

Chapter Ind 59

HAZARDOUS OCCUPANCIES

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Ind 59.001 Scope. This chapter applies to all hazardous occupancies as indicated in the scope of each subchapter.

Ind 59.01 Definitions. (1) "Combustible liquid" means a liquid as defined in s. Ind 8.01 (19).

(2) "Flammable liquid" means a liquid as defined in s. Ind 8.01 (37).

(3) "Motor vehicle" means any self-propelled device fueled by a flammable or combustible liquid used to transport people or goods.

(4) "Open parking structure" means a structure as defined in s. Ind 62.10.

(5) "Private garage" means a structure or a part of a structure, either attached to a one- or 2-family dwelling or unattached but serving the dwelling, housing one or more motor vehicles owned by the occupant of the dwelling and used only for personal or family service, not serving as a place of employment.

(6) "Repair garage" means a structure or any part of a structure in which one or more motor vehicles are primarily repaired or serviced.

(7) "Storage garage" means any structure or part of a structure in which one or more motor vehicles are stored or parked and which is not a repair garage, private garage or open parking structure.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

SUBCHAPTER I VEHICULAR OCCUPANCIES

Ind 59.10 Scope. (1) Except as provided in sub. (2), the requirements of this subchapter apply to storage garages and repair garages.

Note: See ch. Ind 8 - Flammable and Combustible Liquids, for additional requirements pertaining to structures accommodating motor vehicles.

(2) This subchapter does not apply to the following occupancies:

(a) Storage garages serving community-based residential facilities;

Note: See s. Ind 61.10 (2).

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(b) Areas of factories and plants used for the manufacture or assembly of motor vehicles or their components;

(c) Drive-in or drive-through facilities not used for the storage of motor vehicles including, but not limited to those of banks, restaurants, hospitals, car washes, film processing centers or other similar occupancies; and

(d) Storage garages 500 sq. ft. or less in area serving a residential occupancy as specified in ch. Ind 57.

Note: See s. Ind 57.01 (4).

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

Ind 59.11 Construction. (1) **FLOORS.** (a) The floor areas accommodating motor vehicles shall be of earth, gravel or noncombustible, non-absorbent materials.

(b) Service pits and other similar depressions in the floor of a storage or repair garage shall be ventilated in accordance with ch. Ind 64.

(2) **CLEARANCE REQUIREMENTS.** Headroom clearances shall be maintained in accordance with s. Ind 51.164.

(3) **CANOPIES.** Free standing canopies and their supports or other similar structures over fuel dispensing equipment, when located less than 10 feet from a property line, shall be constructed of noncombustible materials.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82; am. (1) (a), Register, October, 1982, No. 322, eff. 11-1-82.

Ind 59.12 Height and area. (1) **STORAGE GARAGES.** Storage garages shall not exceed the number of stories and corresponding area limitations of Table 59.12.

(2) **REPAIR GARAGES.** Repair garages shall not exceed the number of stories and 75% of the corresponding area limitations of Table 59.12.

(3) **ALLOWABLE INCREASE OF FLOOR AREAS.** (a) *Sprinklers.* The areas of subs. (1) and (2) may be increased by 150% for one story storage garages and repair garages and 75% for storage garages and repair garages more than one story, where the entire structure is protected by an approved automatic sprinkler system as specified in s. Ind 51.21.

(b) *Fire divisions.* No storage or repair garage shall be limited in area where divided into sections which do not exceed the maximum areas tabulated in this section by fire division walls as specified in s. Ind 51.02 (13). All openings in such walls shall be protected by swinging, sliding or overhead fire-resistive door assemblies as specified in s. Ind 51.047. Doors protecting such openings may be held open if equipped with rate of rise heat or photoelectric activated automatic closing devices. Doors used as required exits shall comply with the requirements of s. Ind 51.15.

TABLE 59.12
ALLOWABLE HEIGHT, STORIES & AREA (SQ. FT.) (MAXIMUM GROSS FLOOR AREA PER STORY)

