

Chapter ILHR 54

FACTORIES, OFFICE AND MERCANTILE BUILDINGS

ILHR 54.001	Scope (p. 187)	ILHR 54.11	Lighting (p. 195)
ILHR 54.01	Construction, height and allowable area (p. 187)	ILHR 54.12	Sanitary facilities (p. 195)
ILHR 54.02	Number and location of exits (p. 191)	ILHR 54.13	Change rooms and lunch-rooms (p. 199)
ILHR 54.03	Type of exits (p. 192)	ILHR 54.14	Isolation of hazards (p. 199)
ILHR 54.04	Required exit width (p. 193)	ILHR 54.145	Fire extinguishers (p. 200)
ILHR 54.05	Capacity of buildings (p. 193)	ILHR 54.15	Standpipes (p. 200)
ILHR 54.06	Exit doors (p. 193)	ILHR 54.17	Fire alarms (p. 200)
ILHR 54.07	Passageways (p. 193)	ILHR 54.18	Floor load signs (p. 200)
ILHR 54.08	Enclosure of stairways and shafts (p. 194)	ILHR 54.19	Signs indicating number of persons (p. 201)
ILHR 54.10	Trap doors and floor openings (p. 194)	ILHR 54.20	No smoking signs (p. 201)
ILHR 54.105	Toeboards (p. 194)	ILHR 54.21	Tents (p. 201)
		ILHR 54.22	Mini-warehouses (p. 201)

Note: Chapter Ind 54 was renumbered to be chapter ILHR 54 effective January 1, 1984.

ILHR 54.001 Scope. This classification includes all factories and workshops (including all places where manual labor is employed), office buildings, telegraph and telephone offices, mercantile establishments where commodities are bought or sold, warehouses, railroad stations, exhibition buildings, and places where not more than 100 persons assemble for recreation, entertainment, worship, or dining purposes.

History: 1-2-56; am. Register, December, 1981, No. 312, eff. 1-1-82.

ILHR 54.01 Construction, height and allowable area. (1) **GENERAL.** Buildings and structures within the scope of this chapter may not exceed the height and area limitations specified in this section.

Note: See s. ILHR 51.03 for standards of classes of construction.

(2) **LIMITED AREA CH. ILHR 54 BUILDINGS.** (a) Chapter ILHR 54 buildings not protected by complete automatic fire sprinkler protection may not exceed the height and area limitations specified in Table 54.01-1.

(b) Chapter ILHR 54 buildings protected by complete automatic fire sprinkler systems may not exceed the height and area limitations specified in Table 54.01-2.

(c) Freezer warehouses complying with the requirements of s. ILHR 51.06 (6) (a) 3. b. may be designed and constructed with the allowable floor area as specified in par. (b) and with the allowable increase in exit distance as specified in s. ILHR 54.02 (4) (b) without being protected by a complete automatic fire sprinkler system.

(3) **FIRE DIVISION WALL SEPARATION.** (a) No building shall be limited in area when divided into sections which do not exceed the maximum areas tabulated in this section by fire division walls specified in s. ILHR 51.02 (13).

(b) All openings in such walls shall be protected by fire-resistive door assemblies as specified in s. ILHR 51.047.

1. Except as provided in subd. 2, doors protecting such openings may be left open if equipped with an automatic closing device activated by products of combustion other than heat.

2. a. The automatic closing device may be installed to prevent accidental closing of the fire door in the event of a power outage to the building if it is installed with an approved or listed backup mechanism in addition to the smoke detection release device.

b. The automatic closing device on doors located in smoke- or contaminant-filled environments, such as but not limited to foundries, chemical plants and similar environments, may be activated by rate-of-rise heat detectors.

3. Doors used as required exits shall be standard exit doors and shall comply with the requirements of s. ILHR 51.19 (2).

(4) **UNLIMITED AREAS.** (a) The area of buildings completely protected by an automatic fire sprinkler system may be unlimited provided the following conditions are satisfied:

1. The maximum number of stories is limited as follows:

a. Type No. 2 construction — 9 stories;

b. Type No. 3 construction — 5 stories;

c. Type No. 4 and 5A construction — 3 stories; and

d. Type No. 5B and 6 construction — 1 story.

2. Street access is provided as specified in sub. (5) (b).

(b) There shall be no area restriction in one-story buildings where the following conditions are satisfied:

1. Construction of all building elements listed in Table 51.03-A are of noncombustible materials. Built-up roof coverings may not be used;

2. a. The contents of the building are noncombustible;

b. Stored materials are not packed or crated in combustible materials; and

3. Street access is provided as specified in sub. (5) (b).

TABLE 54.01-1 - ALLOWABLE HEIGHT (STORIES) AND AREA (SQUARE FEET) FOR BUILDINGS WITHOUT COMPLETE AUTOMATIC FIRE SPRINKLER SYSTEM PROTECTION (MAXIMUM GROSS FLOOR AREA PER FLOOR)
NOTE: DO NOT USE FOR BUILDINGS EXCEEDING 60 FEET IN HEIGHT

