Edmonton Fire Rescue - Cannabis Guidelines

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Contents

Purpose

The purpose of this guideline is to provide information and inform applicants, operators, and business owners to the relevant regulations with respect to operating Cannabis Retail Stores, Cannabis Cultivation Facilities, and Cannabis Processing Facilities within the City of Edmonton. This guideline is not a complete set of rules for operating these facilities and meeting these requirements may not provide complete conformance with the various acts and regulations which apply to this industry.

Scope

Information contained within the Edmonton Fire Rescue Cannabis Guideline is provided to assist members of the Cannabis industry with applicable code requirements and best practices as the code relates to cultivation, extraction processes, and the businesses related to medical and recreational Cannabis. This document was developed by a coalition group, comprised of members who reviewed the applicable requirements in the 2014 Alberta Fire Code (AFC) as well as other applicable codes and standards that apply to the Cannabis industry.

Conformance to Regulations & Bylaws

Edmonton Fire Rescue Services is the Authority Having Jurisdiction (AHJ) under the *Safety Codes Act* in applying the Alberta Fire Code (AFC). Although this guideline addresses the Fire Code regulations, there are numerous other acts and regulations which are complementary to the Fire Code, and must also be adhered to. It is important to acknowledge and review these regulations to ensure compliance with them and they include:

The Alberta Building Code (ABC)
The Canadian Electrical Code (CEC)
The National Plumbing Code (NPC)
Edmonton Fire Rescue Service
City of Edmonton Zoning Bylaw
Alberta Occupational Health and Safety Act (OH&S Act)

Required Permits

Cannabis Retail and Cannabis Grow Operations operating within the City of Edmonton are required to obtain the following permits:

- City of Edmonton Business License
- City of Edmonton Building Permit(s) (if applicable)
- City of Edmonton Development Permit
- City of Edmonton Trade Permit(s) - HVAC/Plumbing & Gas/Electric (if applicable)
- Certificate of Occupancy (Final Building Inspection)
- Alberta Gaming and Liquor Commission (AGLC) Licence

General Alberta Fire Code Requirements

Building Occupant and Fire Safety

The Fire Safety Plan is an integral part of the occupancy safety and as such is a mandatory requirement. The below listed Sections will assist in creating the most comprehensive plan for your occupants.

Fire Safety Plan

Mercantile Fire Planning

This section describes the method in developing a **Fire Safety Plan** regarding a mercantile occupancy. These occupancies would refer to the sale of medicinal or recreational cannabis to the public.

A fire safety plan conforming to the Alberta Fire Code shall be prepared in cooperation with the fire department and other applicable authorities and shall include

- ➔ The emergency procedures to be used in the case of fire including
  - ◆ Sounding the fire alarm
  - ◆ Notifying the fire department
  - ◆ Instructing occupant on procedures to be followed when the fire alarm sounds
  - ◆ Evacuating occupants, including special provisions for persons requiring assistance
  - ◆ Confining, controlling and extinguishing the fire

- ➔ An integral part of the fire safety plan is to designate supervisory staff to carry out fire safety duties. These staff members should be responsible for training employees in specific disciplines such as:
  - ◆ Documents, including diagrams, showing the type, location and operation of the building fire emergency systems
  - ◆ The holding of fire drills
  - ◆ The control of fire hazards in the building, and
  - ◆ The inspection and maintenance of building facilities provided for the safety of occupants
- ➔ The fire safety plan shall be reviewed at intervals not greater than **12 months** to ensure it takes account of changes in the use and other characteristics of the building.

According to SGI Canada, there are about 24,000 house fires each year, resulting in an average of 377 deaths and 3,048 injuries per year. 1 out of every 100 preventable fires are fatal. In these fatal preventable fires, the #1 ignition source is smoking materials, such as cigarettes. This information can easily translate to cannabis use. Considering a large portion of these fires are preventable, a well developed fire safety plan is paramount in reducing these statistics. For specific information on what your fire safety plan shall contain, see AFC, Division B, Section 2.8.

Industrial Fire Planning

This section describes the method for creating a **Fire Safety Plan** regarding an industrial occupancy. These items, in addition to the mercantile requirements, shall be listed.

- ➔ A fire safety plan shall be prepared for areas where processes and operations that involve a risk from explosion, high flammability or related conditions that create hazard to life safety.

