

WAC 296-24-33013 Bulk plants. (1) Storage.

(a) **Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C).** You must store Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), in closed containers, or in storage tanks above ground outside of buildings, or underground in accordance with WAC 296-24-33005.

(b) **Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) and Category 4 flammable liquids.** You must store Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) and Category 4 flammable liquids in containers, or in tanks within buildings or above ground outside of buildings, or underground in accordance with WAC 296-24-33005.

(c) **Piling containers.** You must separate containers of flammable liquids when piled one upon the other by dunnage sufficient to provide stability and to prevent excessive stress on container walls. The height of the pile must be consistent with the stability and strength of containers.

(2) Buildings.

(a) **Exits.** Rooms in which flammable liquids are stored or handled by pumps must have exit facilities arranged to prevent occupants from being trapped in the event of fire.

(b) **Heating.** Rooms in which Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), are stored or handled must 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 must be located and arranged to prevent entry of flammable vapors.

(c) Ventilation.

(i) You must provide ventilation for all rooms, buildings, or enclosures in which Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), are pumped or dispensed. Design of ventilation systems must 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 inadequate, you must provide mechanical ventilation.

(ii) You must not store or handle Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), within a building having a basement or pit into which flammable vapors may travel, unless such area is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

(iii) You must not draw from or fill containers of Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), within buildings unless provision is made to prevent the accumulation of flammable vapors in hazardous concentrations. Where mechanical ventilation is required, you must keep it in operation while flammable liquids with a flashpoint below 100°F (37.8°C) are being handled.

(3) Loading and unloading facilities.

(a) **Separation.** You must separate tank vehicle and tank car loading or unloading facilities from aboveground tanks, warehouses, other plant buildings or nearest line of adjoining property that may be built upon by a distance of twenty-five feet for Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), and fifteen feet for Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) and Category 4 flammable liq-

uids measured from the nearest position of any fill spout. Buildings for pumps or shelters for personnel may be a part of the facility.

(b) **Category restriction.** You must not use equipment such as piping, pumps, and meters used for the transfer of Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), between storage tanks and the fill stem of the loading rack for the transfer of Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) or Category 4 flammable liquids.

(c) **Valves.** Valves used for the final control for filling tank vehicles must be of the self-closing type and manually held open except where automatic means are provided for shutting off the flow when the vehicle is full or after filling of a preset amount.

(d) **Static protection.**

(i) You must provide bonding facilities for protection against static sparks during the loading of tank vehicles through open domes:

(A) Where Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), are loaded; or

(B) Where Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) or Category 4 flammable liquids are loaded into vehicles which may contain vapors from previous cargoes of Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C).

(ii) Protection as required in (d)(i) of this subsection must consist of a metallic bond wire permanently electrically connected to the fill stem or to some part of the rack structure in electrical contact with the fill stem. The free end of such wire must be provided with a clamp or equivalent device for convenient attachment to some metallic part in electrical contact with the cargo tank of the tank vehicle.

(iii) Such bonding connection must be made fast to the vehicle or tank before dome covers are raised and must remain in place until filling is completed and all dome covers have been closed and secured.

(iv) Bonding as specified in (d)(i), (ii) and (iii) of this subsection is not required:

(A) Where vehicles are loaded exclusively with products not having a static accumulating tendency, such as asphalt, most crude oils, residual oils, and water soluble liquids;

(B) Where no Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), are handled at the loading facility and the tank vehicles loaded are used exclusively for Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) and Category 4 flammable liquids; and

(C) Where vehicles are loaded or unloaded through closed bottom or top connections.

(v) Filling through open domes into the tanks of tank vehicles or tank cars, that contain vapor-air mixtures within the flammable range or where the liquid being filled can form such a mixture, must be by means of a downspout which extends near the bottom of the tank. This precaution is not required when loading liquids which are nonaccumulators of static charges.

