

Chapter Ind 45

MECHANICAL REFRIGERATION

Ind 45.001	Scope, purpose, application	Ind 45.12	Relief devices in general
Ind 45.01	Inspections	Ind 45.13	Relief devices for pressure vessels
Ind 45.02	Definitions	Ind 45.14	Field tests
Ind 45.03	Building occupancy classification	Ind 45.151	Signs
Ind 45.04	Classification by type	Ind 45.154	Charging and discharging refrigerants
Ind 45.05	Refrigerant classification	Ind 45.155	Refrigerants withdrawn from refrigerating systems
Ind 45.06	Requirements for institutional, public assembly, residential, and commercial occupancies	Ind 45.156	Containers used for refrigerants withdrawn from a refrigerating system
Ind 45.062	Group 1 refrigerants	Ind 45.157	Substitution of kind of refrigerant
Ind 45.063	Group 2 refrigerants	Ind 45.158	Refrigerant stored in a machinery room
Ind 45.064	Group 3 refrigerants	Ind 45.159	Masks or helmets
Ind 45.07	Requirements for industrial occupancies	Ind 45.16	Maintenance
Ind 45.08	Installation requirements	Ind 45.17	Responsibility as to operation of the system
Ind 45.09	Refrigerant piping, valves, fittings, and related parts; general	Ind 45.18	Pressure gauges
Ind 45.10	Design and construction of equipment; general	Ind 45.20	Registration
Ind 45.11	Construction, inspection, and stamping of pressure vessels		

History: Chapter Ind 45 as it existed on March 31, 1963 was repealed and a new chapter Ind 45 was created effective April 1, 1963.

Ind 45.001 Scope; purpose; application. (1) The application of this code is intended to insure the safe design, construction, installation, operation, and inspection of every refrigerating system employing a fluid which is vaporized and is normally liquefied in its refrigerating cycle, when employed under the occupancy classifications listed in Wis. Adm. Code section Ind 45.03. The provisions of this code are not intended to apply to the use of water or air as a refrigerant nor to refrigerating systems installed on railroad cars, motor vehicles, motor drawn vehicles or on shipboard.

(2) This code is intended to provide reasonable safeguards to life, limb, health, and property; to correct certain practices which are inconsistent with safety; and to prescribe standards of safety which will properly influence future progress and developments in refrigerating systems. Equipment listed by an approved, nationally recognized testing laboratory, as defined in Wis. Adm. Code section Ind 45.02 is deemed to meet the design, manufacture, and factory test requirements of this code or equivalent, for the refrigerant or refrigerants for which such equipment is designed.

(3) The provisions of this code shall apply to refrigerating systems installed subsequent to its adoption and to parts replaced or added to systems installed prior or subsequent to its adoption. In cases of practical difficulty or unnecessary hardship, the commission may grant exceptions from the literal requirements of this code or permit the use of other devices or methods, but only when it is clearly evident that equivalent protection is thereby secured.

History: Cr. Register, March, 1963, No. 87, eff. 4-1-63; renumbered from Ind 45.01 to be Ind 45.001, Register, April, 1973, No. 208, eff. 5-1-73.

Register, April, 1973, No. 208
Mechanical Refrigeration

Ind 45.01 Inspections. (1) The authorized inspectors of the department, upon presenting appropriate credentials to the owner, operator, or agent in charge, are authorized—

(a) To enter without delay and at reasonable times any factory, plant, establishment, construction site, or other area, workplace or environment where work is performed by an employee of an employer; and

(b) To inspect and investigate during regular working hours and at other reasonable times, and within reasonable limits and in a reasonable manner, any such place of employment and all pertinent conditions, structures, machines, apparatus, devices, equipment, and materials therein, and to question privately any such employer, owner, operator, agent or employee.

(2) The inspector before making his inspection shall contact a representative of the employer and a representative authorized by his employees who shall be given an opportunity to accompany the inspector during the physical inspection of any workplace under subsection (1) for the purpose of aiding such inspection.

(a) Where there is no authorized employee representative, the inspector shall consult with a reasonable number of employees concerning matters of health and safety in the workplace.

Note: The department policy is not to give advance notice, but in the scheduling and in the act of inspecting it may not always be possible to avoid advance notice or to obtain accompaniment as, for example, inside boilers or in precarious locations of elevator installations, but otherwise these rules will be diligently observed.

History: Cr. Register, April, 1973, No. 208, eff. 5-1-73.

Ind 45.02 Definitions. (1) **ABSORBER** (*adsorber*) is that part of the low side of an absorption system used for absorbing (adsorbing) vapor refrigerant.

(2) **ABSORPTION SYSTEM.** See *Refrigeration system (43) (a)*.

(3) **APPROVED** means acceptable to the Wisconsin industrial commission.

(4) **AN APPROVED NATIONALLY RECOGNIZED TESTING LABORATORY** is one acceptable to the Wisconsin industrial commission that provides uniform testing and examination procedures under established standards, is properly organized, equipped, and qualified for testing, and has a follow-up inspection service of the current production of the listed products.

(5) **BRAZED JOINT**, for the purpose of this code, is a gas-tight joint obtained by the joining of metal parts with alloys which melt at temperatures higher than 1,000 F. but less than the melting temperatures of the joined parts.

(6) **BRINE** is any liquid, used for the transmission of heat without a change in its state, having no flash point or a flash point above 150 F.

(7) **CHECK VALVE** is a valve that permits a fluid flow in only one direction.

(8) **COMPANION** or **BLOCK VALVES** are pairs of mating stop valves, valving off sections of systems and arranged so that these sections may be joined before opening these valves or separated after closing them.

(9) COMPRESSOR is a specific machine, with or without accessories, for compressing a given refrigerant vapor.

(10) COMPRESSOR UNIT is a condensing unit less the condenser and liquid receiver.

(11) CONDENSER is a vessel or arrangement of pipe or tubing in which vaporized refrigerant is liquefied by the removal of heat.

(12) CONDENSING UNIT is a specific refrigerating machine combination for a given refrigerant, consisting of one or more power-driven compressors, condensers, liquid receivers (when required), and the regularly furnished accessories.

(13) CONTAINER is a vessel for the transportation of refrigerant.

(14) DESIGN WORKING PRESSURE is the maximum allowable working pressure for which a specific part of a system is designed.

(15) DUCT is a tube or conduit used for conveying or encasing purposes as specifically defined below:

(a) *Air duct* is a tube or conduit used for conveying air. (The air passages of self-contained systems are not to be construed as air ducts.)

(b) *Pipe duct* is a tube or conduit used for encasing pipe.

(c) *Wire duct* is a tube or conduit used for encasing either moving or stationary wire, rope, etc.