

Chapter Ind 47

AMUSEMENT RIDES AND DEVICES

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Ind 47.01 Scope. (1) The intent of this code is to set forth minimum standards for design, construction, operation, repair, inspections, assembly, disassembly and use of amusement rides and devices, permanent and/or temporary structures at carnivals, fairs and other places of amusements for the safety of employes and frequenters.

(a) *Exclusions.* All nonmechanized playground equipment such as swings, seesaws, stationary spring mounted animal features, rider propelled merry-go-rounds, climbers, slides, swinging gates and physical fitness devices are not covered by this code except where admission is charged for usage or a fee is charged to areas where such equipment is located.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.02 Definitions. (1) **AMUSEMENT DEVICE** is a piece of equipment, appliance or combination thereof designed or intended to entertain or amuse frequenters and which is of such nature that accidental personal injuries may be incurred in its assembly, disassembly or use.

(2) **AMUSEMENT RIDE** is a device or combination of devices designed and constructed to carry frequenters in various planes and degrees of motion, mechanically propelled, operated by an attendant or a passenger.

(3) **APPROVED** means approved by the industrial commission.

(4) **AUTHORIZED PERSON** is a competent person experienced and instructed in the work to be performed and who has been given the responsibility to perform his duty by the owner or his representative.

(5) **CARNIVAL** is an enterprise principally devoted to offering amusement or entertainment to the public in, upon, or by means of amusement devices or temporary structures in any number or combination, whether or not associated with other structures or forms of public attraction.

(6) **FAIR** is an enterprise principally devoted to the exhibition of the products of agriculture or industry, in connection with amusement rides, devices, permanent and/or temporary structures.

(7) **PERMANENT STRUCTURE** is an enclosure and/or arrangement of parts, used or intended to be used, for amusement or support of equipment or devices, used or intended for amusement, erected to remain a lasting part of the premise and not specifically covered by other rules administered by the industrial commission.

(8) **PROFESSIONAL ENGINEER** means an engineer registered in the state of Wisconsin or certified by the industrial commission of Wisconsin.

(9) **TEMPORARY STRUCTURE** is a structure serving as an enclosure designed to be relocated from time to time with or without disassembly and used or intended to be used for amusement purposes or for public occupation in connection with such purposes.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.05 Design and construction. (1) **GENERAL.** (a) Amusement rides and devices subject to the provisions of this code shall be so designed and constructed that the maximum allowable loads will not stress any part beyond allowable limits.

(b) Amusements shall be anchored, guyed, stayed or otherwise supported to provide proper stability and to restrict any adverse change in stability.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.06 Emergency brakes and anti-rollback devices. If cars or other components of an amusement device may collide upon failure of normal controls, emergency brakes sufficient to prevent such collisions shall be provided. On rides which make use of inclined tracks, automatic anti-rollback devices shall be installed to prevent backward movement of the passenger-carrying units in case of failure of the propelling mechanism.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.07 Speed-limiting devices required. An amusement device capable of exceeding its maximum safe operating speed shall be provided with a maximum speed-limiting device.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.08 Passenger-carrying devices. (1) The interior and exterior parts of all passenger-carrying amusement devices with which a passenger may come in contact shall be smooth and rounded, free from sharp, rough or splintered edges and corners, with no protruding studs, bolts, screws, or other projections. Interior parts upon which or against which a passenger may be forcibly thrown by the action of the ride shall be adequately padded.

(2) Devices that are self-powered and that are operated by passengers shall have the driving mechanism so guarded and the guards so locked in place as to prevent passengers from gaining access to the mechanism.

(3) Such belts, bars, foot rests and other equipment as may be necessary for safe entrance and exit and for support while the device

is in operation shall be provided. Such equipment and the fastenings shall be of sufficient strength to retain the passengers. The fastenings shall be of a type which cannot be inadvertently released.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.10 Tests and inspections. (1) **RIDE, TYPE.** All passenger-carrying amusement rides of the following types shall be tested and inspected to satisfy code requirements:

- (a) Rides having suspended passenger seats or spaces.
- (b) Rides normally operated at speeds or with movements creating centrifugal forces.
- (c) Rides so elevated that structural failure is likely to cause passengers to be injured by falling.
- (d) Devices that the industrial commission has ordered tested.

