

(15) CONTAINER shall mean any can, bucket, barrel, drum or portable tank, except stationary tanks, tank vehicles, and tank cars.

(16) CRUDE PETROLEUM shall mean hydrocarbon mixtures that have a flash point below 150°F. and which have not been processed in a refinery.

(17) DWELLING shall mean a building occupied exclusively for residence purposes and having not more than 2 dwelling units or as a boarding or rooming house serving not more than 2 persons with meals or sleeping accommodations, or both.

(18) DWELLING UNIT shall mean one or more rooms arranged for the use of one or more individuals living together as a single house-keeping unit, with cooking, living, sanitary and sleeping facilities.

(19) EDUCATIONAL OCCUPANCY shall mean the occupancy or use of a building or structure or any portion thereof by persons assembled for the purpose of learning or of receiving educational instruction.

(20) FLAMMABLE LIQUIDS shall mean any liquid having a flash point below 200°F. and having a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100°F. Flammable liquids shall be divided into 3 classes as follows:

(a) Class I shall include those having flash points at or below 20°F.

(b) Class II shall include those having flash points above 20° F. but at or below 70°F.

(c) Class III shall include those having flash points above 70°F.

(21) FLASH POINT shall mean the minimum temperature in degrees Fahrenheit at which a flammable liquid will give off flammable vapor as determined by appropriate test procedure and apparatus.

(a) The flash point of flammable liquids having a flash point below 175°F. (79°C.) shall be determined in accordance with the Standard Method of Test for Flash Point by Means of the Tag Closed Tester.

(b) The flash point of flammable liquids having a flash point of 175°F. or higher shall be determined in accordance with the Standard Method of Test for Flash Point by Means of the Pensky-Martens Closed Tester.

(c) Any compound liquid or fluid commodity, such as paint, varnish, drier, cleaning solution, and polishing liquids which contains flammable liquids shall be classed by section Ind 8.02 according to the flash point of the mixture.

(22) HEAD AND BULKHEAD. A liquid-tight transverse closure at the end of a cargo tank or between compartments of a cargo tank.

(23) HOTEL shall mean buildings or groups of buildings, not dwellings, under the same management in which there are sleeping accommodations for hire, primarily used by transients who are lodged with or without meals, including but not limited to inns, clubs, motels and apartment hotels.

(24) INSTITUTIONAL OCCUPANCY shall mean the occupancy or use of a building or structure or any portion thereof by 3 or more persons harbored or detained to receive medical, charitable or other care or treatment, or by any number of persons involuntarily detained.

(25) **MARINE SERVICE STATION.** That portion of a property where flammable liquids used as motor fuels are stored and dispensed from fixed equipment on shores, piers, wharves, or barges into the fuel tanks of floating craft, and shall include all facilities used in connection therewith.

(26) **MERCANTILE OCCUPANCY** shall mean the occupancy or use of a building or structure or any portion thereof for the displaying, selling or buying of goods, wares, or merchandise.

(27) **NFPA** means the National Fire Protection Association.

(28) **OFFICE OCCUPANCY** shall mean the occupancy or use of a building or structure or any portion thereof for the transaction of business, or the rendering or receiving of professional services.

(29) **PROCESSING PLANT** shall mean that portion of a property in which flammable liquids are mixed, heated, separated or otherwise processed as principal business, but shall not include plants defined herein as refineries.

(30) **REFINERY** shall mean a plant in which flammable liquids are produced on a commercial scale from crude petroleum, natural gasoline, or other hydrocarbon sources.

(31) **SAFETY CAN** shall mean an approved container, of not over 6 gallons capacity, having a spring-closing lid and spout cover.

(32) **TANK FULL TRAILER.** Any vehicle with or without auxiliary motive power, equipped with a cargo tank mounted thereon or built as an integral part thereof and used for the transportation of flammable liquids and so constructed that practically all of its weight and load rests on its own wheels.

(33) **TANK TRUCK.** Any single self-propelled motor vehicle equipped with a cargo tank mounted thereon and used for the transportation of flammable liquids.

