THIS TANK
DOES NOT COMPLY WITH
THE ALBERTA FIRE CODE

What's Wrong With This Tank?

The Alberta Fire Code does not apply to storage tanks which are used for agricultural purposes. "Farm tanks" are not constructed to a recognized safety standard, including Underwriters Laboratory of Canada (ULC). Storage tanks must be built to a ULC standard to be in conformance with the Fire Code. Common farm tank characteristics include:

- steel thickness of approximately 2 mm (ULC –S643 Utility Tanks of similar size have head and shell thickness of 3 mm)
- a single opening which serves as the tank vent as well as the fill opening
- a 25 mm drain plug
- light-weight metal supports to allow for gravity dispensing
- no emergency pressure relief to protect against catastrophic failure if exposed to fire – excessive pressure could turn the vessel into a rocket
- often not provided with suitable diking or other containment measures to control accidental spills or leaks from exposing nearby equipment, buildings, waterways or adjacent property
- no automatic shut-off valves on fuel hose
- suitable "Flammable-Keep Open Flames Away", "Turn Off Ignition", "No Smoking" signage often absent
- grounding and bonding connections not provided for dispensing and bulk delivery operations
- weeds and other combustible materials often allowed to accumulate around tanks.

Can I Improve a Farm Tank?

If your storage tank is used exclusively for farming activities it is not regulated by the Fire Code. Alberta Agriculture has developed an excellent guide for the storage of flammable and combustible liquids in farming operations. You can view the guidebook online at http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex12363 Owners of farm tanks where product is used exclusively for agricultural purposes may have difficulty adapting existing tanks to improve safety. There is typically only one top opening which prevents the addition of a normal or emergency vent. Ensure that tank ends are pointed away from buildings or where people might gather because the end plates are typically the weakest part and will be first to fail if over-pressurized.

Tanks should be adequately supported by way of concrete, steel with a minimum of two-hour fire proofing materials, or heavy timbers with a minimum dimension of 300 mm on each side. Tanks on stands risk being struck and knocked over. Vertical bollards or concrete curbs could be used to ensure the tank is not hit by equipment being fuelled or fuel delivery trucks. Ideally the tank should be mounted no higher than 300 mm off the ground and a CSA approved pumping device used.

An anti-siphoning device should be used to prevent the tank from emptying without the pump operating. The discharge connection should be equipped with a valve that closes automatically in the event of a fire. If an automatic shutoff valve is not available, a manual valve located adjacent to the tank shell can be used. Tank hoses should be ULC approved steel reinforced fuel hose suitable for the liquid being dispensed, complete with a self-closing nozzle at the discharge end. Cast iron, brass, copper, aluminum and other low melting point materials should not be utilized for fittings or piping systems.

Secondary containment should be placed beneath and around the tank to collect overfills and casual spillage. This can take the form of a large “bathtub” or a synthetic liner placed under the tank with sufficient capacity to contain the contents of the tank plus 10%.

Tanks supported on metal stands resting directly on the ground and equipped with an approved hose and fuel dispensing nozzle do not require additional grounding and bonding connections. Where there is not adequate grounding, a connection should be made with the ground by using a minimum of #4 flexible stranded copper wire (insulated or not insulated) securely attached by a screw clamp or other suitable means. A minimum 1 m steel rod should be driven into the soil completing the ground circuit. Fuel delivery personnel often ensure their vehicle is bonded to the tank prior to unloading. The tank owner could ensure this practice is undertaken by providing a bonding wire, as described above, which has continuity with the tank and is clamped to the vehicle during delivery activity.

Where Do I Get A Proper Tank?

Manufacturers build tanks for a variety of applications. Ensure that the tank will come with an appropriate ULC label. Tanks are designed for used oil, diesel oil, gasoline or all products. The most significant option is single-walled and double-walled construction. The manufacturer can provide an overfill prevention device which will restrict delivery to 90% of the tank's capacity. Be prepared to answer a number of questions so the tank manufacturer can ensure the tank meets your needs.

STORAGE TANK MANUFACTURERS

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Clemmer Technologies Inc.
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Extreme Energy (Pro-Tec)
P.O. Box 6239
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Westeel
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