Special Requirements

Chapter 4 of the IBC provides requirements for several specific occupancies such as high rise buildings, atriums, underground buildings, parking garages, heliports, and facilities with hazardous materials. Generally, the IBC addresses these specific occupancies with greater detail then the NFPA 101. In most cases, the NFPA 101 provides no specific guidelines or requirements. Therefore, the IBC is the only applicable reference to these occupancies.

As an example, the NFPA 101 provides no guidance or requirements related to heliports or hazardous materials. The NFPA 101 refers to other NFPA codes and standards including NFPA 45 for laboratories, for greater detail with regards to life safety and fire protection requirements for the specified occupancies.

While both the IBC and NFPA 101 identify requirements for a specified occupancy, minimal, but identifiable differences exist. The IBC has several specific requirements related to atriums such as automatic sprinkler protection and travel distance provisions that are dissimilar to that identified in the NFPA 101. As an example, both codes require automatic sprinkler protection of atriums, however, the IBC provides additional specification as to where sprinklers can be exempted based on the height of an atrium. Conceptually, both codes contain similar provisions for these occupancies although the details differ.

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
High Rise buildings	**403**	**Same as 101 with these additions.**	**11.8**	
Applicability	403.1	Exceptions: Shall not apply to open parking garages, buildings with low-hazard special industrial occupancies and buildings with Group H-2, and H-3 occupancy	11.8.1.1 referencing 3.3.28.7	Applies to buildings where the floor of an occupiable story is greater than 75 ft. above the lowest level of fire department access
Automatic sprinkler system	403.2	Same as 101 with Exception 2: Telecommunications equip. buildings shall not require sprinklers if provided with fire detection system and fire barrier separation of at least 1 hr walls and 2 hr floor/ceiling assemblies	11.8.2	Sprinkler control valve and water flow device shall be provided on every floor
Reduction in fire-resistance rating	403.3 Fire-resistance rating reductions listed.	Reductions listed in 403..3.1 and 403.3.2 shall be allowed in buildings that have sprinkler control valves equipped with supervisory and water-flow initiating devices on every floor.		No related section
Type of construction	403.3.1	(1) Buildings less than 420 ft can be reduced from Type IA to Type IB construction, but the FR rating of columns cannot be reduced (2) In other than Groups F-1, M and S-1, Type IB can be reduced to IIA		No related section
Shaft enclosures	403.3.2	For buildings less than 420 ft, the required FR rating of fire barriers enclosing vertical shafts , other than exit enclosure and elevator hoistway enclosures shall be reduced to 1 hr where sprinklers are at top and alternate floor levels		No related section
Emergency escape and rescue	403.4	Emergency escape and rescue openings required by Section 1026 are not required		No related section. Emergency escape and rescue window can be secondary egress in Lodging or rooming houses.