(34) **TANK SEMI-TRAILER.** Any vehicle with or without auxiliary motive power, equipped with a cargo tank mounted thereon or built as an integral part thereof, and used for the transportation of flammable liquids and so constructed that when drawn by a tractor by means of a fifth wheel connection, some part of its load and weight rests upon the towing vehicle.

(35) **TANK VEHICLE.** Any tank truck, tank full trailer, or tractor and tank semi-trailer combination.

(36) **VAPOR PRESSURE** shall mean the pressure, measured in pounds per square inch (absolute) exerted by a volatile liquid as determined by the Standard Method of Test for Vapor Pressure of Petroleum Product (Reid Method).

(37) **SWITCH LOADING** shall mean the loading of Class III flammable liquid (such as kerosene or diesel fuel) when the previous load was a Class I or II flammable liquid (such as gasoline).

History: Cr. Register, May, 1959, No. 41, eff. 6-1-59; cr. (37), Register, August, 1969, No. 164, eff. 9-1-69.

Ind 8.03 Enforcement. The regulations in this code shall be enforced by the commission and its authorized agents under the procedure prescribed in chapter 101, Wis. Stats., and by all local officials or bodies having jurisdiction to approve plans or specifications or issue permits for construction, alterations or installations within the purview of this

Ind 8.51 Buildings. (1) **GENERAL CONSTRUCTION.** Class I and Class II flammable liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, **unless such basement or pit is provided with ventilation designed to prevent the accumulation of flammable vapors therein.**

(2) **EXITS.** Rooms storing flammable liquids or in which flammable liquids are handled by pumps shall have exit facilities arranged to prevent occupants being trapped in the event of fire.

(3) **HEATING.** Rooms in which Class I or Class II flammable liquids are stored or handled shall be heated only by means not constituting a source of ignition, such as steam or hot water. Rooms containing heating appliances involving sources of ignition shall be located and arranged to prevent entry of flammable vapors.

(4) **VENTILATION.** Ventilation shall be provided for all rooms, buildings, or enclosures in which Class I or Class II flammable liquids are pumped or dispensed. Design of ventilation systems shall take into account the relatively high specific gravity of the vapors. Ventilation may be provided by adequate openings in outside walls at floor level unobstructed except by louvers or coarse screens. Where natural ventilation is impracticable, mechanical ventilation shall be provided.

Note: National Fire Protection Association No. 91, Standards for the Installation of Blower and Exhaust Systems, provides information on the installation of mechanical exhaust systems.

(This reference is available in the offices of the industrial commission, the secretary of state, and the revisor of statutes.)

(5) **FILLING AND EMPTYING CONTAINERS.** Containers of Class I or Class II flammable liquids shall not be drawn from or filled within buildings unless provision is made to prevent the accumulation of flammable vapors in hazardous concentrations.

History: Cr. Register, May, 1959, No. 41, eff. 6-1-59.

Ind 8.52 Loading and unloading facilities. (1) **TRUCK LOADING RACKS.**

(a) **Location.** Truck loading racks installed after effective date of these regulations dispensing Class I or Class II flammable liquids shall where practicable be separated from tanks, warehouses, other plant buildings, and nearest line of property that may be built upon by a clear distance of not less than 25 feet, measured from the nearest position of any fill stem. A truck loading rack for Class I or II liquids shall not be erected nearer than 10 feet, measured as aforesaid from any of the aforementioned objects. Buildings for pumps or for shelter of loading personnel may be part of the loading rack.

(b) **Static protection.** The following types of truck loading racks shall be equipped with protection against static sparks during truck filling: Racks dispensing Class I or Class II flammable liquids into open domes of tank trucks which may contain flammable vapors from previous cargoes of Class I or Class II flammable liquids. Protection shall consist of a flexible metallic bond-wire permanently electrically connected to the fill stem or some part of the fill stem piping. The free end of such wire shall be provided with a clamp or similar device for convenient attachment to some metallic part of the cargo tank of the tank truck. The bond-wire connection shall be made prior to opening the dome covers. It shall be maintained in place during the entire filling operation and the dome covers shall be securely closed before the bond-wire is disconnected from the cargo tank.

Note: Drag chains and straps formerly specified for the purpose of eliminating static charges have been shown to be ineffective and their elimination is recommended.

