This safe work instrument is administered by WorkSafe New Zealand. For more information please see:

Website: http://www.worksafe.govt.nz

Contact phone: 0800 030 040

Contact address: PO Box 165 Wellington 6140 New Zealand

Health and Safety at Work (Hazardous Substances—Design and Construction of Above Ground Stationary Tank to ULC-ORD-C80.1-2000) Safe Work Instrument 2017

This safe work instrument is approved under section 227 of the Health and Safety at Work Act 2015 by the Minister for Workplace Relations and Safety, being satisfied that:

(a) appropriate consultation has been carried out under section 227(3) of that Act; and

(b) in accordance with regulation 17.105(2) of the Health and Safety at Work (Hazardous Substances) Regulations 2017, for the purposes of clauses 13 and 14 of this safe work instrument, compliance with the provisions of the Regulations that apply to stationary tanks will not appropriately control risk associated with certain stationary tanks.

Contents

Safe Work Instrument

1 Title

This is the Health and Safety at Work (Hazardous Substances—Design and Construction of Above Ground Stationary Tank to ULC-ORD-C80.1-2000) Safe Work Instrument 2017.

2 Commencement

This safe work instrument comes into force on 1 December 2017.

3 Overview

In this safe work instrument,—

(a) clauses 6 to 9 set requirements for the design and construction of a tank for the purposes of regulation 17.6(1)(k) of the Regulations:

(b) clause 10 sets requirements for venting of a tank for the purposes of regulation 17.7(3)(c) of the Regulations:

(c) clause 11 sets requirements for the design, construction, and installation of a liquid level indicator for the purposes of regulation 17.12(3) of the regulations:

(d) clause 12 sets requirements for marking of a tank for the purposes of regulation 17.76(1)(b)(ii) of the Regulations:

(e) clause 13 sets out additional requirements that apply to the installation of a tank and states which PCBUs are required to comply with those requirements for the purposes of regulation 17.105 of the Regulations:

(f) clause 14 sets out additional requirements that apply to the operation of a tank and states which PCBUs are required to comply with those requirements for the purposes of regulation 17.105 of the Regulations.

4 Interpretation

(1) In this safe work instrument, unless the context otherwise requires,—

Act means the Health and Safety at Work Act 2015

Regulations means the Health and Safety at Work (Hazardous Substances) Regulations 2017

tank means an above ground stationary tank to which this safe work instrument applies

ULC means Underwriters' Laboratories of Canada

ULC-ORD-C80.1-2000 means the Underwriters' Laboratories of Canada document ULC-ORD-C80.1-2000 Aboveground Non-Metallic Tanks for Fuel Oil

(2) Any term or expression that is defined in the Act or the Regulations and used, but not defined, in this safe work instrument has the same meaning as in the Act or the Regulations.

5 Application

This safe work instrument applies to an above ground stationary tank that—

(a) is used to contain—

(i) diesel fuel (automotive gas oil and marine diesel oil); or

(ii) low flashpoint diesel (low flash domestic heating oil and alpine diesel); or

(iii) fuel oil manufactured from waste lubricating oil; or

(iv) non-flammable fuel oil manufactured from waste lubricating oil; and

(b) has a containment capacity of not more than 1200 L; and

(c) operates at atmospheric pressure; and

(d) is constructed from fibreglass reinforced thermoset unsaturated polyester resin; and

(e) has not been subjected to a drop test that includes packaging.

6 Tank must be designed and constructed to ULC-ORD-C80.1-2000

A relevant PCBU must ensure that a tank is designed and constructed—

(a) in accordance with ULC-ORD-C80.1-2000; and

(b) to a design that is certified to ULC-ORD-C80.1-2000 by ULC, or by a person licensed by ULC to provide such certification.

7 Requirements for fill pipe, suction pipe, and dip pipe

(1) A relevant PCBU must ensure that each fill pipe, suction pipe, and dip pipe enters through the top of the tank.

(2) If a suction pipe or dip pipe is likely to be opened to atmosphere at any time during normal filling procedure, a relevant PCBU must ensure that the pipe has a liquid seal that ensures that the bottom end of the pipe is submerged in not less than 25 mm of liquid at all times after the initial filling of the tank.

8 Fill pipe

(1) A relevant PCBU must ensure that a tank is designed and constructed to be filled through the top of the tank through a metallic hose connection and metallic fill pipe.