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Fire Command	403.8 referen-cing 911	Shall be separated by a 1 hr fire barrier with the following features: (5) status indicators and controls for air-handling systems, (6) fire fighter's control panel for smoke control systems (12) schematic building plans, (13) worktable, (14) generator supervision devices	11.8.5	Emergency command center shall be provided in a location approved by fire department
Stairway Door Operation	403.12	Doors other than exit discharge doors permitted to be locked from stairway side, but shall be capable of being unlocked without unlatching from the fire command center		No related section
Atrium	**404**			
Use	404.2	Floor of atrium shall be used for low hazard uses and only materials approved in accordance with IFC	8.6.7 (3)	Occupancy within atrium shall be classified as low or ordinary hazard
Automatic sprinkler protection	404.3	Exceptions: (1) Area adjacent or above the atrium need not be sprinklered, provided that portion is separated from atrium by 2 hr rated fire barrier, or horizontal assembly, or both (2) Ceiling of atrium not required to be sprinklered where ceiling is over 55 ft above floor	8.6.7 (4)	Entire building shall be protected by supervised auto. sprinkler system
Standby Power	404.6	Equipment required to provide smoke control shall be connected to a standby power system		No related section
Interior Finish	404.7	Interior finish of walls and ceilings shall be no less than Class B with no reduction for sprinklers		No related section
Travel Distance	404.8	In other than the lowest level, where required means of egress is through atrium space, the exit access travel distance		No related section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
		through the atrium shall not exceed 200 ft		
Underground buildings	**405**		**11.7**	
General	405.1	Applies to building spaces having a floor used for human occupancy more than 30 ft. below the lowest level of exit discharge. Exceptions: Sprinklered one- and two-family dwellings, sprinklered parking garages, fixed guideway transit systems, grandstands, bleachers, etc.	11.7.4.1	Applies to structures in which the floor level is below the level of exit discharge. Structure not considered underground structure if the story is provided, on not less than two sides, with not less than 20 ft² of emergency access opening above adjoining grade level
Construction requirements	405.2	The underground portion of the building shall be of Type I construction	11.1.6	Minimum construction requirements shall be in accordance with applicable occupancy chapter
Automatic sprinkler system	405.3	Highest level of exit discharge serving underground and all levels shall be equipped with auto. sprinklers	11.7.3.4	Exceptions: No sprinklers needed (1) If occupant load is 50 or less in new structure (2) if occupant load is 100 or less in existing structure (3) if the structure is a single-story underground that is permitted to have a single exit with a common path not greater than 50 ft
Number of compartments	405.4.1	A building with a floor level more than 60 ft. below level of exit discharge shall be divided into at least two compartments of equal size. Compartmentation shall extend through the highest level serving the underground portion. Exception: Lowest story need not be compartmented if area < 1500 ft² and occupant load< 10		No related section
Smoke barrier penetration	405.4.2	Compartments shall be separated by a smoke barrier. Penetrations between compartments shall be limited to plumbing		No related section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
		and electrical piping. Doorways shall be protected by fire door assemblies.		
Elevators	405.4.3	Where provided, each compartment shall have direct access to an elevator.		No related section
Smoke control system	405.5	Smoke control system shall be provided	11.7.4.4	Automatic smoke venting shall be provided where underground structure has following features: (1) Occupant load over 100 persons (2) floor level used for occupancy located more than 30 ft. below lowest exit discharge, or having more than one level below lowest exit discharge (3) Combustible contents, interior finish or construction
Compartment smoke control system	405.5.2	Where compartmentation is required, independent smoke control system is also required. System shall be automatically activated and capable of manual operation		No related section
Number of exits	405.8.1	Each floor level provided with min. of two exits. Where compartmentation is required, min. of one exit required from each compartment and an access doorway into adjoining compartment		No related section
Standby Power	405.9	A standby power system shall be provided for the following loads: smoke control system, ventilation and automatic fire detection equip. for smokeproof enclosures and fire pumps		No related section
Emergency Power	405.10	An emergency power system shall be provided for the following power loads: emergency voice/alarm systems, fire alarm systems, automatic	11.7.3.5	Underground portions of a structure and all areas traversed in traveling to the exit discharge shall be provided with emergency lighting in accordance with