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	25,000	22,000	19,000	16,000	13,000	11,000	9,000	8,000	6,000
	2	30,500	27,000	24,000	20,500	17,500	15,000	13,000	12,000	10,000
	3	36,000	33,000	29,000	25,000	22,000	19,000	17,000	16,000	14,000
	4	41,500	39,000	34,000	29,500	26,500	23,000	21,000	20,000	18,000
2. Fire-Resistive Type B	1	23,000	20,000	17,000	14,000	11,000	9,000	7,000	6,000	N.P.
	2	28,000	25,000	22,000	18,500	15,500	13,000	11,000	10,000	N.P.
	3	34,000	31,000	27,000	23,000	20,000	17,000	15,000	14,000	N.P.
	4	39,500	37,000	32,000	27,500	24,500	21,000	19,000	18,000	N.P.
3. Metal Frame Protected	1	21,000	18,000	15,000	12,000	N.P.	N.P.	N.P.	N.P.	N.P.
	2	26,500	23,000	19,500	16,000	N.P.	N.P.	N.P.	N.P.	N.P.
	3	32,000	28,000	24,000	20,000	N.P.	N.P.	N.P.	N.P.	N.P.
	4	37,500	33,000	28,500	24,000	N.P.	N.P.	N.P.	N.P.	N.P.
4. Heavy Timber	1	17,000	14,000	11,000	9,000	N.P.	N.P.	N.P.	N.P.	N.P.
	2	22,000	19,000	16,000	13,500	N.P.	N.P.	N.P.	N.P.	N.P.
	3	27,000	24,000	21,000	18,000	N.P.	N.P.	N.P.	N.P.	N.P.
	4	32,000	29,000	26,000	22,500	N.P.	N.P.	N.P.	N.P.	N.P.
5A. Exterior Masonry Protected	1	15,500	13,500	9,500	8,000	N.P.	N.P.	N.P.	N.P.	N.P.
	2	20,000	17,000	14,000	12,500	N.P.	N.P.	N.P.	N.P.	N.P.
	3	24,500	21,500	18,500	15,500	N.P.	N.P.	N.P.	N.P.	N.P.
	4	29,000	26,000	23,000	19,500	N.P.	N.P.	N.P.	N.P.	N.P.
5B. Exterior Masonry Unprotected	1	14,000	11,500	9,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	18,000	15,000	12,500	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	3	22,000	19,000	16,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	4	26,000	23,000	19,500	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
6. Metal Frame Unprotected	1	14,000	11,500	9,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	18,000	15,000	12,500	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	3	22,000	19,000	16,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	4	26,000	23,000	19,500	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
7. Wood Frame Protected	1	12,500	7,500	5,500	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	16,000	10,000	7,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	3	19,000	12,000	8,500	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	4	22,000	14,000	10,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
8. Wood Frame Unprotected	1	10,000	5,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	12,000	6,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	3	14,000	7,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	4	16,000	8,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.

N.P. MEANS NOT PERMITTED

TABLE 54.01-2 — ALLOWABLE HEIGHT (STORIES) AND AREA (SQUARE FEET) FOR BUILDINGS COMPLETELY PROTECTED BY AUTOMATIC FIRE SPRINKLER SYSTEM (MAXIMUM GROSS FLOOR AREA PER FLOOR) NOTE: USE FOR ALL BUILDINGS

CLASS OF CONSTRUCTION	BUILDING FRONTAGE STREET EXPOSURE	NUMBER OF STORIES									
		1	2	3	4	5	6	7	8	9	Over 9
1. Fire-resistive Type A stories and area may be unlimited subject to s. ILHR 54.01 (5) (b)	1	NO LIMIT									
	2	NO LIMIT									
	3	NO LIMIT									
	4	NO LIMIT									
2. Fire-resistive type B 1 to 9 story area may be unlimited subject to s. ILHR 54.01 (5) (b)	1		69,000	60,000	51,000	42,000	33,000	27,000	21,000	18,000	N.P.
	2	NO	85,500	75,000	66,000	55,500	46,500	39,000	33,000	30,000	
	3	LIMIT	102,000	93,000	81,000	69,000	60,000	51,000	45,000	42,000	
	4		118,500	111,000	96,000	82,500	73,500	63,000	57,000	54,000	
3. Metal frame protected 1 to 5 story area may be unlimited subject to s. ILHR 54.01 (5) (b)	1	84,000	63,000	54,000	45,000	36,000	N.P.	N.P.	N.P.	N.P.	N.P.
	2	106,000	79,500	69,000	58,500	48,000					
	3	128,000	96,000	84,000	72,000	60,000					
	4	150,000	112,500	99,000	85,500	72,000					
4. Heavy Timber 1 to 3 story area may be unlimited subject to s. ILHR 54.01 (5) (b)	1	68,000	51,000	42,000	33,000	27,000	N.P.	N.P.	N.P.	N.P.	N.P.
	2	88,000	66,000	57,000	48,000	40,500					
	3	108,000	81,000	72,000	63,000	54,000					
	4	128,000	96,000	87,000	78,000	67,500					
5A. Exterior Masonry Protected 1 to 3 story area may be unlimited subject to s. ILHR 54.01 (5) (b)	1	62,000	46,500	40,500	28,500	24,000	N.P.	N.P.	N.P.	N.P.	N.P.
	2	80,000	60,000	51,000	42,000	37,500					
	3	98,000	73,500	64,500	55,500	46,500					
	4	116,000	87,000	78,000	69,000	58,500					
5B. Exterior Masonry Unprotected 1 story area may be unlimited subject to s. ILHR 54.01 (5) (b)	1	56,000	42,000	34,500	27,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	72,000	54,000	45,000	37,500						
	3	88,000	66,000	57,000	48,000						
	4	104,000	78,000	69,000	58,500						
6. Metal Frame Unprotected 1 story area may be unlimited subject to s. ILHR 54.01 (5) (b)	1	56,000	42,000	34,500	27,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	72,000	54,000	45,000	37,500						
	3	88,000	66,000	57,000	48,000						
	4	104,000	78,000	69,000	58,500						
7. Wood Frame Protected	1	50,000	37,500	22,500	16,500	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	64,000	48,000	30,000	21,000						
	3	76,000	57,000	36,000	25,500						
	4	88,000	66,000	42,000	30,000						
8. Wood Frame Unprotected	1	40,000	30,000	15,000	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.	N.P.
	2	48,000	36,000	18,000							
	3	56,000	42,000	21,000							
	4	64,000	48,000	24,000							

N.P. MEANS NOT PERMITTED

(5) **STREET ACCESS TO BUILDINGS.** (a) Streets shall be within 50 feet of the adjacent building side with no obstructions between the street and the building which will impede fire-fighting efforts.

