 is not located within a Group B fire area. While a Group B (office) is permitted and commonly found within a Group F and/or S occupancy, the Group H fire area must be located within the Group F and/or Group S fire area of the unlimited area building.

SECTION 508 MIXED USE AND OCCUPANCY

508.2 Accessory occupancies. Accessory occupancies are those occupancies that are ancillary to the main occupancy of the building or portion thereof. Accessory occupancies shall comply with the provisions of Sections 508.2.1 through 508.2.4.

508.2.1 Occupancy classification. Accessory occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space.

508.2.2 Allowable building height. The allowable height and number of stories of the building containing accessory occupancies shall be in accordance with Section 504 for the main occupancy of the building.

508.2.3 Allowable building area. The allowable area of the building shall be based on the applicable provisions of Section 506 for the main occupancy of the building. Aggregate accessory occupancies shall not occupy more than 10 percent of the floor area of the story in which they are located and shall not exceed the tabular values for nonsprinklered buildings in Table 506.2 for each such accessory occupancy.

508.2.4 Separation of occupancies. No separation is required between accessory occupancies and the main occupancy.

Exceptions:

1. Group H-2, H-3, H-4 and H-5 occupancies shall be separated from all other occupancies in accordance with Section 508.4.
2. Group I-1, R-1, R-2 and R-3 *dwelling units* and *sleeping units* shall be separated from other *dwelling* or *sleeping units* and from accessory occupancies contiguous to them in accordance with the requirements of Section 420.

REFERENCED SECTIONS:

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.

Exceptions:

1. Buildings and structures of Type I or II construction for rack storage facilities that do not have access by the public shall not be limited in height, provided that such buildings conform to the requirements of Sections 507.4 and 903.3.1.1 and Chapter 32 of the *International Fire Code*.
2. The *automatic sprinkler system* shall not be required in areas occupied for indoor participant sports, such as tennis, skating, swimming and equestrian activities in occupancies in Group A-4, provided that both of the following criteria are met:

2.1. *Exit* doors directly to the outside are provided for occupants of the participant sports areas.

2.2. The building is equipped with a *fire alarm system* with *manual fire alarm boxes* installed in accordance with Section 907.

507.4.1 Mixed occupancy buildings with Groups A-1 and A-2. Group A-1 and A-2 occupancies of other than Type V construction shall be permitted within mixed occupancy buildings of unlimited area complying with Section 507.4, provided all of the following criteria are met:

1. Group A-1 and A-2 occupancies are separated from other occupancies as required for separated occupancies in Section 508.4.4 with no reduction allowed in the *fire-resistance rating* of the separation based upon the installation of an *automatic sprinkler system*.
2. Each area of the portions of the building used for Group A-1 or A-2 occupancies shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1.
3. *Exit* doors from Group A-1 and A-2 occupancies shall discharge directly to the exterior of the building.

Q: Can a Group I-2 occupancy care facility be an accessory occupancy area in a building of Type IIIB or VB construction in accordance with Section 508.2?

A: No. The code prohibits Group I-2 occupancies in buildings of unprotected combustible construction. This action was consistent with the 1984 report by the CABO Board for the Coordination of the Model Codes entitled, "Health Care Facilities—Use Group I-2 Institutional." The reason for the prohibition is the potential fire hazard of combustible construction and combustible concealed spaces, coupled with the lack of fire-resistance-rated elements when considered in the context of the "defend-in-place" philosophy utilized by the code for such occupancies.

Q: Does Section 508.2 permit an accessory Group A-2 occupancy to be located within an unlimited area Group M building constructed in accordance with Section 507.4?

A: Yes. An accessory Group A-2 occupancy is permitted to be located within an unlimited area Group M building, without the fire-rated separation required in Section 507.4.1 between the Group A-2 occupancy and the Group M occupancy, subject to the limitations of Section 508.2.