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
		fire detection systems, elevator car lighting and means of egress and exit sign illumination		Section 7.9
Motor-Vehicle-related occupancies	406		42.8	
Clear height	406.2.2	Minimum clear height in vehicle and pedestrian traffic areas is seven feet		No related section. 7.1.5.2 applies to measure of egress spaces 7'-6" min. for 2/3 of the ceiling. 1/3 maybe 6'-8"
Ramps	406.2.5	Shall not be considered as required exits unless pedestrian facilities are provided. Vehicle ramps used for vertical circulation as well as parking shall not exceed a slope of 1:15	42.8.2.2.6	(1) Ramp complying with 7.2.5 shall not be subject to normal vehicular traffic where used as an exit (2) In ramp-type open parking structure, ramp permitted to serve in lieu of 2nd means of egress provided ramp discharges directly outside at street level (3) for parking structures extending 1 level below the level of exit discharge, a vehicle ramp leading to the outside shall be permitted to serve in lieu of second means of egress provided no door or shutter is installed
Floor Surface	406.2.6	Shall be of concrete or non-combustible non-absorbent material. Asphalt permitted at ground level		No related section
Construction	406.3.3	Open garages shall be of Type I, II, or IV construction	42.8.1.6	42.1.6 No requirement for minimum construction.
Area and height	406.3.5	Shall be limited as set in Ch. 5 for S-2		No related section
Area and height increases	406.3.6	Area and height can be increased in accordance with the provisions of Section 406.3.6		No related section
Ventilation	406.3.12 directing to 406.3.3.1	Shall not be required other than the percentage of openings specified in 403.3.3.1		No related section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Prohibitions	406.3.13	Not permitted for following uses: (1) vehicle repair work (2) parking of buses, and trucks (3) partial /complete closing of required openings (4) dispensing of fuel	42.8.1.2.2	Parking and repairs must be separated by 1 hour and treated separately as mixed occupancy with industrial occupancy.
Heights and Areas	406.4.1	Limited to allowable heights and areas in Table 503. Roof parking permitted		No related section
Group I-2	**407**		**18 and 19**	**New and existing healthcare**
Corridors	407.2	Shall be continuous to the exits and separated from other areas in accordance with 407.3	18.2.5.3	Shall provide access to no less than two approved exits without passing through any intervening rooms or spaces
Mental health treatment areas	407.2.3	Shall be permitted to open where (1) area does not exceed 1,500 feet	18.3.6.1 (5)	Shall be permitted to open provided that the space meets criteria
Secured yards	407.7	Grounds permitted to be fenced and gates permitted to be locked provided areas are at least 50 ft from building and has 30 sq. ft. for bed and litter patients and 6 sq. ft for ambulatory patients		No related section
Combustible Storage	**413**			
Attic, under-floor and concealed spaces	413.2	Shall be protected on the storage side as required for 1 hr rated construction with self-closing, non combustible openings		No related section
Hazardous Materials	**414**			
General	414.1	Section shall apply to buildings and structure occupied for the manufacturing, processing, dispensing, use or storage of hazardous materials		No related section
Control areas	414.2	Control areas shall comply with sections 414.2.1 through 414.2.5		No related section
Construction requirements	414.2.1	Control areas shall be separated by fire barriers or horizontal assemblies, or both.		No related section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Percentage of max. allowable quantities	414.2.2	The percentage of hazardous materials per control area permitted at each floor level shall be in accordance with Table 414.2.2		No related section
Number	414.2.3	The max. number of control areas within a building shall be in accordance with Table 414.2.3		No related section
Fire-resistance rating requirements	414.2.4	The required rating for fire barriers shall be in accordance with Table 414.2.2. Floor construction and the construction supporting the floor shall have a min. 2 hr rating		No related section
Ventilation	414.3	Rooms in Group H spaces which may have toxic/flammable fumes or vapors shall be mechanically ventilated in accordance with IFC and IMC		No related section
Hazardous Material systems	414.4	Systems involving hazardous materials shall be suitable for intended application		No related section
Inside storage, dispensing and use	414.5	Inside storage, dispensing, and use of hazardous materials in excess of max. quantities in Tables 307.1 (1) and 307.1(2) shall be in accordance with sections 414.5.1 through 414.5.5 and the IFC		No related section
Outdoor storage, dispensing and use	414.6	Shall be in accordance with IFC. Weather protection shall be provided outside with noncombustible construction and separation distance		No related section
Emergency alarms	414.7	Shall be provided for areas used for storage and where materials are being transported through corridors or exit enclosures		No related section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Groups H-1, H-2, H-3, H-4, and H-5	415	Section applies to the storage and use of hazardous materials in excess of the max. allowable quantities per control area		No related section
Hazardous Materials	**416.1**			
Application of flammable finishes	416	Provisions of this section shall apply to construction, installation and use of buildings and structures, or parts thereof, for the spraying of flammable materials used for painting or similar purposes		No related section

Building Heights and Areas

Chapter 5 of the IBC identifies height and area requirements for various use group occupancies as a function of construction classification. This portion of the IBC serves to identify how tall and with what floor area a building can be constructed based on the occupancy classification, or classifications contained within the building. This portion of the IBC intends to identify and limit fire area of a building based on a relative classification of its hazard as construed by its occupancy or occupancies within. In essence, this section of the IBC results in quantifying the number of stories and height of a building as well as the per floor and total floor area. This is evaluated through a series of prescriptive evaluations and quantitative calculations.

The NFPA 101 does not address construction classification with any similarities to detail of the IBC. The NFPA 101 does identify construction classifications for some occupancies, but based solely on height of the buildings. Area is not a factor in the NFPA 101 with regard to identifying construction classifications. Additionally, the NFPA 101 does not identify construction classifications for all occupancies. With regard to the Department of Veterans Affairs, hospitals are identified in the NFPA 101 with regard to fire resistance rating requirements and structural elements and can be compared to those requirements in the IBC. However, the two codes use different evaluation parameters (the IBC bases construction classification on height and area parameters while the NFPA 101 bases construction classification for hospitals only on height of the building), such that a direct comparison is not valid.

