

Aboveground Storage Tank Requirements Check Sheet



STORAGE TANK PERMIT

Div C, 2.2.3.1.(4)

No person shall install, remove, alter or repair any part of a storage tank system unless a storage tank permit has been obtained from Edmonton Fire Rescue Services.

Permit Requirements:

- 1) A detailed scope of work.
- 2) All installations, removals, repairs or replacements of any storage tank system, in whole or in part, must meet all requirements of the NFC(AE).
- 3) The name and certification number of the individual that will be on site during the proposed scope of work must be included in the storage tank permit application.
- 4) All relevant documents must be included with the storage tank permit application, including but not limited to storage tank specification sheets, site maps with clearances, engineered drawings, applications for variance where applicable, etc.
- 5) Engineered drawings that bear the stamp and seal of a licensed engineering professional registered to practice in Alberta are required if any of the following apply:
 - a) Any underground installation/repair of a storage tank system in part or in whole, including tank(s), lines, etc.
 - b) Any in-building installation/repair of a storage tank system in part or in whole, including tank(s), lines, pumps, catch basins, etc.
 - c) Any installation/repair of an aboveground storage tank system where an individual tank exceeds 8,000 L or the aggregate capacity of all tanks exceeds 20,000 L.

***Permits will only be issued by the reviewing Fire Safety Codes Officer with Edmonton Fire Rescue Services if all required information and documents are provided and the proposed scope of work in its entirety meets the requirements of the National Fire Code - 2023 Alberta Edition [NFC(AE)] Any permit application that is incomplete or missing the required information and documents may be subject to cancellation or refusal.**

CERTIFIED PETROLEUM MECHANIC

Div C, 2.2.3.1

- 1) Only individuals approved by the Provincial Fire Administrator are permitted to install, remove, repair or maintain aboveground or underground storage tank systems.
- 2) Approved persons are considered qualified to install, remove, repair and maintain aboveground and ,underground storage tank systems when they have received certification from
 - a) The Canadian Petroleum Contractors Association (CPCA),
 - b) The Technical Standards and Safety Authority (TSSA), and
 - c) The Petroleum Tank Management Association of Alberta (PTMAA) (*see Note A-2.2.3.1.(2)(c)*)

Note A-2.2.3.2.(2)(c). - PTMAA certification will no longer be recognized after December 31, 2025. Anyone who has certification through PTMAA will need to gain their certification through the CPCA or TSSA before December 31, 2025.

STORAGE TANK REGISTRATION

Aboveground storage tanks with a capacity greater than or equal to 2,500 Litres and all underground storage tanks must be registered annually with Edmonton Fire Rescue Services.

The information below lists the most common requirements related to aboveground flammable liquid and combustible liquid storage tank systems. **Include all applicable information listed below in your documentation and refer to the [National Fire Code - 2023 Alberta Edition](#) to ensure all code requirements have been met.**

ABOVEGROUND STORAGE TANK SYSTEMS - GENERAL

STORAGE TANK CONSTRUCTION STANDARDS - *NFC(AE), Div B, 4.3.1.2.*

- ☐ The storage tank(s) are designed to an approved CAN/ULC standard for use in the storage of flammable and combustible liquids as per the NFC(AE).

STORAGE TANK ACCESS AND CLEARANCES - *NFC(AE), Div B, 4.3.2.*

- ☐ Fire Department access to within 60 m of any aboveground storage tank.
- ☐ Minimum 3 m from storage tank to property line.
- ☐ Clearance between storage tanks and the nearest building:
 - ☐ Minimum 3 m for flammable liquid storage tanks.
 - ☐ Minimum 1.5 m for a combustible liquid storage tank with volume >2500 L and <80,000 L, or
 - ☐ Zero for a combustible liquid storage tank with volume <2500 L.
- ☐ Zero if storage tank construction standard is CAN/ULC S655.
- ☐ Minimum of 6 m from LPG cylinders or tanks.
- ☐ Minimum spacing between storage tanks is 1 m.

FOUNDATION AND SUPPORTS - *NFC(AE), Div B, 4.3.3.*

- ☐ Storage tank(s) foundation is level ground and/or non-combustible supports.
- ☐ Supports exceeding 300 mm in height shall have a minimum fire-resistance rating of 2 hr supported by documentation.

