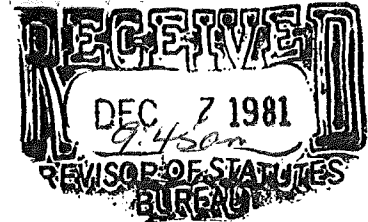


Ind 50 to 59

RULES CERTIFICATE

STATE OF WISCONSIN)
) SS
DEPT. OF INDUSTRY,)
LABOR & HUMAN RELATIONS)



TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Lowell B. Jackson, Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records

of said department, do hereby certify that the annexed rule(s) relating to Chs. Ind 50-64 Bldg. & Htg., Ventilating & Air Conditioning Code Interior Finishes, Safety Glazing and Exits were duly

(Subject)
approved and adopted by this department on Dec. 4 1981.
(Date)

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 Madison in the city of Madison, this 4th day of Dec A.D. 1981.

Lowell B. Jackson
Secretary

1-1-82

ORDER OF ADOPTION

Pursuant to authority vested in the Department of Industry, Labor and Human Relations by section(s) 101.02(1), 101.02(15)(h)-(j), Stats., the Department of Industry, Labor and Human Relations hereby creates; amends; repeals and recreates; and repeals and adopts rules of Wisconsin Administrative Code chapter(s):

Ind. 50-64 Bldg. & Htg., Ventilating & Air Conditioning Code
(Number) Interior Finishes, Safety Glazing and Exits
(Title)

The attached rules shall take effect on The First Day Following Publication
in the Wisconsin Administrative Register, pursuant to section
227.026, Stats.

Adopted at Madison, Wisconsin, this 4th
day of December, A.D., 1981.
DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS
Lawrence S. Jacobs
Secretary



RULES in FINAL DRAFT FORM

Rule: Chs. Ind 50-64

Relating to: Building & Heating, Ventilating & Air Conditioning
Code - Interior Finishes, Safety Glazing & Exits

Administrative rules to amend ss. Ind 50.12 (2) (d), Ind 51.25 (47), Ind 51.27 (5), Ind 54.08 (2) Notes, Ind 55.09 (1) (a); to repeal and recreate ss. Ind 51.02 (11), Table 51.03-A line 21, Ind 51.044, Ind 51.18, Ind 57.08; to create ss. Ind 51.01 (75a), Ind 51.06 (3) (b) 9. Note, Ind 51.07, Ind 51.14, Ind 51.25 (55), Ind 59.17 (2) relating to Interior Finishes, Safety Glazing and Exit Enclosures.

* * * * *

ANALYSIS OF RULES

The Division of Safety and Buildings of the Department of Industry, Labor and Human Relations is responsible for the promulgation of the Building and Heating, Ventilating and Air Conditioning Code, chapter Ind 50-64. Sections of this code are being revised to establish minimum safety, health and welfare standards for interior finishes, exit stair enclosures and safety glazing.

The proposed rules establish interior finish requirements based upon flame spread and smoke developed criteria. The proposed rules address floor, wall and ceiling finish and are consistent with the national model building codes and the National Fire Protection Association Life Safety Code.

The rules update and strengthen existing rules dealing with stairway and enclosures. The hourly ratings of the enclosures and when and where they are required are addressed.

The rules also include provisions to govern the installation of fixed glazed panels adjacent to doors. The federal CPSC recently deleted rules for those panels from its "Architectural Safety Glazing" Standard. The enforcement responsibility is now returning to the states and local units of government.

* * * * *

Pursuant to the authority vested in the state of Wisconsin's Department of Industry, Labor and Human Relations by s. 101.02 (1), ss. 101.02 (15) (h) through (j), Stats., the department hereby creates, amends and repeals and recreates rules interpreting s. 101.02 (1) and ss. 101.02 (15) (h) through (j), Stats., as follows:

SECTION 1. Ind 50.12 (2) (d) is amended to read:

Ind 50.12 (2) (d) Alteration plans for existing buildings, except for those alterations involving changes in interior finishes only.