(2) A relevant PCBU must ensure that a fill pipe—

(a) extends down to a discharge point that is—

(i) not more than one diameter of the pipe above the tank bottom; and

(ii) not less than one diameter of the pipe below the minimum liquid level, in order to form a liquid seal; and

(b) incorporates a pressure equalizer hole that—

(i) connects the upper end of the fill pipe with the upper tank space; and

(ii) if greater than 1.5 mm in diameter, is covered by an antiflash gauze of not coarser than 600 μm mesh.

9 Assessment of fibreglass defects

A relevant PCBU must ensure that, during construction of a tank, visual defects in the tank are assessed in accordance with the provisions of ASTM standard ASTM D2563–08(2015)–Standard Practice for Classifying Visual Defects in Glass-Reinforced Plastic Laminate Parts.

10 Venting

(1) A relevant PCBU must ensure that a tank has a means of venting the vapour space above the liquid in the tank to atmosphere (a vent) that complies with the requirements of this clause.

(2) A relevant PCBU must ensure that the vent ensures the vapour space is in contact with the atmosphere without any intervening valves or other devices, so that the pressure above the liquid is substantially similar to that of the surrounding atmosphere.

(3) Where a vent is combined with a fill point, a relevant PCBU must ensure that the diameter of the opening is—

(a) not less than 1.5 times the bore of the fill nozzle; and

(b) large enough to ensure that—

(i) when the fill nozzle is inserted, there is no less than 700 mm^2 of free vent; and

(ii) when the cap of the fill opening is in place, there is no less than 400 mm^2 of free vent.

(4) Where a separate vent is provided, a relevant PCBU must ensure that the diameter of the vent—

(a) is not less than 1.5 times the bore of the fill nozzle; and

(b) allows not less than 700 mm^2 of free vent.

11 Liquid level indicator

(1) A relevant PCBU must ensure that a tank has a liquid level indicator that—

(a) indicates the actual liquid level in relation to the safe fill level; and

(b) is designed, constructed, and installed to resist heat and impact to which it may be subjected in any reasonably foreseeable situation.

(2) If a relevant PCBU complies with subclause (1) by using a dipstick indicating system, the PCBU must ensure that the dipstick indicating system complies with the following requirements:

(a) the opening in the tank for the dipstick must be fitted with a cap that is liquid tight and gas tight:

(b) if the dipstick measures by contacting the bottom of the tank and the opening for the dipstick is separate from the fill point, a tubular dipstick guide must be provided, which incorporates a pressure equalizer hole that –

(i) connects the upper end of the dipstick guide to the upper tank space; and

(ii) is equipped with an antiflash gauze not coarser than 600 µm mesh, if the hole is greater than 1.5 mm in diameter:

(c) a durable striker pad must be attached firmly to the bottom of the tank below the opening for the dipstick.

(3) If a relevant PCBU complies with subclause (1) by means of a liquid level indicator designed for reading at a remote location, the PCBU must ensure that—

(a) there are additional means of checking the indicator's accuracy; and

(b) the safe fill level of the tank is indicated on the contents indicator.

(4) In subclause (2), **dipstick indicating system** means a dipstick calibrated for the tank, with the safe fill level marked on the dipstick.

12 Tank markings

Despite the marking requirements specified in ULC-ORD-C80.1-2000, a relevant PCBU must ensure that a tank is marked permanently and legibly with the following information, in addition to the information specified in regulation 17.76(1)(b)(i) of the Regulations:

(a) the maximum design life of the tank:

(b) a statement that the tank is to be used only for the storage of diesel fuel (automotive gas oil and marine diesel fuel), low flash point diesel (low flashpoint domestic heating oil and alpine diesel), fuel oil manufactured from waste lubricating oil, or non-flammable fuel oil manufactured from waste lubricating oil:

(c) a statement that the tank is of double skinned construction with non-metallic primary tank and non-metallic secondary tank:

(d) a statement that the maximum fill rate for the tank is 300 L per minute.

13 Installation

A PCBU with management or control of a tank must ensure that a tank is installed on flat and level ground outdoors, and not on a stand or pedestal.

14 Operation

(1) Subject to subclause (2), a PCBU with management or control of a tank must ensure that the cap for the dipstick opening in the tank is kept in place at all times, including during filling of the tank, except when the volume of fuel in the tank is being checked.

(2) Subclause (1) does not apply if the tank has a combined opening for the dipstick and fill point.

Made at Wellington on 13 November 2017.

Hon Iain Lees-Galloway
Minister for Workplace Relations and Safety

Date of notification in *Gazette*: 15 November 2017
This legislation is administered by WorkSafe New Zealand.