Both codes address mixed use occupancies. The IBC contains provisions for incidental, accessory, separated, and non-separated mixed occupancies. Incidental occupancies are handled with specific fire protection requirements, either automatic sprinkler protection or fire rated construction or both. Accessory uses are allowed such that the predominant occupancy of a building or floor of a building is not adversely impacted by relatively small applications of other use groups. As an example, accessory uses can comprise up to 10% of a story but not exceed the allowable tabular values for that occupancy as provided within the Table 503 of the IBC. Where there is a greater distribution of uses within a building, options exist for separated and non-separated occupancies. A key element to determining whether or not occupancies are required to be separated is the construction classification of a building. The method of providing the greatest flexibility for the location of various uses within a building is to utilize the non-separated approach, however, this results in the most restrictive construction classification.

The Life Safety Code also addresses mixed occupancies. Several occupancies, such as healthcare do incorporate a concept similar to the IBC's incidental use group provisions. In this circumstance, this specific occupancy chapter identifies specific fire resistance rating requirements for various special use groups such as living rooms, storage rooms. The NFPA 101 does not incorporate a concept of accessory use such that any mixing of occupancies results in the application of separated or non-separated requirements. A key difference between the IBC and NFPA 101 pertains to the non-separated provisions in the IBC, the provisions relevant to an occupancy only pertain to that occupancy area and are not required to be utilized throughout a building. In the NFPA 101, the most stringent requirements for all the occupancies present within the building are to be applied throughout the building.

This application has resulted in confusion for design teams and code officials. The application of the non-separated mixed use provisions of the NFPA 101 would technically require the travel distance provisions for assembly to be applied throughout a building even if that building only

incorporates a small portion as assembly use. In some cases, this can be technically infeasible and, with distinctly different occupancies such as business and healthcare, can become impractical in meeting program requirements.

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
General Building Heights and Areas	**Chapter 5 ***	**The provisions of this chapter control the height and area of structures hereafter erected and additions to existing structures.**		**No related Section**
General	**501**			
Address Numbers	501.2	Building should have approved address numbers, clearly labeled in plain view. Numbers must contrast background, be Arabic numerals or Alphabetical numbers, and comply with the listed letter dimensions.		No related Section
General Height and Area Limitations	**503**			**No related Section**
General	503.1	Height and area requirements determined by use of building and cannot exceed limits listed in Table 503. Each portion bounded by fire walls can be considered a separate building.		No related Section
Allowable Height and Building Areas	Table 503	List of height limitations above grade plane and area limitations as determined by the definition of "Area, building," per story		No related Section
Special Industrial Occupancies	503.1.1	Buildings and structures designed to house special industrial processes that require large areas and unusual heights, shall be exempt from the height and area limitations of Table 503.		No related Section
Buildings on Same Lot	503.1.2			No related Section
Type I Construction	503.1.3			No related Section
Height	**504**			**No related Section**
General	504.1			No related Section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Automatic Sprinkler System Increase	504.2			No related Section
Roof Structures	504.3			No related Section
Mezzanines	**505**			
Area Limitation	505.2	Aggregate area of a mezzanine within a room shall not exceed one-third of floor area. Enclosed portion of a room not included in determination of floor area of room in which mezzanine is located. Exceptions for Type I and II structures	8.6.9.2	Does not have exceptions for specified structures
Equipment Platforms	505.5	Equipment platforms not to be included in building area, as part of floor below or means of egress, or in number of stories	40.2.5.2	Industrial egress required to meet NFPA Table 40.2.5.2.1
Area Limitations	505.5.1	Equipment platforms may not exceed 2/3 of the area of the room, if occurring alone or in aggregate with mezzanines.		No related Section
Fire Supression	505.5.2	Sprinklers required above and below equipment platforms		No related Section
Guards	505.5.3	Equipment platforms shall have guards where required by Section 1013.1		No related Section
Area Modifications	**506**			**No related Section**
General	506.1	Areas limited by Table 503 shall be permitted to be increased due to frontage and sprinkler protection.		No related Section
Basements	506.1.1	Basement not included in allowable area if it does not exceed area allowed for one-story building.		No related Section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
Frontage Increase	506.2	Area increase for frontage only permitted if building has more than 25% of frontage facing open space >=20 feet. Provides formula for determining area increase.		No related Section
Width Limits	506.2.1	Width must be >= 20 feet; width divided by 30 <=1 except where permitted to be unlimited area, width divided by 30 <= 2.		No related Section
Open Space Limits	506.2.2	Open space must be on same lot or dedicated for public use. Access required from street or fire lane.		No related Section
Automatic Sprinkler System Increase	506.3	Area limitation in Table 503 is permitted to be increased 200% for multi-story buildings and 300% for single-story buildings.		No related Section
Area Determination	506.4	The maximum area of a multi-story building shall be determined by multiplying the allowable area of the first story as determined in Section 506.1, by two for buildings with two stories above grade plane. Multiply by three for buildings with three or more stories above grade plane.		No related Section
Mixed Occupancies	506.4.1	For mixed occupancy buildings, the allowable area per story shall be based on the most restrictive provisions.		No related Section
Unlimited Area Buildings	**507**			
General	507.1	The area of buildings of the occupancies and configurations specified in this section shall not be limited		No related Section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Nonsprinklered, One Story	507.2	The area of a one-story, group F-2 and S-2 building shall not be limited if building is surrounded and adjoined by public ways or yards >= 60 feet in width.		No related Section
Sprinklered, One Story	507.3	The area of one-story, group B or S or group A-4, of other than Type V construction, shall not be limited if equipped with sprinkler system and adjoined to public ways >= 60 feet in width		No related Section
Two Story	507.4	The area of a two-story, group B or S building shall not be limited if equipped with automatic sprinkler system and surrounded and adjoined by public ways >= 60feet in width		No related Section
Reduced Open Space	507.5	Required open space of 60 feet shall be permitted to be reduced to not less than 40 feet provided specified requirements are met.		No related Section
Group A - 3 Buildings	507.6	Group A-3 buildings used as place of religious worship, community hall, dance hall, exhibition hall, gymnasium, lecture hall, indoor swimming pool or tennis court of Type II construction shall not be limited when specified criteria are met.		No related Section
Mixed Use and Occupancy	**508**			
Incidental Uses	508.2	Incidental use areas shall comply with the provisions of this section	6.1.14.1.3	specified incidental areas permitted to be considered part of the predominant occupancy and are subject to provisions of the code of the predominant occupancy.