SECTION 2. Ind 51.01 (75a) is created to read:

Ind 51.01 (75a) "Interior finish" means the exposed interior surfaces of buildings, including, but not limited to fixed or movable walls and partitions, columns, ceilings, and floors.

(a) "Class A interior finish" includes any material classified at 25 or less on the flame spread test scale and 450 or less on the smoke test scale in accordance with ASTM E84-80 - Test of Surface Burning Characteristics of Building Materials.

(b) "Class B interior finish" includes any material classified at more than 25 but not more than 75 on the flame spread test scale and 450 or less on the smoke test scale in accordance with ASTM E84-80 - Test of Surface Burning Characteristics of Building Materials.

(c) "Class C interior finish" includes any material classified at more than 75 but not more than 200 on the flame spread test scale and 450 or less on the smoke test scale in accordance with ASTM E84-80 - Test of Surface Burning Characteristics of Building Materials.

(d) "Class I interior floor finish" includes any material with a minimum critical radiant flux of 0.45 watts per square centimeter as determined in accordance with ASTM E648-78 - Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

(e) "Class II interior floor finish" includes any material with a minimum critical radiant flux of 0.22 watts per square centimeter as in accordance with ASTM E648-78 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

SECTION 3. Ind 51.02 (11) is repealed and recreated to read:

Ind 51.02 (11) PROTECTION OF VERTICAL OPENINGS. (a) Except as specified in par. (b), stairways, elevator shafts and other vertical openings, which serve 2 or more floor levels, shall be enclosed with fire-resistive rated construction equal to or better than the hourly ratings specified in Table 51.03-A, line 20.

(b) Exceptions. Vertical openings need not be enclosed under the following conditions:

1. Serving and contained within individual living units;
2. Serving raised or depressed areas, open mezzanines or open balconies contained within a single story;
3. Serving 2 floor levels and the opening is not a required means of egress provided the opening is separated from any corridor or stairway serving other floors by fire resistive rated construction having at least the hourly rating specified for fire enclosures as specified in line 21 of Table 51.03-A; or
4. As permitted by chs. Ind 54 through 62.

(c) Openings in required exit enclosures shall be limited to exit doors serving public passageways and corridors or serving floors occupied by a single tenant.

SECTION 4. Table 51.03-A, Line 20, is repealed and recreated to read:

CLASSIFICATION OF CONSTRUCTION - TABLE 1.1.1 - FIRE RESISTIVE RATED JOINTS

BUILDING ELEMENT	MODIFYING CONDITIONS	TYPE OF JOINT										APPLICABLE CODES	
		FIRE RESISTIVE TYPE A	FIRE RESISTIVE TYPE B	PERMITTED	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5A	NO. 5B	NO. 6		NO. 7
21. Fire Enclosure (Stairways, Elevators Vertical Shafts)	SEE NOTES 1 & 2 BOND STRAPX NTS. TO P.C. OR TO OTHER BOND OR SAVE PREP. BEARING OR NONBEARING	NO. 1	NO. 2	NO. 3	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5A	NO. 5B	NO. 6	NO. 7	SEE S. 190 51.1.3 FOR CONSTRUCTION STANDARDS
		Over 3 Stories 3 Stories or less	NO-2	NO-2	NO-1	1	2	1	1	1	1	1	A & E

SECTION 5. Ind 51.044 is repealed and recreated to read:

Ind 51.044 APPROVED TESTING LABORATORIES. Fire rating tests conducted by recognized testing laboratories in accordance with the ASTM standards specified in Table 51.044-1 shall be acceptable.