Note: See s. ILHR 51.01 (124) for definition of street.

(b) 1. Except as provided in subd. 2., buildings with no area limitations shall have a continuous all-weather, hard-surfaced area 30 feet or more in width for a distance of not less than 50% of the perimeter of the building. These buildings shall have at least one wall facing a street for its entire length. At least 2 of the remaining building walls shall face streets for at least 50% of their respective lengths.

2. Unlimited area buildings of fire-resistive type 1 construction and one-story unlimited area buildings of fire-resistive type 2 construction shall be provided with street access as defined in s. ILHR 51.01 (124) to at least one side of the building.

(6) **HEIGHT EXCEPTIONS.** Rack storage facilities of noncombustible construction protected with automatic fire sprinkler systems installed in accordance with NFPA No. 231C — Standard for Rack Storage of Materials, may be of unlimited height.

History: 1-2-56; am. (2) and (3), Register, September, 1959, No. 45, eff. 10-1-59; am. (3), Register, February, 1971, No. 182, eff. 7-1-71; r. and recr. (3), eff. 8-1-71 and exp. 1-1-72; cr. (3) eff. 1-1-72, Register, July, 1971, No. 187; r. and recr. (1) and (2), Register, June, 1972, No. 198, eff. 1-1-73; r. and recr. (2) and (3), Register, September, 1973, No. 213, eff. 10-1-73; cr. (2) (a) 2 a, Register, December, 1977, No. 264, eff. 1-1-78; am. (2) (b) 2. a. and (2) (c), cr. (4), Register, November, 1978, No. 276, eff. 1-1-79; am. (3), Register, January, 1980, No. 289, eff. 2-1-80; r. and recr. table, am. (2) (b) 2. and (3), Register, December, 1981, No. 312, eff. 1-1-82; reprinted to correct errors in Table 54.01 and (2) (b) 2., Register, February, 1982, No. 314; am. (3), Register, December, 1983, No. 336, eff. 1-1-84; renum. (2) (a) and (c) to be (2) (a) 1. and (d), (2) (a) 2. renumb. and am. from ILHR 54.23, am. (2) (b) 1. and 2., r. and recr. (2) (b) 3., cr. (2) (c), Register, August, 1985, No. 356, eff. 1-1-86; emerg. r. and recr. (1) to (4), cr. (5) and (6) and tables 54.01-1 and 54.01-2, r. table 54.01, eff. 9-6-86; r. and recr. (1) to (4), cr. (5), (6) and tables 54.01-1 and 54.01-2, r. table 54.01, Register, November, 1986, No. 371, eff. 12-1-86.

ILHR 54.02 Number and location of exits. (1) **NUMBER OF EXITS.** Every building and every floor level thereof shall have at least 2 exits.

(2) **EXCEPTIONS.** One exit will be permitted in the following conditions:

(a) Floor levels used entirely for storage in buildings 2 stories or less in height and not over 3,000 square feet gross area per floor.

(b) Interior balconies or mezzanine floors not over 3,000 square feet gross area used entirely for storage.

(c) Open interior balconies or open mezzanine floors not over 750 square feet gross area used for purposes other than nonoccupied storage.

(d) One-story office buildings, without a basement or mezzanine, having a gross floor area, per floor, of not more than 1,800 square feet. Only one office operation per floor level shall be permitted. The single exit from the first floor or ground floor(s) shall be an outside exit serving only that floor level.

(e) Retail establishments not over 750 square feet net area, provided there are 2 directions for exiting from the entrance door of the store.

(3) **OFFICE SUITE EXITING.** One exit will be permitted from office suites having a floor area of not more than 1,800 square feet net area, provided there are 2 directions for exiting from the entrance door of the suite.

(4)* **EXIT DISTANCE.** (a) Exits shall be distributed or located so that no part of any building within the scope of this chapter will be more than 150 feet distant from an exit.

(b) Where an approved automatic fire sprinkler system is provided throughout the building, an increase in exit distance to 200 feet will be permitted for mercantile buildings and an increase in exit distance to 300 feet will be permitted in all other buildings within the scope of this chapter, except high hazard buildings.

(c) Buildings having contents which are liable to burn with extreme rapidity or from which poisonous fumes may be liberated or explosions occur in case of fire, shall have exits provided so that the maximum distance to exit is limited to 75 feet.

Note: See s. A52.015 of Appendix A for further information relating to "high hazard" occupancies.

(d) All of the above distances shall be measured along public passageways and aisles.

Note: Also see s. ILHR 54.08 (1) for alternate exit distance provisions.

(5) **EXIT DISTRIBUTION.** Exits in all buildings of this classification shall be so located and distributed so as to afford the best possible egress.

History: 1-2-56; cr. (1) (c), Register, September, 1959, No. 45, eff. 10-1-59; am. (1) (b), Register, February, 1971, No. 182, eff. 7-1-71; r. and recr. (1) (b) eff. 8-1-71 and exp. 1-1-72, and cr. (1) (b) eff. 1-1-72, Register, July, 1971, No. 187; am. (1), Register, September, 1973, No. 213, eff. 10-1-73; r. and recr. Register, December, 1978, No. 276, eff. 1-1-79; am. (4), Register, January, 1980, No. 289, eff. 2-1-80; am. (4), Register, December, 1981, No. 312, eff. 1-1-82; emerg. am. (4) (b), eff. 9-6-86; am. (4) (b), Register, November, 1986, No. 371, eff. 12-1-86.

