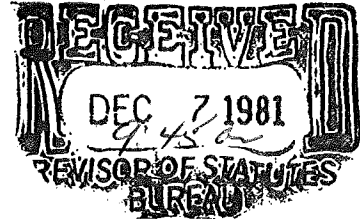


Ind 50 to 56, 62

# 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 Assembly Seating Facilities 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 9am in the city of Madison, this 4th day of Dec A.D. 1981.

Lowell B. Jackson  
Secretary

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# 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) Assembly Seating Facilities (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., 1987.

DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Lawell S. Jaska  
Secretary



# RULES in FINAL DRAFT FORM

Rule: Chs. Ind 50-64  
Relating to: Building & Heating, Ventilating & Air Conditioning  
Code - Assembly Seating Facilities

Administrative rules to repeal ss. Ind 55.51 through 55.62; to renumber s. Ind 62.10 (1) through (4) to be s. Ind 62.10 (2) through (5); to amend ss. Ind 50.12 (1) (b), Ind 50.12 (2) (i), Ind 50.12 (3) (d), Ind 51.161 (4), Ind 51.162 (1) (b), Ind 51.162 (3), Ind 51.162 (4) (b), Ind 53.11 (1) (e) 5. - Table 53-I; to repeal and recreate ss. Ind 55.13, Ind 56.13; to create ss. Ind 51.15 (6) (c), Ind 53.11 (1) (e) 7. - Table 53-I, Ind 62.10 (1), Ind 62.10 (1a) and ch. Ind 62-Subch. V, relating to Bleachers and Grandstands.

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#### 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, chapters Ind 50-64. Sections of this code are being revised to establish minimum safety, health and welfare standards for bleachers and grandstands. The proposed rules for bleachers and grandstands (assembly seating facilities) include provisions for plan approval and facility inspection, design loads, construction, height, area and clearance limitations, setback, means of egress, seating, guardrails, isolation of hazards, sanitary facilities, illumination and fire protection.

The rules are based upon the model building codes and the National Fire Protection Association Standard 102-1978. The proposed rules would replace those rules currently found in the code.

The proposed rules were developed to update the current rules of the Building Code pertaining to bleachers and grandstands to be consistent with the requirements of the national model code and the National Fire Protection Association (NFPA) Standard No. 102.

Bleacher manufacturers have requested that the Wisconsin code be updated so that uniform manufacturing of units is possible. Currently, the units must be modified to meet the Wisconsin code.

The proposal also clarifies the administrative procedures for plan review and approval and inspection of the facilities.

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Pursuant to the authority vested in the state of Wisconsin's Department of Industry, Labor and Human Relations by s. 101.02 (2), ss. 101.02 (15) (h) through (j), Stats., the department hereby creates, amends, repeals and recreates, and repeals rules interpreting s. 101.02 (1) and ss. 101.02 (15) (h) through (j), Stats., as follows:

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

Ind 50.12 (1) (b) Theaters, and assembly halls, and places of outdoor assembly (chapter Ind 55).

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

Ind 50.12 (2) (i) ~~Stadium, grandstand and bleacher~~ Assembly seating facility plans.

SECTION 3. Ind 50.12 (3) (d) is amended to read:

Ind 50.12 (3) (d) Specialty Plans. Specialty plans for spray booths, special exhaust systems, ~~stadiums, grandstands and bleachers,~~ assembly seating facilities, fire escapes and special structural systems shall include pertinent information with respect to the design and construction of the specialty.

SECTION 4. Ind 51.15 (6) (c) is created to read:

Ind 51.15 (6) (c) The required aggregate width of exits from assembly seating facilities shall comply with the requirements of s. Ind 62.75 (4).

SECTION 5. Ind 51.161 (4) is amended to read:

Ind 51.161 (4) CONTINUITY AND EXTENSIONS. (a) Except as provided in par. (b), handrails shall be continuous for the full length of the stairway or ramp and one handrail shall extend at least 12 inches beyond the top and bottom riser or ramp end and shall not constitute a projecting hazard.

(b) Handrails not required for barrier-free design construction on assembly seating facilities need not comply with the 12 inch extension requirement.

SECTION 6. Ind 51.162 (1) (b) is amended to read:

Ind 51.162 (1) (b) On ~~bleachers and grandstands~~ assembly seating facilities as specified in ~~section Ind 55.55 and as indicated in (5) of this section~~ s. Ind 62.77.