Table 51.044-1

Name of Recognized Laboratories	ASTM Standard Tests						
	E-84	E-108	E-119	E-136	E-152	E-163	E-648
Forest Prod. Lab., Madison, Wis*	--	--	X	--	X	--	--
Hardwood Plywood Mfgs. Assoc., Reston, Va	X	--	--	X	--	--	X
Nat'l Bureau of St'd., Washington, D.C.	--	--	X	X	--	--	--
Ohio State Univ., Columbus, Ohio	--	--	X	X	X	X	--
Portland Cement Assoc., Skokie, Ill.	--	--	X	--	--	--	--
Southwest Research Inst., San Antonio, Tex.	X	--	--	--	--	--	--
Underwriters' Lab., Inc., Chicago, Ill.	X	X	X	--	X	X	--
Underwriters' Lab., Inc., Scarborough, Ont., Canada	X	X	X	X	X	X	--
Univ. of Calif., Berleley, Calif.	--	X	X	--	--	X	--
U.S. Testing Co., Hoboken, N.J.	--	X	X	--	--	X	--
Warnock Hersey Intl-Inc., Antioch, Calif.	X	--	X	--	*X	X	--

*Reference based on research and development data. Facility is not available for conducting routine rating tests.

Note #1: See ss. Ind 51.25 (47)-(50), (52)-(53) and (55) for test information and specific standards adopted.

Note #2: Other testing laboratories will be recognized as an approved agency if accepted in writing by the department.

SECTION 6. Ind 51.06 (3) (b) 9. Note is created to read:

Ind 51.06 (3) (b) 9. Note: See s. Ind 51.07 for restrictions on interior finishes.

SECTION 7. Ind 51.07 is created to read:

Ind 51.07 INTERIOR FINISHES. (I) SCOPE. The requirements of this section apply to the interior finishes or surfaces of a building.

Note #1: See s. Ind 51.06 for the restrictions of foam plastics.

Note #2: Toxicity of the products of combustion is not included as a basis in determining the smoke developed criteria of this section. The smoke developed criteria is based solely upon the obscuration of light.

(2) APPLICATION TO MATERIALS. (a) Except as provided in par. (b), the classification of interior finish materials as specified in this section shall include the basic material used by itself or in combination with other materials.

(b) Subsequently applied paint or wall covering not exceeding 1/28 inch in thickness and classified 450 or less on the smoke test scale are exempt from the provisions of par. (a).

(3) TRIM AND INCIDENTAL FINISH. Interior finish not in excess of 10 percent of the aggregate wall and ceiling areas of any room or space may be Class C materials in occupancies where interior finish of Class A or Class B is required.

(4) EXPOSED CONSTRUCTION. (a) This section does not require the installation of interior finish, but where construction or fire protection materials are exposed in rooms or spaces used for the occupancies specified, the hazard from rate of flame spread of the exposed materials shall be not greater than that of the interior finish permitted for such occupancy or use.

(b) Exposed portions of structural members of Type No. 4-Heavy Timber Construction shall not be subject to the interior finish requirements of this section.

(5) USE OF INTERIOR FINISHES. Interior finish material shall be used in accordance with requirements specified in Table 51.07-1.