INTERNATIONAL BUILDING CODE INTERPRETATIONS

508.4.4 Separation. Individual occupancies shall be separated from adjacent occupancies in accordance with Table 508.4.

REFERENCED SECTIONS:

508.4.2 Allowable building area. In each *story*, the *building area* shall be such that the sum of the ratios of the actual *building area* of each separated occupancy divided by the allowable *building area* of each separated occupancy shall not exceed 1.

508.4.3 Allowable height. Each separated occupancy shall comply with the *building height* limitations based on the type of construction of the building in accordance with Section 503.1.

Exception: Special provisions of Section 510 shall permit occupancies at *building heights* other than provided in Section 503.1.

Q: In accordance with Table 508.4, no separation is required between the occupancies in the occupancy grouping of B, F-1, M, S-1. Are these occupancies considered “separated” for the purpose of allowable height and allowable area?

A: Yes. Although the occupancies are not required to be physically separated, for the purpose of building height and area only they are still evaluated under the separated option. These are occupancies that share the same level of hazard with respect to fire safety. It is pos-

sible, therefore, to have multiple occupancies that comply with the separated use provisions that require no separation between them.

But note that, where code requirements are based on established fire areas, occupancies not separated must be considered as sharing the same fire area.

SECTION 509 INCIDENTAL USES

509.4 Separation and protection. The incidental uses listed in Table 509 shall be separated from the remainder of the building or equipped with an *automatic sprinkler system*, or both, in accordance with the provisions of that table.

Q: Is an Incidental Use Area, as identified in Table 509, permitted to be classified as an occupancy use group different from the building in which it is located, and the building classified as a mixed use building subject to the requirements of Section 508.1?

A: Yes. Section 509 is intended to apply to specific areas that are considered to be part of the main occupancy classification, which generally represent a higher relative fire hazard. Section 509 is allowing these to be considered as part of the main occupancy, thus not requiring consideration of designing the building as if it

**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 ^c , 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	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R ^a	—	—	—	—	—	—	N	N	1 ^c	2 ^c	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2 ^b , U	—	—	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3	2	NP
B ^c , 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 ^d	NP	1	NP
H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

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.

e. See Section 422.2 for ambulatory care facilities.

contained an occupancy classification, because the presence of this area with higher relative hazard is accounted for by requiring that area to be separated and/or protected by a fire suppression system.

However, when such areas are classified separately as to their occupancy, and the building is considered to be of mixed occupancy, the presence of the higher relative fire hazard is accounted for in a different way—by fire protection features that result from considering such areas as one of the building's multiple occupancy classifications. The application of Section 508.1 will result in certain building features being governed by code requirements commensurate with higher relative fire hazard or a storage or workshop area.

address the safety concerns of placing the parking below the other occupancy. An automatic fire suppression system for the open parking area would not appreciably increase the level of safety and, therefore, need not be required in this situation.

Q: Is a laundry room located in a building of occupancies A, B, E, I-1, R-1 or R-2, which is available and usable by all building occupants, regarded as a space that is to be considered a storage room and therefore required to have the specified separation/protection in accordance with Table 509?

A: Yes. Laundry rooms over 100 square feet in area are required to have the specified separation/protection.

SECTION 510 SPECIAL PROVISIONS

510.7 Open parking garage beneath Groups A, I, B, M and R. Open parking garages constructed under Groups A, I, B, M and R shall not exceed the height and area limitations permitted under Section 406.5. The height and area of the portion of the building above the *open parking garage* shall not exceed the limitations in Section 503 for the upper occupancy. The height, in both feet and stories, of the portion of the building above the *open parking garage* shall be measured from grade plane and shall include both the *open parking garage* and the portion of the building above the parking garage.

Q: Given a mixed use group building with open parking below another occupancy as described in Section 510.7, is suppression of the open parking area required when the occupancy above must have an automatic fire suppression system?

A: No. Section 510.7 provides for various exceptions to requirements that would otherwise apply under the general mixed use group approach. This unique approach recognizes the unusually low fire hazard potential of an open parking structure. The requirement for fire-resistance-rated separation between an open parking structure and the occupancy above, as well as other conditions set forth in Section 510.7, adequately

INTERNATIONAL BUILDING CODE INTERPRETATIONS

**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	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 provide 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 or 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
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 uninterruptible power supplies	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.