ILHR 54.03 Type of exits. (1) At least one-half of the exits required in accordance with s. ILHR 54.02 shall be stairways or standard exits to grade as specified in ss. ILHR 51.15-51.18. The other exits shall be either stairways, standard exits, or horizontal exits as specified in s. ILHR 51.19, or fire escapes as specified in s. ILHR 51.20. A fire escape will not be accepted as a required exit for any building level more than 5 stories or 55 feet above grade. An outside wooden stairway may be used as an exit for a 2-story building.

(a) *Exception.* The width of required exit stairways serving unoccupied areas (i.e., storage areas, equipment mezzanines and similar areas) not exceeding 750 square feet may be reduced to 3 feet 0 inches.

(b) *Exception.* Less than 3 risers may be used to elevated work stations (such as pharmacy floors, computer floors and similar areas) or to altars, podiums and similar areas, not in a required exit passageway.

(c) *Exception.* A spiral stairway may be used as a nonrequired convenience stairway in addition to all other required exit stairways in places of employment.

*See Appendix A for further explanatory material.

(d) *Exception.* A rescue platform (exterior balcony) of combustible construction may be used as a required second exit for buildings of type 7 and 8 construction, provided the following conditions are satisfied:

1. The exit serves 8 or less people;
2. The exit platform is located not more than 10 feet above the adjacent exit discharge grade;
3. The platform area is at least 14 square feet, with a minimum dimension of 3 feet;
4. The platform is designed for 80 pounds per square foot live load plus dead load;
5. Railings are provided in accordance with the provisions of s. ILHR 51.162;
6. Platforms having solid floors are provided with a roof equal in area to that of the platform; and
7. All wood used in the construction of the rescue platform shall be pressure treated wood satisfying the requirements of the applicable standards specified in s. ILHR 51.27 (6a) unless the wood is inherently resistant to decay.

(2) Every building which will accommodate more than 50 persons above the second story shall have at least 2 stairways.

(3) Wherever stairways are required under this classification, ramps with a slope not greater than one foot in 8 feet may be substituted. Ramps shall comply with all the requirements for stairways as to construction, enclosures, width, landing and lighting, and shall be surfaced with an approved non-slip material.

History: 1-2-56; am. (1), Register, December, 1974, No. 228, eff. 1-1-75; cr. (1) (a) to (d), Register, December, 1977, No. 264, eff. 1-1-78; am. (1) (b), Register, December, 1978, No.

DEPT. OF INDUSTRY, LABOR AND HUMAN RELATIONS 193
Factories, office, mercantile ILHR 54

276, eff. 1-1-79; am. (1) (d) 5. and (3), Register, January, 1980, No. 289, eff. 2-1-80; am. (1) (d) (intro.) 5. and 6., cr. (1) (d) 7., Register, December, 1983, No. 336, eff. 1-1-84.

ILHR 54.04 Required exit width. (1) The total required exit width from a building level shall be in accordance with the requirements of ss. ILHR 51.15 (6) and 51.16 (3).

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(2) Standard fire escapes (s. ILHR 51.20) may be substituted for stairways to the extent of not more than 1/3 of the required total width, subject to the provision of s. ILHR 54.02.

(3) Horizontal exits in accordance with the requirements of s. ILHR 51.19 may provide up to one-half of the required exit width for any floor, subject to the provisions of s. ILHR 54.02.

History: 1-2-56; am. (1) (a) and (b) and (3) (a) and (b), Register, June, 1972, No. 198, eff. 1-1-73; r. and recr. (1) and (3), r. (4), Register, December, 1974, No. 228, eff. 1-1-75.

ILHR 54.05 Capacity of buildings. (1) In calculating the aggregate width of exits, the capacity of the buildings shall be established as follows:

- (a) Stores, first floor and basement ----- 30 sq. ft. per person
- (b) Stores, second floor and above ----- 60 sq. ft. per person
- (c) Dining rooms, cafes, taverns, etc. ----- 10 sq. ft. per person
- (d) Places of seated assemblage----- 7 sq. ft. per person
- (e) Warehouses ----- 300 sq. ft. per person
- (f) Factories and offices ----- 75 sq. ft. per person

(2) The above figures are based on the net area of each occupied space. Where dining rooms, cafes, dance halls and places of seated assemblage accommodate more than 100 persons, see s. ILHR 55.01.

(3) In other occupancies not specified above, the capacity shall be determined by the actual number of persons liable to be accommodated therein and no greater number of persons will be permitted therein.

ILHR 54.06 Exit doors. (1) **GENERAL.** Except as provided in pars. (a) and (b), every door which serves as an exit from a building, public passageway or stairway shall be a standard exit door as specified in s. ILHR 51.15.

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(a) Exit doors serving 25 or less persons need not swing in the direction of egress.

(b) Exit access doors serving 25 or less persons may be reduced in width to 2 feet 8 inches and may be sliding or accordian-type doors.

(2) **ILLUMINATED EXIT SIGNS.** Every exit door from each floor, other than the principal entrance on the first floor, shall be marked with exit signs as specified in s. ILHR 51.15 (5).

History: 1-2-56; am. (1), Register, December, 1978, No. 276, eff. 1-1-79; am. Register, January, 1980, No. 289, eff. 2-1-80; am. Register, December, 1983, No. 336, eff. 1-1-84.