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
Incidental Use Areas	Table 508.2	Gives incidental rooms or areas and their required separation and/or protection		No related Section
Occupancy Classification	508.2.1*	An incidental use area shall be classified in accordance with the occupancy of that portion of the building or the building shall be classified as a mixed occupancy. More definitive	6.1.14.1.3	Specified areas permitted to be considered part of the predominant occupancy and are subject to provisions of the code of the predominant occupancy.
Separation	508.2.2*	Incidental use areas shall be separated and/or protected in accordance with Table 508.2		Separation based on predominant occupancy, but not from the present occupancy
Construction	508.2.2.1	Incidental use areas shall be separated from remainder of the building by barrier constructed in accordance with Section 706. Construction must be capable of resisting passage of smoke.		No related Section
Protection	508.2.3	Where an automatic fire-extinguishing system or an automatic sprinkler system is provided in accordance with Table 508.2, only the incidental use areas need be equipped with such a system		No related Section
Mixed Sec.	**508.3**		**6.1.14.2.1**	**Multiple occupancy**
Occupancies	508.3.1	Aggregate accessory occupancies shall not occupy more than 10 percent of the area of the story in which they are located and shall not exceed the tabular values in Table 503		No related Section
Occupancy Classification	508.3.1.1	Accessory occupancies shall be individually classified in accordance with Section 302.1. Most restrictive applicable		No related Section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
		provisions of Section 403 and Chapter 9 shall apply to the entire building or portion thereof		
Allowable Area and Height	508.3.1.2	Allowable area and height of a building shall be based on the main occupancy. Height of accessory occupancies shall not exceed values in Table 503, without height and area increases in accordance with Sections 504 and 506.		No related Section
Separation	508.3.1.3	No separation is required between accessory occupancies or the main occupancy.		
Nonseparated Occupancies	**508.3.2**		**6.1.14.3**	**Mixed occupancies**
Occupancy Classification	508.3.2.1	Non separated occupancies shall be classified in accordance with Section 302.1. Code requirements shall apply to each portion of the building based on the occupancy of that space except that the most restrictive applicable provisions of Section 403 and Chapter 9 shall apply to the entire building or portion thereof.	6.1.14.3.2	The means of egress facilities type of construction, protection, and other safeguards in the building shall comply with most restrictive requirements of the occupancies involved.
Allowable Area and Height	508.3.2.2	Allowable area and height of a building shall be based on the most restrictive allowances.		No related Section
Separation	508.3.2.3	No separation required between occupancies	6.1.14.3.2	
Separated Occupancy	508.3.3		6.1.14.4	Separated occupancies
	508.3.3.1	The building area shall be such that the sum of ratios of the actual floor area of each occupancy divided by the allowable		No related Section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
		area of each occupancy shall not exceed one.		
Allowable Area	508.3.3.2	The building area shall be such that the sum of ratios of the actual floor area of each occupancy divided by the allowable area of each occupancy shall not exceed one.		No related Section
Allowable Height	508.3.3.3	Each occupancy shall comply with the height limitations based on the type of construction of the building in accordance with Section 503.1		No related Section
Separation	508.3.3 Table	*(see attached)*	Table 6.1.14.4.3-4	Tables 6.1.14.1(a) and (b) *(see attached)*
Special Provisions	**509**			**No related Section**
General	509.1	Permits modifications to and exemptions from other requirements of this chapter		No related Section
Group S-2 Enclosed or Open Parking Garage With Group A,B or S Above	509.2	Basement first story above grade for Type IA to be considered separate building if meets multiple specific requirements		No related Section
Group S-2 Enclosed Parking Garage With Group S-2 Open Parking Garage Above	509.3	Group S-2 enclosed garages on basement or first story to be considered separate building from S-2 open garage above if meets multiple specific requirements		No related Section
Open Parking Garage Beneath Groups A, B and I	509.7	Open parking under groups A,I,B,M, and R may not exceed heights and areas allowed in 406.3. Building above must meet 503. Total height to be measured from grade plane.		No related Section