(c) *Equipment; procedures.* Every new and existing bulk plant and terminal loading at a rate of 250 gallons per minute or more shall have the following equipment for top loading, and follow the below specified procedures:

1. All fill tubes shall be of metal or other suitable material with an equivalent electrical conductance.
2. All fill tubes delivering at or above a velocity of 15 feet per second shall be equipped with a deflector made of metal or other suitable material with an equivalent electrical conductance, so as to maintain the fill tube in place during the loading operation.
3. All compartment dome covers shall be closed when compartment is not being loaded.
4. On a switch load, the bottom of the fill tube shall be placed as near as possible to the bottom of the tank.
5. On a switch load, the fill tubes shall be in approximately the vertical position at all times during loading.
6. On a switch load, the velocity shall not exceed 15 feet per second until the top of the fill tube deflector is covered.
7. On a switch load, all compartments shall be drained before loading.
8. There shall be established for each bulk plant and terminal safety procedures for the filling and discharging of cargo tanks (as may be appropriate for the particular operations of the bulk plant or terminal) and such safety procedures, along with a copy of subsection (1) (c), shall be readily available or conspicuously posted at each bulk plant and terminal.

(2) TANK CAR RACKS. Class I and Class II flammable liquids shall not be discharged from or loaded into tank cars unless protection against stray currents has been provided and is used.

(a) Liquids having a flash point below 150° F. shall not be withdrawn from tank cars from bottom outlets, but shall be unloaded through dome (manhole) only.

1. **Exception.** Bottom outlet unloading of fuel oil will be permitted subject to the written approval of the industrial commission.

(b) The use of compressed air to discharge the contents of tank cars shall be prohibited, but this shall not be construed to prevent the use of an approved system employing an inert gas, such as carbon dioxide or nitrogen, as pressure generating medium for this purpose.

(c) Unloading from tank cars into tank trucks or any portable container is prohibited.

(d) 1. Before unloading operations are started and before any connection or contact is made with piping or other unloading equipment, the tank car or other transport shall be electrically bonded in an effective manner.

2. Permanent electrical connection of not less than No. 0 copper cable shall be made between the rails on which the tank cars stand and the piping system used in connection with handling of flammable liquids.

Note: This connection may be accomplished in one of two ways: The rails may be bonded by means of standard rail bonds, and connected to the permanent piping system with No. 0 electric cable connections at each end of the loading or unloading section; or a similar connection may be made between each rail on which cars stand and the permanent piping system.

(3) **CONTAINER FILLING FACILITIES.** Class I and Class II flammable liquids shall not be run into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond-wire, the provisions of this section shall be deemed to have been complied with.

(4) **VEHICLE REFUELING AT BULK PLANTS.** No motor fuel or special fuel as defined in chapter 78, Wis. Stats., shall be dispensed at any bulk plant directly into the fuel tanks of customers' motor vehicle when such tanks are connected to the carburetor system of such vehicle; except that such vehicles may be serviced by qualified bulk plant personnel through an approved dispensing pump connected with an underground storage tank.

History: Cr. Register, May, 1959, No. 41, eff. 6-1-59; cr. (2) (d), Register, December, 1960, No. 60, eff. 1-1-61; cr. (4), Register, February, 1962, No. 74, eff. 3-1-62; r. and recr. (4), Register, August, 1962, No. 80, eff. 9-1-62; cr. (1) (c), Register, August, 1969, No. 164, eff. 9-1-69.

Ind 8.53 Electrical equipment. All wiring and electrical equipment including motors and electrical switch gear for pumps handling flammable liquids, having a flash point below 100° F. and located within the possible path of vapor travel shall be designed and installed so as not to create an ignition hazard.

Note: The Wisconsin state electrical code provides information on the design and installation of electrical equipment for hazardous locations.

History: Cr. Register, May, 1959, No. 41, eff. 6-1-59.

Ind 8.54 Sources of ignition. Class I or Class II flammable liquids shall not be handled, drawn or dispensed where flammable vapors may reach a source of ignition. Smoking shall be prohibited except in designated localities. "NO SMOKING" signs shall be conspicuously posted where hazard from flammable liquid vapors is normally present.

History: Cr. Register, May, 1959, No. 41, eff. 6-1-59.