ILHR 54.07 Passageways. Where there is not direct access to outside exit doors, safe and continuous passageways, aisles or corridors leading directly to every exit shall be maintained at all times on all floors of all

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buildings. Every passageway, aisle or corridor shall conform in width to the rule for width of stairways as specified in ss. ILHR 51.15 (6) and 51.16 (3). Widths shall be measured in the clear, at their narrowest points produced by any projection, radiator, pipe or other object and the required width shall be maintained clear and unobstructed at all times.

History: 1-2-56; am. Register, December, 1981, No. 312, eff. 1-1-82.

FP ILHR 54.08 Enclosure of stairways and shafts. (1) (a) Except as provided in par. (b), all stairways including landings, ramps and shafts, shall be enclosed as specified in s. ILHR 51.02 (11).

(b) 1. The stairways or shafts connecting the first floor with one floor level immediately adjacent to it (e.g., second story, mezzanine, ground floor or basement) may be left open in buildings 2 stories or less in height, and where the distance to an exit from the area served by the open stairway including the horizontal travel distance on the exit access stair, does not exceed 100 feet in buildings not completely protected by an approved automatic sprinkler system or 150 feet in buildings completely protected by an approved automatic sprinkler system; or

2. Any stairway or shaft connecting the second floor, first floor and basement or ground floor shall be separated at the first floor level or first adjacent basement or ground floor level with fire resistive construction as specified in Table 51.03-A or better in buildings 2 stories or less in height, and where the distance to an exit from the area served by the open stairway including the horizontal travel distance on the exit access stair, does not exceed 100 feet in buildings not completely protected by an approved automatic sprinkler system or 150 feet in buildings completely protected by an approved automatic sprinkler system.

(2) All doors opening into such enclosures shall be as specified in s. ILHR 51.047, and all windows shall be of wired glass and metal frames and sash.

Note: See ch. Ind 4 for requirements governing the installation and operation of elevators.

History: 1-2-56; am. (1) (a), (b), (c), (d) and (2), Register, February, 1971, No. 182, eff. 7-1-71; r. and recr. (1) (a), (b), (c), (d) and (2) eff. 8-1-71 and exp. 1-1-72; cr. (1) (a), (b), (c), (d) and (2) eff. 1-1-72, Register, July, 1971, No. 187; r. and recr. (1), Register, June, 1972, No. 198, eff. 1-1-73; am. (3), Register, December, 1977, No. 264, eff. 1-1-78; r. (3), Register, December, 1978, No. 276, eff. 1-1-79; am. (1), Register, January, 1980, No. 289, eff. 2-1-80; am. (1), Register, October, 1982, No. 322, eff. 11-1-82; am. (1) (b), Register, December, 1983, No. 336, eff. 1-1-84.

ILHR 54.10 Trap doors and floor openings. Every opening through any floor or through any roof used by the public or by employees shall be guarded by a substantial enclosure or rail not less than 3 feet 6 inches high. Floor openings in buildings of more than 2 stories, unless enclosed with fire-resistive enclosures as specified in s. ILHR 54.08 shall be protected by fire-resistive doors as specified in s. ILHR 51.047.

History: 1-2-56; am. Register, February, 1971, No. 182, eff. 7-1-71; r. and recr. eff. 8-1-71 and exp. 1-1-72; cr. eff. 1-1-72, Register, July, 1971, No. 187.

ILHR 54.105 Toeboards. A toeboard shall be provided at the exposed edges of all elevated platforms, walks, balconies, mezzanines, ramps and floor openings to prevent the fall of materials where the elevation difference is greater than 5 feet. The toeboard shall extend 4 inches above the finished floor. Where material is stockpiled to a height where the toeboard does not provide adequate protection, additional measures shall be taken to prevent the fall of materials.

(1) **EXCEPTION.** Toeboards are not required on stairways or ramps and their landings or platforms.

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

ILHR 54.11 Lighting. (1) (a) Except as provided in par. (b), all stairways, fire escapes and exits and the passageways leading thereto when used at night shall be properly illuminated to facilitate egress. The intensity of illumination shall be as specified in ch. Ind 19.

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(b) The level of intensity of illumination for fire escapes may be reduced to 2.5 foot candles.

(2) All gas jets or gas lights in factories or workshops where combustible material is used, shall be properly enclosed by globes or wire cages, or otherwise properly guarded.

History: 1-2-56; am. (1), Register, August, 1985, No. 356, eff. 1-1-86.

ILHR 54.12 Sanitary facilities. (1) **TOILET ROOMS.** The occupancies included under the scope of this chapter shall be provided with toilet rooms as outlined in this section.

(a) *Factories, office and mercantile buildings.* All factories, office and mercantile buildings shall be provided with separate toilet rooms for each sex, except as follows:

1. Where not more than 10 employes and 25 patrons are accommodated, one toilet room, shared in common, may be provided if the door of the toilet room is equipped with a lock to ensure privacy.

2. Separate toilet rooms for the employes and the general public need not be provided if the toilet rooms are accessible to both employes and the general public.

3. Toilet facilities need not be provided in buildings and structures which provide service to people in automobiles, such as drive-in bank teller booths, photography and film service booths, or parking lot attendant booths, but not including drive-in restaurants, provided that a written statement is submitted to the department showing proof that convenient toilet facilities are available during all periods of operation. The requirement for toilet facilities is also waived for mobile crews and for unattended buildings, provided the employes have access to available toilet facilities.

(b) *Shopping centers.* In shopping centers, separate toilet rooms for each sex shall be provided for use by the general public. The toilet rooms may be located in the public mall or in the individual stores. Separate toilet rooms for each sex shall be provided for the employes in each store. In stores which accommodate not more than 10 employes and 25 patrons, one toilet room to accommodate both sexes will be acceptable. A store which has a net area of 750 square feet or less is not required to be provided with toilet rooms for the employes if the employes have access to the public toilet rooms located in the mall.

