

OCCUPANCY CLASSIFICATION FOR BUILDINGS USED FOR PARKING, REPAIRING AND SERVICING TANK VEHICLES

PURPOSE

The purpose of this interpretation is to clarify the application of the Alberta Building Code 2014 (ABC 2014) and the Alberta Fire Code (AFC 2014) to buildings used for parking, repairing and servicing of tank vehicles.

DISCUSSION

Tank vehicles containing flammable liquids or vapours, or combustible liquids or vapours present a unique hazard inside a building. In addition to the hazard inherent in the product itself, there is a potential for the release of flammable or combustible vapours in significant quantities that can overwhelm a standard ventilation system for a building and become a fire or explosion risk.

The activity of bringing a tank vehicle into a building involves specific references from both the ABC 2014 and the AFC 2014. The Provincial Administrators for Building and Fire consider a joint interpretation necessary to communicate the importance of applying this interpretation to both new building construction and practices within existing buildings. The ABC 2014 applies to:

- (a) new buildings prior to occupancy, or
- (b) existing building undergoing a change in occupancy.

The AFC 2014 applies to the operation and maintenance of existing buildings and establishes requirements for tank vehicles.

CODE REFERENCES

1. AFC 2014 Article 1.4.1.2. of Division A states:

1.4.1.2. Defined Terms

Tank vehicle means any vehicle, other than railroad tank cars and boats, with a cargo tank having a capacity of more than 450 L, mounted or built as an integral part of the vehicle and used for the transportation of *flammable liquids* or *combustible liquids* and including tank trucks, trailers and semi-trailers.

2. ABC 2014 Sentences 3.2.2.6.(1) and 3.2.2.8.(1) states:

3.2.2.6. Multiple Major Occupancies

1) Except as permitted by Articles 3.2.2.7. and 3.2.2.8., in a *building* containing more than one *major occupancy*, the requirements of this Subsection for the most restricted *major occupancy* contained shall apply to the whole *building*.

Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2014.

Issue of this STANDATA is authorized by
the Provincial Building and Fire Administrators.

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3.2.2.8. Exceptions for Major Occupancies

1) In a *building* in which the aggregate area of all *major occupancies* in a particular Group or Division is not more than 10% of the *floor area* of the *storey* in which they are located, these *major occupancies* need not be considered as *major occupancies* for the purposes of this Subsection, provided they are not classified as Group F, Division 1 or 2 *occupancies*.

3. AFC 2014 Article 4.11.2.3. of Division B states:

4.11.2.3. Parking inside Buildings

- 1) A *tank vehicle* shall not be parked inside a *building* unless the *building* is specifically designed for that purpose or the cargo tank has been purged in accordance with this Section.
- 2) If a *tank vehicle* is to be parked inside a *building*, provisions shall be made to ensure that there is sufficient space in the tank to compensate for thermal expansion of the *flammable liquid* or *combustible liquid*.
- 3) Before parking a *tank vehicle* inside a *building*, the vehicle shall be inspected to ensure that there are no leaks in the tank, piping or valves.

4. AFC 2014 Article 4.11.2.6. of Division B states:

4.11.2.6. Repair and Servicing

- 1) No person shall repair or service the cargo tank of a *tank vehicle* in a *building* unless
 - a) all *flammable liquids* and *combustible liquids* have been removed from the cargo tank and stored in a *storage tank* or container constructed and installed in accordance with this Part,
 - b) the cargo tank has been purged with steam of flammable vapours or combustible vapours, outside the *building* or in a well-ventilated area, to less than 10% of the *lower explosive limit*, and
 - c) while the cargo tank is being repaired, it is monitored for the presence of flammable vapours and combustible vapours using combustible gas detection equipment.
- 2) No person shall repair, service or store a *tank vehicle* in a *building* other than for repairs conducted in conformance with Article 4.11.2.2. and Sentence (1), unless
 - a) the *building* is acceptable to the *authority having jurisdiction*, or
 - b) all *flammable liquids* and *combustible liquids* have been removed from the cargo tank and the tank has been purged of flammable vapours or combustible vapours, outside the *building* or in a well-ventilated area, to less than 10% of the *lower explosive limit*.

APPLICATION

This interpretation applies to buildings to be used for any one or all of the following activities: the parking, repairing and servicing of tank vehicles.

INTERPRETATION

1. Buildings to be used for parking tank vehicles which contain flammable or combustible gases or vapours are classified as Group F, Division 1, high hazard industrial occupancies and shall:
 - a. be specifically designed for that purpose according to both the ABC 2014 and the AFC 2014,
 - b. be provided with a ventilation system in accordance with Part 6 of the ABC 2014,

- c. have electrical systems installed in conformance with the electrical regulations made pursuant to the *Safety Codes Act*,
- d. have fuel-fired appliances in service rooms with no openings between the hazardous location and the components capable of igniting a flammable or combustible vapour, and
- e. have fuel-fired appliances installed in conformance with the applicable Codes and Standards, and in the case of Gas-fired appliances in conformance to the gas regulations made pursuant to the *Safety Codes Act*.

Note: Additional requirements of Part 3 or Part 6 of the ABC 2014 or Part 4 of the AFC 2014 may apply.

- 2. Buildings to be used for parking, repairing and servicing tank vehicles that have been purged of their flammable or combustible gases or vapours are classified as Group F, Division 2, medium hazard industrial occupancies, provided
 - a. the area is specifically designed for that purpose
 - b. all flammable liquids and combustible liquids have been removed and the tanks purged in accordance with Section 4.11. of the AFC 2014.
 - c. with a ventilation system in accordance with Part 6 of ABC 2014,
 - d. electrical systems are installed in conformance with the electrical regulations made pursuant to the *Safety Codes Act*,
 - e. fuel-fired appliances which are installed in service rooms have no openings between the garage location and the components capable of igniting a flammable or combustible vapour, unless the appliances are at height as permitted by the applicable Codes or Regulation, and
 - f. fuel-fired appliances installed in conformance with the applicable Codes, and in the case of Gas-fired appliances in conformance to the gas regulations made pursuant to the *Safety Codes Act*.

This INTERPRETATION is applicable throughout the province of Alberta.