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Fire Separation	509.7.1	Fire separation between open parking and occupancies above must meet Table 508.3.3. Structural members supporting occupancies above require more restrictive requirements. Exit facilities for occupancies above to be separated by 2-hour construction.		
Group B with Group S-2 Open Parking Garage Above	509.8	Group B or M uses located in basement of first story below a Group S-2 open parking garage shall be classified as a separate building for purpose of determining type of construction when all specified conditions are met.	No related Section	

IBC TABLE 508.3.3 REQUIRED SEPARATION OF OCCUPANCIES (HOURS)																
OCCUPANCY	A [e], E		I		R [d]		F-2, S-2 [c,d], U [d]		B [b], F-1, M [b], 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
A [e], E [e]	N	N	1	2	1	2	N	1	1	2	NP	NP	3	4	2	3 [a]
I	—	—	N	N	1	NP	1	2	1	2	NP	NP	3	NP	2	NP
R [d]	—	—	—	—	N	N	1	2	1	2	NP	NP	3	NP	2	NP
F-2, S-2 [c,d], U [d]	—	—	—	—	—	—	N	N	1	2	NP	NP	3	4	2	3 [a]
B [b], F-1, M [b], S-1	—	—	—	—	—	—	—	—	N	N	NP	NP	2	3	1	2 [a]
H-1	—	—	—	—	—	—	—	—	—	—	N	NP	NP	NP	NP	NP
H-2	—	—	—	—	—	—	—	—	—	—	—	—	N	NP	1	NP
H-3, H-4, H-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	N	NP

For SI: 1 square foot = 0.0929 m 2 .

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. For Group H-5 occupancies, see Section 903.2.4.2 .

b. Occupancy separation need not be provided for storage areas within Groups B and M if the:

1. Area is less than 10 percent of the floor area;
2. Area is equipped with an automatic fire-extinguishing system and is less than 3,000 square feet; or
3. Area is less than 1,000 square feet.

c. Areas used only for private or pleasure vehicles shall be allowed to reduce separation by 1 hour.

d. See Section 406.1.4 .

e. Commercial kitchens need not be separated from the restaurant seating areas that they serve.

