

Section 4.7. Bulk Plants

4.7.1. Scope

4.7.1.1. Application

1) This Section shall apply to that portion of a property where *flammable liquids* or *combustible liquids* are received in bulk quantities and are stored or handled for the purpose of being distributed.

4.7.2. Storage

4.7.2.1. Storage

- 1) *Flammable liquids* and *combustible liquids* shall be stored in
 - a) *closed containers*, in conformance with Article 4.7.2.4., or
 - b) *storage tanks*, in conformance with Section 4.3.

4.7.2.2. Storage Tanks

1) At bulk plant rail loading and unloading facilities, the minimum distance from a *storage tank* to a railway line shall be in conformance with TC General Order No. O-32, C.R.C., c1148, “Flammable liquids Bulk Storage Regulations.”

4.7.2.3. Hydraulic Pressure Shock

1) Bulk *storage tanks*, piping, pumps, valves and associated components shall be designed, installed and maintained to accommodate hydraulic pressure shock on the system.

4.7.2.4. Container Storage

- 1) Containers for *flammable liquids* or *combustible liquids* stored indoors shall be stored in conformance with Subsection 4.2.7.
- 2) Containers for *flammable liquids* or *combustible liquids* stored outdoors shall be stored in conformance with Subsection 4.2.11., except that the distance between the piles and property lines and the distance between piles need not apply when the containers are stored in an area that does not present a hazard to neighbouring property.

4.7.2.5. Spill Control

1) An outdoor storage area shall be designed to accommodate accidental spillage in conformance with Subsection 4.1.6.

4.7.2.6. Fencing

1) The outdoor area occupied by aboveground *storage tanks*, container storage, ancillary equipment and unloading facilities shall be fenced in conformance with Article 3.3.2.6.

4.7.3. Dispensing

4.7.3.1. Interconnection

1) Dispensing systems for Class I liquids shall not be interconnected with dispensing systems for Class II and IIIA liquids.

4.7.3.2. Dispensing into Vehicles

1) Dispensers used by the general public to dispense *flammable liquids* or *combustible liquids* into the fuel tanks of vehicles shall not be located at a bulk plant unless separated by a fence or equivalent barrier from the area in which the bulk storage operations are conducted.

- 2) Where a dispenser referred to in Sentence (1) is supplied from an aboveground *storage tank*
 - a) an automatically operated valve that is designed to open only when the dispenser is being operated shall be provided at the tank outlet, and
 - b) an emergency valve shall be provided for the dispenser in conformance with Sentence 4.6.6.3.(1).

4.7.3.3. Dispensing into Metal Containers or Tanks

1) Class I liquids shall not be dispensed into a metal container or *storage tank* unless it is electrically connected in conformance with Article 4.1.8.2.

4.7.4. Loading and Unloading Facilities

(See Note A-4.7.4.)

4.7.4.1. Clearances

1) At a loading or unloading facility for *tank vehicles* or tank cars, the horizontal distance from the fill stem to an aboveground *storage tank*, a *building* or a property line shall be not less than

- a) 7.5 m for Class I liquids, and
- b) 4.5 m for Class II and IIIA liquids.

2) At bulk plant rail loading and unloading facilities, the minimum distance from a loading structure to a railway line shall be in conformance with TC General Order No. O-32, C.R.C., c1148, “Flammable liquids Bulk Storage Regulations.”

3) *Buildings* for the shelter of personnel or pumps shall be considered a part of the loading or unloading facility.

4.7.4.2. Multi-purpose Facilities

1) When piping and pumping systems have been used for the transfer of either *flammable liquids* or *combustible liquids* at loading or unloading facilities, the system shall be cleaned of vapours before the other class of liquid is introduced.

4.7.4.3. Check Valves

1) Systems through which tank cars or *tank vehicles* discharge into aboveground *storage tanks* by means of pumps shall be provided with check valves to prevent backflow and the inadvertent mixing of liquids.

2) Systems referred to in Sentence (1) shall be designed, installed and maintained to prevent leakage or spillage.

4.7.4.4. Control Valves

1) Valves installed to control the filling of *tank vehicles* or tank cars shall be of the self-closing type.

2) Control valves referred to in Sentence (1) shall be held open manually, except where automatic devices are provided for shutting off the flow in order to prevent the overfilling of *tank vehicle* or tank car compartments.

(See Note A-4.7.4.4.(2).)

4.7.4.5. Bonding and Grounding

(See Note A-4.7.4.5.)

1) Bonding, grounding and isolation components for protection against static charges during the loading or unloading of *tank vehicles* or tank cars shall be provided when transferring *flammable liquids* or *combustible liquids*.

2) Where *flammable liquids* or *combustible liquids* are transferred from or into railway tank cars, the railway tracks shall be bonded throughout their length and permanently grounded in conformance with TC SOR/82-1015, “Railway Prevention of Electric Sparks Regulations.”

3) Bonding required in Sentence (1) shall consist of a metallic bond wire connected to the fill stem or to some part of the loading or unloading structure that is in electrical contact with the fill stem in conformance with Subsection 4.1.4.

4) Bonding wires for *tank vehicles* shall be provided with a pull-off connector attached so as to be in electrical contact with the cargo tank of the *tank vehicle*.

5) The bonding connection required in Sentence (1) shall be fixed to the *tank vehicle* or *storage tank* before dome covers are raised and shall remain in place until filling is completed and all dome covers have been closed and secured.

4.7.4.6. Downspouts

1) Except as provided in Sentence 4.1.8.2.(3), when *tank vehicles* or tank cars are filled with Class I or II liquids through the top of the tank, the fill pipe shall terminate within 150 mm of the bottom of the tank.

4.7.5. Fire Protection

4.7.5.1. Portable Extinguishers

1) At least 2 portable extinguishers, each having a rating of not less than 80-B:C, shall be provided at hazardous locations in bulk storage plants for *flammable liquids* and *combustible liquids*.

4.7.6. Spill Control

4.7.6.1. Spill Control

1) Facilities to control possible spills of *flammable liquids* or *combustible liquids* shall be provided at loading and unloading points, in conformance with Subsection 4.1.6.