

FEBRUARY 1995

92 FCR 004

INSTALLATION OF PROTECTED ABOVEGROUND STORAGE TANKS

Issue:

The Alberta Fire Code 1992, establishes minimum distances for the placement of aboveground storage tanks from property lines and from buildings on the same property.

ULC/ORD 142.16, "Protected Aboveground Tank Assemblies for Flammable Liquids" is similar in many respects to ULC/ORD 142.5, "Concrete Encased Steel Aboveground Tank Assemblies for Flammable Liquids" but contains specific requirements for determination of a 2 hour fire-resistance, impact and ballistic (small arms fire) resistance.

A question has been raised regarding the application of Subsection 4.3.2., when installing protected tanks. Fire Code distances are based on the installation of single wall steel aboveground tanks. It does not take into consideration the fire-resistance inherent with a protected tank.

Code requirements:

4.3.2. Installation of Outside Aboveground Storage Tanks

4.3.2.1. Location

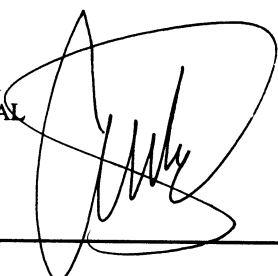
(1) Except as provided in Sentences (2) to (4), every aboveground *storage tank* for the storage of *flammable liquids* or *combustible liquids* shall be located in conformance with Table 4.3.2.A. with respect to property lines and *buildings*.

(2) The minimum required distance in Sentence (1) from a *storage tank* to a property line or to a *building* on the same property is permitted to be reduced to 1.5 m provided the *storage tank* contains only *combustible liquids* and does not exceed 50 000 L storage capacity.

(3) At bulk plant rail loading and unloading facilities, the minimum distance from a *storage tank* to a property line or to a *building* on the same property may be reduced to the limits specified in General Order 0-32, "Flammable Liquids Bulk Storage Regulations," of Transport Canada.

ISSUE OF THIS RULING IS AUTHORIZED
UNDER ARTICLE 1.1.4.4. OF THE ALBERTA
FIRE CODE 1992 BY THE SENIOR TECHNICAL
OFFICER, FIRE STANDARDS.

C.M.TYE



(4) The minimum distance from a *storage tank* to a *building* on the same property may be reduced to 0.5 m provided the tank

- (a) contains only *combustible liquids*, and
- (b) does not exceed 5 000 L capacity.

(5) Where end failure of horizontal *storage tanks* may endanger adjacent property, the tanks shall be placed with the longitudinal axis parallel to such property.

(6) *Storage tank* spacing not conforming to the requirements of this Subsection and requiring special engineering design shall be *approved*.

Table 4.3.2.A.
Forming Part of Sentence 4.3.2.1.(1)

Location of Aboveground Storage Tanks	
Maximum Tank Capacity, L	Minimum Distance from <i>Storage Tank</i> to Property Line or to a <i>Building</i> on the Same Property, m
250 000	3
500 000	4.5
2 500 000	9
5 000 000	12
over 5 000 000	15
Column 1	2

Interpretation:

In applying Table 4.3.2.A. of the Alberta Fire Code 1992, Subsection 4.3.2., does not take into consideration protected storage tanks which provide a fire-resistance rating.

Ruling:

Protected storage tanks are permitted to be installed adjacent to property lines and buildings on the same property without any spatial separation, provided:

1. Tanks meet the requirements of ULC/ORD-C 142.16, "Protected Aboveground Tank Assemblies for Flammable Liquids", or the proposed standard ULC-S-655, "Standard for Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids"
2. Individual tanks have a capacity of not more than 50 000 L, and
3. All other applicable requirements of Part 4 are met.