NFPA 101 Table 6.1.14.4.1(a) Required Separation of Occupancies (hours)*, Part 1

Occupancy	Assembly ≤300	Assembly >300 to ≤1000	Assembly >1000	Educational	Day-Care >12 Clients	Day-Care Homes	Health Care	Ambulatory Health Care	Detention & Correctional	One- & Two-Family Dwellings	Lodging or Rooming Houses	Hotels & Dormitories
Assembly ≤300		0	0	2	2	1	2†	2	2†	2	2	2
Assembly >300 to ≤1000			0	2	2	2	2†	2	2†	2	2	2
Assembly >1000				2	2	2	2†	2	2†	2	2	2
Educational					2	2	2†	2	2†	2	2	2
Day-Care >12 Clients						1	2†	2	2†	2	2	2
Day-Care Homes							2†	2	2†	2	2	2
Health Care								2†	2†	2†	2†	2†
Ambulatory Health Care									2†	2	2	2
Detention & Correctional										2†	2†	2†
One- & Two-Family Dwellings											1	1
Lodging or Rooming Houses												1
Hotels and Dormitories												

* The fire resistance rating is permitted to be reduced by 1 hour, but in no case to less than 1 hour, where the building is protected throughout by an approved automatic sprinkler system in accordance with 9.7.1.1(1) and supervised in accordance with 9.7.2.
† The 1-hour reduction due to the presence of sprinklers in accordance with the asterisk footnote is not permitted.

NFPA 101 Table 6.1.14.4.1(b) Required Separation of Occupancies (hours)*, Part 2

Occupancy	Apartment Buildings	Board & Care, Small	Board & Care, Large	Mercantile	Mercantile, Mall	Mercantile, Bulk Retail	Business	Industrial, General Purpose	Industrial, Special Purpose	Industrial, High Hazard	Storage, Low & Ordinary Hazard	Storage, High Hazard
Assembly ≤300	2	2	2	2	2	3	1	2	2	3	2	3
Assembly >300 to ≤1000	2	2	2	2	2	3	2	2	2	3	2	3
Assembly >1000	2	2	2	2	2	3	2	3	2	3	3	3
Educational	2	2	2	2	2	3	2	3	3	3	3	3

Dare-Care >12 Clients	2	2	2	2	2	3	2	3	3	3	3	3
Day-Care Homes	2	2	2	2	2	3	2	3	3	3	2	3
Health Care	2†	2†	2†	2†	2†	2†	2†	2†	2†	2†	2†	2†
Ambulatory Health Care	2	2	2	2	2	2†	1	2	2	2†	2	2†
Detention & Correctional	2†	2†	2†	2†	2†	2†	2†	2†	2†	NP	2†	NP
One- & Two- Family Dwellings	1	1	2	2	2	3	2	2	2	3	2	3
Lodging or Rooming Houses	1	2	2	2	2	3	2	2	2	3	2	3
Hotels & Dormitories	1	2	2	2	2	3	2	2	2	3	2	3
Apartment Buildings		2	2	2	2	3	2	2	2	3	2	3
Board & Care, Small			1	2	2	3	2	3	3	3	3	3
Board & Care, Large				2	2	3	2	3	3	3	3	3
Mercantile					0	3	2	2	2	3	2	3
Mercantile, Mall						3	2	3	3	3	2	3
Mercantile, Bulk Retail							2	2	2	3	2	2
Business								2	2	2	2	2
Industrial, General Purpose									1	1	1	1
Industrial, Special Purpose										1	1	1
Industrial, High Hazard											1	1
Storage, Low & Ordinary Hazard												1
Storage, High Hazard												

NP: Not permitted.
* The fire resistance rating is permitted to be reduced by 1 hour, but in no case to less than 1 hour, where the building is protected throughout by an approved automatic sprinkler system in accordance with 9.7.1.1(1) and supervised in accordance with 9.7.2.
† The 1-hour reduction due to the presence of sprinklers in accordance with the asterisk footnote is not permitted.

Types of Construction

Chapter 6 of the IBC defines the requirements of each construction classifications based on the hourly ratings of various structural elements. The NFPA 101 refers to NFPA 220 for definitions.

The following table compares the various construction classification requirements as identified in each of the codes. A direct comparison of the various fire resistance rating requirements as defined by construction classification between the codes is not obtainable because each of the codes identifies requirements with an associated terminology that is not consistent between the codes. However, once a construction classification is identified, it can be readily compared to those of the other code. As an example, the IBC identifies Type 1A construction as having 3-hour exterior bearing walls, 3-hour interior bearing walls, 2-hour floors, and 1.5-hour roof construction. A similar classification is identified by NFPA 220, as referenced by NFPA 101, as construction I (332) having 3-hour exterior building walls, 3-hour interior bearing walls, 2-hour floors, 1.5-hour roofs.

These definitions only have importance in the context of the application and identification by their respective codes. A straight forward comparison of each of these requirements is only applicable in the context of their implementation to a holistic, full range of code requirements.

