

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 work-shops (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) Buildings in this classification shall be of the type of construction and shall not exceed the number of stories as specified in this section. The floor area of any such building shall not exceed that permitted for the corresponding type of construction and number of stories shown in Table 54.01.

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

(2) ALLOWABLE INCREASE OF FLOOR AREAS. (a) 1. When the entire building is protected by an approved automatic sprinkler system, the areas in Table 54.01 may be increased by 150% for one-story buildings and 75% for buildings of more than one story. (See example below.)

Note 1: See s. ILHR 51.23 for approved automatic sprinkler system.

Note 2: Example

	<i>(from Table 54.01)</i>		<i>(if sprinklered)</i>		<i>(total allowable)</i>
1. One story	10,000 sq. ft.	+	(1.5 X 10,000)	=	25,000 sq. ft.
2. Two or more stories	10,000 sq. ft.	+	(.75 X 10,000)	=	17,500 sq. ft.

2. Freezer warehouses complying with the requirements of s. ILHR 51.06 (6) (a) 3. b. may be designed and constructed with the allowable increase in floor area as specified in subd. 1 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.

Note: See s. ILHR 52.015 for additional requirements pertaining to automatic fire sprinkler systems.

**ALLOWABLE HEIGHT STORIES and AREA (Square Feet)
(Maximum gross floor area per floor)**

DEPT. OF INDUSTRY, LABOR AND HUMAN RELATIONS 189
Factories, office, mercantile
LHR 54

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									
	3									
	4									
2. Fire-Resistive Type B	1	NO RE-	20,000	17,000	14,000	11,000	9,000	7,000	6,000	N.P.
	2	STRIC-	25,000	22,000	18,500	15,500	13,000	11,000	10,000	
	3	TION-	31,000	27,000	23,000	20,000	17,000	15,000	14,000	
	4		37,000	32,000	27,500	24,500	21,000	19,000	18,000	
3. Metal Frame Protected	1	21,000	18,000	15,000	12,000	-----	-----	N.P.	-----	-----
	2	26,500	23,000	19,500	16,000	-----	-----	-----	-----	-----
	3	32,000	28,000	24,000	20,000	-----	-----	-----	-----	-----
	4	37,500	33,000	28,500	24,000	-----	-----	-----	-----	-----
4. Heavy Timber	1	17,000	14,000	11,000	9,000	-----	-----	N.P.	-----	-----
	2	22,000	19,000	16,000	13,500	-----	-----	-----	-----	-----
	3	27,000	24,000	21,000	18,000	-----	-----	-----	-----	-----
	4	32,000	29,000	26,000	22,500	-----	-----	-----	-----	-----
5A. Exterior Masonry Protected	1	15,500	13,500	9,500	8,000	-----	-----	N.P.	-----	-----
	2	20,000	17,000	14,000	12,500	-----	-----	-----	-----	-----
	3	24,500	21,500	18,500	15,500	-----	-----	-----	-----	-----
	4	29,000	26,000	23,000	19,500	-----	-----	-----	-----	-----
5B. Exterior Masonry Unprotected	1	14,000	11,500	9,000	-----	-----	-----	N.P.	-----	-----
	2	18,000	15,000	12,500	-----	-----	-----	-----	-----	-----
	3	22,000	19,000	16,000	-----	-----	-----	-----	-----	-----
	4	26,000	23,000	19,500	-----	-----	-----	-----	-----	-----
6. Metal Frame Unprotected	1	14,000	11,500	9,000	-----	-----	-----	N.P.	-----	-----
	2	18,000	15,000	12,500	-----	-----	-----	-----	-----	-----
	3	22,000	19,000	16,000	-----	-----	-----	-----	-----	-----
	4	26,000	23,000	19,500	-----	-----	-----	-----	-----	-----
7. Wood Frame Protected	1	12,500	7,500	5,500	-----	-----	-----	N.P.	-----	-----
	2	16,000	10,000	7,000	-----	-----	-----	-----	-----	-----
	3	19,000	12,000	8,500	-----	-----	-----	-----	-----	-----
	4	22,000	14,000	10,000	-----	-----	-----	-----	-----	-----
8. Wood Frame Unprotected	1	10,000	5,000	-----	-----	-----	-----	N.P.	-----	-----
	2	12,000	6,000	-----	-----	-----	-----	-----	-----	-----
	3	14,000	7,000	-----	-----	-----	-----	-----	-----	-----
	4	16,000	8,000	-----	-----	-----	-----	-----	-----	-----

Note: N.P. means "not permitted."

a. Except as provided in subpars. b. to d., construction meets the requirements for Type 5 or 6 with all building elements listed in Table 51.03-A and stairs of non combustible materials and is protected by an approved automatic fire sprinkler system.

b. Nonbearing partitions may be of fire-retardant treated wood or combustible one-hour rated materials. Openings need not be protected by rated fire door or rated fire window assemblies.

c. Class A roof coverings may be used.

3. Construction of all building elements listed in Table 51.03-A, and all stairs and interior finishes are of non-combustible materials and the contents of the building are entirely noncombustible. Built-up roof coverings may not be used.

(c) There shall be no area restriction in 2-story buildings provided the construction meets the requirements for Type No. 2, 3, 5 or 6 construction with all building elements of noncombustible materials and the building is completely protected by an approved automatic fire sprinkler system. Class A or non-combustible roof coverings shall be required. The area of the second story may not exceed $\frac{1}{2}$ the area of the first story.

(d) 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.

(3) (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.

FP 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 (i.e. foundries, chemical plants) 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) 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. (See s. ILHR 51.01 (124) for definition of street.)

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)

DEPT. OF INDUSTRY, LABOR AND HUMAN RELATIONS 191
Factories, office, mercantile ILHR 54

(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.

ILHR 54.02 Number and location of exits. (1) NUMBER OF EXITS. Every **FP** 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 approved automatic sprinklers are provided throughout the building, an increase in exit distance to 200 feet will be permitted.

(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.

*See Appendix A for further explanatory material.

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.

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.

(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.

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 in par. (b), all fuel-fired heating boilers and furnaces, power boilers, fuel rooms and breeching, 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. **FP**

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; renum. 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) **FIRST-AID STANDPIPES.** First-aid 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 the floor area is divided with noncombustible 0-hour or 3/4-hour or better rated partitions into areas of 3,000 square feet or less, or unless an approved automatic sprinkler system is installed.

History: 1-2-56; renum. 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.

FP ILHR 54.17 Fire alarms. (1) **FACTORY AND WORKSHOP.** 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, except as follows:

- (a) Buildings provided with a complete automatic sprinkler system; or
- (b) Buildings of fire resistive type 1 or 2 construction whose contents are noncombustible.

(2) **OFFICE BUILDINGS.** 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.

History: 1-2-56; am. Register, June, 1972, No. 198, eff. 1-1-73; renum. from 54.16, Register, December, 1976, No. 252, eff. 1-1-77; r. and recr. Register, December, 1981, No. 312, eff. 1-1-82.

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.