(e) **Stray currents.** You must protect tank car loading facilities where Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), are loaded through open domes against stray currents by bonding the pipe to at least one rail and to the rack structure if of metal. You must electrically bond multiple lines entering the rack area shall be electrically bonded together. In addition, in areas where excessive stray currents are known

to exist, you must provide all pipe entering the rack area with insulating sections to electrically isolate the rack piping from the pipelines. No bonding between the tank car and the rack or piping is required during either loading or unloading of Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) or Category 4 flammable liquids.

(f) **Container filling facilities.** Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), must not be dispensed 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 these standards must be deemed to have been complied with.

(4) **Wharves.**

(a) **Definition, application.** The term wharf must mean any wharf, pier, bulkhead, or other structure over or contiguous to navigable water used in conjunction with a bulk plant, the primary function of which is the transfer of flammable liquid cargo in bulk between the bulk plant and any tank vessel, ship, barge, lighter boat, or other mobile floating craft; and this subparagraph must apply to all such installations except marine service stations as covered in WAC 296-24-33015.

(b) **Package cargo.** Package cargo of flammable liquids, including full and empty drums, bulk fuel, and stores may be handled over a wharf and at such times and places as may be agreed upon by the wharf superintendent and the senior deck officer on duty.

(c) **Location.** Wharves at which flammable liquid cargoes are to be transferred in bulk quantities to or from tank vessels must be at least 100 feet from any bridge over a navigable waterway, or from an entrance to or superstructure of any vehicular or railroad tunnel under a waterway. The termination of the wharf loading or unloading fixed piping must be at least 200 feet from a bridge or from an entrance to or superstructure of a tunnel.

(d) **Design and construction.** Substructure and deck must be substantially designed for the use intended. Deck may employ any material which will afford the desired combination of flexibility, resistance to shock, durability, strength, and fire resistance. Heavy timber construction is acceptable.

(e) **Tanks.** Tanks used exclusively for ballast water or Category 3 or Category 4 liquids may be installed on suitably designed wharves.

(f) **Pumps.** You must provide loading pumps capable of building up pressures in excess of the safe working pressure of cargo hose or loading arms with bypasses, relief valves, or other arrangement to protect the loading facilities against excessive pressure. You must test relief devices at not more than yearly intervals to determine that they function satisfactorily at the pressure at which they are set.

(g) **Hoses and couplings.** You must inspect all pressure hoses and couplings at intervals appropriate to the service. You must test the hose and couplings with the hose extended and using the "inservice maximum operating pressures." You must withdraw any hose showing material deteriorations, signs of leakage, or weakness in its carcass or at the couplings from service and repair or discard it.

(h) **Piping and fittings.** Piping, valves, and fittings must be in accordance with WAC 296-24-33007 with the following exceptions and additions:

(i) You must ensure flexibility of piping by appropriate layout and arrangement of piping supports so that motion of the wharf structure resulting from wave action, currents, tides, or the mooring of vessels will not subject the pipe to repeated strain beyond the elastic limit.

(ii) You must not use pipe joints depending upon the friction characteristics of combustible materials or grooving of pipe ends for mechanical continuity of piping.

(iii) Swivel joints may be used in piping to which hoses are connected, and for articulated swivel-joint transfer systems, provided that the design is such that the mechanical strength of joint will not be impaired if the packing material should fail, as by exposure to fire.

(iv) Piping systems must contain a sufficient number of valves to operate the system properly and to control the flow of liquid in normal operation and in the event of physical damage.

(v) In addition to the requirements of (4) (h) (iv), you must provide each line conveying Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), leading to a wharf with a readily accessible block valve located on shore near the approach to the wharf and outside of any diked area. Where more than one line is involved, you must group the valves in one location.

(vi) You must provide means of easy access for cargo line valves located below the wharf deck.

(vii) You must adequately bond and ground pipelines on flammable liquids wharves. If excessive stray currents are encountered, you must install insulating points. Bonding and grounding connections on all pipelines must be located on wharveside of hose-riser insulating flanges, if used, and must be accessible for inspection.

(viii) Hose or articulated swivel-joint pipe connections used for cargo transfer must be capable of accommodating the combined effects of change in draft and maximum tidal range, and you must keep mooring lines adjusted to prevent the surge of the vessel from placing stress on the cargo transfer system.