TABLE 51.07-1
MINIMUM INTERIOR FINISH REQUIREMENTS

OCCUPANCY	REQUIRED EXIT ENCLOSURES ¹		EXIT ACCESS ¹		ROOMS OR ENCLOSED SPACES ^{1,2}	
	WALLS & CEILINGS ⁴	FLOOR ⁵	WALLS & CEILINGS ⁴	FLOOR ⁵	WALLS & CEILINGS ⁴	FLOOR ^{3,5}
Ch. Ind 54 Occupancies Other than Storage and Warehouses	A	II	A or B	II	A, B or C	DOC FF-1 ⁶
Ch. Ind 54 Storage and Warehouse Occupancies	A or B	DOC FF-1 ⁶	A or B	DOC FF-1 ⁶	A, B or C	DOC FF-1 ⁶
Ch. Ind 55 Places of Assembly	A	I	A	II	A or B ⁷	DOC FF-1 ⁶
Ch. Ind 56 Places of Instruction	A	I	A or B	II	A, B or C	DOC FF-1 ⁶
Ch. Ind 57 Residential Occupancies	A	II	A or B	II	A, B or C	DOC FF-1 ⁶
Ch. Ind 58 Health Care and Places of Detention	SEE CHAPTER IND 58 FOR SPECIFIC REQUIREMENTS					
Ch. Ind 59 Hazardous Occupancies	A	DOC FF-1 ⁶	A or B	DOC FF-1 ⁶	A, B or C	DOC FF-1 ⁶
Ch. Ind 60 Day Care Centers (20 Children or Less)	A or B	DOC FF-1 ⁶	A or B	DOC FF-1 ⁶	A, B or C	DOC FF-1 ⁶
Ch. Ind 60 Day Care Centers (More than 20 Children)	A	II	A or B	II	A, B or C	DOC FF-1 ⁶
Ch. Ind 62 Specialty Occupancies	A, B or C	DOC FF-1 ⁶	A, B or C	DOC FF-1 ⁶	A, B or C	DOC FF-1 ⁶

Footnotes to Table 51.07-1

- 1 Exposed portions of structural members of Type No. 4-Heavy Timber Construction are not subject to the requirements of this table.
- 2 Where a complete automatic sprinkler system is installed, materials with an interior finish of Class B or C may be used in places where Class A or B materials, respectively are required and floor finish materials with an interior finish of Class II or materials complying with the DOC FF-1-70 "pill test" may be used in places where Class I or II materials respectively are required.
- 3 Requirements for rooms or enclosed spaces are based upon the spaces being separated from exit access corridors and exits by partitions extending from the floor to the ceiling. Where partitions do not satisfy this criteria, the room or space is considered part of the exit access or the exit.
- 4 Materials having napped, tufted, looped or similar surfaces, such as carpet, when applied on walls or ceilings shall meet the requirements for Class A interior finish.
- 5 Wood, vinyl, linoleum, terrazzo, resilient and other approved finished floors or floor covering materials are exempt from the provisions of this table.
- 6 All carpet manufactured for sale in the U.S. is required by federal regulations to comply with the DOC FF-1-70 "pill test" (16 CFR Para 1630). If a material other than carpet is used, the material should be shown to be resistant to flame propagation as a material which passes the DOC FF-1-70 test (minimum critical radiant flux of 0.04 watts/cm^2).
- 7 Class C interior finish materials may be used in places of assembly with a capacity of 400 persons or less.

Note: See s. Ind 51.01 (75a) for further explanatory information.

Class A Interior Finish - flame spread 0-25, smoke developed 0-450.

Class B Interior Finish - flame spread 26-75, smoke developed 0-450.

Class C Interior Finish - flame spread 76-200, smoke developed 0-450.

Class I Interior Floor Finish - critical radiant flux - $.45 \text{ watts/cm}^2$.

Class II Interior Floor Finish - critical radiant flux - $.22 \text{ watts/cm}^2$.

SECTION 8. Ind 51.14 is created to read:

Ind 51.14 SAFETY GLAZING. (1) SCOPE. This section applies to fixed or operating glazed flat panels adjacent to doors, fire window assemblies, display cases within 7 feet of the floor in schools, mirrors, frames, glazed pictures or similar decorative objects, skylights, sloped glazing and any other glazing materials used in hazardous impact areas which are not included within the scope of the federal Consumer Product Safety Commission (CPSC) standard for architectural glazing materials, 16 CFR, para. 1201.

Note: The CPSC standard for architectural glazing materials pre-empts state and local regulations for framed or unframed interior or exterior glazed doors, exterior doors with glazed lights, sliding doors and the adjacent glazed fixed or operating panel, storm doors, shower doors, walk-in mirror closet doors and tub enclosures.