Note #1: The department recommends that public toilet rooms in the mall be conveniently located for patron use and that the travel distance between sets of public toilet rooms be less than 400 feet.

Note #2: See ss. ILHR 54.12 (1) (d) and 55.32 for requirements for toilet rooms for other use groups which may also be included in shopping centers.

(c) *Places of worship.* Places of worship which are included under the scope of this chapter shall be provided with separate toilet rooms for each sex.

(d) *Places for entertainment, recreation and seated dining.* Restaurants, taverns, and places for entertainment and recreation which are included under the scope of this chapter shall be provided with separate toilet rooms for each sex. Separate toilet rooms for employes and the general public are not required.

Note: See ch. HSS 196, Wis. Adm. Code, rules of the department of health and social services, for supplementary requirements for toilet room facilities in restaurants.

(e) *Garages, service stations and filling stations.* Toilet rooms shall be provided in accordance with the requirements of this subsection.

1. *Garages.* Separate toilet rooms for each sex shall be provided in all service and repair garages, body shops, automobile tire and battery shops, and buildings of similar use, except that a single toilet room, shared in common, may be provided in buildings which accommodate not more than 10 employes and 25 patrons. Separate toilet rooms for employes and patrons need not be provided if toilet rooms are accessible to both employes and patrons.

2. *Service stations and filling stations.* Separate toilet rooms for each sex shall be provided in service stations and filling stations, including self-service stations. Separate toilet rooms for employes and patrons need not be provided if toilet rooms are accessible to both employes and patrons.

(2) *Sanitary fixtures.* In public buildings and places of employment, except taverns, restaurants, filling stations and service stations, the total number of sanitary fixtures required in the building shall be based upon the total number of occupants of the building and shall be determined from the ratios established in Table 54.12-A, but in no case shall the ratio of the number of fixtures to the number of employes be less than those specified in Table 54.12-B. The total number of occupants will be considered equally divided between men and women unless a different ratio is approved by the department. The requirements of this section do not apply to the buildings exempt from toilet rooms under s. ILHR 54.12 (1).

(a) *Exceptions:* 1. a. Except as provided in subpar. b, taverns and restaurants shall provide at least one toilet room for each sex.

b. One toilet room having at least one water closet (WC) and one lavatory (L) may be shared in common by both sexes in restaurants providing seating for 15 or less patrons provided the door of the toilet room is equipped with a lock to ensure privacy. Separate toilet rooms for the employes and the general public need not be provided if the toilet rooms are accessible to both employes and the general public.

c. Restaurants accommodating 16 to 50 total occupants shall provide at least one water closet (WC) and one lavatory (L) for each sex.

d. Taverns and restaurants accommodating 50 to 100 occupants in total shall provide at least 2 water closets (WC) and one lavatory (L) for the females and at least one water closet (WC), one urinal (U) and one lavatory (L) for the males.

e. Taverns and restaurants accommodating more than 100 occupants in total shall be provided with sanitary fixtures as specified in Table 55.32.

TABLE 54.12-A
NUMBER OF FIXTURES REQUIRED FOR OCCUPANTS

Number of Occupants	Type of Fixture					
	Water Closets (WC)		Urinals (U)	Lavatories (L)	Showers (S) ¹	Drinking Facilities (DF)
	Males (M)	Females (F)	Males (M)			
1- 100 occupants of each sex	1	1	0	One (L) for each 2 required (WC) or (U), or both or fraction	None required	One (DF) for each 150 occupants up to 600 or fraction
101- 200 occupants of each sex	1	2	1			
201- 300 occupants of each sex	1	3	2			
301- 400 occupants of each sex	2	4	2			
401- 500 occupants of each sex	2	5	3			
501- 600 occupants of each sex	2	6	4			
Over 600 occupants of each sex	One (WC) for each additional 600 (M), or fraction	One (WC) for each additional 275 (F), or fraction	One (U) for each additional 500 (M), or fraction			One additional (DF) for each additional 3000 occupants, or fraction

¹Showers shall be provided in public pool facilities and for occupants exposed to occupational hazards such as poisons, infectious or irritating materials.

TABLE 54.12-B
NUMBER OF FIXTURES REQUIRED FOR EMPLOYEES

Number of Employees	Type of Fixture					
	Water Closets (WC)		Urinals (U)	Lavatories (L)	Showers (S) ¹	Drinking Facilities (DF)
	Males (M)	Females (F)	Males (M)			
0- 15 employes of each sex	1	1	0	One (L) for each 2 (WC) required or (U), or fraction	One (S) for each 10 employes of each sex, or fraction	One (DF) for each 100 employes, or fraction
16- 35 employes of each sex	1	2	1			
36- 55 employes of each sex	2	3	1			
56- 80 employes of each sex	2	4	2			
81-110 employes of each sex	3	5	2			
111-150 employes of each sex	4	6	2			
Over 150 employes of each sex	One additional fixture for each additional 40 employes of each sex; 2/3 of the additional water closets for males may be urinals.					

¹Showers shall be provided in public pool facilities and for employes exposed to occupational hazards such as poisons, infectious or irritating materials.

Note #1: *Examples:* Example #1: Mercantile building with 300 patrons and 50 employes = 350 total occupants; equally divided between sexes = 175 males, 175 females. From Table 54.12-A, 101-200 occupants of each sex: males require one water closet, one urinal, one lavatory; females require 2 water closets, one lavatory. Check for compliance with Table 54.12-B for employes: 50 employes, equally divided between sexes = 25 males, 25 females; 16-35 employes of each sex, males require one water closet, one urinal, one lavatory; females require 2 water closets, one lavatory. Therefore, the number of fixtures required by Table 54.12-A also satisfies the requirements of Table 54.12-B for employes and governs.