(ix) You must support hose so as to avoid kinking and damage from chafing.

(i) **Fire protection.** Suitable portable fire extinguishers with a rating of not less than 12-BC must be located with 75 feet of those portions of the facility where fires are likely to occur, such as hose connections, pumps, and separator tanks.

(i) Where piped water is available, you must provide ready-connected fire hose in size appropriate for the water supply so that manifolds where connections are made and broken can be reached by at least one hose stream.

(ii) You must not place material on wharves in such a manner as to obstruct access to firefighting equipment, or important pipeline control valves.

(iii) Where the wharf is accessible to vehicle traffic, you must maintain an unobstructed roadway to the shore end of the wharf for access of firefighting apparatus.

(j) **Operations control.** You must not commence loading or discharging until the wharf superintendent and officer in charge of the tank vessel agree that the tank vessel is properly moored and all connections are properly made. You must not perform mechanical work on the wharf during cargo transfer, except under special authorization by a delegated person or the delegated persons authorized representative

based on a review of the area involved, methods to be employed, and precaution necessary.

(5) **Electrical equipment.**

(a) **Application.** This subsection applies to areas where Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), are stored or handled. For areas where Category 3 flammable liquids with a flashpoint at or above 100°F (37.8°C) or Category 4 flammable liquids are stored or handled, the electrical equipment may be installed according to chapter 296-24 WAC Part L for ordinary locations.

(b) **Conformance.** All electrical equipment and wiring must be of a type specified by and you must install it according to chapter 296-24 WAC Part L.

(c) **Classification.** So far as it applies Table H-18 must be used to delineate and classify hazardous areas for the purpose of installation of electrical equipment under normal circumstances. In Table H-18 a classified area must not extend beyond an unpierced wall, roof, or other solid partition. The area classifications listed must be based on the premise that the installation meets the applicable requirements of this section in all respects.

TABLE H-18
ELECTRICAL EQUIPMENT HAZARDOUS
AREAS—BULK PLANTS

Location	Class I Group D division	Extent of classified area
Tank vehicle and tank car: ¹ Loading through open dome	1	Within 3 feet of edge of dome, extending in all directions.
	2	Area between 3 feet and 5 feet from edge of dome, extending in all directions.
Loading through bottom connections with atmospheric venting	1	Within 3 feet of point of venting to atmosphere, extending in all directions.
	2	Area between 3 feet and 5 feet from point of venting to atmosphere, extending in all directions. Also up to 18 inches above grade within a horizontal radius of 10 feet from point of loading connection.
Loading through closed dome with atmospheric venting	1	Within 3 feet of open end of vent, extending in all directions.

Location	Class I Group D division	Extent of classified area
	2	Area between 3 feet and 5 feet from open end of vent, extending in all directions. Also within 3 feet of edge of dome, extending in all directions.
Loading through closed dome with vapor recovery _____	2	Within 3 feet of point of connection of both fill and vapor lines, extending in all directions.
Bottom loading with vapor recovery or any bottom unloading _____	2	Within 3 feet of point of connections extending in all directions. Also up to 18 inches above grade within a horizontal radius of 10 feet from point of connection.
Drum and container filling: Outdoors, or indoors with adequate ventilation _____	1	Within 3 feet of vent and fill opening, extending in all directions.
	2	Area between 3 feet and 5 feet from vent or fill opening, extending in all directions. Also up to 18 inches above floor or grade level within a horizontal radius of 10 feet from vent or fill opening.
Outdoors, or indoors with adequate ventilation _____	1	Within 3 feet of vent and fill opening, extending in all directions.
	2	Area between 3 feet and 5 feet from vent or fill opening, extending in all directions. Also up to 18 inches above floor or grade level within a horizontal radius of 10 feet from vent or fill opening.
Tank—Aboveground: Shell, ends, or roof and dike area _____		

