

Ind 50 to 59 Received July 3, 1973
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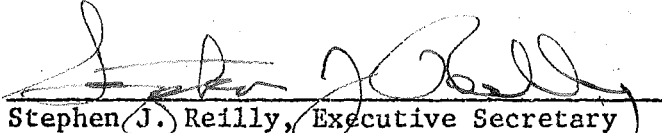
STATE OF WISCONSIN)
DEPARTMENT OF INDUSTRY,) SS
LABOR AND HUMAN RELATIONS)

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Stephen J. Reilly, Executive Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records of said Department, do hereby certify that the attached rules to Wisconsin Administrative Code Chapters Ind 50-59--Building and Heating, Ventilating and Air Conditioning Code, were adopted by the Department of Industry, Labor and Human Relations on July 2, 1973.

I further certify that said copy has been compared by me with the original on file in this Department and that the same is a true copy thereof and of the whole of such original.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the Department at the Capitol, in the City of Madison, this 3 day of July, A.D., 1973


Stephen J. Reilly, Executive Secretary

ORDER OF
DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by sections 101.01 to 101.25, Wis. Stats., the Department of Industry, Labor and Human Relations hereby amends, creates, renumbers, repeals, and repeals and recreates rules of Wisconsin Administrative Code Chapters Ind 50-59--Building and Heating, Ventilating and Air Conditioning Code.

The rules attached hereto shall become effective on the first day of the month following publication in the Wisconsin Administrative Code as provided in section 227, Wis. Stats.

Subsection Ind 50.10 (7) to be amended to read:

- (7) Drawings, specifications and calculations for buildings containing less than 50,000 cubic feet of volume and alterations to buildings containing less than 100,000 cubic feet of volume shall be submitted to the following cities for examination and approval according to requirements of this code:

Appleton	Janesville	Superior
Beloit	Kaukauna	Two Rivers
Brookfield	Kenosha	Watertown
Cudahy	La Crosse	Waukesha
Eau Claire	Madison	Wausau
Fond du Lac	Manitowoc	West Allis
Glendale	Muskego	West Bend
Green Bay	Racine	Wisconsin Rapids
Greendale	Sheboygan	
Greenfield	Stevens Point	

Note: Materials submitted to said cities for examination and approval need not be submitted to the department.

Section Ind 51.001, Scope, to be renumbered Ind 51.015.

Subsection Ind 51.01 (1) to be renumbered (1a).

Subsection Ind 51.01 (1) to be created to read:

- (1) ACCESSORY ROOM. Any room or enclosed floor space used for eating, cooking, bathrooms, water closet compartments, laundries, pantries, foyers, hallways, and other similar floor spaces. Rooms designated as recreation, study, den, family room, office, etc., in addition to habitable rooms, are considered accessory rooms.

Subsection Ind 51.01 (5a) to be created to read:

- (5a) AREAWAY. Exterior area whose grade is below the grade (at building) and having at least one side consisting of the exterior wall of a building.

Subsection Ind 51.01 (10) to be repealed and recreated to read:

- (10) BASEMENT. A basement floor is that level below the first or ground floor level with its entire floor below exit discharge grade.

Subsection Ind 51.01 (22a) to be created to read:

- (22a) CORRIDOR (REQUIRED EXIT). A fire-rated enclosure beginning at the end point of maximum allowable exit distance and continuing to the exit discharge door.

Note: See line 20 of Table 51.03-A.

Subsection Ind 51.01 (54) to be repealed and recreated to read:

- (54) FIRST FLOOR. The first floor is the primary floor used in determining the number of stories of a building.

Subsection Ind 51.01 (56a) to be created to read:

- (56a) FLOOR. The bottom or lower part of an enclosed space including any portions raised or depressed by not more than 3 feet from the designated principal level where the raised or depressed portion is treated architecturally as a part of the same principal level.

Subsection Ind 51.01 (57a) to be created to read:

- (57a) FLOOR LEVEL. The upper surface of a floor treated architecturally as the designated principal floor at a given elevation.

Subsection Ind 51.01 (67) to be repealed and recreated to read:

- (67) GROUND FLOOR. A ground floor is that level of a building on a sloping or multilevel site which has its floor line at or not more than 3 feet above exit discharge grade for at least one-half of the required exit discharges.

Subsection Ind 51.01 (67a) to be created to read:

- (67a) HABITABLE ROOM.* Any room or enclosed floor space arranged for living and/or sleeping purposes.

Subsection Ind 51.01 (76a) to be created to read:

- (76a) LIVING UNIT. Any enclosed floor space consisting of one or more habitable rooms (with or without accessory rooms) used by a person(s) or family.

Subsection Ind 51.01 (106a) to be created to read:

- (106a) REQUIRED EXIT CORRIDOR. See "Corridor (Required Exit)."

Subsection Ind 51.01 (121) to be repealed and recreated to read:

- (121) STORIES, NUMBER OF.* The number of stories of a multistory building includes all stories except the basement(s), ground floor(s), attic or interior balcony(ies) and/or mezzanine floor(s). Also see Ind 51.02 (14).

Subsection Ind 51.01 (144) WALL (DIVISION) to include asterisk after (DIVISION).*

Subsection Ind 51.01 (148a) to be created to read:

- (148a) WALL (NONBEARING INTERIOR). See "Partition."

Subsection Ind 51.02 (2) (a) to be amended to read:

- (a) Construction requiring the use of noncombustible material shall not be replaced by combustible construction regardless of fire-resistive rating unless mentioned specifically under classes of construction standards.

Subsection Ind 51.02 (3) to be renumbered (4).

*See Appendix A for further explanatory material.

Subsection Ind 51.02 (3) to be created to read:

(3) Floor framing.

- (a) All floor framing shall satisfy the requirements of Table 51.03-A, whether floor system is considered part of a story or not, unless more restrictive requirements are noted under the occupancy chapters of this code.

Subsection Ind 51.02 (4) to be renumbered (6).

Subsection Ind 51.02 (5) to be renumbered (7).

Subsection Ind 51.02 (5) to be created to read:

(5) Interior wall construction.

- (a) Openings in partitions and interior bearing walls shall be protected if such walls serve as required building division, fire division or fire separation walls.

1. Openings shall be protected by approved fire door or fire window assemblies as specified in section Ind 51.047, or fire damper or fire door assemblies as specified in section Ind 59.69.

Note: Openings in walls other than those specified above need not be protected except to satisfy structural integrity end point for the time specified.

Subsection Ind 51.02 (6) to be renumbered (8).

Subsection Ind 51.02 (7) to be renumbered (9).

Subsection Ind 51.02 (8) to be renumbered (10).

Subsections Ind 51.02 (9) and (10) to be repealed.

Subsections Ind 51.02 (11), (12), (13) and (14) to be created to read:

- (11) Stairways, elevators and vertical shafts which serve 3 or more floor levels shall be enclosed with fire-resistive rated construction equal to or better than requirements specified in Table 51.03-A, except as exempted below:

- (a) In buildings with 3 floor levels, the stairways in the upper 2 levels may be left open provided all stairways leading to the lowest level are separated from the upper levels with fire-resistive rated construction as specified in Table 51.03-A or better.
- (b) Conditions specified in subsections Ind 55.09(1)(a) and (b) as applied to a place of worship are acceptable.

(12) Parapet walls:

- (a) Parapet walls not less than 8 inches in thickness and 2 feet in height shall be provided on all exterior walls of masonry or concrete, where

such walls connect with roofs other than roofs that are of noncombustible construction throughout; but this section shall not apply to:

1. Buildings where type No. 7 and No. 8 construction would be permitted under the provisions of this code;
 2. Walls which face streets or alleys;
 3. Walls where not less than 10 feet of vacant space is maintained between the wall and the property line;
 4. Walls which are not less than 10 feet from other buildings on the same property.
- (b) All parapet walls shall be properly coped with noncombustible weatherproof material.
- (13) Fire division walls. Fire division walls shall have not less than a 4-hour fire-resistive rating as specified in section Ind 51.04 and shall comply with one of the following conditions:
- (a) The wall shall extend 3 feet above the roof.
 - (b) The wall shall connect and make tight contact with roof decks of at least 2-hour fire-resistive noncombustible construction on both sides of the wall.
 - (c) The wall shall connect and make tight contact with roofs of noncombustible construction on both sides of the wall and shall be noncontinuous at the wall.
- (14) Determination of number of stories.* For purposes of establishing the maximum allowable stories in the various classes of construction stated in section Ind 51.03, the number of stories shall be determined on the following basis:
- (a) The first floor shall be determined first and this level shall satisfy the following conditions:
 1. Is the lowest floor having one or more required exits for that floor and for any floor(s) above or below.
 - a. If condition stated in 1. is not satisfied, the highest floor level shall be considered the first floor.
 2. The elevation of the first floor shall be at or not more than 6 feet above an exit discharge grade.
 3. The door sill of all required exit discharges from the first floor shall be at or not more than 3 feet above exit discharge grade.
 - (b) An interior balcony or mezzanine floor which exceeds 25,000 square feet or one third (1/3), whichever is least, of the net area enclosed within exterior walls and/or fire division walls shall be counted as a story.

*See Appendix A for further explanatory material.

- (c) Penthouse(s) with a total area that exceeds 50% of the total roof area shall be counted as a story(ies).
- (d) Construction according to subsection Ind 51.02(3)(b) 1. b. shall also be counted as a story(ies).
- (e) Total number of stories shall include the first floor plus all stories above and those stories determined by subsections Ind 51.02(14)(b), (c) and (d).
 - 1. Floor levels satisfying the definition of basement(s), ground floor(s), attic, interior balcony(ies) and/or mezzanine floor(s), unless otherwise stated, shall not be counted as a story(ies). For exception, see Appendix A-51.02 (14), Illustration No. 4.

Table 51.03-A to be amended (see attached).

CONSTRUCTION TABLE 51.03-A FIRE RESISTIVE RATINGS IN HOURS (OR FRACTIONS THEREOF)

MODIFYING CONDITIONS			TYPES OF CONSTRUCTION								APPLICABLE NOTES
SEE NOTES (f)(g)			FIRE RESISTIVE TYPE A	FIRE RESISTIVE TYPE B	METAL FRAME PROTECTED	HEAVY TIMBER	EXTERIOR MASONRY	METAL FRAME UNPROTECTED	WOOD FRAME PROTECTED	WOOD FRAME UNPROTECTED	
NUMBER OF STORIES	BLDG SETBACK DIS. TO P/L OR TO OTHER BLDG ON SAME PROP.	BEARING OR NON-BEARING	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	SEE IND. 51.03 FOR CONSTRUCTION STANDARDS
OVER 8 STORIES OR MORE THAN 5' IN HEIGHT			NC-4	NP	NP	NP	NP	NP	NP	NP	(a)(d)
3 STORIES OR 35' IN HEIGHT OR LESS			NC-3	NC-2	SEE IND. 51.03(3) NC-1	SEE IND. 51.03(4) H.T. OR I	SEE IND. 51.03(5) 0	SEE IND. 51.03(6) NC-0	SEE IND. 51.03(7) 3/4	SEE IND. 51.03(8) 0	(a)(d)(h)
MORE THAN 2 STORIES			NC-3	NC-2	SEE IND. 51.03(3) NC-1	SEE IND. 51.03(4) H.T. OR I	SEE IND. 51.03(5) 0	SEE IND. 51.03(6) NC-0	NP	NP	(a)
2 STORIES OR LESS			NC-2	NC-1	NC-1	SEE IND. 51.03(4) H.T. OR I 1 STORY-H.T. OR O	0	SEE IND. 51.03(6) NC-0	3/4	0	(a)(h)
OVER 8 STORIES OR MORE THAN 5' IN HEIGHT			NC-2	NP	NP	NP	NP	NP	NP	NP	(a)
5 TO 8 STORIES OR 85' IN HEIGHT OR LESS			NC-2	NC-1 1/2	SEE IND. 51.03(3) NC-1	SEE IND. 51.03(4) H.T. OR I	SEE IND. 51.03(5) 0	SEE IND. 51.03(6) NC-0	NP	NP	(a)
2 STORIES, OR UNDER 35' IN HEIGHT			NC-1	NC-1	NC-1	SEE IND. 51.03(4) H.T. OR I	SEE IND. 51.03(5) 0	NC-0	SEE IND. 51.03(7) 3/4	0	(a)(h)
1 STORY - ROOF FRAMING MORE THAN 20' ABOVE FL			NC-0	SEE IND. 51.03(2) NC-0	NC-0	SEE IND. 51.03(4) H.T. OR I	0	0	0	0	(a)
1 STORY - ROOF FRAMING 20' OR LESS ABOVE FL			NC-1	NC-1	NC-1	SEE IND. 51.03(4) H.T. OR I	0	0	SEE IND. 51.03(7) 3/4	0	(a)(h)
OVER 8 STORIES OR MORE THAN 35' IN HEIGHT			CLASS A	NP	NP	NP	NP	NP	NP	NP	(a)
3 STORIES OR 35' IN HEIGHT OR LESS			CLASS A	CLASS A	CLASS A	CLASS B	CLASS B	CLASS C	CLASS C	CLASS C	(a)
	LESS THAN 10 FT.	BEARING	NC-4	NC-3	NC-2	NC-2	NC-2	NC-2	NP	NP	(a)(d)(e)(f)
	10 FT. TO 30 FT. INCLUSIVE	BEARING	NC-3	NC-2	NC-3/4	I	NC-1	NC-0	3/4	0	(a)(c)(d)(e)(f)(h)
	OVER 30 FT.	BEARING	NC-2	NC-1	NC-0	I	NC-1	NC-0	3/4	0	(a)(c)(d)(e)(f)(h)
	LESS THAN 10 FT.	NON-BEARING	NC-2	NC-2	NC-1	NC-1	NC-1	NC-1	NP	NP	(a)(d)(e)(f)
	10 FT. TO 30 FT. INCLUSIVE	NON-BEARING	NC-1	NC-1	NC-0	I	NC-1	NC-0	3/4	0	(a)(c)(d)(e)(f)(h)
	OVER 30 FT.	NON-BEARING	NC-0	NC-0	NC-0	3/4	NC-0	NC-0	3/4	0	(a)(c)(d)(e)(f)(h)

