

In-Building Storage Tank - General Requirements Check Sheet



STORAGE TANK PERMIT

Div C, 2.2.3.1.(5)

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 in-building flammable liquid and

combustible liquid storage tank systems. **Include all applicable information listed below in your documentation as well as any other applicable code requirements not listed below and refer to the [National Fire Code - 2023 Alberta Edition](#) to ensure all code requirements have been met.**

IN-BUILDING STORAGE TANK SYSTEMS - GENERAL

OCCUPANCY - NFC(AE), Div B, 4.3.13.1.

- Storage tanks located inside buildings shall
 - conform to NFC(AE) Subsections 4.3.13. to 4.3.15.
 - Be installed in industrial occupancies
 - Be installed in occupancies other than industrial occupancies where combustible liquids are stored and used for fuel for oil-burning equipment, emergency generators and fire pumps.

MAXIMUM QUANTITIES AND LOCATION- NFC(AE), Div B, 4.3.13.4.

- Storage tanks for flammable liquids or combustible liquids shall be
 - Located in dedicated storage rooms conforming to Subsection 4.3.14. and
 - Located in conformance with Tables 4.3.12.4.-A and 4.3.13.4.-B.

STORAGE TANK CONSTRUCTION- NFC(AE), Div B, 4.3.13.5.

- Storage tanks with an individual capacity exceeding 2,500 L but not exceeding 20,000 L that are used in conformance with Table 4.3..13.4.-B shall be:
 - Double walled construction in conformance with CAN/ULC-S601, and
 - Monitored for leakage in conformance with high-tech secondary containment monitoring that continuously monitors the secondary containment.
- Storage tanks with an individual capacity exceeding 20,000 L that are used in conformance with Table 4.3..13.4.-B shall be:
 - Double walled construction in conformance with CAN/ULC-S655, and
 - Monitored for leakage in conformance with high-tech secondary containment monitoring that continuously monitors the secondary containment.

SUPPORTS, FOUNDATIONS AND ANCHORAGE - NFC(AE), Div B, 4.3.13.11

- 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.

STORAGE TANKS OUTSIDE STORAGE ROOMS - NFC(AE), Div B, 4.3.13.9

- When storage tanks for flammable liquids or combustible liquids are located outside a storage room conforming to 4.3.14.:
 - Provisions shall be made to contain a spill equal to at least 100% of the volume of the largest storage tank, or to drain away spilled flammable liquids or combustible liquids, and
 - The area in which the storage tanks are located shall be ventilated

ROOMS FOR STORAGE TANKS - NFC(AE), Div B, 4.3.14.

Design and Construction

- Rooms for storage tanks inside buildings shall be:
 - Separated from the rest of the building by a fire separation having a fire-resistance rating of at least 2 hrs;
 - Designed to contain a spill equal to at least 100% of the volume of the largest storage tank, or drain away the spilled flammable liquids or combustible liquids,
 - Made liquid-tight where the walls join the floor, and
 - Used for no other purposes than the storage and handling of flammable liquids or combustible liquids.

Clearances

- A minimum clear space of 550 mm shall be maintained between the storage tank and the walls of the room for storage tanks. If the clearance cannot be met, Edmonton Fire Rescue Municipal Variance EFRS-MV003 will be in effect and all requirements there-in shall be followed.

VENTS - NFC(AE), Div B, 4.3.13.10.

- Normal and emergency vents for storage tanks in buildings shall be in conformance with API STD 2000, "Venting Atmospheric and Low-Pressure Storage Tanks," or the tank design standards.
- Location of vent pipe outlets on storage tanks must meet the following requirements:
 - Normal Vent Pipes for storage tanks of Class I liquids shall be located outside buildings not less than:
 - 3.5 m above adjacent ground level,
 - 1.5 m from any building openings, and
 - Discharge so that flammable vapours will not enter the building or be trapped anywhere near the building.
 - Normal Vent Pipes for storage tanks of Class II or IIIA liquids shall be located outside buildings not less than:
 - 2.0 m above adjacent ground level,
 - 1.5 m from any building openings, and
 - Emergency vent outlets for storage tanks shall discharge outside buildings not less than 1.5 m from any building opening and from any combustible component of any building's exterior wall.
- Storage tanks are permitted to be connected to a common vent pipe for normal relief venting, provided the vent pipe size is designed to accommodate the requirements of all tanks.
 - * Combined venting must be reviewed and calculated by the Engineering Professional and all details must be included on the permit documentation.

Placards

- Placards that identify the liquids stored as flammable liquids or combustible liquids shall be posted on the entrance door to the room.

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

- All pipelines for flammable liquids or combustible liquids shall be marked with the contents of the line and direction of flow

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

- A room for storage tanks shall be provided with a minimum 10BC fire extinguisher.

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.

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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