COLLISION PROTECTION - *NFC(AE), Div B, 4.3.7.4.(3).*

- ☐ A Storage Tank shall be protected by posts or guardrails (jersey barriers, lego blocks, etc) where they are exposed to potential collision damage.

NORMAL AND EMERGENCY VENTING - *NFC(AE), Div B, 4.3.4. and 4.3.5*

- ☐ Storage tanks are provided with normal and emergency venting in conformance with:
 - API STD 2000, "Venting Atmospheric and Low Pressure Storage Tanks," or
 - The tank design standards listed in Sentence 4.3.1.2.(1).
- ☐ Constructed of steel and conforms to the standards as described in NFC(AE).
- ☐ All vent pipe outlets shall terminate not less than 1.5 m from any building opening (exit, overhead door, window, air intake, etc.)
- ☐ All vent pipes must terminate a minimum of:
 - ☐ 3.5 m above adjacent ground level for Class I liquids, or
 - ☐ 2 m above adjacent ground level for Class II and Class IIIA liquids.

CONNECTIONS FOR FILLING AND EMPTYING - NFC(AE), Div B, 4.3.6.4

- ☐ Connections for filling and emptying storage tanks shall be provided with a spill containment device in conformance with CAN/ULC-S663 - **New**
- ☐ Connections for filling and emptying aboveground storage tanks shall
 - be kept closed to prevent leakage when not in use, and
 - be located not less than 1.5 m away from building openings (exit, overhead door, window, air intake, etc.)
- ☐ Tanks intended for the manual deposition of used oil (CAN/ULC S652) shall be equipped with a fixed suction tube that extends to within 50 mm of the tank bottom as per the CAN/ULC S652 Standard.

OVERFILL PROTECTION - NFC(AE), Div B, 4.3.1.8.

- ☐ A storage tank has one of the following in place for overfill protection:
 - ☐ Continuous supervision of the filling operation by personnel qualified to supervise such operations, or
 - ☐ An overfill protection device conforming to CAN/ULC S661, "Overfill Protection Devices for Flammable and Combustible Liquid Storage Tanks".
- ☐ Storage tanks that are filled remotely with used oil shall be prevented from being overfilled by providing an overfill protection device conforming to CAN/ULC S661, "Overfill Protection Devices for Flammable and Combustible Liquid Storage Tanks". **New**

SPILL CONTROL - NFC(AE), Div B, 4.1.6.3.

- ☐ A non-combustible spill kit must be provided at or near the storage tank for clean-up of spilled flammable liquids or combustible liquids. If the spill kit is located inside the nearest door to a building, the door shall have signage indicating that a spill kit is located inside.

SIGNAGE - NFC(AE), Div B, 4.3.1.7.

- ☐ The contents of every aboveground storage tank shall be clearly identified from not less than 4.5 m away on at least two sides of the storage tank.

FIRE EXTINGUISHER - NFC(AE), Div B, 2.1.5

- ☐ An area containing a storage tank shall be provided with a minimum 10BC fire extinguisher. If the fire extinguisher is located inside the nearest door to a building, the door shall have signage indicating that a fire extinguisher is located inside.

TRANSFER SYSTEMS (LOCATED INSIDE BUILDINGS)

TRANSFER SYSTEMS REQUIREMENTS

Any transfer systems that are located inside a building, including pumps, catch basins, lines with camlock fittings, etc. must follow the requirements listed below.

CONNECTIONS FOR FILLING AND EMPTYING - *NFC(AE), Div B, 4.3.6.4*

- ☐ A filling connection for filling or emptying storage tanks for flammable liquids and combustible liquids is permitted to be located inside for the collection of used liquids.
- ☐ The fill piping is provided with means to prevent flammable vapours from returning to the building.
- ☐ Transfer systems that include a catch basin and/or camlock collection hose, and pump must meet the following requirements:
 - ☐ Catch basins must be made of non-combustible material and have a tight fitting lid that is to be kept closed except during manual deposition of used oil.
 - ☐ If collection containers and/or oil filters are to remain in the catch basin for drainage, the lid must be able to accommodate this process in the closed position.
 - ☐ Any containers/cart used for the collection of used oil as well as the catch basin shall be marked with the contents.

IDENTIFICATION OF PIPING SYSTEMS - *NFC(AE), Div B, 4.5.4.1.*

- ☐ Pipelines for flammable liquids or combustible liquids shall be marked with the contents and direction of flow.