7.	ORDERS, JOISTS, FRAME RAFTERS, PURLINS, DECK)	2 STORIES OR UNDER 35' IN HEIGHT			NC-1	NC-1	NC-1	SEE IND. 51.03(4) H.T. OR I	SEE IND. 51.03(5) O	NC-O	SEE IND. 51.03(7) 3/4
8.		1 STORY - ROOF FRAMING MORE THAN 20' ABOVE FL			NC-O	SEE IND. 51.03(2) NC-O	NC-O	SEE IND. 51.03(4) H.T. OR I	O	O	O
9.		1 STORY - ROOF FRAMING 20' OR LESS ABOVE FL			NC-1	NC-1	NC-1	SEE IND. 51.03(4) H.T. OR I	O	O	SEE IND. 51.03(7) 3/4
10.	ROOF COVERING	OVER 8 STORIES OR MORE THAN 85' IN HEIGHT			CLASS A	NP	NP	NP	NP	NP	NP
11.		8 STORIES OR 85' IN HEIGHT OR LESS			CLASS A	CLASS A	CLASS A	CLASS B	CLASS B	CLASS C	CLASS C
12.	EXTERIOR WALLS & COURT WALLS (NOT INCLUDING INTERIOR FURRING ATTACHED TO INSIDE SURFACE OF WALL)		LESS THAN 10 FT.	BEARING	NC-4	NC-3	NC-2	NC-2	NC-2	NC-2	NP
13.			10 FT. TO 30 FT. INCLUSIVE	BEARING	NC-3	NC-2	NC-3/4	I	NC-1	NC-O	3/4
14.			OVER 30 FT.	BEARING	NC-2	NC-1	NC-O	I	NC-1	NC-O	3/4
15.			LESS THAN 10 FT.	NON-BEARING	NC-2	NC-2	NC-1	NC-1	NC-1	NC-1	NP
16.			10 FT. TO 30 FT. INCLUSIVE	NON-BEARING	NC-1	NC-1	NC-O	I	NC-1	NC-O	3/4
17.			OVER 30 FT.	NON-BEARING	NC-O	NC-O	NC-O	3/4	NC-O	NC-O	3/4
18.		INTERIOR WALLS BEARING				NC-3	NC-2	NC-1	I	I	NC-O
19.	PARTITIONS				NC-O	NC-O	NC-O	O	O	O	O
20.	REQUIRED EXIT CORRIDOR ENCLOS.				NC-2	NC-2	NC-1	I	I	I	3/4
21.	FIRE ENCLOSURE (STAIRWAYS, ELEVATORS, VERTICAL SHAFTS)	3 STORIES OR MORE									NP
		3 OR MORE FLOOR LEVELS			NC-2	NC-2	NC-1	I	I	I	3/4
22.	PENTHOUSE WALLS				NC-O	NC-O	NC-O	O	NC-O	O	O
23.	PENTHOUSE ROOF				NC-O	NC-O	NC-O	O	O	O	O

KEY TO ABBREVIATIONS :

NC - NON COMBUSTIBLE
NP - NOT PERMITTED
H.T. - HEAVY TIMBER

- (a) - SEE OCCUPANCY SECTIONS OF THE CODE FOR OTHER BASIC REQUIREMENTS AND MORE RESTRICTIVE LIMITATIONS.
(b) - ROOF COVERING SAME AS FOR MAIN BUILDING.
(c) - WALLS OF SOLID WOOD 4" IN THICKNESS ARE ACCEPTABLE AS EQUAL TO ONE HOUR FIRE-RESISTIVE RATING.
(d) - FIRE RESISTIVE REQUIREMENTS ALSO APPLY FOR THOSE BRACING MEMBERS REQUIRED FOR GRAVITY LOADING.
(e) - REFER TO TABLE 51.03-B FOR ALLOWABLE AREAS FOR WINDOWS AND OTHER OPENINGS IN EXTERIOR WALLS.
(f) - FOR EXCEPTIONS REFER TO IND. 51.02

Subsection Ind 51.03 (1) (d) to be amended to read:

(d) Doors and windows may be of wood except as otherwise specified in section Ind 51.02(5), Table 51.03-B, sections Ind 51.17, 51.18, 51.19 and 51.20, or in the occupancy chapters of this code.

1. Doors leading into main public corridors shall be noncombustible or quality certified glued solid wood core flush doors unless otherwise specified above.

Note: Public corridors are intended to include principal corridors serving a floor and leading directly to building exits, but do not include communicating passageways within a given use area.

Subsection Ind 51.03 (1) (e) 1. to be renumbered (f).

Subsection Ind 51.03 (1) (e) 1. a. to be renumbered 1.

Subsection Ind 51.03 (1) (f) to be renumbered (g).

Subsection Ind 51.03 (1) (g) to be renumbered (h).

Subsection Ind 51.03 (1) (h) to be renumbered (i).

Subsection Ind 51.03 (1) (i) to be renumbered (j).

Subsection Ind 51.03 (2) to be retitled to read:

(2) FIRE-RESISTIVE TYPE B (NO. 2):

Subsection Ind 51.03 (2) (e) to be amended to read:

(e) Doors and windows may be of wood except as otherwise specified in section Ind 51.02(5), Table 51.03-B, sections Ind 51.17, 51.18, 51.19 and 51.20, or in the occupancy chapters of this code.

1. Doors leading into main public corridors shall be noncombustible or quality certified glued solid wood core flush doors unless otherwise specified above.

Note: Public corridors are intended to include principal corridors serving a floor and leading directly to building exits, but do not include communicating passageways within a given use area.

Subsection Ind 51.03 (2) (f) 1. to be renumbered (g).

Subsection Ind 51.03 (2) (f) 1. a. to be renumbered 1.

Subsection Ind 51.03 (2) (g) to be renumbered (h).

Subsection Ind 51.03 (2) (h) to be renumbered (i).

Subsection Ind 51.03 (2) (i) to be renumbered (j).

Subsection Ind 51.03 (3) (d) 1. to be renumbered (e).

Subsection Ind 51.03 (3) (d) 1. a. to be renumbered 1.

Subsection Ind 51.03 (4) (e) 3. to be repealed.

Subsection Ind 51.03 (5) (f) to be amended to read:

- (f) Bays, oriels and similar exterior projections from the walls shall be constructed of material with fire-resistive ratings as required for exterior walls or approved fire-retardant treated wood satisfying the definition for "noncombustible" [Ind 51.01 (86) (c)].

Subsection Ind 51.03 (5) (g) 1. to be amended to read:

- 1. All exposed material shall be noncombustible material or fire-retardant treated wood satisfying the definition for "noncombustible" [Ind 51.01 (86) (c)].

Subsection Ind 51.03 (6) (a) to be repealed and recreated to read:

- (a) A building is of metal frame unprotected construction if the enclosing walls are of unprotected metal or unprotected metal in combination with other noncombustible materials and the other building elements are as set forth in Table 51.03-A unless otherwise exempted.
 - 1. Heavy timber may be used for interior columns and floor framing.

Subsection Ind 51.03 (7) (b) to be renumbered (c).

Subsection Ind 51.03 (7) (c) to be renumbered (b).

Subsection Ind 51.03 (7) (d) to be created to read:

- (d) The structural members supporting the finished ceiling in the topmost story shall be protected on the underside by fire-resistive material acceptable in systems approved for one-hour fire-resistive ratings as covered in section Ind 51.04.

Subsection Ind 51.042 (5) to include asterisk after (5).*

*See Appendix A for further explanatory material.

Subsection Ind 51.047 (1) (intro. par.) to be amended to read:

- (1) Openings in fire-rated construction, where permitted by other sections of the code, shall satisfy the following appropriate requirements unless otherwise exempted.

Subsection Ind 51.047 (1) (a) 1. to be repealed and recreated to read:

(a) Fire door assemblies.

1. Openings.

- a. All openings in 3- and 4-hour fire-resistive walls shall be protected with not less than 3-hour rated doors.
- b. All openings in 2-hour fire-resistive walls shall be protected with not less than one and one-half (1-1/2) hour rated doors.
- c. All openings in one-hour fire-resistive walls, including openings to exterior fire escapes, shall be protected with not less than three-fourths (3/4) hour rated doors.
- d. All openings in three-fourths (3/4) hour fire-resistive walls shall be protected with not less than three-fourths (3/4) hour rated doors.

Note: Door assemblies with glued solid wood core flush doors, one and three-fourths (1-3/4) inches thick, quality certified as meeting National Woodwork Manufacturers Association industry standard IS-1-69, and in addition possessing no core voids, may be used with one-hour fire-resistive walls where the occupancy chapters of this code permit.

Subsection Ind 51.15 (7) (a) 1. to be amended to read:

1. Apartment houses with less than 20 living units, row houses and rooming houses;

Subsection Ind 51.16 (2) (a) to be amended to read:

- (a) In apartment buildings not more than 2 stories in height and having not more than 2 living units on a floor, and in rooming houses, hospitals, hotels and similar buildings not more than 2 stories in height and having not more than 6 habitable rooms on a floor, such stairways shall not be less than 3 feet wide.

Section Ind 52.02 to be repealed and recreated to read:

Ind 52.02 Windows.

- (1) Every room in which one or more persons live, sleep, or are employed (except storage rooms or other rooms where the nature of the occupancy will not permit) shall be lighted by a window or windows opening directly upon a street or alley, or upon a court on the same lot with the building. The windows shall be so constructed and distributed as to afford light. Every building more than 40 feet deep (measuring at right angles to the windows) shall have windows on at least 2 sides.

Note: For windows and other outdoor openings used for natural ventilation, see Ind 59.24 (4) and Ind 57.19.

- (a) The provisions for (1) may be waived for such occupancies as factory, office, mercantile, or educational facilities if provisions are made for artificial lighting as covered by Wis. Adm. Code Chapter Ind 19, Illumination.

1. Requirements applicable to schools or places of instruction shall be as stated in section Ind 56.05.

- (2) Every building more than one story in height which does not have windows opening directly upon a street in each story above the first shall be provided with a suitable access for fire department use. Such access shall be a window or door opening through the wall on each floor above the first story. The opening shall be at least 36 inches in width and not less than 48 inches in height with the sill not more than 32 inches above the floor. The openings shall be so spaced that there will be one opening in each 100 feet of wall length in any accessible wall of the building. This requirement for access openings for fire department use shall not apply where a building is equipped throughout with an automatic sprinkler system approved for fire protection purposes.

Subsection Ind 52.05 (2) to be amended to read:

- (2) Outer lot line courts shall be not less than 5 feet wide for a court 2 stories or less in height and 40 feet or less in length, measured from the lot line to the wall of the building. For each additional story in height, the width of such court shall be increased one foot; and for each additional 15 feet or fraction thereof in length, the width of such court shall be further increased one foot.