(2) **NATURE OF TEST.** (a) Each passenger seat or space shall be weighted with at least 300 pounds dead weight, except that in a device posted for weight limitation not exceeding 90 pounds, each seat or space shall be weighted with at least 150 pounds dead weight.

1. Mechanically propelled devices shall be operated at maximum allowable speed. Control devices shall be tested for proper control of speed-limiting devices, brakes and other equipment provided for safety.

a. A rotating amusement ride that may overturn or fail structurally due to uneven loading of weight shall be equipped with an automatic control actuated by the ride imbalance to shut off the power. The equipment shall be tested for the maximum allowable unbalance determined by control equipment.

b. A rotating amusement ride that is designed to resist operational forces of unbalance without the use of automatic unbalance limit controls shall be tested with dead weights placed in seats or passenger spaces that will create a condition of greatest unbalance.

(3) **EVIDENCE OF TEST.** (a) All amusement devices covered under section Ind 47.10 (1) shall be load tested and results of test shall be filed with the industrial commission. The load test shall be conducted and reported by one of the following:

1. A professional engineer or an engineer certified by the industrial commission other than the manufacturer or designer.
2. An approved testing agency.

(4) **APPROVAL OF TEST.** (a) All amusement devices requiring a load test shall have written approval from the industrial commission before device may be used in Wisconsin. The written approval will become void should the device be rebuilt or modified in a manner that will affect the structural design or strength after load tests have been approved.

1. A registration number will be issued on written approval of tests and this number shall remain in effect until the approved test becomes void. The plate bearing registration number shall be firmly attached to the equipment along with the identification and rating plate.

(5) **IDENTIFICATION AND RATING PLATES.** All amusement devices shall be identified by a trade or descriptive name, an identification

number and its model number, if any. The identification shall also include the name and address of the manufacturer, the maximum number of passengers and the maximum safe speed. The required information shall be legibly impressed on a metal plate and plate firmly attached to the device in a readily visible location.

(6) LICENSE. The owner and/or manager of a traveling carnival and the owner and/or manager of each traveling amusement device shall have a state showman's license as required by section 129.14, Wis. Stats.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.11 Rebuilt and modified devices. (1) An amusement device that has been rebuilt or modified after load tests have been approved shall be subject to the following conditions:

(a) The owner of devices to be modified or rebuilt shall notify the industrial commission of such action before proceeding with the change. The changes related to operational safety of the device shall have written approval from the industrial commission.

(b) New load tests shall be made when the industrial commission deems it necessary.

(c) The device shall be reidentified by a different registration number, identification number and/or model number.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.12 Daily inspection and operational test. (1) An amusement device shall be inspected and tested each day when it is intended to be used. The inspection and test shall be made by or under the immediate supervision of an authorized person.

(a) The inspection and operational test shall include the operation of control devices, speed-limiting devices, brakes and other equipment provided for safety.

(b) A record of each inspection and operational test shall be made immediately upon completion of the test. The record of any test within 30 days of the day of inspection shall be made available upon request of the industrial commission.

(c) New load tests as per section Ind 47.10 shall be made when the industrial commission deems it necessary.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.15 Assembly and disassembly. (1) SUPERVISION. The assembly and disassembly of an amusement device or temporary structure shall be done by or under the supervision of an authorized person.

(2) QUALITY OF ASSEMBLY WORK. Assembly work shall be performed in a proper and workmanlike manner. Parts shall be properly aligned, and shall not be bent, distorted, cut or otherwise damaged to force a fit. Parts requiring lubrication shall be lubricated in course of assembly. Fastening and locking devices shall be installed where required for dependable operation.

(3) QUALITY AND INSPECTION OF PARTS. Parts excessively worn or materially damaged shall not be used. Close visual inspection of parts shall be made during assembly to discover such wear or damage and immediate inspection of fastening devices shall be made after assembly to assure that they have been properly installed.

(4) **TOOLS AND EQUIPMENT.** (a) Persons engaged in the assembly or disassembly of amusement devices or temporary structures shall be provided with and shall use tools of proper size and design to enable the work to be done safely. Broken, damaged and unsuitable tools shall not be used. Electrically operated tools shall be grounded during use.