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	**Section**	**Requirements**	**Section**	**Requirements**
Types of Construction	**Chapter 6**	**Requirements on building construction types.**	**8.2.1**	**Construction**
Fire Resistance Ratings for Building Elements	**Table 601**		**8.2.1.2**	
Type 1		For construction IA: Exterior Bearing walls: 3-hr FRR, Interior Bearing: 3-hr FRR, Floor: 2-hr FRR, Roof: 1.5-hr FRR		For Construction I(442): Exterior Bearing walls: 4-hr FRR, Interior Bearing: 4-hr FRR (3-hr FRR if supporting only roof or one floor), Floor: 2-hr FRR, Roof: 2-hr FRR
		For construction IB: Exterior Bearing walls: 2-hr FRR, Interior Bearing: 2-hr FRR, Floor: 2-hr FRR, Roof: 1-hr FRR		For Construction I(332): Exterior Bearing walls: 3-hr FRR, Interior Bearing: 3-hr FRR (2-hr FRR if supporting only roof or one floor), Floor: 2-hr FRR, Roof: 1.5-hr FRR
Type II		For construction IIA: Exterior Bearing walls: 1-hr FRR, Interior Bearing: 1-hr FRR, Floor: 1-hr FRR, Roof: 1-hr FRR		For Construction II(222): Exterior Bearing walls: 2-hr FRR (1-hr FRR if supporting only roof), Interior Bearing: 2-hr FRR (1-hr FRR if supporting only roof), Floor: 2-hr FRR, Roof: 1-hr FRR
		For construction IIB: Exterior Bearing walls: 0-hr FRR, Interior Bearing: 0-hr FRR, Floor: 0-hr FRR, Roof: 0-hr FRR		For Construction II(111): Exterior Bearing walls: 1-hr FRR, Interior Bearing: 1-hr FRR, Floor: 1-hr FRR, Roof: 1-hr FRR
				For Construction II(000): Exterior Bearing walls: 0-hr FRR, Interior Bearing: 0-hr FRR, Floor: 0-hr FRR, Roof: 0-hr FRR
Type III		For construction IIIA: Exterior Bearing walls: 2-hr FRR, Interior Bearing: 1-hr FRR, Floor: 1-hr FRR, Roof: 0-hr FRR		For Construction III(211): Exterior Bearing walls: 2-hr FRR, Interior Bearing: 1-hr FRR, Floor: 1-hr FRR, Roof: 1-hr FRR
		For construction IIIB: Exterior Bearing walls: 2-hr FRR, Interior Bearing: 0-hr FRR, Floor: 0-hr FRR, Roof: 0-hr FRR		For Construction III(200): Exterior Bearing walls: 2-hr FRR, Interior Bearing: 0-hr FRR, Floor: 0-hr FRR, Roof: 0-hr FRR

INTERNATIONAL BUILDING CODE 2006			NFPA 101 2006	
Title	Section	Requirements	Section	Requirements
Type IV		For construction IV: Exterior Bearing walls: 2-hr FRR, Interior Bearing: 1-hr FRR/HT, Floor: HT, Roof: HT		For Construction IV(2HH): Exterior Bearing walls: 2-hr FRR, Interior Bearing: 2-hr FRR (`-hr FRR if supporting only roof or one floor), Floor: HT, Roof: HT
Type V		For construction VA: Exterior Bearing walls: 1-hr FRR, Interior Bearing: 1-hr FRR, Floor: 1-hr FRR, Roof: 1-hr FRR		For Construction V(111): Exterior Bearing walls: 1-hr FRR, Interior Bearing: 1-hr FRR, Floor: 1-hr FRR, Roof: 1-hr FRR
		For construction VB: Exterior Bearing walls: 0-hr FRR, Interior Bearing: 0-hr FRR, Floor: 0-hr FRR, Roof: 0-hr FRR		For Construction V(000): Exterior Bearing walls: 0-hr FRR, Interior Bearing: 0-hr FRR, Floor: 0-hr FRR, Roof: 0-hr FRR

Commentary Table 8.1 Cross-Reference of Building Construction Types										
NFPA 220 / NFPA5000	I(442)	I(332)	II(222)	II(111)	II(000)	III(211)	III(200)	IV(2HH)	V(111)	V(000)
IBC	-	IA	IB	IIA	IIB	IIIA	IIIB	IVHT	VA	VB