Subsection Ind 52.05 (5) to be amended to read:

- (5) Inner lot line courts one story high shall be not less than 5 feet wide and not less than 45 square feet in area. Inner lot line courts 2 stories high shall be not less than 6 feet wide and not less than 60 square feet in area. For every additional story, every such inner lot line court shall be increased by at least one lineal foot in length and one lineal foot in its width.

Subsection Ind 52.19 (1) to be amended to read:

- (1) Gas and oil lamps shall not be used where electricity is available, except within living units of apartment buildings.

Section Ind 52.52 to be amended to read:

Ind 52.52 Sex designated. Wherever women are employed or accommodated, each toilet room shall be distinctly marked with regard to the sex which uses it, and no person shall be allowed to use a toilet room assigned to the other sex, except as provided in section Ind 52.51. The door or room labels shall be the words MEN, or WOMEN, respectively, in letters not less than one inch in height.

Subsection Ind 52.53 (3) to be amended to read:

- (3) No toilet room shall have windows or ventilator openings in any elevator shaft or inner court that has windows of habitable rooms above.

Section Ind 52.55 to be amended to read:

Ind 52.55 Artificial light. Every toilet room, except those within living units, shall be artificially lighted during the entire period that the building is occupied, wherever and whenever adequate natural light is not available, so that all parts of the room, especially the toilet compartments, shall be provided with artificial light intensity of not less than 2.5 footcandles at the floor level.

Section Ind 52.57 to be amended to read:

Ind 52.57 Floor and base. Every toilet room, except those within living units of apartment buildings, shall have the entire floor and the side walls to a height of not less than 6 inches made waterproof with ceramic tile, terrazzo, painted concrete, marble, slate, monolithic asphalt or other approved material impervious to water.

Subsection Ind 52.60 (1) to be amended to read:

- (1) Only individual water closets of porcelain or vitreous china shall be used. Water closet seats shall be of wood or other non-heat absorbing material, and shall have a finished surface that is impervious to water or cleaning agents. In public buildings, places of employment, and all other public places except within living units of apartment, hotel and motel buildings, the water closets shall have elongated bowls. All water closets except within living units of apartment buildings shall have open front seats without cover.

Subsection Ind 54.01 (2) to be repealed and recreated to read:

(2) Allowable increase of floor areas.

- (a) 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.)
- (b) There shall be no area restriction in one-story buildings satisfying one of the following conditions:
 - 1. Construction meets the requirements for Type No. 3 or Type No. 4 and is protected by an approved automatic sprinkler system.
 - 2. Construction meets the requirements for Type No. 5 or 6 of totally noncombustible construction and is protected by an approved automatic sprinkler system.
 - 3. Construction of floors, walls, roof and structural framing is of noncombustible material and the contents of building are noncombustible.
- (c) Buildings with no area limitations shall have a continuous all-weather, hard-surfaced area 30 feet or more in width for a distance of at least 50% of the perimeter of the building. The said hard-surfaced area shall be located so as to provide an unobstructed space for a distance of not more than 50 feet from the building.

NOTE 1: See section Ind 51.23 for approved automatic sprinkler system.

NOTE 2: Example:

	(from table 54.01)	(if sprinklered)	(total allowable)
1. One story	10,000 sq. ft.	+ (1.5 × 10,000)	= 25,000 sq. ft.
2. Two or more stories	10,000 sq. ft.	+ (.75 × 10,000)	= 17,500 sq. ft.

Subsection Ind 54.01 (3) to be repealed and recreated to read:

- (3) 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. Such fire division walls shall be as specified in section Ind 51.02 (13). All openings in such walls shall be protected by fire-resistive doors as specified in section Ind 51.047. Such doors may normally remain open if held in that position by fusible links.

Subsection Ind 54.02 (1) to be repealed and recreated to read:

- (1) Every building and every floor level thereof shall have at least 2 exits. One exit will be allowed in the following exceptions:
 - (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) Office areas (suites) having a floor area of not more than 1,800 square feet net area, provided that there are 2 directions for exiting from the suite entrance door.
- (d) Retail establishments not over 750 square feet net area, provided that there are 2 directions for exiting from the store entrance door.

Subsection Ind 55.02 (1) (a) to be created to read:

- (a) Exception. One-story buildings are permitted for unlimited capacities providing the following conditions are satisfied:
 1. The class of construction requirements satisfy Type No. 3, 4 or 6.
 2. There are no ground floors or basements.
 3. The setback satisfies the requirements of Table 51.03-A for over 30 feet distance.

Subsection Ind 55.03 (2) to be amended to read:

- (2) ASSEMBLY HALLS AND ROOF GARDENS ABOVE FIRST STORY. Where assembly halls are provided above the first story, the following limitation of occupancy, type of construction and exit facilities shall apply:

Type of Construction	Maximum Number of Occupants	Height Above Grade
Type No. 1 and No. 2	No limit	See Ind 51.03*
Type No. 3 thru No. 6	400	2nd story
Type No. 3 thru No. 6	200	3rd and 4th story

*One smokeproof stair tower from the level of the assembly hall leading directly to the exterior at street grade shall be provided for every 750 persons capacity, or fraction thereof. These stairways shall be at least 44 inches wide and shall be in addition to other required stairways in the building.

Subsection Ind 55.06 (2) (k) to be repealed.

Subsection Ind 55.06 (2) (L) to be renumbered (k).

Subsection Ind 55.06 (2) (m) to be renumbered (L).

Subsection Ind 55.06 (2) (n) to be renumbered (m).

Section Ind 56.01 to be created to read:

Ind 56.01 Maximum height.

- (1) Buildings occupied primarily by pupils up to and including grade 12 shall not exceed 4 stories or 48 feet in height.
 - (a) Exception. Buildings provided with complete automatic sprinkler or automatic smoke detection systems, occupied primarily by students of grades 9 through 12, shall be no more than 6 stories or 72 feet in height.

Note: Also see requirements for classes of construction.

Subsection Ind 56.02 (4) to be created to read:

- (4) Auditoriums, gymnasiums or field houses, or those parts of buildings similarly used, shall comply with the following:
 - (a) Limitations when occupancy is restricted to first story or ground floor only.

Type of Construction	Maximum Number of Occupants in Any Room Used for Auditorium, Gymnasium, or Field House Purposes	
	With Stage	Without Stage
Type No. 1 and No. 2	No limit	No limit
Type No. 3 and No. 4	750	1500
Type No. 5 and No. 6	500	1000
Type No. 7 and No. 8	300	750

- 1. Exception. One-story buildings are permitted for unlimited capacities providing the following conditions are satisfied:
 - a. The class of construction requirements satisfy Type No. 3, 4 or 6.
 - b. There are no ground floors or basements.
 - c. The setback satisfies the requirements of table 51.03-A for over 30 feet distance.

(b) Limitations when occupancy is above the first story.

Type of Construction	Maximum Number of Occupants	No. of Stories
Type No. 1 and No. 2	No limit	See Ind 56.01*
Type No. 3 thru No. 6	400	2nd story
Type No. 3 thru No. 6	200	3rd and 4th story

*One smokeproof stair tower from the level of the assembly hall leading directly to the exterior at street grade shall be provided for every 750 persons capacity, or fraction thereof. These stairways shall be at least 44 inches wide and shall be in addition to other required stairways in the building.

Section Ind 56.05 to be repealed and recreated to read:

Ind 56.05 Exterior wall openings.

- (1) One-story buildings with no floor levels below the first floor need not be provided with exterior wall openings other than required exits.
- (2) Buildings with basements shall at such levels be protected with an approved automatic sprinkler system (Ind 51.23) or an approved automatic smoke detection system, either of which shall be connected to the required fire alarm (Ind 56.19).

Note: See section Ind 51.01 for definitions of "automatic" and "basement."

- (3) Buildings more than one story shall be provided with wall openings for emergency purposes above the first story as specified in subsection Ind 52.02 (2) except as follows:
 - (a) The requirements for wall openings is waived in buildings provided throughout with an approved automatic sprinkler system (Ind 51.23) or an approved automatic smoke detection system, either of which shall be connected to the required fire alarm (Ind 56.19).

Section Ind 56.06 to be repealed and recreated to read:

Ind 56.06 Type, location and number of exits.

(1) Type of exits.

- (a) Exit corridors requiring a fire-resistive rated enclosure to satisfy limitations on travel distance stated in (2) below shall satisfy the following conditions:
 1. Enclosure shall satisfy one-hour fire-resistive construction unless classes of construction requirements are more restrictive or requirements for (2) (c) 2. must be satisfied.
 2. In one-hour enclosures of corridors, all openings shall be protected with no less than 3/4-hour approved fire doors with automatic closing devices or approved fire-resistive windows satisfying requirements for moderate fire exposures. Quality certified glued solid wood core flush doors, 1-3/4 inches thick, may be used in lieu of 3/4-hour approved fire doors.

Note: See Ind 51.047 for fire doors and windows.

3. Corridors requiring more than one-hour fire-resistive construction shall have all openings protected with approved fire doors corresponding to required fire-resistive wall ratings covered in Ind 51.047. Fire doors shall be equipped with automatic closing devices.
- (b) Stairways shall satisfy:

1. Required exit stairways shall have a uniform rise of not more than 7-1/2 inches measuring from tread to tread, and a uniform tread of not less than 10 inches measuring from nosing to nosing of tread.
 2. Handrails shall be provided on both sides.
 3. There shall be no winders used in required exit stairways.
 4. Ramps other than those required for the physically handicapped may be used in lieu of stairways providing the slope is not greater than one foot of rise in 8 feet.
 - a. Exits serving areas noted under Ind 56.06(2) (c) involving a change of elevation between floor levels or platforms not exceeding 3 feet shall be provided with an approved ramp.
 5. Requirements other than those specified in 1., 2., 3. and 4. shall satisfy applicable sections of Ind 51.16.
 6. All required exit stairways shall be identified with approved exit lights.
 7. Stairways shall be enclosed as specified in sections Ind 51.02, Table 51.03-A, and Ind 51.18.
 - a. Stairways serving basement areas shall be enclosed at that level as specified in section Ind 51.18.
- (c) All required exterior exit doors and those required interior exits serving each floor, and enclosed areas serving more than 100 persons, shall be identified by an approved exit light. Approved exit lights and any additional directional lights shall be as required by sub-section Ind 51.15(5).
- (d) Fire escapes are not acceptable in meeting the standards for required exits. Where used for other purposes, the design of fire escapes shall satisfy the requirements of section Ind 51.20.
- (2) Location of exits.
- (a) The required exits at the exterior and those interior exits serving enclosed areas requiring more than one exit as covered in (3) shall be located as remote from each other as practicable.
 - (b) Travel distance to an exterior exit door or a required fire-resistive rated enclosure, from any point in a building, shall not exceed 150 feet.
 1. Exception. For building service areas such as pipe chases, tunnels, catwalks, ducts or similar spaces not accessible to the general public, the travel distance may be increased to 300 feet.
 - (c) Auditoriums, gymnasiums or field houses, whose capacity exceeds 600 persons, shall have exits satisfying one of the following requirements:

1. Where there is at least one wall directly exposed to the exterior, at least one-half of the required exits shall be located in this exterior wall.
 2. If no wall serving these areas is exposed to the exterior, the exit passageways leading to the exits at the exterior of the building shall be enclosed with no less than 2-hour fire-resistive construction.
- (d) Interior exit doors or openings serving an enclosed area, at or above ground floor levels, may be located so as to allow the occupants only one direction of travel, providing:
1. The distance from the farthest required interior exit is not more than 10 feet to the following area:
 - a. The opening to a public corridor permitting the occupant to choose one of 2 directions of travel to reach the required exits at the exterior of building.
 2. The area served, when satisfying conditions stated in 1. above, has at least one exterior wall exposure and does not exceed 1,800 square feet total net area.
 3. The distance from the farthest required interior exit is not more than 20 feet to the exit at the exterior of the building and the total net area served does not exceed 1,800 square feet.
- (3) Number of exits. The total number of required exits shall satisfy the requirements for total width specified in section Ind 56.07.
- (a) Exits at the exterior of a building. There shall be at least 2 exits located at the exterior of every building which serve the first floor and those levels above or below the first floor.
 - (b) Exits within the interior of a one-story building.
 1. There shall be at least 2 exits serving an enclosed area having a capacity of more than 50 persons.
 - a. Regular academic classrooms, administrative and office space areas having an exterior wall opening providing emergency ingress or egress as described in subsection Ind 52.02(2), will be accepted in meeting the requirement for one exit, provided the capacity of the area does not exceed 100 persons.
 - b. Exits serving above areas may discharge directly to the outside or to a public passageway or corridor that leads to the required exits at the exterior of the building.
 2. There shall be at least 2 means of exiting from an enclosed area without exterior wall exposure whose capacity exceeds 20 persons.