(b) Ladders, scaffolds and safety belts used in assembly or disassembly work shall be of the design, material and construction specified in Wis. Adm. Code, chapter Ind 1 (Safety) and chapter Ind 35 (Safety in Construction).

(c) Fiber or wire rope used in assembly or disassembly work shall meet those standards specified in Wis. Adm. Code, chapter Ind 35 (Safety in Construction).

(d) Tackle blocks shall be of a size to fit the rope. All load-carrying equipment shall be designed and constructed throughout to support the intended load.

(5) **LIGHTING OF WORK AREA.** See section Ind 47.52.

(6) **PERSONS IN WORK AREA.** A sufficient number of persons to do the work properly shall be engaged for the assembly or disassembly of amusement devices and temporary structures. Persons not so engaged shall be prevented from entering the area in which the work may create a hazard.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.16 Location notices for non-permanent amusements. No amusement device or temporary structure shall be used at any time or location unless notice of intent has been filed on Peddler, Transient Merchant or Showman's License application form of the Motor Vehicle department 7 days before the first intended date of use.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.20 Access and egress to and from amusement devices, rides and temporary structures. (1) **GENERAL REQUIREMENTS.** Safe and adequate means of access to and egress from amusement devices, rides and temporary structures shall be provided. Such means of access and egress shall have:

(a) Protection from adjacent hazards or from frequenters failing by the use of rails, enclosures, barriers or similar means.

(b) All passageways kept free from debris, obstructions, projections and other hazards. All surfaces shall be such as to prevent slipping and tripping.

(c) Width of passageways not less than the exit doors or stairs to which it leads, but in neither case shall it be less than 44 inches. Head clearance shall not be less than 7 feet.

(d) Either stairways or ramps and the necessary connecting landings and/or platforms whenever the frequenters enter or leave a device, ride or temporary structure that is above or below grade or floor level at entrance to or exit from such amusement.

1. A landing and/or platform shall be provided immediately at entrance to or exit from an amusement.

(2) **DESIGN OF STAIRWAYS, LANDINGS AND RAMPS.** (a) Stairways, landings and ramps shall be designed, constructed and maintained to sustain safely a live load of at least 100 pounds per square foot.

(b) Stairways, landings and ramps leading to or from an amusement device *not in connection with* a permanent or temporary structure intended for public occupancy within shall not be less than 22 inches wide for single lane passage or 44 inches for double lane passage. Landings shall not be less than 3 feet long measured in direction of travel.

1. Stair treads shall not be less than $9\frac{1}{2}$ inches (measured from riser to riser) and the rise shall not be greater than $7\frac{5}{8}$ inches (measured from tread to tread). Between any 2 connected adjoining levels, the treads shall be of uniform depth and the risers shall be of uniform height. The slope of ramps shall not exceed one foot rise in 4 feet of run.

(c) Stairways, landings and ramps *in connection with* temporary structures intended for public occupancy within, shall not be less than 44 inches wide. Landings shall not be less than 3 feet 6 inches long measured in direction of travel.

1. Stair treads shall not be less than 10 inches (measured from riser to riser) and the rise shall not be greater than $7\frac{1}{2}$ inches (measured from tread to tread). Between any 2 connected adjoining levels, the treads shall be of uniform depth and the risers shall be of uniform height. The slope of ramps shall not exceed one foot rise in 8 feet of run.

(d) Handrails: 1. Handrails shall be provided on both sides of all stairways of more than 2 risers connecting adjoining levels whose difference in elevation exceeds 15 inches.

2. Handrails shall be provided on both sides of landings and/or platforms and ramps more than 15 inches above grade.

3. Handrails shall be at least 30 inches above the ramp surface or nose of steps and 42 inches above the landings.

4. Distances between handrails shall not be less than 18 inches for single lane passage and 36 inches for a double lane passage.

5. Two intermediate rails spaced equally apart shall be provided with all handrails.

6. Stairways or ramps more than 8 feet wide shall be provided with railings dividing the widths into not more than 8 feet, nor less than widths stated in Ind 47.20 (2) (d) 4.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.21 Exits. (1) All temporary structures shall have at least 2 exits located at or near opposite ends of the structure.