Class of Construction	Building Frontage Street* Exposure	Number of Stories								
		1	2	3	4	5	6	7	8	Over 8
1. Fire-Resistive Type A	1	NO RESTRICTION								
	2	NO RESTRICTION								
	3	NO RESTRICTION								
	4	NO RESTRICTION								
2. Fire-Resistive Type B	1	NO RESTRICTION	20,000	17,000	14,000	11,000	9,000	7,000	6,000	NOT PERMITTED
	2	25,000	22,000	18,500	15,500	13,000	11,000	10,000	10,000	NOT PERMITTED
	3	31,000	27,000	23,000	20,000	17,000	15,000	14,000	14,000	NOT PERMITTED
	4	37,000	32,000	27,500	24,500	21,000	19,000	18,000	18,000	NOT PERMITTED
3. Metal Frame Protected	1	21,000	18,000	15,000	12,000	NOT PERMITTED				
	2	26,500	23,000	19,500	16,000	NOT PERMITTED				
	3	32,000	28,000	24,000	20,000	NOT PERMITTED				
	4	37,500	33,000	28,500	24,000	NOT PERMITTED				
4. Heavy Timber	1	17,000	14,000	11,000	9,000	NOT PERMITTED				
	2	22,000	19,000	16,000	13,500	NOT PERMITTED				
	3	27,000	24,000	21,000	18,000	NOT PERMITTED				
	4	32,000	29,000	26,000	22,500	NOT PERMITTED				
5A. Exterior Masonry Protected	1	15,500	13,000	9,500	8,000	NOT PERMITTED				
	2	20,000	17,000	14,000	12,500	NOT PERMITTED				
	3	24,500	21,500	18,500	15,500	NOT PERMITTED				
	4	29,000	26,000	23,000	19,500	NOT PERMITTED				
5B. Exterior Masonry Unprotected	1	14,000	11,500	9,000	7,000	NOT PERMITTED				
	2	18,000	15,000	12,500	10,000	NOT PERMITTED				
	3	22,000	19,000	16,000	13,000	NOT PERMITTED				
	4	26,000	23,000	19,500	16,000	NOT PERMITTED				
6. Metal Frame Unprotected	1	14,000	11,500	9,000	NOT PERMITTED					
	2	18,000	15,000	12,500	NOT PERMITTED					
	3	22,000	19,000	16,000	NOT PERMITTED					
	4	26,000	23,000	19,500	NOT PERMITTED					
7. Wood Frame Protected	1	12,500	NOT PERMITTED							
	2	16,000	NOT PERMITTED							
	3	19,000	NOT PERMITTED							
	4	22,000	NOT PERMITTED							
8. Wood Frame Unprotected	1	10,000	NOT PERMITTED							
	2	12,000	NOT PERMITTED							
	3	14,000	NOT PERMITTED							
	4	16,000	NOT PERMITTED							

* A 4-hour fire division wall will be considered as a street for the purpose of computing the area limitations of Table 59.12.

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History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

FP Ind 59.13 Types of exits. (1) GENERAL. (a) Only the following types of exits shall be used to comply with the provisions of s. Ind 59.14:

1. Standard exit as specified in s. Ind 51.15, except as provided in sub. (2);
2. Stairways as specified in s. Ind 51.16, except as provided in sub. (2);
3. Smokeproof stair tower as specified in s. Ind 51.17;
4. Interior enclosed stairway as specified in s. Ind 51.18;
5. Horizontal exit as specified in s. Ind 51.19;
6. Fire escapes as specified in s. Ind 51.20; and
7. Nonparking access ramps with a maximum slope of 1:8.

(b) At least half of the exits required under s. Ind 59.14 shall be standard exits, stairways, smokeproof stair towers or interior enclosed stairways to grade.

(2) EXCEPTIONS. (a) A spiral stairway shall not serve as a required exit, but may be used as an employe convenience stairway if located in nonpublic areas.

(b) The width of required exit stairways serving unoccupied areas, such as storage areas, equipment mezzanines and similar areas not exceeding 750 sq. ft. may be reduced to 3 feet 0 inches.

(c) Doors in standard exits serving rooms, spaces or areas with an occupancy load of 25 persons or less are not required to swing in the direction of egress.

(d) A door not complying with s. Ind 51.15 (2), may be used as a standard exit serving rooms, spaces or areas with an occupancy load of less than 10 persons.

Note: Where accessibility and interior circulation for persons with functional limitations must be provided, the requirements of s. Ind 52.04 (9) govern.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

FP Ind 59.14 Number and location of exits. (1) GENERAL. (a) Except as provided in par. (b), every floor level and every room, space or area of a storage garage and a repair garage shall be provided with at least 2 exits.

(b) One exit is permitted from the following:

1. Any room, space or area used for storage garage purposes with an occupancy load of 10 persons or less and which does not exceed 3,000 sq. ft. in net floor area;
2. Any room, space or area used for repair garage purposes and does not exceed 750 sq. ft. in net floor area;
3. Any room, space or area used as other than a storage or repair garage with an capacity of 25 persons or less; and
4. A mezzanine floor level, provided the mezzanine is:

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- a. Three thousand square feet or less in net floor area;
- b. Used only for storage purposes;
- c. Open on at least one side to the floor below; and
- d. Not more than 12 feet above the floor below.

(2) **EXIT DISTANCE.** Exits shall be provided and distributed as follows:

(a) *Storage garages.* 1. No area of a storage garage shall be more than 100 feet from an exit, unless the entire storage garage is protected by an automatic sprinkler system.

2. No area of a storage garage entirely protected by an automatic sprinkler system shall be more than 150 feet from an exit.