- a. The means of exiting from the above area may be by means of direct access to a public corridor permitting 2 directions of travel that will lead to the exits at the exterior of the building; or
 - b. One such exit leading directly to a public corridor from the immediate area and the second exit by way of a connecting door leading into the adjoining area, providing that a clear passageway is maintained from the connecting door to the required exit or exits serving the adjoining area.
- (c) Exits within the interior of a building more than one story.
1. Every floor and balcony shall be provided with not less than 2 exits that will lead occupants to the required exits at the exterior of the building.
 2. There shall be at least 2 exits serving enclosed areas above the first floor having a capacity of more than 40 persons.
 - a. Regular academic classrooms, administrative and office space areas having an exterior wall opening providing emergency ingress or egress as described in subsection Ind 52.02(2), will be accepted in meeting the requirement for one exit, provided the capacity of the area does not exceed 100 persons.
 - b. Exits serving above areas may discharge directly to a public passageway or corridor that leads to the required exit stairways.
 3. There shall be at least 2 means of exiting from an enclosed area without exterior wall exposure whose capacity exceeds 20 persons.

Section Ind 56.07 to be repealed and recreated to read:

Ind 56.07 Total width of exits.

- (1) The total exit widths serving each floor and those exits serving each interior enclosed area shall be based on the following rates:
 - (a) For classes of construction types No. 1, 2, 3 and 4--30 inches per 100 persons.
 - (b) For classes of construction types No. 5, 6, 7 and 8--40 inches per 100 persons.
- (2) The required width of exits serving each floor at or above the first floor shall be not less than the required width of exits serving the floor above having the largest capacity.
- (3) The required width of exits serving each floor at or below the first floor shall be not less than the required width of exits serving the floor level below having the largest capacity.

- (4) The exit widths required at first floor shall be not less than the sum of required exit widths serving the floor levels next above and below when such exits terminate at the first floor.
- (5) The capacity of educational buildings or any individual story or section thereof for the purpose of determining exits shall be the maximum capacity designated on approved plans.
 - (a) The maximum capacity shall not exceed the requirements of subsection (b).
 - (b) The maximum capacities of all rooms and spaces as listed below shall be determined on the basis of the minimum net square feet area per person shown for that occupancy unless otherwise designated on the plans.

Minimum Square Feet Per Occupant

1. Academic classrooms-Regular-----	20
2. Administrative and office space-----	75
3. Arts, crafts, drafting-----	30
4. Bleachers (one seat per 18 inches of bench length)	
5. Gymnasiums, field houses, auditoriums, theatres, lecture rooms (fixed seating)-----	6
6. Gymnasiums, field houses, multipurpose rooms, cafeterias, study halls, commons and other level floor areas with nonfixed individual seating-----	10
7. Home economics, business education-----	30
8. Industrial arts-vocational shop-----	50
9. Laboratories-Science (fixed lab. tables)-----	30
10. Libraries and resource centers-----	20
11. Museums and art galleries-----	40
12. Music	
a. Vocal-----	10
b. Instrumental-----	20
13. Special education	
a. Mentally retarded, physically handicapped, etc.-----	35

Subsection Ind 56.16 (1) intro. par. preceding chart to be amended to read:

- (1) The following tabulated groups or combinations thereof shall be provided with one fixture of each type in accordance with the ratio given in chart to serve the total number of persons designated on the plans.

Subsection Ind 56.16 (1) (a) to be repealed and recreated to read:

- (a) When fixtures required for a designated group are not available to another designated group the number of fixtures shall be provided according to the ratio indicated in the chart and independent of other group requirements.

Subsection Ind 56.16 (1) (b) to be created to read:

- (b) Where a theatre is a part of an educational facility the requirements listed under "large group occupancies" shall apply.

Section Ind 57.04 to be repealed and recreated to read:

Ind 57.04 Corridor and dividing partitions--3-story places of abode.

- (1) The public passageways shall be enclosed with partitions of not less than one-hour fire-resistive construction as specified in section Ind 51.04 and shall have all living units separated by such partitions, except as follows:
 - (a) Apartment buildings having one living unit on each floor.
 - (b) Hotels, motels, hospitals, nursing homes and other similar buildings having not more than 8 habitable rooms on each floor.
- (2) Hotels, motels, hospitals, nursing homes and other similar buildings having more than 8 habitable rooms on each floor shall be divided into groups of not more than 8 habitable rooms each, with partitions of not less than one-hour fire-resistive construction as specified in section Ind 51.04.
- (3) Corridor and dividing partitions may be provided with door assemblies with glued solid wood core flush doors, 1-3/4 inches thick, and need not have a closing device.

Note: See Ind 51.047 (1) (a) 1. Note for standards of glued solid wood core flush doors.

Subsections Ind 57.07 (1) (intro. par.) and (2) to be amended to read:

- (1) There shall be at least 2 exits accessible from each living unit by means of stairways, ramps or horizontal exits. The number and location of such exits shall be such that in case any exit or passageway is blocked at any point, some other exit will still be accessible through public passageways from every living unit.
- (2) Exits shall be distributed so that the entrance to each living unit will be not more than 50 feet distant from an exit, measuring along public passageways, if in a building of less than type No. 1 or No. 2 construction, or 75 feet in a type No. 1 or No. 2 building.

Subsection Ind 57.07 (4) to be amended to read:

- (4) Apartment buildings 3 stories or less in height whose floors and supporting members are of not less than 2-hour fire-resistive construction as specified in section Ind 51.04, and which have a plan so arranged that not more than 2 living units on any floor make use of a common stairway, may be constructed with one common stairway as a single exit, provided the walls between units and those enclosing the stairway are of 2-hour fire-resistive construction as specified in section Ind 51.04. In this case, the stairways must be of not less than 2-hour fire-resistive construction, must lead directly to the outside and have all interior openings protected by approved fire-resistive doors as specified in section Ind 51.047.

Section Ind 57.17 to be amended to read:

Ind 57.17 Size of rooms. Every habitable room used for sleeping shall be of sufficient size to afford at least 400 cubic feet of air space for each occupant over 12 years of age and 200 cubic feet for each occupant under 12 years, except that a minimum of 150 cubic feet may be provided for infants in hospital nurseries. No greater number of occupants than the number thus established shall be permitted in any such rooms.

Section Ind 57.18 to be repealed and recreated to read:

Ind 57.18 Habitable rooms--floors below grade.*

- (1) Any building or part of a building used or occupied as a hospital, home for the aged and infirm, nursing home, convalescent hospital or home, asylum, mental hospital, jail or place of detention shall not have any living units located below grade (at building) except:
 - (a) In ground-story living units, habitable rooms shall have at least one exterior wall with a full exterior exposure from the ground floor level to the ceiling. The exterior exposure shall not be made by the construction of an areaway.
- (2) Living units, other than those in (1) above, having habitable rooms, or parts thereof, on floor levels below grade (at building) shall comply with the requirements of this section.
 - (a) The grade (at building) does not include the grade level within the perimeter of an areaway.
- (3) Every habitable room shall have at least one exterior wall adjoining an areaway or court.
- (4) Every habitable room shall have at least one outside window which can be opened from the inside without the use of tools to provide a clear opening of not less than 22 inches in least dimension and not less than 5 square feet in area, with the bottom of the opening not more than 4 feet above the floor.
 - (a) Windows having sills below grade (at building) shall be provided with an areaway as described in (5) of this section.
 - (b) All windows shall comply with the requirements of Ind 52.02 and 57.19 in addition to this subsection.
 - (c) Window assemblies of a type which, when open, obstruct emergency egress shall not be used.
- (5) Areaways used for compliance with this section shall:
 - (a) Have a minimum width of 3 feet measured perpendicular to the building wall;

*See Appendix A for further explanatory material.

Note: For further restrictions, see Ind 59.24 (4).

- (b) Have, when used as a required means of egress, exits complying with sections Ind 51.16 and 52.21.
- (6)* All living units with floors below grade (at building) shall have access to 2 exits complying with all applicable sections of this code except as listed below.
 - (a) Exception: Living units having one exit door leading directly outside (not to an areaway) need not have access to a second exit.
- (7) All buildings having living units below grade (at building) shall be designed and constructed to prevent undue collection of moisture in all stories below grade.

Note #1: Surface and subsoil draining systems for areaways and foundation walls are regulated under the requirements of the Wis. Adm. Plumbing Code Chapter H-62, administered by the department of health and social services.

Note #2: See Ind 50.10 (1) "Note" for reference to flood plane requirements.

- (a) All foundation walls shall be thoroughly dampproofed prior to back-filling of soil.
- (b) Provisions shall be made to prevent the accumulation of moisture due to condensation of high humidity so as to prevent slippery floors and to prevent conditions susceptible to mildew or other undesirable fungi or bacteria.

Note #1: The inside design conditions for cooling or dehumidification will be accepted on the basis of a dry bulb temperature of 75° F and a relative humidity not greater than 50%.

Note #2: See Ind 59.20 (4) (g) "Note: Cross reference" for the acceptance of nationally recognized association methods and standards as a basis for calculations and design data.

Note #3: The standards for winter heating are found in Chapter Ind 59 of this code.

Section Ind 57.19 to be amended to read:

Ind 57.19 Windows. The outside windows in every habitable room shall have a total sash area of at least one-tenth of the floor area of the room but not less than 12 square feet. The openable area of such windows shall be equal to not less than 5% of the floor area of the room served.

Note: Also see Ind 52.02 and Ind 59.24 (4).

*See Appendix A for further explanatory material.

Subsection Ind 57.20 (5) to be amended to read:

- (5) The enclosure for the heating plant may be omitted in apartment buildings not more than 2 stories in height and having not more than 2 living units on a floor, and in rooming houses not more than 2 stories in height and having not more than 8 habitable rooms on a floor, provided no part of the building is used for business purposes and all interior basement stairways are enclosed with a one-hour fire-resistive enclosure as specified in section Ind 51.04, or better. See section Ind 57.25 for exception to row house installations.
 - (a) Exception: Gas-fired space heaters may be used within living units of apartment buildings and within habitable rooms of motels or tourist courts without an enclosure if approved by the department. Space heaters fired with liquid fuel may be used without an enclosure in motels and apartment buildings not more than one story in height.

Subsection Ind 57.24 (1) to be amended to read:

- (1) In every habitable room likely to be used by transients, a notice shall be conspicuously posted giving complete and plain directions for reaching at least 2 exits.

Subsections Ind 57.25 (1) and (2) (a) to be amended to read:

- (1) DEFINITION. A row house is a place of abode not more than 2 stories in height, arranged to accommodate 3 or more attached row living units in which each living unit is separated from the adjoining unit by an unperced vertical occupancy separation of not less than one-hour fire-resistive construction, extending from the basement or lowest floor to the under side of the roof boards.
- (2) REQUIREMENTS.
 - (a) Each living unit shall have separate entrances and exits leading directly to the outside.

Subsection Ind 59.01 (5) to be created to read:

- (5) Definitions. See section Ind 51.01.

Section Ind 59.20 to be repealed and recreated to read:

Ind 59.20 Design, inspection, approval of drawings and specifications.

- (1) The design and preparation of drawings and data for the installation of heating, ventilating and air conditioning equipment shall satisfy the requirements of this code.
- (2) All drawings and specifications shall be sealed or stamped by an engineer, architect or designer registered in accordance with the laws of Wisconsin when they involve one or more of the following conditions:
 - (a) Buildings whose total volume is greater than 50,000 cubic feet.
 - (b) An addition to a building in which the addition results in the entire building having a volume greater than 50,000 cubic feet.

Note: Laws regulating the practice of engineering and architecture are found in Chapter 443, Wis. Stats.