(2) If the capacity of the temporary structure exceeds 600 persons, exits shall be provided on 3 sides. If the capacity exceeds 1,000 persons the exits shall be located on 4 sides. Exits shall be uniformly distributed as near as possible and the line of travel from any point to an exit shall not exceed 150 feet.

(3) The total width of exits serving the structure shall not be less than 44 inches per 100 persons. Exit openings to the outside shall satisfy Wis. Adm. Code, chapter Ind 54 (Building) for less than 100 persons, and chapter Ind 55 where there are over 100 persons. The width of a doorway shall be taken as the width of the door. The width of the stairway shall be taken as the length of the treads between stringers.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.25 Design and construction of temporary structures. (1) All temporary structures used in connection with amusement devices shall be designed and constructed to carry safely all loads to which such structures may normally be subjected. Materials used in above structures shall not be stressed beyond limits stated in the Wis. Adm. Code, chapter Ind 53 (Building).

(a) *Tents.* For purposes of this code a tent is a portable, temporary shelter or a structure, the covering of which is made of pliable material. The design of the tent shall satisfy the Wis. Adm. Code, chapter Ind 55 (Building).

(b) *Rigid or semi-rigid construction.* Temporary structures of rigid or semi-rigid construction shall be designed to withstand wind pressures of at least 20 pounds per square foot of projected area. The structure shall be anchored to withstand at least 10 pounds per square foot lifting force based on entire area.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.30 Control of operation. (1) All amusement devices, other than passenger operated or controlled devices, shall be operated by an authorized person at least 18 years of age. The operator shall be in the immediate vicinity of the operating controls during operation and no unauthorized person shall be permitted to handle such controls during normal operation.

(2) The amusement devices that are passenger operated or controlled shall have the controls located where they are in easy reach of the passenger at all times the device is in operation.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.31 Wind and storm hazards. An amusement device which is exposed to wind or storms shall not be operated under dangerous weather conditions except to release or discharge occupants.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.32 Signal systems. Signal systems for the starting and stopping of amusement devices shall be provided where the operator of the device does not have a clear view of the point at which passengers are loaded or unloaded. Any code of signals adopted shall be printed and kept posted at both the operator's and signalman's

stations. All persons who may use these signals shall be fully instructed in their use. Signals for the movement or operation of an amusement device shall not be given until all passengers and other persons who may be endangered are in a position of safety.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.33 Public protection. An amusement device shall not be used or operated while any person is so located as to be endangered. Areas in which persons may be so endangered shall be fenced, barricaded or otherwise guarded against public intrusion.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.34 Guarding of machinery. Machinery used in or with an amusement device shall be enclosed, barricaded or otherwise effectively guarded against contact. Guards removed for maintenance purposes shall be replaced before normal operation is resumed.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.35 Air compressors and equipment. Air compressors, air compressor tanks and equipment used in connection therewith, shall be constructed, equipped and maintained as covered by the Wis. Adm. Code, chapter Ind 41 (Boiler and Unfired Pressure Vessel Code). The equipment shall be inspected and tested at least once a year by persons authorized by the industrial commission. A record of each inspection shall be kept by the owner and/or manager on the premise where equipment is located and shall be made available on request by the industrial commission.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.36 Fire prevention and protection. (1) FIRE RESISTANCE OF FABRICS. Fabrics constituting part of an amusement device or a temporary structure shall be fire-resistant to meet the following standard: 2 strips or test sections either of the fabric used or of other fabric identical therewith shall be tested. Each strip shall be not less than 6 inches wide and 12 inches long. Each strip shall be thoroughly dry and shall then be subjected to an open flame applied to the lower edge while the strip is held vertically for 12 seconds. Neither strip shall flame for more than 2 seconds after the test flame is removed from contact nor shall the average length of char exceed 2½ inches. The owner and/or manager shall have a certificate or a test report from an approved testing agency or engineer indicating fire resistance rating is equal to or better than above standard.

(2) FIRE EXTINGUISHERS. Approved fire extinguishers shall be provided where necessary to secure reasonable and adequate protection from fire hazards.