Location	Class I Group D division	Extent of classified area
	2	Within 10 feet from shell, ends, or roof of tank, area inside dikes to level of top of dike.
Vent _____	1	Within 5 feet of open end of vent, extending in all directions.
	2	Area between 5 feet and 10 feet from open end of vent, extending in all directions.
Floating roof _____	1	Area above the roof and within the shell.
Pits:		
Without mechanical ventilation _____	1	Entire area within pit if any part is within a Division 1 or 2 classified area.
With mechanical ventilation _____	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
Containing valves, fittings or piping, and not within a Division 1 or 2 classified area _____	2	Entire pit.
Pumps, bleeders, withdrawal fittings, meters and similar devices:		
Indoors _____	2	Within 5 feet of any edge of such devices, extending in all directions. Also up to 3 feet above floor or grade level within 25 feet horizontally from any edge of such devices.
Outdoors _____	2	Within 3 feet of any edge of such devices, extending in all directions. Also up to 18 inches above grade level within 10 feet horizontally from any edge of such devices.
Storage and repair garage for tank vehicles _____		
	1	All pits or spaces below floor level.
	2	Area up to 18 inches above floor or grade level for entire storage or repair garage.

Location	Class I Group D division	Extent of classified area
Drainage ditches, separators, impounding basins _____	2	Area up to 18 inches above ditch, separator or basin. Also up to 18 inches above grade within 15 feet horizontally from any edge.
Garages for other than tank vehicles _____	Ordinary	If there is any opening to these rooms within the extent of an outdoor classified area, the entire room must be classified the same as the area classification at the point of the opening.
Outdoor drum storage _____	Ordinary	
Indoor warehousing where there is no flammable liquid transfer _____	Ordinary	If there is any opening to these rooms within the extent of an indoor classified area, the room must be classified the same as if the wall, curb or partition did not exist.
Office and rest rooms _____	Ordinary	

¹ When classifying the extent of the area, you must give consideration to the fact that tank cars or tank vehicles may be spotted at varying points. Therefore, you must use the extremities of the loading or unloading positions.

(6) **Sources of ignition.** You must not handle, draw, or dispense Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), where flammable vapors may reach a source of ignition. You must prohibit smoking except in designated localities. You must conspicuously post "No smoking" signs where hazard from flammable liquid vapors is normally present.

(7) **Drainage and waste disposal.** You must make provisions to prevent flammable liquids which may be spilled at loading or unloading points from entering public sewers and drainage systems, or natural waterways. You must provide connection to such sewers, drains, or waterways by which flammable liquids might enter with separator boxes or other approved means whereby such entry is precluded. You must not dump crankcase drainings and flammable liquids into sewers, but you must store them in tanks or tight drums outside of any building until removed from the premises.

(8) **Fire control.** Suitable fire-control devices, such as small hose or portable fire extinguishers, must be available to locations where fires are likely to occur. Additional fire-control equipment may be required where a tank of more than 50,000 gallons individual ca-

capacity contains Category 1 or 2 flammable liquids, or Category 3 flammable liquids with a flashpoint below 100°F (37.8°C), and where an unusual exposure hazard exists from surrounding property. Such additional fire-control equipment shall be sufficient to extinguish a fire in the largest tank. The design and amount of such equipment must be in accordance with approved engineering standards.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 17-02-066, § 296-24-33013, filed 1/3/17, effective 2/3/17; WSR 15-24-100, § 296-24-33013, filed 12/1/15, effective 1/5/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060 and 29 C.F.R. 1910 Subpart Z. WSR 14-07-086, § 296-24-33013, filed 3/18/14, effective 5/1/14. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-24-33013, filed 7/20/94, effective 9/20/94; WSR 91-24-017 (Order 91-07), § 296-24-33013, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 85-10-004 (Order 85-09), § 296-24-33013, filed 4/19/85; Order 76-6, § 296-24-33013, filed 3/1/76; Order 73-5, § 296-24-33013, filed 5/9/73 and Order 73-4, § 296-24-33013, filed 5/7/73.]