SECTION 7. Ind 51.162 (3) is amended to read:

Ind 51.162 (3) LOADING. (a) Except as provided in par. (b), all guardrails shall be designed and constructed to withstand a load of at least 200 pounds applied in any direction at any point.

(b) All guardrails on assembly seating facilities shall be designed and constructed to withstand a vertical and horizontal load of 50 pounds per linear foot. Loads need not be applied simultaneously.

SECTION 8. Ind 51.162 (4) (b) is amended to read:

Ind 51.162 (4) (b) Exception. Guardrails on a balcony immediately in front of the first row of fixed seating and which are not at the end of an aisle may be ~~36~~ 30 inches in height.

SECTION 9. Table 53-I, Ind 53.11 (1) (e) 5. is amended to read:

TABLE 53-I  
FLOOR LOADINGS

OCCUPANCY	PSF
5. Floors supporting portable reviewing stands <del>grandstands or bleachers</del> <u>and assembly seating facilities with vertical dead load less than 15 pounds per square foot</u>	<del>430</del> <u>100</u>

~~Note: See Ind 55.56 for designing of portable units.~~

SECTION 10. Table 53-I, Ind 53.11 (1) (e) 7. is created to read:

TABLE 53-I  
FLOOR LOADINGS

OCCUPANCY	PSF
7. Floors supporting portable reviewing stands . . . . . and assembly seating facilities with a vertical dead load of 15 pounds per square foot or more	100 plus the actual vertical dead load of reviewing stand or assembly seating facility

SECTION 11. Ind 55.13 is repealed and recreated to read:

Ind 55.13 SEATING. All chairs, seats and benches used for the purpose of assembly seating shall conform to the requirements of ch. Ind 62, subch. V - Assembly Seating Facilities.

SECTION 12. Ind 55.51 to 55.62 are repealed.

SECTION 13. Ind 56.13 is repealed and recreated to read:

Ind 56.13 ASSEMBLY SEATING. All assembly seating in auditoriums, gymnasiums, field houses and other large group occupancy areas shall comply with the requirements of ch. Ind 62, subch. V - Assembly Seating Facilities. Where any area of a building in this category has a stage loft in excess of 25' 0" in height above the stage floor and is equipped with permanent or movable scenery, it shall comply with ss. Ind 55.21 - Ind 55.30.

SECTION 14. Ind 62.10 (1), (2), (3) and (4) are renumbered Ind 62.10 (3), (4), (5) and (6), and Ind 62.10 (1) is created to read:

Ind 62.10 (1) "Assembly seating facilities" means structures including but not limited to, bleachers, grandstands and stadiums on which persons are seated for such purposes as entertainment, worship or deliberation.

SECTION 15. Ind 62.10 (2) is created to read:

Ind 62.10 (2) "Permanent" means in place for more than 180 consecutive calendar days.

SECTION 16. Chapter Ind 62 Subchapter V is created to read:

Chapter Ind 62  
Subchapter V  
Assembly Seating Facilities

Ind 62.70 SCOPE. The requirements of this subchapter apply to all assembly seating facilities intended primarily to support persons for the purpose of spectator seating.

Ind 62.71 APPROVAL AND SUPERVISION. (1) APPROVAL OF PLANS. Plans and specifications shall be submitted to the department in accordance with the applicable provisions of ch. Ind 50. The following information shall also be included with each submittal:

(a) A plot plan for outdoor seating facilities showing location of facility relative to property lines and adjacent buildings or structures on the same premises; or a floor plan for indoor seating facilities showing location of seating relative to all required exits, aisles and passageways;

(b) Location and size of all structural members, seating area and number of seats, aisles and guardrail assemblies and number and spacing of all rows; and

(c) Structural calculations or a test report made by an independent testing agency and certified by a Wisconsin registered architect or engineer showing that the dead and live load in the open or partially open position and dead load in the closed position can be safely carried by the supporting structure.

1. Exception. The information specified in this paragraph need not be submitted if the seating facility has been granted a materials approval as specified in sub. (2).

(2) APPROVAL OF DESIGN. The design of each type or model of a seating facility may be approved by the department prior to installation for designs that are structurally repetitive in nature.