Example #2: Office building with 300 employes and 50 patrons = 350 total occupants; equally divided between sexes = 175 males, 175 females. From Table 54.12-A, 101-200 occupants of each sex: males require one water closet, one urinal, one lavatory; females require 2 water closets, one lavatory. Check for compliance with Table 54.12-B for employes: 300 employes, equally divided between sexes = 150 males, 150 females; 111-150 employes of each sex, males require 4 water closets, 2 urinals, 3 lavatories; females require 6 water closets, 3 lavatories. Therefore, the number of fixtures required by Table 54.12-B for employes is more restrictive and governs.

Note #2: The ratios established in Table 54.12-B for employes are taken directly from the U.S. Department of Labor, Occupational Safety and Health Act (OSHA) regulations. Therefore, s. ILHR 50.25, petitions for variance, is not applicable to the requirements of this table.

Note #3: See also rules of the department of health and social services for sanitary fixtures for public swimming places, mobile home parks, camping grounds, camping resorts, recreational camps and educational camps.

Note #4: See Ch. Ind 1000-2000—Wis. Safety and Health Code, for additional washing facilities required in places of employment where environmental hazards are present.

2. Filling stations and service stations shall provide at least one toilet room for each sex. A minimum of one water closet (WC) and one lavatory (L) shall be provided for each sex, but in no case shall the ratio of number of fixtures to number of employes be less than those specified in Table 54.12-B.

History: 1-2-56; am. (3) (a) and (b), and (6), Register, September, 1959, No. 45, eff. 10-1-59; r. and recr. Register, December, 1976, No. 252, eff. 1-1-77; am. (1) (a) 1, (1) (b) and (e) 1, r. (1) (e) 3, r. and recr. (2), Register, December, 1977, No. 264, eff. 1-1-78; am. (2) (intro.) and (2) (a) 2., Register, December, 1978, No. 276, eff. 1-1-79; r. and recr. table and (2) (a) 1., Register, December, 1981, No. 312, eff. 1-1-82; r. and recr. (2) (a) 1., Register, October, 1982, No. 322, eff. 11-1-82; am. (1) (a) 1. and (e) 1., Register, December, 1983, No. 336, eff. 1-1-84; am. table 54.12 A and B, r. (2) (a) 1. a., renum. (2) (a) 1. intro., b. and c. to be a. d. and e. and am. a., cr (2) (a) 1. b. and c., Register, August, 1985, No. 356, eff. 1-1-86.

ILHR 54.13 Change rooms and lunchrooms. (1) CHANGE ROOMS. Change rooms equipped with storage facilities for street clothes shall be provided where employes are required to wear protective clothing due to the nature of the employment and where employes are exposed to toxic materials and industrial poisons. Separate storage facilities for street clothes and work clothes shall be provided for employes who work with industrial poisons.

Note: See also ch. HSS 196, Wis. Adm. Code, rules of the department of health and social services, for requirements for dressing rooms and lockers in restaurants.

(2) **LUNCHROOMS.** A space for eating lunches shall be provided in all places of employment where there is exposure to injurious dusts, toxic material and industrial poisons. Such space shall be physically separate from any location where there is exposure to toxic materials. Toilet rooms shall not be permitted to serve as lunchrooms.

History: Cr. Register, December, 1976, No. 252, eff. 1-1-77.

ILHR 54.14 Isolation of hazards. (1) GENERAL. (a) Except as provided **FP** in par. (b), all fuel-fired heating boilers and furnaces, power boilers, fuel rooms and breaching, storage vaults for paints, oils, and similar combustibles and other similar hazards in a building shall be isolated from the rest of the building by at least a 2-hour fire-resistive enclosure as specified in ss. ILHR 51.04 to 51.049; except that in buildings not more than 2 stories in height and having a floor area of not more than 3,000 square feet per floor, a 1-hour fire-resistive enclosure as specified in ss. ILHR 51.04 to 51.049, or better, shall be provided.

Note: See ch. ILHR 10, for isolation of flammable and combustible liquids.

(b) Direct vent sealed combustion chamber appliances need not be enclosed with fire-resistive rated construction as specified in par. (a).

(2) **PROTECTION OF OPENINGS.** All openings shall be protected with self-closing fire-resistive doors as specified in s. ILHR 51.047.

(3) **SUSPENDING EQUIPMENT. (a)** Except as provided in par. (b), boilers up to 200,000 Btu input, water heaters up to 200,000 Btu input, gas and liquid fuel-fired space heaters, suspended furnaces, vented and unvented unit heaters may be used without an enclosure where approved by the department. Where suspended furnaces, vented and unvented unit heaters, boilers, and water heaters are used without an enclosure, all such units shall be located at least 7 feet above the floor. The blow-off pipe for suspended boilers and water heaters shall be extended down to within 6 inches of the floor.

(b) The rated enclosure for heating equipment in factories may be omitted if the burner of the equipment is located at least 7 feet off the floor and the equipment is protected from physical damage.

Note: See s. ILHR 64.21 for additional requirements.