(3) FLAMMABLE WASTE. Flammable waste such as oily rags and other flammable materials shall be placed in covered metal containers. Such containers shall not be kept at or near exits.

(4) FLAMMABLE LIQUIDS AND GASES. (a) Gasoline and other volatile liquids and flammable gases shall be stored in cool and ventilated places. Dispensing of such liquids shall be from approved safety cans. Smoking and the carrying of lighted cigars, cigarettes or pipes is prohibited in any area where such liquids or gases are stored or are transferred from one container to another.

(b) Storage and use of flammable liquids and gases shall comply with requirements of Wis. Adm. Code, chapter Ind 8 (Flammable and Combustible Liquids); chapter Ind 9 (Liquid Petroleum Gas); and chapter Ind 1 (Safety).

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.37 Cleanliness. (1) A suitable number of metal containers for refuse shall be provided in and around all amusement devices and temporary structures. Excessive accumulations of trash or refuse shall be promptly removed. All parts of amusement devices and temporary structures used by passengers or customers shall be maintained in a clean condition.

(2) All walkways between amusement rides and devices on the premise shall be kept free from debris, obstructions or other hazards.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.50 Electrical. (1) **GENERAL.** (a) Live parts of electrical equipment operating at 50 volts or more shall be guarded against accidental contact by enclosure or by locating the equipment as follows:

1. In a room or enclosure which is accessible only to authorized persons.

2. Elevated 8 feet or more above the floor or ground.

(b) All wiring located within 8 feet of the ground, floor or other level accessible to frequenters shall consist of power cables or conductors in conduit.

(c) All wiring which is worn or defective so as to endanger life or property shall be repaired or replaced.

(2) **OUTDOOR EQUIPMENT AND WIRING.** (a) Open overhead conductors shall be installed with a minimum vertical clearance of at least 18 feet over spaces where trucks may travel and 12 feet over spaces accessible to pedestrians only.

(b) In locations where vehicles and frequenters may travel, cables shall be protected with conduit, planks or other approved methods.

(c) All electrical equipment exposed to the weather shall be of approved weatherproof construction.

(3) **WIRING IN TEMPORARY STRUCTURES.** A vertical clearance of at least 8 feet shall be maintained between open conductors and the floor or other levels accessible to the frequenters or employes.

(4) **GROUNDING.** All equipment shall be grounded in accordance with Wis. Adm. Code, chapter E 250 (Electrical).

(5) **OVERCURRENT PROTECTION OF CONDUCTORS AND MOTORS.** (a) Conductors shall be protected in accordance with their ampacities.

(b) Motors shall be protected according to requirements of Wis. Adm. Code, chapter E 430 (Electrical).

(6) **MASTER SWITCH.** Each electrically operated amusement device not designed to be controlled directly by the passenger shall be provided with a disconnect power switch placed within reach of the operator.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.51 Lighting of exits and passageways. Amusement devices, temporary structures, access thereto and exits therefrom shall, while

in operation or occupied, be provided with illumination by natural or artificial means of no less than 5 footcandles measured at grade level.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.52 Lighting of work area. Assembly and disassembly of amusement devices and temporary structures shall be done under light conditions of no less than 10 footcandles measured in area of work or at grade level.

History: Cr. Register, July, 1967, No. 139, eff. 8-1-67.

Ind 47.60 Maintenance. (1) **GENERAL.** (a) All equipment relative to amusement rides and devices shall be given periodic daily inspection and kept in safe operating condition.

(b) Machinery, engines and motors shall be kept properly lubricated and clean.

(c) Worn parts shall be replaced before unsafe conditions develop.

1. Records of parts replaced and the date of replacement shall be made available to the representative of the industrial commission on request.

(d) Equipment or wiring that requires guarding or has to be isolated from the frequenters shall be periodically checked to see that these hazards have not been accidentally left exposed by maintenance work or by other means.

(e) Parts that have worked loose through operation of equipment or because their retainers have failed, shall be replaced or reseated and safetied to prevent further danger to the employes or frequenters.

(f) Accidents resulting in personal injury shall be reported to the industrial commission within 10 days from the date of accident. Owner or his manager shall submit copy of insurance carrier's accident report.