(2) APPLICATION. All glazing material used in hazardous impact locations shall be safety glazing material. All replacements of glazing material in hazardous impact locations made after November 30, 1976, shall be safety glazing, except that the replacement of glazing shall be as specified in sub. (3) (c).

(a) Location. Hazardous impact locations shall include all glazed elements such as framed or unframed interior or exterior glass doors, first fixed or operating flat panels within 2 feet of nearest vertical edge of an entrance or exit door, exterior doors with glass lights, or any other glazed elements which may be mistaken for a means of egress or ingress to a room or building. Other hazardous impact locations shall include sliding doors and the adjacent glazed fixed or operating panel, storm doors, shower doors, tub enclosures and display cases within 7 feet of the floor in schools except as follows:

1. A fixed or operating flat panel immediately adjacent to an entrance or exit door is exempt from the requirements of this paragraph if the lower horizontal edge of the panel is 2 feet or more above the floor; or

2. Any mirror, framed glazed picture or similar decorative object which is attached to a door or wall in a hazardous impact location and which does not in whole or in part conceal any opening in such door or wall is exempt from the requirements of this paragraph.

(b) Material. Safety glazing shall include any glazing material including but not limited to tempered glass, laminated glass, wired glass, safety plastic, or safety insulating units which meet the test requirements of the American National Standards Institute (ANSI) standard Z97.1-1975, and which are constructed, treated or combined with other materials so as to minimize the likelihood of cutting and piercing injuries resulting from human impact with the glazing material.

(c) Labeling. Safety glazing material shall be labeled with a permanent label by such means as etching, sand blasting, firing of ceramic material, or hot die stamping. The label shall be legible and visible after installation. Labels identifying safety glazing materials may be omitted provided that a notarized affidavit or invoice is submitted to the department or owner upon request certifying the installation of safety glazing material. The label or affidavit shall identify the seller, manufacturer, fabricator, or installer, the nominal thickness and type of safety glazing material, and the fact that the material meets the test requirements of the American National Standards Institute (ANSI) standard Z97.1-1975.

(3) GUARDING OF GLAZING. All interior and exterior glazed panels, subject to human impact not in a hazardous impact location, shall be guarded or provided with safety glazing, except that glazed panels with a sill height of 2 feet or more, or glazed panels less than 12 inches in width, are not required to be safety glazed or guarded.

(a) Guarding shall consist of a horizontal bar, rail, mullion, grille or screen at least 1-1/2 inches wide and located within 3 feet 6 inches to 4 feet 6 inches above the floor. The guard assembly shall be capable of withstanding a lateral force of 100 pounds applied at any point and installed to avoid contact with the glazing when the force is applied.

(b) Safety glazing materials shall be as specified in sub. (2) (b).

(c) For replacement of glazing in buildings contracted for or existing prior to November 30, 1976, the installation of a horizontal bar, rail, mullion, grille or screen as a protective device may be provided in lieu of safety glazing material in hazardous impact locations where safety glazing would be impractical because of the size of the light required.

(4) INTERIOR DOORS WITH GLASS LIGHTS. (a) All interior doors with glass lights greater than 8 inches in the least dimension shall be provided with safety glazing material.

(b) All interior doors with glass lights less than 8 inches in the least dimension shall be provided with 1/4-inch glazing material.

(c) Safety glazing materials shall be as specified in sub. (2) (b).

(5) SKYLIGHTS AND SLOPED GLAZING. (a) Skylights. All glazing in skylights shall be safety glazing material and shall comply with the requirements specified in s. Ind 51.02 (6).

(b) Sloped Glazing. All glazing installed more than 15° with the vertical shall be safety glazing material. This paragraph does not apply to greenhouses.

(6) FIRE WINDOW ASSEMBLIES. All glazing in fire window assemblies shall be designed and installed as specified in s. Ind 51.048.

(7) STRUCTURAL REQUIREMENT. Glazing material shall be designed and installed to safely withstand the loads specified in ch. Ind 53.