(b) *Repair garages.* 1. No area of a repair garage shall be more than 75 feet from an exit, unless the entire repair garage is protected by an automatic sprinkler system.

2. No area of a repair garage entirely protected by an automatic sprinkler system shall be more than 120 feet from an exit.

(c) * *Measurement of exit distance.* The exit distances required by this section shall be measured along public passageways and aisles to:

1. Standard exits leading to grade as specified in s. Ind 51.15;
2. Doors opening into smokeproof stair towers as specified in s. Ind 51.17, interior enclosed stairways as specified in s. Ind 51.18, or fire escapes as specified in s. Ind 51.20; or
3. Horizontal exits as specified in s. Ind 51.19.

(3) **LOCATION OF EXITS.** Except as provided in sub. (1) (b), exits in all storage garages and repair garages shall be located and distributed so that in the event an exit is blocked, another exit is available from every area of the storage garage or repair garage.

(4) **EXIT MAINTENANCE.** Exits shall be maintained in accordance with s. Ind 52.21.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

Ind 59.15 Required exit width, (1) GENERAL. Every floor level of a storage garage and repair garage shall be provided with at least the required aggregate width of exits as specified in ss. Ind 51.15 (6) and 51.16 (3).

(2) **HORIZONTAL EXITS.** Horizontal exits may provide up to one-half of the required aggregate width of exits for a floor level.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

Ind 59.16 Capacity of structures. In calculating the required aggregate width of exits under s. Ind 59.15 and the required number of sanitary facilities under s. Ind 59.20, the capacities of structures and floor levels shall be computed on the following basis:

*See Appendix A for further explanatory material.

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- (1) Storage garages and repair garages - 300 sq. ft. per person; and
- (2) Other areas as dictated by the appropriate sections of chs. Ind 54 to 62.

Note: See ss. Ind 54.05, 56.06, 56.07 for additional requirements.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

FP Ind 59.17 Enclosure of stairways and shafts. (1) **GENERAL.** (a) Except as provided in par. (b), all stairways and shafts within a storage garage and a repair garage shall be fully enclosed with smoke partitions. Smoke partitions shall be constructed of solid and rigid materials. Openings in such enclosures shall be protected with doors equipped with automatic closing devices.

(b) Stairways to open storage mezzaniness 3,000 square feet or less in area are not required to be enclosed.

(2) **THREE OR MORE FLOOR LEVELS.** Stairways and shafts serving 3 or more floor levels shall be enclosed pursuant to s. Ind 51.18 with fire-resistive construction as specified in Table 51.03-A.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82; reprinted to correct error in (2), Register, February, 1982, No. 314; am. (2), Register, October, 1982, No. 322, eff. 11-1-82.

Ind 59.18 Vehicular guardrails. Vehicular guardrails shall be provided at all floor openings and at all differences in floor level elevations as follows:

(1) **DRIVE LANES.** Vehicular guardrails shall be installed at the end of drive lanes and shall be designed for a minimum horizontal live load of 1000 pounds per linear foot acting at 18 inches above the floor level; and

(2) **PARKING STALLS.** Vehicular guardrails shall be installed at the end of parking stalls and shall be designed for a minimum horizontal live load of 500 pounds per linear foot acting at 18 inches above the floor level.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

FP Ind 59.19 Illumination levels. (1) **EXITS.** All stairways and exits and the passageways leading to them shall be illuminated to facilitate egress. The intensity of illumination shall be not less than 10 footcandles at the floor or step level.

(2) **DRIVING AREAS.** The minimum illumination level for driving areas at a horizontal plane 30 inches above the floor shall be an intensity of at least 2 footcandles.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

Ind 59.20 Sanitary facilities. (1) **GENERAL.** Sanitary facilities shall be provided as specified in ss. Ind 54.12, 55.32 or 56.16, as appropriate for the use of the building.

(2) **UNATTENDED STORAGE GARAGES.** Sanitary facilities are not required to be provided in unattended storage garages.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

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Ind 59.21 Isolation of hazards and separations. All open-flame FP equipment within a storage garage and a repair garage, including, but not limited to boilers, furnaces and water heaters, shall be isolated from the rest of the storage garage or repair garage by at least 2-hour fire-resistive construction as specified in s. Ind 51.04 or shall be installed in accordance with s. Ind 64.21.

(1) **PROTECTION OF OPENINGS.** All openings in required enclosures shall be protected with self-closing fire-resistive door assemblies as specified in s. Ind 51.047. The installation or use of hold-open devices for these doors shall be prohibited.

(2) **PROHIBITED OPENINGS.** (a) Except as provided in par. (b), openings shall be prohibited in any building component separating garage areas and open flame equipment where the open flame equipment is located below the elevation of the garage floor.