History: 1-2-56; am. (1) and (2), Register, February, 1971, No. 182, eff. 7-1-71; r. and recr. (1) and (2) eff. 8-1-71 and exp. 1-1-72; cr. (1) and (2) eff. 1-1-72, Register, July, 1971, No. 187; renun. from 54.13, Register, December, 1976, No. 252, eff. 1-1-77; am. (3), Register, December, 1978, No. 276, eff. 1-1-79; am. Register, December, 1981, No. 312, eff. 1-1-82; am. (3), Register, October, 1982, No. 322, eff. 11-1-82; r. and recr. (3), Register, December, 1983, No. 336, eff. 1-1-84; am. (1), Register, August, 1985, No. 356, eff. 1-1-86.

FP ILHR 54.145* FIRE EXTINGUISHERS. Portable fire extinguishers shall be provided and maintained as specified in s. ILHR 51.22.

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

FP ILHR 54.15 Standpipes. (1) **FIRE DEPARTMENT STANDPIPES.** Fire department standpipes shall be provided in all buildings exceeding 60 feet in height.

(2) **STANDPIPES.** Dry standpipes shall be provided in all buildings 3 stories or more in height in which the floor area of each story is more than 3,000 square feet, unless an approved automatic sprinkler system is installed. First-aid standpipes may be provided in lieu of dry standpipes in factory occupancies.

History: 1-2-56; renun. from 54.14 and r. and recr. Register, December, 1976, No. 252, eff. 1-1-77; am. (2), Register, December, 1977, No. 264, eff. 1-1-78; emerg. r. and recr. (2), eff. 9-6-86; r. and recr. (2), Register, November, 1986, No. 371, eff. 12-1-86.

FP ILHR 54.17 Fire alarms. (1) **FACTORY AND WORKSHOP.** Except as provided in sub. (3), a manual fire alarm complying with the requirements of s. ILHR 51.24 shall be provided in every factory or workshop where more than 10 persons are employed above the second story.

(2) **OFFICE BUILDINGS.** Except as provided in sub. (3), a manual fire alarm complying with the requirements of s. ILHR 51.24 shall be provided in office buildings complying with either of the following conditions:

(a) Four stories or more in height; or

(b) 15,000 square feet or more on any floor level above or below a floor of exit discharge.

(3) **EXCEPTION.** The installation of a manual fire alarm system may be omitted in buildings where complete automatic fire sprinkler system protection is provided.

History: 1-2-56; am. Register, June, 1972, No. 198, eff. 1-1-73; renun. from 54.16, Register, December, 1976, No. 252, eff. 1-1-77; r. and recr. Register, December, 1981, No. 312, eff. 1-1-82; emerg. r. and recr., eff. 9-6-86; r. and recr. Register, November, 1986, No. 371, eff. 12-1-86.

ILHR 54.18 Floor load signs. (1) In every factory, workshop, warehouse, or other building where material is piled, notices of a permanent character shall be painted or otherwise prominently displayed, stating the live load in pounds per square foot which the floor is designed to carry. Such notices shall be placed in full view, on each floor.

*See Appendix A for further explanatory material.

(2) Where floors are always used for the storage of some particular material, the walls shall be marked to the height to which the material shall be piled without exceeding the safe load.

History: 1-2-56; renum. from 54.17, Register, December, 1976, No. 252, eff. 1-1-77.

ILHR 54.19 Signs indicating number of persons. In all buildings of this classification where 50 or more persons are accommodated on any floor above the second, notices shall be prominently displayed stating the maximum number of persons on each floor for whom stairways and other exits have been provided according to ss. ILHR 54.02—54.06. Such notices shall be placed in full view, on each floor.

History: 1-2-56; renum. from 54.18, Register, December, 1976, No. 252, eff. 1-1-77.

ILHR 54.20 No smoking signs. Smoking shall not be permitted in retail establishments where flammable materials are handled or sold. Suitable signs bearing the words "No Smoking" shall be erected in all places where such hazard exists. FP

History: 1-2-56; renum. from 54.19, Register, December, 1976, No. 252, eff. 1-1-77.

ILHR 54.21 Tents. All tents used for sales or storage purposes shall conform to the requirements specified in ss. ILHR 62.42—62.51.

History: Cr. Register, September, 1959, No. 45, eff. 10-1-59; renum. from 54.20, Register, December, 1976, No. 252, eff. 1-1-77; am. Register, December, 1981, No. 312, eff. 1-1-82.

ILHR 54.22 Mini-warehouses. (1) SCOPE. This section applies to mini-warehouses.

(2) CLASS OF CONSTRUCTION. Mini-warehouses shall be of at least type 8, wood frame unprotected construction.

(3) CONTENTS. Storage of hazardous materials or vehicles in mini-warehouses is prohibited. The owner shall submit an affidavit to the department stating that the building will not be used for this purpose.

(4) NUMBER OF EXITS. (a) Except as provided in par. (b), 2 exits shall be required from each storage compartment.

(b) One exit is permitted from compartments of 3,000 square feet or less.

(5) TYPE OF EXITS. (a) Standard exit doors shall be required from compartments with the capacity of 25 persons or more, using the capacity ratios established in s. ILHR 54.05.

(b) Nonstandard exit doors such as overhead, sliding and similar doors may be used for compartments with a capacity of less than 25 persons.

(6) OPENINGS. Mini-warehouse buildings on the same property may be located less than 30 feet to each other with no restriction on the percentage of wall openings provided the combined gross area of the buildings, including the area between the buildings, is not more than the area permitted by s. ILHR 54.01.

History: Cr. Register, December, 1978, No. 276, eff. 1-1-79; r. and recr. Register, December, 1981, No. 312, eff. 1-1-82; cr. (6), Register, August, 1985, No. 356, eff. 1-1-86.

ILHR 54.23 Freezer warehouse. History: Cr. Register, December, 1983, No. 336, eff. 1-1-84; r. Register, August, 1985, No. 356, eff. 1-1-86.