For SI: 1 square foot = 0.0929 m², 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 m³.

CHAPTER 6

TYPES OF CONSTRUCTION

SECTION 602 CONSTRUCTION CLASSIFICATION

602.1 General. Buildings and structures erected or to be erected, altered or extended in height or area shall be classified in one of the five construction types defined in Sections 602.2 through 602.5. The building elements shall have a *fire-resistance rating* not less than that specified in Table 601 and exterior walls shall have a *fire-resistance rating* not less than that specified in Table 602. Where required to have a *fire-resistance rating* by Table 601, building elements shall comply with the applicable provisions of Section 703.2. The protection of openings, ducts and air transfer openings in building elements shall not be required unless required by other provisions of this code.

602.1.1 Minimum requirements. A building or portion thereof shall not be required to conform to the details of a type of construction higher than that type which meets the minimum requirements based on occupancy even though certain features of such a building actually conform to a higher type of construction.

Q: Can a building contain more than one construction type?

A: Yes. Section 602.1 indicates that a building or structure shall be classified in one of the five permitted construction types. However, if the building contains multiple types of construction, Section 602.1.1 indicates that the building's designated type of construction shall be that of the lesser type unless all requirements for the higher type are fulfilled. For example, if a building is constructed of both Type IB and Type VB construction, the building must be classified as Type VB construction for purposes of the application of code requirements.

An acceptable alternative is to construct a fire wall dividing the structure, thus creating two separate buildings. Each building can then be classified separately as to its construction type.

Q: In buildings of Type I or Type II construction, does the code allow exterior nonload-bearing walls to be constructed of steel stud and gypsum board with an exterior fire-retardant-treated wood sheathing?

A: No. In buildings of Type I or Type II construction, the exterior wall system must have the required fire-resistance ratings, structural strength and weather resistance without the use of combustible materials. In this particular situation, both steel studs and gypsum board are adequate, but a noncombustible exterior weather covering must be provided. Combustible architectural

trim is permitted in accordance with Section 1406.2.1 and foam plastic insulation in accordance with Section 2603.

Fire-retardant-treated wood is a combustible material which is allowed as indicated in Section 603.1.

Q: Can fire-retardant-treated wood be used where the code requires the use of noncombustible materials?

A: No. Fire-retardant-treated wood is a combustible material. The allowable use of fire-retardant-treated wood in noncombustible construction is limited as indicated in Section 603.1.

Q: Are exterior walls placed perpendicular to an interior lot line required to be fire-resistance rated because of proximity to the lot line?

A: No. Exterior walls are required to be fire-resistance rated in accordance with Table 602, based on the fire separation distance as defined in Section 202, and the building's construction type and use group classification. The fire separation distance for the exterior walls in question is measured from the face of the wall. Therefore, the fire separation distance and the fire-resistance rating are not determined by a lot line located perpendicular to the wall.

Q: Is the elevator rail beam located within a 2-hour fire-resistance-rated elevator shaft enclosure required to have a fire-resistance rating?

A: No. Structural members that support stairway landings, and stringers or elevator guide rails which are located within a fire-resistance rated shaft enclosure and do not constitute part of the required shaft enclosure or provide structural support of the shaft enclosure, would not be required to have an individual fire-resistance rating.

Q: Are steel beams that support only precast concrete stringers and/or a concrete stair landing required to have a fire-resistance rating if they fall completely within the 2-hour fire-resistance-rated stairway enclosure?

A: No. Structural members that support stairway landings, and stringers or elevator guide rails which are located within a fire-resistance-rated shaft enclosure and do not constitute part of the required shaft enclosure or provide structural support of the shaft enclosure, would not be required to have an individual fire-resistance rating.

Q: Is it the intent of Section 703.2 and Table 601 that only roof/ceiling assemblies tested in accordance with the ASTM E119 comply with the requirement for fire-resistance-rated roof construction in Table 601?

A: Yes.