- (3) The installation of the heating, ventilating and air conditioning equipment that must satisfy requirements of Ind 59.20(2) shall be inspected by a registered professional engineer, architect or designer.
 - (a) On completion of the installation, the inspecting engineer, architect or designer shall file a written statement with the department certifying that, to the best of his knowledge and belief, the installation has been performed in compliance with approved drawings and specifications.
 - (b) No building owner shall alter the installation or portions thereof except in compliance with the provisions of this code.
- (4) Approval of drawings and specifications.
 - (a) At least 3 complete sets of all drawings and one copy of specifications and data for the design and installation of heating, ventilating and air conditioning equipment shall be submitted to the department for approval before affected work is commenced. The requirement shall apply to the following:
 1. Where such equipment is installed in buildings or structures that are included in the scope of the building code.
 - a. Exception: Refer to Ind 50.03 and Ind 50.10(2).
 2. Where the installation of this equipment is in connection with meeting requirements of the following codes and, as a result, the installation has a direct bearing on the acceptance of the entire heating, ventilating and air conditioning system:
 - a. Chapter Ind 4, Elevator.
 - b. Chapter Ind 7, Cleaning and Dyeing.

- c. Chapter Ind 8, Flammable and Combustible Liquids.
- d. Chapter Ind 20, Dusts, Fumes, Vapors and Gases.
- e. Chapter Ind 21, Spray Coating.
- f. Chapters Ind 41-42, Boilers and Unfired Pressure Vessels.
- g. Chapter Ind 45, Mechanical Refrigeration.
- h. Chapter Ind 49, Migrant Labor Camps.
- i. Chapters Ind 50-59, Building and Heating, Ventilating and Air Conditioning.
- j. Volume 2, Electrical.

Note #1: To expedite approval, the required material should be submitted with the drawings submitted for approval of building designs.

Note #2: Approval is not required for the installation of air cooling equipment when added to an approved heating and ventilating system.

- (b) Drawings for installations within the city limits of Milwaukee shall be submitted to the Inspector of Buildings, Milwaukee, for examination and approval. For list of additional cities to which drawings may be submitted, see subsection Ind 50.10(7) of the building code.
- (c) The replacement of major apparatus is subject to approval by the department.
 - 1. A statement, in triplicate, showing capacities of old and new equipment may be submitted instead of data required in subsection Ind 59-20 (4) (g).
- (d) Approval of major changes. Revisions to approved heating and ventilating drawings or specifications shall be approved by the department before work is commenced when such revisions involve code regulations.
- (e) Evidence of approval. A complete set of approved drawings and specifications shall be made available at the job site.
- (f) Information required on drawings and in specifications. The drawings, data and information for heating, ventilating and air conditioning systems submitted for approval shall be prints that are permanent, clear, legible and complete and shall include all details and data necessary for review of the proposed installation, such as:

Note #1: Original drawings are not considered as a substitute for permanent prints.

Note #2: Duplicate information need not be submitted when heating, ventilating, air conditioning and building drawings are submitted simultaneously.

1. Name of the owner of the building and complete address of the building.
2. The location of building with respect to property lines and/or lot lines and/or adjoining streets, alleys and any other buildings on the same lot or property when wall openings are used for natural ventilation as per Ind 59.24 or are used for outside ventilating intakes or exhausts per Ind 59.60.
3. Architect, engineer or designer's name shall appear on the title sheet.
4. A floor plan for each floor where equipment is installed.
5. A room schedule, indicating the intended use of all rooms.
6. A description of the construction for walls, floors, ceilings and roof.
 - a. Location of required fire or smoke dampers. [See Ind 59.69(13).]
7. Elevation and sectional plans to illustrate and clarify equipment arrangements where required.
8. Location, size and type of all equipment.
9. Size and continuity of all pipe and duct work.
10. Description of construction and location of chimney.
11. Specifications shall be properly identified with the drawings.

(g) Data required. All drawings submitted for approval shall be accompanied by sufficient data and information for the department to judge if the capacity of the equipment and the performance of the system will meet the requirements of the code. The following data shall be submitted:

1. Construction losses for each typical room.
 - a. Heat loss calculated in Btu per hour.
2. List CFM circulated, outside air and exhaust required for each typical room.

Note: Refer to Ind 59.64 concerning ratings of radiators and convectors.

3. Summation(s) of total heating and ventilating requirements shall include:
 - a. A listing of specific heating and/or ventilating unit(s) with their input and net rating in Btu/hour to satisfy the summation(s). For direct fired equipment give input rating.
 - b. Where more than one heating and/or ventilating unit is to be installed, provide a separate summation for each unit.

Note: Cross reference: The department will accept as the basis for calculations and design data the methods and standards recommended by the Mechanical Contractors' Association of America; the American Society of Heating, Refrigerating and Air Conditioning Engineers; and the Institute of Boiler and Radiator Manufacturers.

4. When requested, additional data pertaining to design and operation of a heating and ventilating system shall be submitted to the department for approval by the engineer, architect, designer or manufacturer before such equipment is installed or used.
- (5) Seasonal occupancies. When approved in writing by the department, heating requirements may be waived (but not ventilation required by sections Ind 59.40 and 59.41) during the period of June 1 through September 15 for the following or similar occupancies:
 - (a) Drive-in eating places.
 - (b) Club houses.
 - (c) Outdoor toilets.
 - (d) Camp lodge buildings.
 - (e) Canning factories.
 - (f) Migrant labor camps. (Also see W.A.C. Chapter 49, Migrant Labor Camps.)
- (6) Approval of material and equipment. The use of materials, equipment, devices and methods of installation not mentioned in this code is subject to written approval by the department. Sufficient test data and descriptive information shall be submitted to prove its use.

Section Ind 59.22 (heading) to be amended to read:

Ind 59.22 Design conditions.

Subsection Ind 59.22 (4) Table 2, the following items to be amended to read:

<u>Type of Building</u>	<u>Deg.</u> <u>Fahr.</u>
Hospitals:	
Private Rooms-----	75 (change from 70)
Wards-----	75 (change from 68)

Subsections Ind 59.22 (9), (10), (11) and (12) to be created to read:

- (9) Number and arrangements. The capacity, number and arrangement of outlets, returns and exhausts shall insure a uniform distribution of air.
- (10) Elevator shafts and stairwells. Air shall not be transferred through elevator shafts and stairwells where doors are required at any floor level.
- (11) Grilles or diffusers required. All air supply outlets and returns shall be equipped with grilles or devices which will provide a uniform distribution of air.
- (12) Corridor ventilation. Air in a volume equal to the outside air required from a room may be discharged and recirculated through a corridor and exhausted through lockers, toilet rooms, kitchens, janitor closets and similar areas. Additional exhaust ventilation shall be provided where the volume of air exhausted from the corridor is less than the volume of air supplied.

Section Ind 59.24 to be repealed and recreated to read:

Ind 59.24 General requirements for heating, ventilating and exhaust systems.

- (1) Heating systems required. Heating systems complying with the requirements of this code shall be provided, maintained and operated for all occupied areas within the scope of this code.
- (2) Guarding of surfaces. Equipment located in occupied areas and installed less than 7 feet above the floor shall be guarded to prevent bodily contact with:
 - (a) Any surface temperatures that exceed 180° F.
 - (b) Surfaces that are likely to cause lacerations.

Note: For more restrictive conditions, see Ind 59.66 (2).

- (3) Ventilating systems required. Ventilating systems shall be provided, maintained and operated to accomplish required ventilation service for all occupied areas within the scope of this code.

Note: Cross reference: For requirements pertaining to all places of employment or occupancy where smoke, gas, dust, fumes, steam, vapor, industrial poisons, or other detrimental materials are used, stored, handled, or are present in the air in sufficient quantities to obstruct the vision, or to be irritating, or to be injurious to the health, safety or welfare of the employes or frequenters, see Wis. Adm. Code Chapter Ind 20--Dusts, Fumes, Vapors and Gases.

- (4) Natural ventilation. Where outdoor openings are used for natural ventilation the openings shall be within 100 feet, or 5 times the least dimensional width of the occupied area, whichever is the least.
 - (a) Outdoor openings below grade will not be accepted unless there is a clear space outside of the opening having a width not less than 1-1/2 times the distance below grade at the bottom of the opening.

Note: Width of clear space is the horizontal distance measured at right angles to the plane of the opening.

- (b) Outdoor openings shall be at least 5 feet from a property line and/or lot line or an adjacent building on the same property. This distance restriction does not apply to property lines along streets.

Note: For further restrictions, see Table 51.03-B and section Ind 59.60.

- (5) Gravity direct-indirect systems. The installation of gravity direct-indirect systems is prohibited.

Note: This rule is intended to prohibit the use of direct-indirect radiation whereby the outside air supply is admitted to the base and delivered at the top without mechanical assistance.

- (6) Hot water heating and ventilating systems. Hot water systems installed in areas where ventilation is required under this code shall comply with the following requirement:

- (a) The system hot water shall be circulated continuously by mechanical means.

- (7) Exhaust ventilating system.

- (a) Exhaust ventilating systems shall be designed to reasonably prevent contaminated air reentering the building.

- (b) The required exhaust ventilating systems shall operate continuously whenever the space exhausted is occupied.

Note: See Wis. Adm. Code Chapter Ind 20.

- (8) Tempered air supply.

- (a) Where ventilation is affected by exhaust methods, an outside tempered air supply shall be provided to replace the air exhausted from the area if the volume of air exhausted exceeds one air change per hour.

- (b) Where heat gain from a process is equal to all or part of the ventilation heat load, the air may be recirculated and supplied mechanically within the immediate area and mixed with a quantity of outside air to temper the air supply, provided that dampers and temperature controls are installed in the system to maintain a discharge temperature of not less than 50° F.

Note: See other applicable sections of Chapter Ind 59 for further restrictions.

- (c) A tempered air supply depending on a negative pressure within the space is prohibited except in foundries, steel fabricating shops and similar areas.

(9) Contamination of adjacent area. The ventilation of all equipment and system service rooms which house sources of odors, fumes, noxious gases, smoke, steam, dust, spray, or other contamination, shall be such as to prevent spreading of any such contamination to other parts of the building occupied by people.

(a) Areas where chlorinated hydrocarbons are introduced shall be arranged to satisfy the following conditions:

Note: Some of the chlorinated hydrocarbons commonly used are: trichloroethylene, perchloroethylene, carbon tetrochloride, methylene chloride, methyl chloroform, Freon F-11, Freon F-12, Freon F-21 and Freon F-114. For example, these materials are used in dry cleaning establishments, in degreasing operations, and where pressure can propellants are used. Pressure cans are used for such products as enamels, lacquers, paint removers, stencil inks, lubricants, pesticides, hair sprays, shaving lathers, shampoos and colognes.

1. The area shall have an exhaust system capable of maintaining a negative pressure within the enclosed area.
2. The volume and distribution of air movement within the area shall be such that the average threshold limit values of specific air-borne contaminants are not exceeded. See Wis. Adm. Code Chapter Ind 20--Dusts, Fumes, Vapors and Gases.
3. No direct-fired heating unit with or without a heat exchanger shall be located within this area nor shall it recirculate air from this area.
4. Surface temperatures of any kind of heating equipment used in these areas shall be below the temperature at which toxic materials may be released.

Note: Toxic materials are those covered in Wis. Adm. Code Chapter Ind 20--Dusts, Fumes, Vapors and Gases.

(b) Ventilation air shall not be drawn from an area of greater contamination to satisfy code requirements.

Note: The following examples are typical of acceptable systems: corridor to toilet; corridor to cloak rooms or janitor closets; dining room to kitchen; locker room to toilet room; gymnasium to locker room; and showroom to garage.

- (10) Final test required. The designer or installer shall be responsible for the testing and balancing of every heating, ventilating and air conditioning system.
- (11) Instructions. The designer or installer shall provide the owner with written instructions for the operation and maintenance of the system and equipment.

Subsection Ind 59.40 (2) Table 3 to be amended to read:

TABLE 3

Use or Occupancy	Classification	Basis of Capacity
Arenas and field houses*-----	(a)	4 sq. ft. per person. Use seated area only.
Armories (drill halls)-----	(a)	30 sq. ft. per person.
Assembly halls*-----	(a) or (b)	7 sq. ft. per person. See Wis. Adm. Code section Ind 59.42.
Banquet halls*-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.42.
Barber shops-----	(b)	20 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Bath and shower rooms-----	(c)	See Wis. Adm. Code section Ind 59.48.
Beauty parlors-----	(b)	20 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Billiard rooms-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Bowling alleys-----	(a) or (b)	Seating capacity, plus 6 persons per alley. Terminate occupied area at foul line. See Wis. Adm. Code section Ind 59.51.
Brokerage board rooms-----	(a) or (b)	7 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Cafeterias*-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.42.
Churches and places of worship-----	(a) or (b)	See Wis. Adm. Code section Ind 59.44.
Chapel-----	(a) or (b)	7 sq. ft. per person.
Dining and social rooms-----	(a) or (b)	15 sq. ft. per person.
Nave or auditorium-----	(a) or (b)	7 sq. ft. per person.
Club rooms-----	(a) or (b)	Depends on usage.
Dance halls-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Dining rooms*-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.42.