PIPING AT ENTRANCES TO BUILDINGS - *NFC(AE), Div B, 4.5.4.1.*

- ☐ Piping for flammable liquids or combustible liquids shall be located aboveground where piping enters the building.
- ☐ Shut-off valves are to be installed at or close to the catch basin and also as close as possible to the storage tank fill connection.
- ☐ Where piping passes through a wall that would restrict expansion or contraction of the piping, pipe sleeves shall be provided at the wall penetration to facilitate movement.

ABOVEGROUND (OUTDOOR) DISPENSING - GENERAL

STORAGE TANK SYSTEM DISPENSING REQUIREMENTS

Any aboveground storage tank system that includes a dispensing system must meet the requirements above along with also meeting the following requirements

DISPENSERS - *NFC(AE), Div B, 4.6.2 and 4.6.3.*

- ☐ Fixed dispensers for flammable liquids or combustible liquids shall conform to CSA B346-M "Power Operated Dispensing Devices for Flammable Liquids."

LOCATION AND CLEARANCES - *NFC(AE), Div B, 4.6.3.3.*

- ☐ Fixed dispenser locations shall be not less than:
 - ☐ 3 m from any right-of-way and any property line,
 - ☐ 6 m horizontally from any fixed source of ignition,
 - ☐ 6 m horizontally from any LPG cylinder or storage tank,
 - ☐ 3 m from any building openings, other than those that serve as shelter for operating personnel,
 - ☐ 6 m from any manhole or sewer opening
 - ☐ 7.5 m from smoking and non-fixed sources of ignition

COLLISION PROTECTION - *NFC(AE), Div B, 4.6.3.4.*

- ☐ Where fixed dispensers are not attached to storage tanks with protection, they shall be protected against collision damage by:
 - ☐ A concrete island not less than 100 mm high, or
 - ☐ Posts or guardrails (jersey barriers, lego blocks, etc.)

DELIVERY HOSE AND NOZZLES - *NFC(AE), Div B, 4.6.5.*

- ☐ Delivery hose shall conform to CAN/ULC-S612, "Standards for Hose and Hose Assemblies for Flammable and Combustible liquids."
- ☐ The maximum length for a hose through which flammable liquids and combustible liquids are dispensed is 4.5 m. This can be extended to 6 m with a retracting mechanism.
- ☐ Every hose nozzle valve through which a Class I or II liquid is dispensed into a vehicle shall be automatic closing and conform to CAN/ULC - S620, "Standard for Hose Nozzle Valves for Flammable and Combustible Liquids."
- ☐ A hose nozzle valve shall be constructed so that:
 - ☐ If equipped with a hold-open device, it shall
 - a) Allow automatic dispensing,
 - b) Automatically shut off when vehicle tank is full, and
 - c) Shut off if the nozzle is dropped or falls from the fill pipe.

SHUT-OFF DEVICES - NFC(AE), Div B, 4.6.4.

- ☐ A device to shut off power to all dispensers and pumps shall be clearly marked and provided at a location not less than 6 m and not more than 30 m away from dispensers and pumps.
- ☐ Shut-off devices and pumps must be powered from a permanent power source. The use of extension cords or alligator clips to batteries that have the potential to produce sparks are not permitted.

SPILL KITS - NFC(AE), Div B, 4.1.6.3.(3)(b)

- ☐ A non-combustible spill kit with tight fitting lid shall be provided at or near the dispensing station that includes absorbent material to clean up any spilled flammable or combustible liquids.

SIGNS - NFC(AE), Div B, 4.1.8.2.(1)

- ☐ At least one weather resistant sign shall be provided at a dispensing area that indicates:
 - ☐ Smoking is not permitted and ignition must be turned off while fueling.
 - ☐ Dispensing procedures.
 - ☐ Emergency contact numbers for site contacts and emergency services.

FIRE EXTINGUISHER - NFC(AE), Div B, 4.6.9.1.

- ☐ At least 2 portable fire extinguishers, each having a rating of not less than 40-B-C, shall be provided at each dispensing station.

Failure to comply with the National Fire Code (Alberta Edition) can result in fines and even jail time as outlined in the [Safety Codes Act](#).

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Form Approver: Fire Marshal

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