(b) Supply and return air grilles or registers in garage areas are permitted if the bottom of the grille or register opening is at least 18 inches above the garage floor.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

Ind 59.22 Occupancy separations—mixed occupancies. (1) **GENERAL.** (a) Where a storage garage or a repair garage is located in a building used for other purposes, not within the scope of this chapter, the storage garage or repair garage shall be separated from any other occupancy by construction having at least the fire-resistive ratings as specified in Table 59.22.

(b) Where a storage garage or a repair garage is located below an exit court of any occupancy, the storage garage or repair garage shall be separated from the exit court by construction having at least the fire-resistive ratings as specified in Table 59.22.

(2) **PARAPETS.** (a) All walls with a 3-hour fire-resistive rating serving as a required occupancy separation shall be provided with a 3-hour fire-resistive rated parapet at least one foot in height.

(b) All walls with a 4-hour fire-resistive rating serving as a required occupancy separation shall be provided with a 4-hour fire-resistive rated parapet at least 3 feet in height.

(3) **OPENINGS.** (a) All openings in walls serving as a required occupancy separation shall be protected by means of self-closing fire-resistive door assemblies as specified in s. Ind 51.047.

(b) All floors and ceilings serving as a required occupancy separation shall be unpierced, except for plumbing or electrical components.

Note: See s. Ind 51.049 for plastic plumbing and electrical components penetrating fire-rated construction.

TABLE 59.22
OCCUPANCY SEPARATIONS FIRE-RESISTIVE RATINGS IN HOURS.

OCCUPANCY TYPES	CH ^{1,3} 54	CH 55	CH 56	CH 57	CH 58	CH ² 59	CH 60	CH 61	CH ² 62	BELOW EXIT COURTS
Storage Garage greater than 500 sq. ft.	2	3	2	2	3	0	2	See s. Ind 61.10 (2)	0	3
Storage Garage equal to or less than 500 sq. ft.	1	3	2	See s. Ind 57.01 (4)	3	0	1	See s. Ind 61.10 (2)	0	3
Repair Garage greater than 500 sq. ft.	3	4	3	3	4	0	3	3	0	4
Repair Garage equal to or less than 500 sq. ft.	2	4	3	2	4	0	2	2	0	4

¹ Occupancy separations are not required within a fire station or other similar occupancy to isolate vehicles from other areas of the building that are directly and permanently related to the functions of the building.

² An occupancy separation is not required to separate a storage garage, repair garage or open parking structure from each other, however, the most stringent occupancy requirements shall apply. Where these areas are to be classified as separate occupancies, a separation of at least one-hour fire-resistive construction shall be provided.

³ Occupancy separations are not required within an office, factory, or warehouse occupancies only, with a storage garage accommodating one or 2 vehicles which are directly related to the functions of that occupancy. Where a storage garage accommodating one or 2 vehicles within an office, factory or warehouse is part of a multi-occupancy/multi-tenant building (i.e., strip shopping center) the occupancy separation must at least be provided at the adjoining tenant's wall.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82; am. table, Register, October, 1982, No. 322, eff. 11-1-82.

Ind 59.23 Fire protection. (1) STANDPIPES. (a) Except as provided in FP par. (e), fire department standpipes shall be provided as follows:

1. In all storage garages and repair garages 3 or more stories in height; and

2. In all storage garage and repair garage floor levels more than 500 sq. ft. in area, located below grade and not accessible to fire fighting vehicles.

(b) Required fire department standpipes with a fire department siamese connection greater than 50 feet to a street shall be interconnected to a standpipe system with such a connection 50 feet or less to a street.

(c) Required fire department standpipes shall be provided in each stair enclosure serving a storage or repair garage and shall be provided with approved 2½ in. valve hose connections at each floor level with one connection in the stair tower and one immediately outside.

(d) Fire department standpipes shall conform to the requirements specified in s. Ind 51.21 (3) (e) to (i).

(e) 1. The department will recognize alternative systems and designs in lieu of required fire department standpipes, if an equivalent degree of safety is provided in storage or repair garages 60 feet or less in height.

2. The department will accept storage garages or repair garages without fire department standpipes, if clearances are provided to allow fire fighting vehicles access throughout the storage or repair garages.

(2) **AUTOMATIC SPRINKLERS.** Storage garages and repair garages FP greater than 40,000 square feet in gross floor area accommodating aircraft shall be protected by an approved automatic fire suppression system.

(3) * **FIRE EXTINGUISHERS.** Portable fire extinguishers shall be provided and maintained as specified in s. Ind 51.22. FP

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

Ind 59.24 Fire alarms. A fire alarm system complying with s. Ind FP 51.24 shall be provided in every storage garage and repair garage where more than 10 persons are employed above the second story except storage garages and repair garages which are provided with a complete automatic sprinkler system.

History: Cr. Register, December, 1981, No. 312, eff. 1-1-82.

*See Appendix A for further explanatory material.