*These occupancies are other than those related to educational facilities under Chapter Ind 56.

Use or Occupancy	Classification	Basis of Capacity
Educational facilities [†]		
Academic classrooms--regular--	(a)	20 sq. ft. per person.
Administrative and office space-----	(a) or (b)	75 sq. ft. per person.
Arts, crafts, drafting-----	(a) or (c)	30 sq. ft. per person. Also see Wis. Adm. Code chapter Ind 20--Dusts, Fumes, Vapors and Gases.
Bleachers-----	(a)	One seat per 18 inches of bench length.
Gymnasiums, field houses, auditoriums, theaters, lec- ture rooms (fixed seating)---	(a)	6 sq. ft. per person.
Gymnasiums, field houses, multipurpose rooms, cafete- rias, study halls, commons and other level floor areas with nonfixed individual seating-----	(a)	10 sq. ft. per person.
Home economics, business education-----	(a)	30 sq. ft. per person.
Industrial arts-vocational shop-----	(a) or (c)	50 sq. ft. per person. See Ind 59.52 and Wis. Adm. Code chapter Ind 20--Dusts, Fumes, Vapors and Gases.
Laboratories-science (fixed lab. tables)-----	(a) or (c)	30 sq. ft. per person. Also see Wis. Adm. Code chapter Ind 20--Dusts, Fumes, Vapors and Gases.
Libraries and resource centers-----	(a)	20 sq. ft. per person.
Museums and art galleries----	(a)	40 sq. ft. per person.
Music Vocal----- Instrumental-----	(a) (a)	10 sq. ft. per person. 20 sq. ft. per person.
Special education (mentally retarded, physically handi- capped, etc.)-----	(a)	35 sq. ft. per person.

[†]For areas listed under "educational facilities," the department will accept maximum capacities stated on building plans according to section Ind 56.07.

Use or Occupancy	Classification	Basis of Capacity
Factories and machine shops----	(b)	See Wis. Adm. Code section Ind 59.53. Also see rules of Wis. Adm. Code chapter Ind 20--Dusts, Fumes, Vapors and Gases.
First-aid rest rooms-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.53.
Foundries and boiler shops----	(b)	See Wis. Adm. Code section Ind 59.53. Also see rules of Wis. Adm. Code chapter Ind 20--Dusts, Fumes, Vapors and Gases.
Funeral homes----- Chapel-----	(a) or (b)	See Wis. Adm. Code section Ind 59.44. 7 sq. ft. per person.
Garages and service stations---	(d)	See Wis. Adm. Code section Ind 59.52.
General offices*-----	(a) or (b)	See Wis. Adm. Code section Ind 59.50.
Gymnasiums and combined gymnasiums and assembly halls*----	(a)	6 sq. ft. per person for seated space. 15 sq. ft. per person for space not seated.
Hospitals-----	(a) or (b)	See Wis. Adm. Code section Ind 59.56. See Wis. Adm. Code section Ind 57.17 and Ind 57.19.
Hospitals (Mental)----- Day rooms----- Dormitories-----	(b) (b)	See Wis. Adm. Code section Ind 59.55. See Wis. Adm. Code section Ind 57.19. See Wis. Adm. Code section Ind 57.17 and Ind 57.19.
Janitor closets-----	(c)	See Wis. Adm. Code section Ind 59.48 and Ind 59.56.
Kitchens-----	(c)	See Wis. Adm. Code section Ind 59.49.
Laboratories*-----	(a) or (c)	25 sq. ft. per person. See rules of Wis. Adm. Code chapter Ind 20--Dusts, Fumes, Vapors and Gases.
Laundries*-----	(c)	See Wis. Adm. Code section Ind 59.56(a).
Lecture halls*-----	(a)	7 sq. ft. per person. Use seated area only.
Library reading rooms*-----	(a)	20 sq. ft. per person.

*These occupancies are other than those related to educational facilities under Chapter Ind 56.

Use or Occupancy	Classifi- cation	Basis of Capacity
Locker rooms-----	(c) or (d)	See Wis. Adm. Code section Ind 59.48 and Ind 59.53.
Lodge halls-----	(a) or (b)	6 sq. ft. per person for seated space. 15 sq. ft. per person for space not seated. See Wis. Adm. Code section Ind 59.51.
Mental hospitals-----		See Wis. Adm. Code section Ind 59.55.
Day rooms-----	(b)	See Wis. Adm. Code section Ind 57.19.
Dormitories-----	(b)	See Wis. Adm. Code section Ind 57.17 and Ind 57.19.
Motion picture booths-----	(a) or (c)	See Wis. Adm. Code section Ind 59.43.
Penal institutions-----		See Wis. Adm. Code section Ind 57.17 and Ind 57.19.
Jail cell (overnight lockup)-	(b) & (c)	6 air changes per hour.
Places of employment*-----	(b)	75 sq. ft. per person. See Wis. Adm. Code section Ind 59.53.
Playrooms (unfinished areas)*--	(c)	23 sq. ft. per person.
Printing establishments-----	(b)	See Wis. Adm. Code section Ind 59.53. Also see rules of Wis. Adm. Code chapter Ind 20--Dusts, Fumes, Vapors and Gases.
Restaurants-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Retail establishments-----	(a) or (b)	Basement: 40 sq. ft. per person. Other floors: 60 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Security vaults (occupied)-----	(d)	2 CFM per sq. ft.
Skating rinks-----	(a) or (b)	15 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Sunday School-----	(b)	15 sq. ft. per person.
Swimming pools-----	(c)	See Wis. Adm. Code section Ind 59.48.
Taverns-----	(a) or (b)	20 sq. ft. per person. See Wis. Adm. Code section Ind 59.51.
Theaters*-----	(a)	7 sq. ft. per person.

*These occupancies are other than those related to educational facilities under Chapter Ind 56.

Use or Occupancy	Classification	Basis of Capacity
Theater lobbies*-----	(a)	15 sq. ft. per person.
Theater lounge rooms*-----	(a)	15 sq. ft. per person.
Toilet rooms-----	(c)	See Wis. Adm. Code section Ind 59.48.
Wardrobes, lockers and cloak rooms-----		2 CFM per sq. ft. floor area. See Wis. Adm. Code section Ind 59.48 and Ind 59.53.

*These occupancies are other than those related to educational facilities under Chapter Ind 56.

Subsection Ind 59.48 (1) to be amended to read:

(1) Scope. This classification shall include toilet rooms, locker rooms, natatoriums, shower rooms and janitor closets.

Note #1: A janitor closet is a service closet with one or more plumbing fixtures.

Note #2: For exhaust ventilation requirements in hospital service areas, see Wis. Adm. Code section Ind 59.56 (2).

Note #3: For exhaust ventilation requirements in places of employment, see Wis. Adm. Code section Ind 59.53.

Subsection Ind 59.48 (2) (f) to be created to read:

(f) Exemptions. Exhaust ventilation is not required from toilet rooms having one water closet or one urinal, or from janitor closets having one service sink or receptor, providing

1. The room has an outside window of at least 4 square feet with at least 2 square feet that is openable.

Subsection Ind 59.49 (1) to be amended to read:

(1) Scope. This classification includes all areas where food is prepared, except in domestic science educational facilities from grades kindergarten thru 12, and single unit apartments in hotels, motels and apartment buildings.

Subsection Ind 59.49 (2) (a) to be repealed and recreated to read:

(2) Ventilation required.

- (a) Exhaust. The exhaust ventilation shall be not less than 4 cubic feet per minute per square foot of floor area for every occupied area within the scope of this section.
1. Exception: The exhaust ventilation shall be not less than 2 cubic feet per minute per square foot of floor area for kitchens used in the preparation of only one meal a day. The exception may apply to churches, auditoriums and lodge halls.

Subsection Ind 59.49 (3) to be repealed and recreated to read:

(3) Exhaust hoods.

- (a) Where required. Exhaust hoods are required under the following conditions:

1. Where frying and/or broiling is done.

Note: The above includes deep-fat frying and surface frying.

2. Where cooking is a regular commercial operation.

Note: The above includes ranges, griddles, fryers, broilers and similar grease-producing equipment.

- (b) Size of hood. The horizontal inside dimensions of the hood shall be sized to effectively capture grease vapors, but in no case shall these dimensions be less than the overall horizontal dimensions of the grease-producing equipment.
- (c) The volume of exhaust air from the hood shall be not less than 100 cubic feet per minute per square foot of the overall horizontal dimensions of the grease-producing equipment.
- (d) When hoods are connected to ducts supplying outside air, performance data shall be submitted as required by subsection Ind 59.20 (4) (g).
- (e) Hood surfaces and exposed exhaust ducts within 18 inches of combustible material shall be protected by 2-hour fire-resistive construction.
- (f) Hood surfaces that are concealed by or recessed into adjoining construction shall be protected by 2-hour fire-resistive construction.
- (g) Recirculation of air as described under subsection Ind 59.24 (8) (b) is prohibited.

Subsection Ind 59.49 (4) (a) to be amended to read:

(4) Ducts.

- (a) Exhaust ducts or vents connected to required hoods that pass through any other area of the building, including suspended ceilings, shall be protected with not less than 2-hour fire-resistive construction. Where 2-hour fire-resistive construction cannot be provided, a manufactured or masonry chimney shall be used. The manufactured chimney shall be tested and approved for use at a flue gas temperature of not less than 1000° F.

Note #1: See Wis. Adm. Code section Ind 51.04 for various building materials having a 2-hour rating.

Note #2: See Ind 59.69 (13) (a) 5. for fire dampers.

Subsection Ind 59.52 (1) to be repealed and recreated to read:

- (1) Scope. Ventilation shall be provided for all repair garages, service stations, body shops, repair service shops and live storage garages where vehicles or equipment having internal combustion engines are operated for repair or other purposes.

Note: A live storage area does not include vehicles or equipment stored for a seasonal period or where such vehicles or equipment, when new, are displayed in a showroom area.

Subsection Ind 59.52 (3) Note to be created to read:

Note: A live storage area is any area within a building used for the storage of fire trucks, tractors, automobiles, trucks and other self-propelled vehicles driven in and out under their own power. For exception, see note under (1).

Subsections Ind 59.52 (4) (c) and (d) to be created to read:

- (c) A noncombustible flexible tube or hose not more than 10 feet long, connected to the engine exhaust (tail pipe) and terminating outside the building, may be used in lieu of requirements stated in (b) above.

Note: The requirements stated in (4) (a) need not be increased when satisfying requirements of either (b) or (c). Also see Wis. Adm. Code Chapter Ind 20--Dusts, Fumes, Vapors and Gases, for additional requirements.

- (d) Areas involved in the servicing of small internal combustion engines such as lawnmowers, snowmobiles, chainsaws, cycles, boat engines, etc. shall be provided with at least 3/4 cubic foot of tempered outside air per square foot of enclosed service floor area and an equivalent exhaust.

Subsection Ind 59.52 (5) to be repealed and recreated to read:

- (5) Service stations. Buildings of this classification shall include liquid fuel dispensing stations and/or where vehicles can be driven into the building for washing, greasing, oil change, motor tune-up or repair, tire replacement, battery charging or replacement, and similar operations.
 - (a) All service and/or workroom areas, other than where engine tune-up or repair is made, shall be supplied with a volume of tempered outside air not less than 1/2 cubic foot per minute per square foot of floor area.
 - 1. An exhaust ventilation system shall be provided to satisfy the minimum required air movement.
 - 2. The exhaust air shall be drawn from not more than 18 inches above the floor.
 - (b) All service and/or workroom areas involving engine tune-up or repair requiring the operation of internal combustion engines shall be provided with ventilation to satisfy requirements of (4) above.
 - (c) Buildings or portions of buildings having a capacity of and used exclusively for washing 2 or more vehicles simultaneously shall be supplied and exhausted with a volume of air equal to 1/2 cubic foot per minute per square foot of floor area.
 - 1. The minimum floor area calculated for wash areas provided with vehicle conveyor systems shall be based on that portion of floor located between the termination of the conveyor system and the vehicle exit door.

