Use of Containers, Portable Tanks and Transportation Tanks for the Ongoing Storage and Dispensing of Flammable and Combustible Liquids

Background:

Flammable and Combustible Liquids are transported on Alberta’s roads in a number of “bulk” formats which are required to be compliant with the Transportation of Dangerous Goods Regulations (TDGR - Canada & Alberta). These include compliant steel and plastic drums, compliant “totes” (one-way and re-useable), Portable Tanks (CSA B620), Intermodal Bulk Containers (including “ISO” containers) and tank vehicles/trailers (TC 406, 407).

It has been reported that these units are being used, indoors and outdoors, as refillable containers or portable tanks for the ongoing delivery, storage and dispensing of flammable and combustible liquids at some locations. Except for the specific allowances to dispense Class II and IIIA liquids from tank vehicles into vehicle fuel tanks in Sentence 4.11.3.8.(2) of the Alberta Fire Code 2006¹ (AFC 06), this is type of activity not permitted.

While these containers and transportation units may be compliant with TDGR, and some of them could meet the requirements of Article 4.2.1.1. of the AFC 06 for:

- containers conforming to Clauses 4.2.3.1.(1)(a) to (d) having an individual capacity of not more than 230 L, eg. The standards are as below:
  a) “Transportation of Dangerous Goods Regulations,”
  b) CSA B376-M, “Portable Containers for Gasoline and Other Petroleum Fuels,”
  c) CSA B306-M, “Portable Fuel Tanks for Marine Use,”
  d) ULC/ORD-C30, “Safety Containers,” or

- portable tanks conforming to Clause 4.2.3.1.(1)(e) having an individual capacity of not more than 2 500 L, or

- intermodal bulk containers conforming to Clause 4.2.3.1.(1)(e) having an individual capacity of not more than 3000 L. eg. The standard for portable tanks and intermodal bulk containers is as below:
  e) Section 6 of CSA B620, “Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods.”

they do not meet the AFC 06’s requirements for the on-site refilling and ongoing storage of flammable and combustible liquids indoors or outdoors.

These containers and portable tanks are not designed, manufactured or installed to the standards outlined in Section 4.3. of the AFC 06, do not provide secondary containment and the manufacturers and distributors concur that these units are not intended for installation and ongoing storage with on-site refilling. Their intended purpose, and the intent of their inclusion in the AFC 06 in Section 4.2. is only for transportation of a product to a site and the subsequent dispensing of their contents by the end user. When they have been emptied at the end use site.

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they need to be transported back to the manufacturer or distributor for possible testing and refurnishment prior to being refilled and shipped once again to an end user. Due to this “one way” usage and portable nature they are unacceptable for usage as part of a storage tank system which must meet the requirements of Section 4.3 of the AFC 06 nor are they acceptable for continuous use in a container dispensing system (e.g. drums).

Intent:
This means that:
Containers, portable tanks and transportation tanks are intended to be delivered to the point of end use and emptied in a compliant manner at that end use point. This will typically involve either:

- transfer to a permanent storage tank compliant with Section 4.3. of the AFC 06,
- storage in a store room designed for this purpose under Div. B Article 3.3.5.18. of the Alberta Building Code 2006 and Sub Section 4.2.9. of the AFC 06, often in rack storage, while awaiting withdrawal for the purpose of manufacturing, blending or operations,
- storage in a store room designed for this purpose under Div. B Article 3.3.5.18. of the Alberta Building Code 2006 and Sub Section 4.2.9. of the AFC 06, often in rack storage, while awaiting further shipping or transfer,
- connected to process equipment in a code compliant manner so that the product may be directly introduced to that process, or
- being placed outside a store room, subject to quantity limitations, in a manner acceptable to the Authority Having Jurisdiction (AHJ) in conformance with Article 4.2.1.1, for usage as per Sub Section 4.2.8. Incidental Use of the AFC 06 within a high or medium hazard occupancy where the product is dispensed, with appropriate equipment rated for the product which meets the requirements of Sentence 4.2.9.4.(1) and A-4.1.8.3.(1), in a safe and compliant manner.

4.2.8. Incidental Use

4.2.8.1. Application
1) Except as otherwise noted in this Part, this Subsection applies to industrial occupancies where the use, storage and handling of flammable liquids or combustible liquids is secondary to the principal activity.

4.2.8.2. Maximum Quantities
1) Except as provided in Sentences (2) and (3) and in Article 4.2.8.4., the quantity of flammable liquids and combustible liquids permitted to be located outside of storage rooms conforming to Subsections 4.2.7., 4.2.9. or 4.3.13., or storage cabinets conforming to Subsection 4.2.10., in any one fire compartment of a building, shall not be more than
   a) 600 L of flammable liquids and combustible liquids in closed containers, of which not more than 100 L shall be Class IA liquids, and
   b) 5000 L of Class IB, IC, II and IIIA liquids in storage tanks or portable tanks.

As previously noted these containers, portable tanks and transportation tanks cannot be refilled on site and must be either returned to the manufacturer or distributor’s location for inspection and possible testing by trained staff prior to refilling or being disposed of in an appropriate manner.
On site refilling at the end user location and the ongoing usage of containers, portable tanks and transportation tanks including TDGR transportation containers or vehicle mounted tanks is prohibited. This provides an assurance to owners that storage of flammable and combustible liquids, such as liquid fuels, solvents, windshield washer antifreeze, engine additives and other related products are delivered and stored in a safe and consistent manner across Alberta.

Where flammable and combustible liquids, in quantities greater than the amounts noted in Sentence 4.2.1.1.(1), are offloaded and stored in storage tanks anywhere under the jurisdiction of the AFC 06 these tanks must meet the requirements of Sentence 4.3.1.2.(1) or an approved variance.

In addition the installation of storage tanks for the ongoing usage and refilling will require the owner to obtain a Storage Tank System Permit as per the Permit Regulation (AR 204/2007) adopted under the Safety Codes Act (ch. S-1 RSA 2000), a plan review approval and a subsequent site inspection from the AHJ which may be the local municipality or the Petroleum Tank Management Association of Alberta (PTMAA). If the tank has a capacity of more than 2500 L the tank will need to be registered annually through PTMAA as well.

This Interpretation applies throughout the Province of Alberta.

1 All references are to the Alberta Fire Code, Division B, unless otherwise stated.