Note: Section 101.125, Wis. Stats., requires safety glazing in all hazardous locations.

SECTION 9. Ind 51.18 is repealed and recreated to read:

Ind 51.18 INTERIOR ENCLOSED STAIRWAY. (1) GENERAL. An interior enclosed stairway shall be separated from other areas of the building by fire-resistive rated construction as specified in Table 51.03-A.

(2) EXTENT OF ENCLOSURE. (a) The enclosure shall include at each floor level a portion of the floor which will be at least as wide as the stairway.

(b) The enclosure shall provide uninterrupted passage from the uppermost floor to an outside door without leaving the enclosure.

(c) The enclosure shall also include any passageway, if provided, on the floor of exit discharge leading from the stairway to the exit discharge, so as to afford uninterrupted passage from the uppermost floor to the exit discharge, without leaving the enclosure.

(3) OPENINGS IN THE ENCLOSURE. Openings in the stairway enclosure shall be limited to exit doors serving public passageways or corridors or serving floors occupied by a single tenant.

(4) PROTECTION OF OPENINGS. (a) All openings for doors shall be protected by fire-rated door assemblies as specified in s. Ind 51.047.

(b) If windows are provided in the enclosure, the window openings shall be protected by fixed fire rated window assemblies as specified in s. Ind 51.048, except in outside walls.

SECTION 10. Ind 51.25 (47) is amended to read:

Ind 51.25 (47) SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS. Part 18 ~~ASTM Designation E-84-74~~ E 84-80.

SECTION 11. Ind 51.25 (55) is created to read:

Ind 51.25 (55) TEST FOR CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS USING A RADIANT HEAT SOURCE. Part 18 ASTM Designation E 648-78.

SECTION 12. Ind 51.27 (5) is amended to read:

Ind 51.27 (5) American National Standards Institute, Inc., 1430 Broadway, New York, N.Y. 10018, SPECIFICATION FOR REINFORCED GYPSUM CONCRETE, ANSI A59.1-1968, ANSI A59.1-1968 (R-1972); SPECIFICATION FOR VERMICULITE CONCRETE ROOFS AND SLABS ON GRADE, ANSI A122.1-1965; PERFORMANCE SPECIFICATIONS AND METHODS OF TESTING FOR SAFETY GLAZING MATERIALS USED IN BUILDINGS, ANSI Z97.1-1972, Z97.1-1975.

SECTION 13. Ind 54.08 (2) Notes are amended to read:

Ind 54.08 (2) Note: ~~Elevators and elevator enclosures~~ See ch. Ind 4, Wis. Adm. Code for requirements concerning the installation and operation of elevators and the construction and protection of elevator shaftways, see the Elevator Code, Ind. 4.

~~Note: Monumental stairs, see section Ind 51.02 (11) (c).~~

SECTION 14. Ind 55.09 (1) (a) is amended to read:

Ind 55.09 (1) (a) ~~Stairways~~ Monumental stairways from the main floor to the first balcony need not be enclosed provided the balcony is served by additional enclosed stairways specified in ss. Ind 51.02 (11) and Ind 55.07.

SECTION 15. Ind 57.08 is repealed and recreated to read:

Ind 57.08 ENCLOSURE OF INTERIOR STAIRWAYS AND SHAFTS. All stairways, including landings, ramps and shafts, shall be enclosed as specified in s. Ind 51.02 (11) with fire-resistive rated construction as specified in Table 51.03-A.

SECTION 16. Ind 59.17 (2) is created to read:

Ind 59.17 (2) TWO OR MORE FLOOR LEVELS. Stairways and shafts serving 2 or more floor levels shall be enclosed pursuant to s. Ind 51.02 (11) with fire-resistive construction as specified in Table 51.03-A, line 21.

EFFECTIVE DATE

Pursuant to s. 227.026 (1), Intro., Stats., these rules shall take effect on the first day of the month following publication in the Wisconsin Administrative Register.