Note: See s. Ind 50.19 for further information.

(3) INSTALLATION SUPERVISION. (a) The installation of all permanent seating facilities having more than 5 rows in height shall be erected under the supervision of a Wisconsin registered architect or engineer.

(b) Every temporary seating facility shall be inspected for proper erection in accordance with the manufacturer's instructions prior to initial public occupancy.

Ind 62.72 INSPECTION AND MAINTENANCE. Every seating facility shall be inspected at least annually. Any loose connections, defective or broken members shall be repaired before the facility is used. All repairs and maintenance shall conform with the provisions of chs. Ind 50-64.

Ind 62.73 DESIGN LOADS. (1) DEAD LOADS. All seating facilities shall be designed and constructed to support the actual dead weight of all component members.

(2) LIVE LOADS. All seating facilities shall be designed and constructed to support the superimposed minimum live loads specified in Table 62.73. In every case where the live load is greater than the minimum, the actual load shall be used. The most severe distribution, concentration and combination of design loads and forces shall be taken into consideration.



TABLE 62.73  
MINIMUM STRUCTURAL LOADINGS

Component or Load Orientation	Load*
Vertical loads:	
Seating structure with load applied over the horizontal projected area	100 PSF
Seats and footboards	120 PLF
Seating platforms	100 PSF
Nonseating areas, such as aisles and passageways	100 PSF
Sway loads in combination with vertical loads:	
Acting parallel to seating	24 PLF
Acting normal to seating, such as front to rear and rear to front	10 PLF
Wind loads in combination with live, dead and sway loads:	
Vertical projected area when occupied	15 PSF
Vertical projected area when unoccupied	30 PSF
Guardrail loads:	
All rail members with load acting vertically and horizontally	50 PLF
Floor and ground loadings:	
Floors supporting seating facilities	See Table 53-I
Ground supporting seating facilities	See Chapter Ind 53, Part II

\*PSF = Pounds per square foot; PLF = Pounds per linear foot

(3) PARTIAL LOADING. (a) Except as provided in par. (b), structural members in which the stresses are greater under a partial loading than under full loading shall be designed to meet the conditions of greatest stress.

(b) Allowable stresses due to dead and live loads combined with either the wind or sway load or both, may be increased 33-1/3% provided the structural capacity of the component used is not less than that required for dead and live loads alone.

(4) ANCHORAGE LOADS. Folding or telescoping seating facilities that are attached to a floor or wall shall be anchored to withstand all impact loads in addition to the required live and dead loads.

(5) STRUCTURAL MEMBER OMISSION. All seating facilities shall be designed and manufactured so that if any structural member essential to the strength and stability of the structure is omitted during erection, the absence of such unused member will be self-evident.

(6) FOUNDATIONS, BASE PLATES AND MUDSILLS. (a) Where provided, foundations for seating facilities shall comply with the requirements of ch. Ind 53, Part II.

(b) Mudsills of approved material sized to prevent settlement shall be provided when seating facilities rest directly on the ground. All bearing surfaces between mudsills and base plates shall be in full contact with each other.

Ind 62.74 CONSTRUCTION REQUIREMENTS. (1) AREA LIMITATIONS. (a) Combustible Construction. Seating facilities constructed entirely of combustible construction shall not exceed 10,000 square feet in ground area or 200 feet in length.

(b) Partially Noncombustible Construction. Seating facilities shall not exceed 20,000 square feet in ground area or 400 feet in length when constructed of any of the following:

1. Noncombustible framing and combustible seatboards or footboards;
2. Entirely of fire retardant treated wood; or
3. Entirely of members conforming to dimensions for heavy timber construction as specified in s. Ind 51.03 (4).

(c) Noncombustible Construction. Seating facilities constructed of totally noncombustible construction shall not be limited in ground area or length.

(2) HEIGHT LIMITATIONS. (a) Combustible Construction. Seating facilities constructed entirely of combustible materials shall not exceed 20 feet above the ground or floor.

(b) Noncombustible Construction. Seating facilities constructed of totally or partially noncombustible construction shall not be limited in height.

(c) Within Tents. The highest level of seat platforms of any portable seating facility within a tent shall not exceed 12 feet above the ground or floor.