Subsections Ind 59.52 (6) (d) and (e) to be created to read:

- (d) If the provisions of this section do not provide sufficient ventilation to meet the standards for threshold limit values covered in Wis. Adm. Code Chapter Ind 20--Dusts, Fumes, Vapors and Gases, the additional exhaust requirements with an equivalent volume of tempered outside air shall be provided to satisfy the requirements of Chapter Ind 20.
- (e) The ventilation for battery-charging rooms shall satisfy the requirements of (4) (d).

Subsection Ind 59.56 (2) to be repealed and recreated to read:

- (2) Ventilation required.
 - (a) Exhaust ventilation shall be provided on the basis of 2 cubic feet per minute for each square foot of floor area from such rooms as baths, laboratories, laundries, anesthetic storage, bedpan, sterilizing, soiled utility, soiled linen, and janitor closets.

- (b) Drug storage rooms, clean utility rooms, treatment rooms, dark rooms, and X-ray rooms shall have a minimum air movement of 6 air changes per hour. Such ventilation shall be accomplished by exhaust methods.
- (c) The heating and ventilating system serving such rooms as operating, anesthesia, recovery, labor, delivery, nursery, isolation, therapy, and autopsy shall satisfy the following conditions:
 - 1. A minimum air movement of not less than 6 air changes per hour.
 - 2. Tempered outside air of not less than 6 air changes per hour shall be provided.
 - 3. The recirculation of air is not permitted in autopsy rooms.
 - 4. Recirculation of air shall only be permitted within the system serving an individual room.
 - 5. Mechanical exhaust shall be provided.
 - 6. The system shall be designed to maintain room temperature at 75° F.
 - 7. The relative humidity in rooms where anesthetic gases are used shall be maintained at not less than 50%.
- (d) Private rooms, semi-private wards, day rooms, and nursing stations shall be ventilated in accordance with the requirements of Wis. Adm. Code section Ind 59.41 unless openable sash area has been provided and the content of the space is in excess of 400 cubic feet per occupant.

Note: See Wis. Adm. Code sections Ind 57.17 and 57.19.

Section Ind 59.59 to be created to read:

Ind 59.59 Combustion air intakes.

- (1) All burners shall be provided with combustion air by one of the following methods:
 - (a) Infiltration where total area of outdoor openings is greater than 3% of the floor area in which the burner is located.

Note: See Ind 59.66 (3) for special conditions.

- (b) Gravity intakes where the free area of such opening is at least one square inch for each 5,000 Btu per hour of fuel consumed. The minimum free area of such opening shall be not less than 100 square inches.
 - 1. Manually operated dampers are prohibited.
 - 2. Motorized dampers are acceptable when interconnected with the burner of direct-fired equipment. Dampers shall be open when the burner is in operation.

- (c) Mechanical combustion air systems such as induced draft, forced draft or makeup air units when complete design data, including size of combustion air intake, has been approved by the department.

Note: The department will accept 150% or more of theoretical combustion air requirements or burner manufacturers recommendations.

- (2) All boiler and furnace rooms shall be provided with combustion air from outside the building as required by subsection (1) (b) or (c) above.
- (3) A natural-draft burner shall not be installed where the space in which the burner is located is under negative pressure due to another exhaust system.
- (4) Mounting height shall be as required in subsection Ind 59.60 (1) (c).

Subsection Ind 59.60 (heading) to be amended to read:

Ind 59.60 Outside ventilating air intakes or exhausts.

Subsection Ind 59.60 (1) to be repealed and recreated to read:

(1) Location.

- (a) Outside air intake openings shall be located so as to minimize contamination of intake air, but in no case shall the distance be less than:

- 1. Twenty (20) feet horizontally or 10 feet vertically from chimney outlets.
- 2. Ten (10) feet (measured in any direction) from all other exhaust and plumbing vents.

- (b) Air intakes and exhausts shall be at least 10 feet from a property line and/or lot line or an adjacent building on the same property. This distance restriction does not apply to property lines along streets or alleys.

(c) Mounting height.

- 1. The lowest side of outside air intake openings shall be located at least 12 inches above the outside grade or above the adjoining roof surface.
- 2. Where outside air intake openings are located in any areaway below grade, the lowest side of opening shall be at least 12 inches above the bottom of areaway.
 - a. The minimum horizontal cross-sectional area of areaway shall be at least equal to the free area of the opening.
- 3. A grating shall be provided over the top of the areaway required in 2. above.

- a. The grating shall have a free area at least equal to the required area of combustion air intake.
- b. The openings in grating shall be 1/2 inch to one inch in the clear.
- c. The grating shall be capable of supporting the design loads for intended location, but in no case shall it be designed for less than 100 pounds per square foot.

Subsections Ind 59.60 (2) and (6) to be repealed.

Subsection Ind 59.60 (3) to be renumbered (2).

Subsection Ind 59.60 (4) to be renumbered (3).

Subsection Ind 59.60 (5) to be renumbered (4).

Section Ind 59.64 to be created to read:

Ind 59.64 Radiation and convection equipment. The rating of steam or hot water radiation and convection equipment shall be based on approved standards.

Note: The department will accept net ratings as listed by Mechanical Contractors Association of America, Inc.; Institute of Boiler and Radiator Manufacturers; and equipment tested according to Commercial Standard 140-47.

Subsection Ind 59.69 (13) to be repealed and recreated to read:

(13) Fire dampers and fire door assemblies.

(a) Where heating and ventilating ducts pass through required fire-resistive walls or floor systems, such ducts shall have approved fire dampers or fire door assemblies installed in the approved tested position and located at the point where the ducts pierce the walls or floor systems. Ducts shall be protected according to the following conditions:

1. For construction requiring a fire-resistive rating of one hour or less, the damper or fire door assembly shall be rated not less than the rating of construction. See the following exception.
 - a. If the above referenced duct is constructed entirely of 20 U.S. gauge sheet metal, no damper will be required. Ducts installed in combustible fire-resistive construction shall satisfy the installation requirements for smoke pipes as stated in section Ind 52.12.
2. For construction requiring a fire-resistive rating of not less than 1-1/2 hours up to ratings not more than 2 hours, the damper or door shall be rated not less than 1-1/2 hours.

3. For construction requiring a fire-resistive rating of 3 or 4 hours, the door assembly shall be rated not less than 3 hours.
4. Access panels shall be provided next to damper or door assembly to permit viewing and servicing.

Note #1: Special attention should be given to design and installation of equipment where highly corrosive conditions exist.

Note #2: See Wis. Adm. Code Chapters 50 through 57 for fire-resistive rated construction.

5. No openings will be permitted in fire-resistive rated doors unless such door assemblies satisfy the requirements of Ind 51.047.
6. Fire dampers are prohibited in kitchen exhaust ducts where combustion-supporting grease deposits can accumulate unless approved kitchen hood assemblies including fire dampers and extinguishing systems are used.

Note #1: The department will accept those hoods and systems approved by Underwriters' Laboratories.

Note #2: The above includes those exhaust ducts serving ranges, broilers, fryers and griddles, for example, but does not include such equipment as dishwashers and steam kettles.

- (b) Where heating and ventilating ducts terminate after penetration of required fire-resistive walls or floor systems, such duct openings shall be protected by approved fire dampers or fire door assemblies installed in the approved tested position and rated to satisfy one of the following conditions:

Note: The above includes transfer grilles, combustion air intakes, and supply and return air ducts.

1. Where construction of enclosure must satisfy a fire-resistive rating of one hour or less, the damper or fire door assembly shall be rated not less than the rating of construction. See the following exception.
 - a. Exception: If the above referenced duct is constructed entirely of 20 U.S. gauge sheet metal, no damper will be required. Ducts installed in combustible fire-resistive construction shall satisfy the installation requirements for smoke pipes as stated in section Ind 52.12.
2. Where construction of enclosure must satisfy a fire-resistive rating of one and one-half (1-1/2) hours or two (2) hours, the damper or fire door assembly shall be rated not less than one and one-half (1-1/2) hours.

3. Where construction of enclosure must satisfy a fire-resistive rating of three (3) or four (4) hours, the fire door assembly shall be rated not less than three (3) hours.

Note: The department will accept listed fire damper and fire door assemblies tested by a nationally recognized testing laboratory and the systems recommended in publications of Sheet Metal, Air Conditioning Contractors National Association, Inc. and National Fire Protection Association Bulletin No. 90A.

- (c) Exceptions: Fire damper or fire door assemblies are not required in
 - (a) where
 1. Maximum duct area does not exceed 20 square inches.
 2. Duct serves as an exhaust for kitchen range hood.

Section Ind 59.71 to be repealed.

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Stephen J. Reilly, Executive Secretary

Date

CORRECTIONS AND ADDITIONS TO APPENDIX A

Revisor, please note: In reprinting of "Appendix" please place it after Chapter Ind 59 and preceding the "Index."

A-51.01(67a) to be created to read:

A-51.01(67a) HABITABLE ROOM. It is the intent that rooms designated as recreation, study, den, family room, office, etc. and providing the only space for living and/or sleeping are considered habitable rooms.

A-51.01(121) to be amended to read:

A-51.01(121) STORIES, NUMBER OF. For further clarification, refer to A-51.02(14).

(Revisor: The present illustrations will be amended and placed under A-51.02(14).)

A-51.01(144) to be created to read:

A-51.01(144) WALL (DIVISION).

(a) Building division wall is intended to denote a wall constructed in a manner sufficient to meet requirements for a party wall [see "Wall (Party)"] and is acceptable as a dividing wall or enclosing wall when determining the volume of a building as referred to in sections Ind 50.10, 52.001 and 59.20. Also see Chapter A-E 2 of Wis. Adm. Code--Examining Board of Architects, Professional Engineers, Designers and Land Surveyors.

(b) Fire division wall is intended to relate to construction that provides separation between portions of a building to satisfy allowable floor area limitations, separation between 2 classes of construction, or separation of hazardous occupancies. For other separations, see "occupancy separations" and isolation of hazards sections of this code.

A-51.02(14) to be created to read:

A-51.02(14) DETERMINATION OF NUMBER OF STORIES. The following illustrations are provided to give visual aid to this rule and the definition of Ind 51.01(121) Stories, Number of.

A-51.042(5) to be created to read:

A-51.042(5) The use of the term "high hazard" as referred to in this section is intended to apply to the following list of operations and occupancies:

1. Aircraft hangars.
2. Dry cleaning establishments: using or storing gasoline or other volatile flammable liquids.
3. Enameling or japanning operations.
4. Mills: sugar, starch, cereal, feed, flour and grist mills.
5. Paint and varnish: manufacturing, storing, handling, spraying, and other related operations.
6. Pyroxylin products: manufacture and storage.
7. Repair garages.
8. Smoke houses.
9. Storage of: explosive gases under pressure (15 psi and over 2,500 cubic feet) such as acetylene, hydrogen, natural gas, etc.
10. Storage of: materials with a flash point under 200° F, such as celluloid products, kerosene, oils, etc.
11. Woodworking establishments.

A-57.18 to be created to read:

A-57.18 The intent of this section is to apply to floor levels not more than one story below grade (at building).

A-57.18(6) to be created to read:

A-57.18(6) It is the intent of this subsection that each living unit needs only one means of exit from within the unit and that the entire building be provided with no less than 2 exits.