Q: If so, how does a wood truss roof system comply with this provision?

A: It is the intent of the code that fire-resistance ratings of structural elements be determined in accordance with ASTM E119 or an approved analytical method. In the case of a wood truss roof system, if there is no tested assembly for a 1-hour roof/ceiling assembly, some method of equivalency must be obtained. The code official can consider approval of an alternative method based on the use of a ceiling membrane from a fire-resistance-rated roof/ceiling or floor/ceiling assembly in which the ceiling membrane provides equivalent protection to the bottom chord of the truss. A ceiling membrane with the appropriate connections and support providing a finish rating of 60 minutes or more can be utilized to determine equivalency.

Q: Where a residential building is developed in a manner that establishes lot lines between adjacent dwelling units, can the separation between such units consist of two separate walls in lieu of a party wall?

A: Yes. Where lot lines occur between adjacent dwelling units, each unit, in effect, is a building on an individual lot and has a zero fire separation distance from the common lot line between adjacent units. The wall construction between units can therefore be composed of two independent wall assemblies, each complying with the requirements for an exterior wall with a zero fire separation distance. In Type V construction, the walls are permitted to be of combustible construction, and each wall must provide a 1-hour fire-resistance rating with no openings in accordance with Section 705. Alternatively, a single, noncombustible wall assembly could be used on the lot line. Such a wall, by definition, would be a party wall and must comply with the requirements of Section 706.

Q: Is an elevator hoistway required to be enclosed with a fire-resistance-rated assembly as specified for elevator shafts where the elevator is located within an atrium space?

A: No. Shaft enclosures for elevator hoistways are required to protect penetrations of floor assemblies created by the hoistway. Where an elevator hoistway is located within an atrium space, no penetrations of floor assemblies occur. The atrium is one continuous volume

of space; therefore, a fire-resistance-rated enclosure of the hoistway within such space is not required.

602.3 Type III. Type III construction is that type of construction in which the exterior walls are of noncombustible materials and the interior building elements are of any material permitted by this code. *Fire-retardant-treated wood* framing complying with Section 2303.2 shall be permitted within *exterior wall* assemblies of a 2-hour rating or less.

Q: If fire-retardant-treated wood studs are used in the exterior walls of Type V construction, would this change the construction to Type III?

A: No. Section 602.3 requires exterior walls of Type III construction to be of noncombustible materials. The *International Building Code*® (IBC®) recognizes the increased resistance to fire afforded by fire-retardant-treated wood, but does not consider it to be noncombustible.

SECTION 603 COMBUSTIBLE MATERIAL IN TYPES I AND II CONSTRUCTION

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 803.13.
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 m²), 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.

REFERENCED SECTION:

SECTION 602 CONSTRUCTION CLASSIFICATION

602.2 Types I and II. Types I and II construction are those types of construction in which the building elements listed in Table 601 are of noncombustible materials, except as permitted in Section 603 and elsewhere in this code.

Q: Are combustible plumbing fixtures, such as water closets and shower and bathtub enclosures, permitted to be installed in buildings of Type I or Type II construction?

A: Yes. It is not the intent of the IBC that the combustibility or noncombustibility of plumbing fixtures be a factor that determines the type of construction classification. The *International Plumbing Code*® (IPC®) specifies the requirements for plumbing fixtures. There is no distinction made for plumbing fixtures among the various construction types. The combustible plumbing fixtures that are most prevalent must conform to one of the American National Standard Institute (ANSI) Z124 standards requiring fixtures to be impregnated with chemicals to retard the contributions that the fixtures would make to combustion.

Q: Are doors and windows that are constructed of combustible materials permitted in noncombustible types of construction?

A: Yes. Doors and windows are not among the elements required to be composed of noncombustible materials in Types I, II, III and IV construction, as described in Sections 602.2, 602.3 and 602.4. When a door or window is not required to be a protected opening, the code does not contain any requirements regulating the use of combustible versus noncombustible materials (see Table 705.8).

Q: Are untreated wood blocking or nailers used to support fixtures, railings, cabinets, interior and exterior fin-