(d) Folding or Telescoping. The highest level of seat platforms of any folding or telescoping seating facility not attached to a wall shall not exceed 12 rows or 11 feet above the floor, whichever is lower.

(3) CLEARANCE LIMITATIONS. A minimum of 7 feet vertical clearance shall be provided between any platform, seatboard or footboard and any ceiling or projection beneath the ceiling.

(4) LOCATION AND SETBACK. Outdoor seating facilities shall be located at least 10 feet from any other building or adjoining property line unless the exterior walls of such adjacent building are of one-hour fire-resistive construction or better and all openings therein are protected with fire-resistive doors and windows as specified in ss. Ind 51.047 and Ind 51.048.

(5) BARRIER-FREE REQUIREMENTS. Accessible seating space shall be provided in permanent, elevated seating facilities in accordance with the applicable requirements as specified in s. Ind 52.04.

Ind 62.75 MEANS OF EGRESS. (1) TYPE OF EXITS. (a) Except as provided in par. (b), all required exits from any part of a seating facility shall be doorways, stairways or ramps conforming to the requirements specified in ss. Ind 55.08 - Ind 55.10.

(b) Doorways, stairways and ramps are not required for assembly seating facilities when aisles are not required.

(2) NUMBER OF EXITS. (a) Outdoor Seating. Every outdoor seating facility, and every balcony or tier considered separately, shall be provided with at least 2 exits located as remote from each other as practicable and leading directly to the outside at grade. If the capacity of any such facility, balcony or tier exceeds 1,000 persons, there shall be at least 3 exits and where the capacity exceeds 4,000 persons, there shall be at least 4 exits.

(b) Indoor Seating. The number of exits for every indoor seating facility shall comply with the requirements as specified in s. Ind 55.07.

(3) DISTANCE TO EXITS. Exits shall be distributed uniformly to prevent congestion and shall be so located that the line of travel to an exit or to a street, alley or open court is not greater than 150 feet.

(4) AGGREGATE WIDTH OF EXITS. (a) Outdoor Seating. The total clear width of exits from any outdoor seating facility shall be not less than 22 inches for each 500 persons, or fraction thereof.

(b) Indoor Seating. The total clear width of exits off of any indoor seating facility shall be not less than 22 inches per 100 persons, or fraction thereof.

(5) EXIT LIGHTS AND SIGNS. Exit lights and signs shall comply with the requirements as specified in s. Ind 55.11.

(6) AISLES REQUIRED. (a) Except as provided in par. (b), aisles shall be required in all seating facilities.

(b) Aisles may be omitted provided all of the following conditions exist:

1. Seats are without backrests;
2. The rise between rows does not exceed 12 inches;
3. The number of rows does not exceed 20 for outdoor seating facilities or 16 for indoor seating facilities;
4. The row spacing does not exceed 28 inches; and
5. The first seatboard is not more than 20 inches above the ground or floor.

(7) AISLE WIDTH. Aisles having seats on both sides shall be not less than 42 inches in width and aisles having seats on one side only shall be not less than 36 inches wide.

(8) AISLE LOCATION. (a) Outdoor Seating. For seating not within a building, the number of seats between any seat and an aisle shall not be greater than 20 when the seats are without backrests and 11 when the seats have backrests.

(b) Indoor Seating. Except as provided in par. (c), the number of seats between any seat and an aisle for seating within a building, shall not be greater than 9 when the seats are without backrests and 6 when the seats have backrests.

(c) Continental Seating. The number of seats between any seat and an aisle may be increased to 49 where:

1. A minimum unobstructed passage of 22 inches is provided between rows of unoccupied seats; and

2. The unobstructed passage between rows leads to a side aisle on each end of the rows where exit doors are located at no more than 20 foot intervals leading to an exit corridor or exit court.

(9) CROSS AISLES. Where provided, aisles parallel to the seat rows shall be not less than 48 inches in width.

(10) UNOBSTRUCTED MEANS OF EGRESS. No aisle, stair, door or other way of ingress or egress shall be obstructed in any manner while the seating facility is occupied by the public.

Ind 62.76 SEATING. (1) SEATING ARRANGEMENTS. A minimum 12-inch spacing shall be provided between the back of each seat and the front of the seat immediately behind it. The seating arrangement shall comply with the spacing requirements specified in Table 62.76. Where the same level is used for both seats and footrests, the width of this level shall be not less than 26 inches.