FACTORS

DISCHARGE GRADE REFERENCE = 0
 'X' = 0' TO MAXIMUM OF 3' ABOVE GR
 'Y' = 0' TO MAXIMUM OF 6' ABOVE GR
 'Z' = MAXIMUM VARIATION FROM THE
 PRINCIPAL LEVEL IS 3'

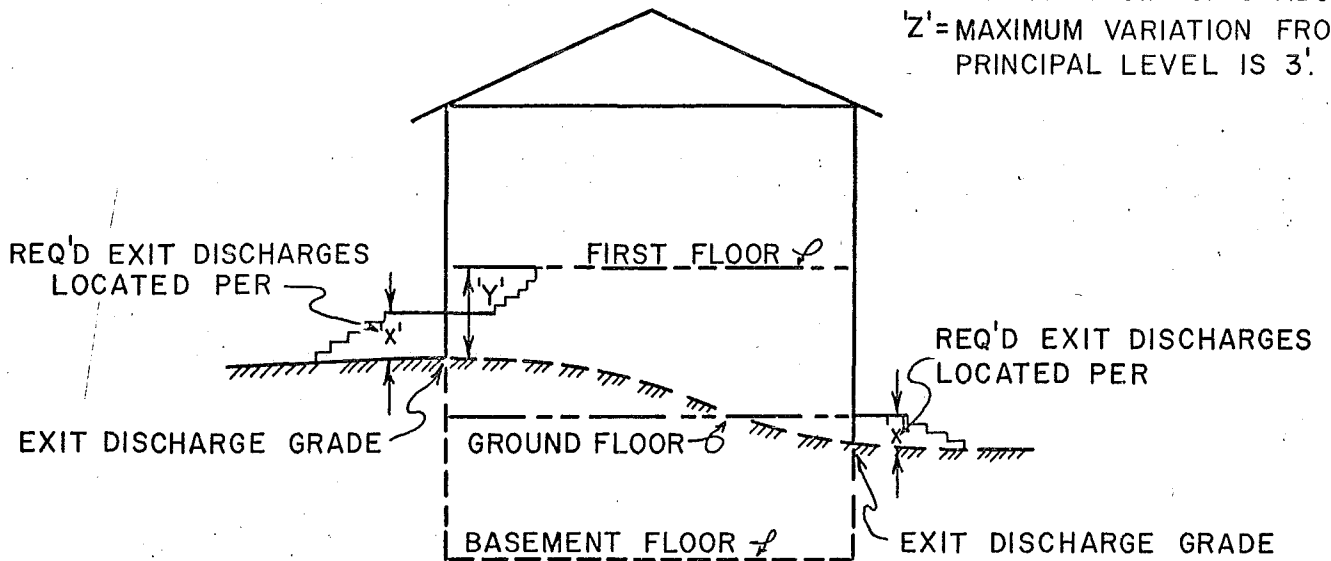


ILLUSTRATION SHOWING EXTREME ALLOWABLE CONDITION FOR FIRST FLOOR AND GROUND FLOOR ILLUSTRATION A-1

NOTE: PENTHOUSE AREAS EXCEEDING 50% OF ROOF AREA WILL BE CONSIDERED AN ADDITIONAL STORY

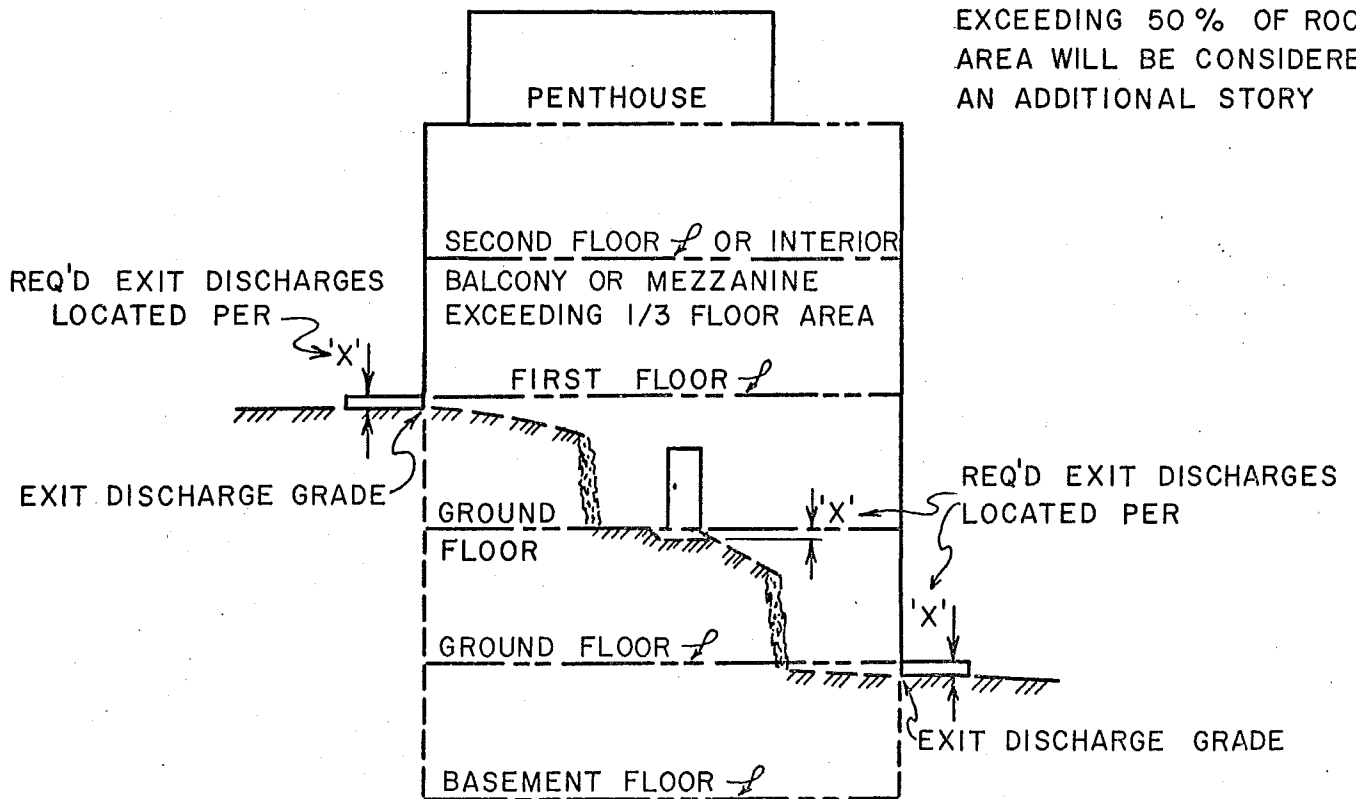
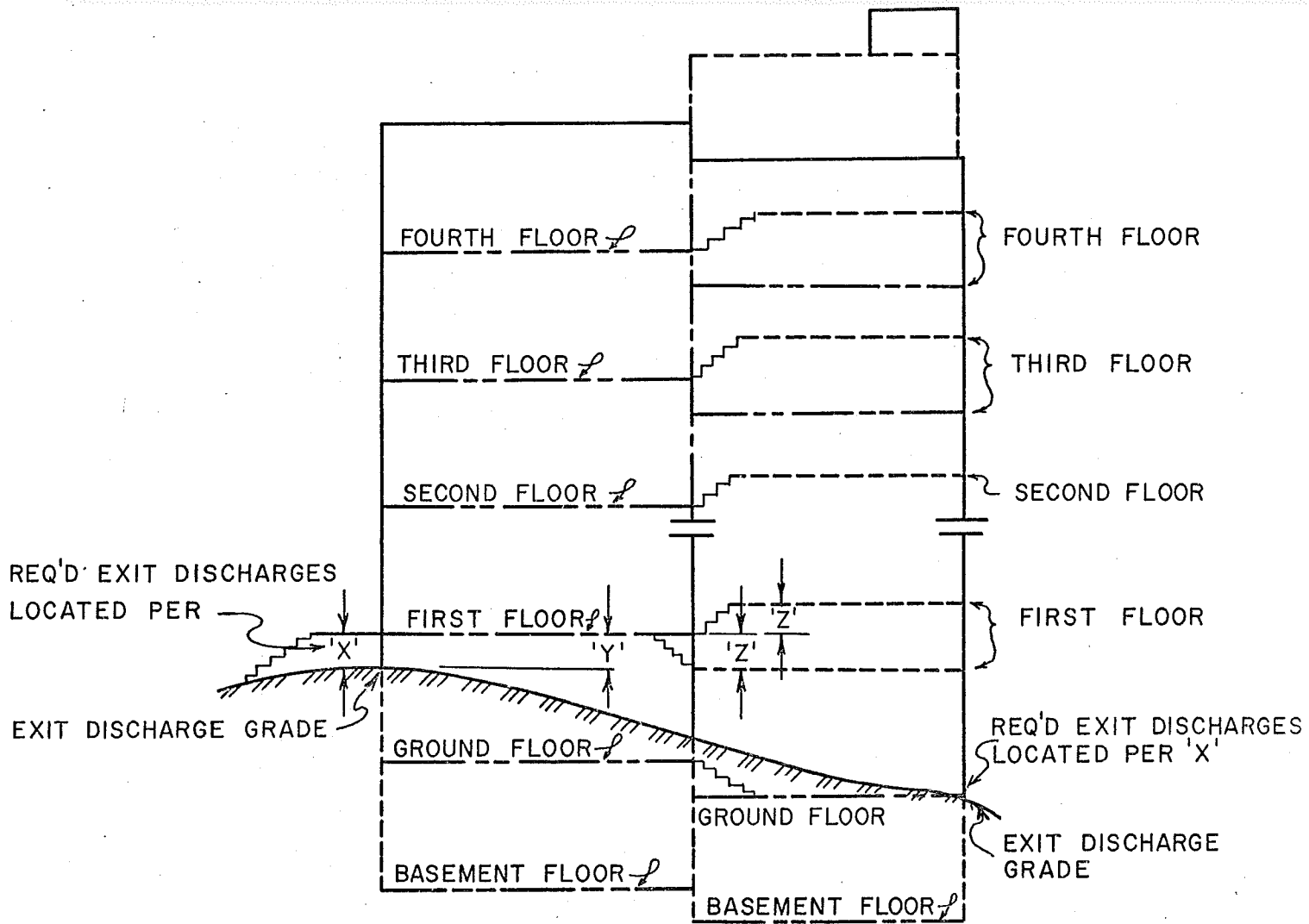
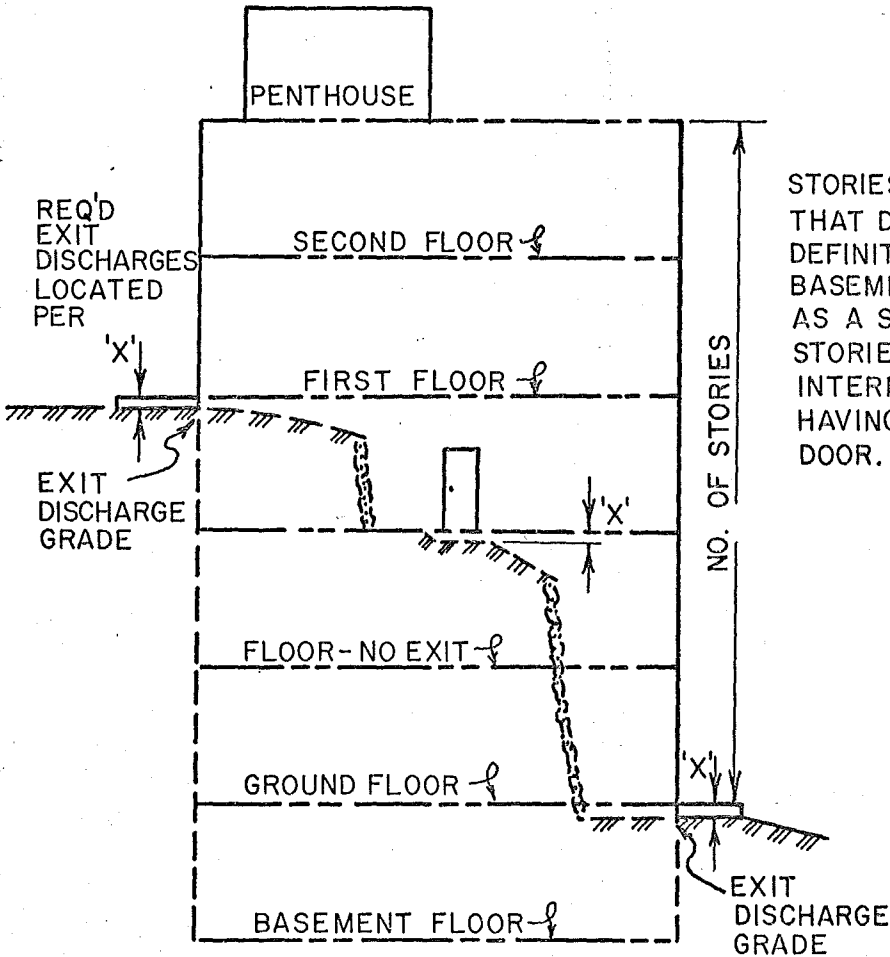


ILLUSTRATION SHOWING POSSIBLE 2 STORY CONDITION OR 3 STORY WITH PENTHOUSE

NOTE: FOR ADDITIONAL VARIATIONS TO NO. OF STORIES SEE IND. 51.02 (3)(b).



FOUR STORY BUILDING
ILLUSTRATION A-3



EXCEPTION
 STORIES BELOW A FIRST FLOOR THAT DO NOT COMPLY WITH THE DEFINITION OF GROUND FLOOR OR BASEMENT SHALL BE COUNTED AS A STORY. TOTAL NUMBER OF STORIES WILL INCLUDE ANY INTERMEDIATE GROUND FLOOR HAVING AN EXTERIOR EXIT DOOR.

ILLUSTRATION A-4

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