TABLE 62.76  
ROW SPACING REQUIREMENTS

Type of Seating	Minimum Back-to-Back Spacing (Inches) <sup>1</sup>
Seats without backrests	22
Seats with backrests	30
Chair seating	32

<sup>1</sup> All measurements are taken between plumb lines.

(2) FOOTRESTS. Where the same level is not used for both seatboard and footboard, independent footrests shall be provided.

(3) SEATBOARDS AND FOOTBOARDS. (a) Seatboards and footboards (footrests) shall have a minimum width of 9 inches.

(b) All seatboards and footboards shall be fastened in place in such a manner that they cannot be accidentally displaced.

(4) SEAT OCCUPANT WIDTH. The seating capacity shall be established by allowing one sitting or seat to each 18 inches of length.

(5) RISE BETWEEN ROWS. The maximum rise between seat rows shall not exceed 16 inches unless the horizontal row spacing is 40 inches or more.

(6) STEPS. Where the rise between rows exceeds 12 inches, intermediate steps shall be provided the full width of the aisles. Such steps shall have a uniform rise of not more than 8 inches and a tread of not less than 10 inches in width. In no case shall the angle of seating exceed 45 degrees.

(7) OPENINGS. The design of the seatboards and footboards shall be such that a sphere with a diameter larger than 9 inches will not pass from the seating area to the area beneath the seating where seatboards are more than 5 rows above the ground or floor.

Ind 62.77 GUARDRAILS. (1) FRONT RAIL. Where the front footrest or cross aisle is more than 2 feet above the ground or floor, a guardrail with a midrail shall be provided at the front of such footrest or cross aisle.

(a) At Front Footrest. When required, the rail at the front footrest shall be not less than 30 inches in height.

(b) At Front Cross Aisle. When required, the rail at the front cross aisle shall be not less than 36 inches in height.

(2) BACK AND SIDE RAILS. (a) Except as provided in par. (b), a guardrail not less than 42 inches in height above the aisle surface or footrest or above the center of the seatboard surface, whichever is adjacent, shall be provided along the back and sides of seating where the seats are more than 4-1/2 feet above the ground or floor.

(b) When a wall or fence is within 6 inches of seating and affords protection equivalent to that required under par (a), guardrails may be omitted.

(3) OPENINGS BELOW TOP RAIL. All back, side and front cross aisle guardrails shall have intermediate rails or an ornamental pattern between the footboard or cross aisle and the top rail to prevent the passage of a sphere with a diameter larger than 9 inches.

(4) CROSS AISLE RAIL. A guardrail not less than 30 inches in height with a midrail shall be provided along the front edge of cross aisles where the backs of the seats in front of the cross aisle are less than 24 inches above the cross aisle surface.

(5) LOADING. All guardrails shall be designed and constructed to withstand a vertical and horizontal load of 50 pounds per linear foot. Loads need not be applied simultaneously.

Ind 62.78 ISOLATION OF HAZARDS. (1) FIRE-RESISTIVE REQUIREMENTS. Every boiler or furnace room, including the breeching and fuel room, built in connection with a seating facility shall be enclosed with 2-hour fire-resistive construction as specified in ss. Ind 51.04 - Ind 51.049.

(2) FUEL-FIRED APPLIANCES. Fuel-fired space heating equipment shall be installed in a boiler or furnace room.

Ind 62.79 SANITARY FACILITIES. All places of spectator assembly shall be provided with toilet rooms and sanitary fixtures as specified in s. Ind 55.32. Toilet room construction and equipment shall comply with the requirements as specified in ss. Ind 52.50 - Ind 52.64.

Ind 62.80 ILLUMINATION AND EMERGENCY LIGHTING. Illumination and emergency lighting of seating facilities shall comply with the provisions as specified in chs. ILHR 16 and Ind 19, Wis. Adm. Code.

Ind 62.81 FIRE PREVENTION. (1) FLAMMABLE MATERIALS. (a) Except as provided in par. (b), the space under a seating facility shall be kept free from flammable materials and shall not be occupied or used for other than exit purposes.

(b) The space under a seating facility may be used for nonhazardous purposes provided the use is approved in writing by the department and the area is enclosed with at least one-hour fire-resistive rated construction.

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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.

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