- ➔ If your occupancy will be using or storing hazardous products or dangerous goods:
  - ◆ Include the product classification
  - ◆ Where the products are stored
  - ◆ Where you can locate an up to date SDS **"Safety Data Sheet"** (updated every 3 years)

- ➔ In addition...
  - ◆ The location and identification of storage and use areas for specific hazardous products such as gases, pressurized vessels, dangerous goods, etc...
  - ◆ The names, addresses and telephone numbers of persons to be contacted in the case of fire during non-operating hours

Similar to mercantile occupancies, the fire safety plan for your industrial occupancy holds the same weight, if not heavier. Considering the likelihood of stored hazardous material and compressed vessels, the dangers in the event of a fire are well elevated. According to NFPA statistics, between the years of 2011 and 2015, fire departments responded to an average of 37,910 fires at industrial or manufacturing properties each year, with annual losses from these fires estimated at 16 civilian deaths, 273 civilian injuries and $1.2 billion in direct property damage. A robust, well planned fire safety plan will reduce the amount of liability and increase reaction time during these emergency situations.

For further specific information on the risk of explosion, high flammability or related conditions, see Alberta Fire Code, Division B, Section 4 Flammable and Combustible Liquids and Section 5 Hazardous Processes and Operations. Keep in mind that your industrial occupancy fire safety plan must also conform with Section 2.8. Emergency Planning

Occupancy Classification

Proper Occupancy Classification of Cannabis facilities is essential to proper application of ABC and AFC requirements as there are different requirements for level of safety depending on the activities and materials within a building.

Occupant Egress and Exits

All egress routes and exits are to be maintained in accordance with Part 2 of the AFC such as to be clearly identified, free of obstruction, and with fully functioning door release hardware. Care must be taken in the use of additional security control features. Security locking mechanisms must be compliant with the requirements of the ABC and AFC to ensure no delay in occupant egress, as outlined in the Fire Safety Plan.

Doors

Any door required for egress purposes shall be opened from the inside without requiring keys, special devices or specialized knowledge of the door opening mechanism. An example of this is the current Health Canada requirements for employee tracking in and out of grow rooms or product vaults. Generally, tracking and door access is done through swipe card stations. Restricted access from the outside of the room or vault is permissible, however the door must be readily openable from the interior.

Building Modifications

Building modification and alterations must be completed under a permit as required by the Building AHJ. Building modifications completed outside of the permit process may be identified during inspection, and subject to orders or fines under the *Safety Codes Act*. Building owners are encouraged to keep a copy of approved permits on site for inspection/verification.

For further information, you can visit the website:
www.edmonton.ca/developmentservicesforms/

Fire Extinguishers

Portable fire extinguishers must be appropriate for the hazard and located in accordance to AFC requirements found in AFC B- 2.1.5.

- ➔ Minimum recommended extinguisher size is 2A 10BC located appropriately:
  - ◆ Near principle entries and exits
  - ◆ Near a manual pull station
  - ◆ Near a high hazard location
  - ◆ In a conspicuous location
- ➔ Keep in mind that all extinguishers must be appropriately tagged and maintained annually by a certified agency.

For specific information relating to fire extinguishers, you can reference NFPA 10 - Standard for Portable Fire Extinguishers, visit the website at www.nfpa.org for free access to the standard.

Hazardous Activities

Where a hazardous activity is not allowed for in the original design of the building or equipment that activity shall not be carried out unless written permission is obtained from the Fire AHJ. Specifically this includes the use of processing equipment that is not being used as intended by the manufacturer, or which lacks listing, or labelling indicating its designed purpose. These hazards will generally require professional involvement and proper design, and engineering documentation should be submitted to the Fire AHJ at the development permit or building permit stage to minimize delays in operating. (See AFC B-2.1.2.2.)

Indoor and Outdoor Storage

Storage Limits

Storage limits for dangerous goods must be in accordance with AFC Div B, Part 3. This includes requirements for limits of certain materials, access/aisles throughout industrial occupancies, and outdoor storage of dangerous goods. These limits and their locations shall also be included in the **Fire Safety Plan**.

Flammable and Combustible Liquids

Ventilation and Explosion Control

Ventilation for facilities which include the storage or use of flammable and combustible liquids must conform with AFC Division B, Part 4.

All plans for ventilation and explosion control shall be submitted to the AHJ for approval prior to installation or modification. The submittal shall provide information adequate to describe the hazard and to demonstrate safe performance of the system.

Material Handling, Storage and Dispensing

Handling, storage and dispensing of flammable and combustible liquids shall be in conformance with AFC Div B, Part 4. In addition to the scope of this section, a copy of the Safety Data Sheet (SDS) for each hazardous material on location.

- ➔ Some items you should consider when handling, storing or dispensing hazardous materials
  - ◆ Properly trained employees will reduce the risk of injury or illness
  - ◆ Training in the proper usage of PPE, determined specifically by the material you're using
  - ◆ An accessible, up to date Safety Data Sheet for all employees to review prior to engaging in activities with hazardous materials
  - ◆ A well developed fire safety plan, regarding emergency procedures in the event of an emergency
  - ◆ A fire escape plan, posted conspicuously, showcasing areas where these materials may be stored
  - ◆ Emergency phone numbers to call in the event of accidental ingestion
    - Alberta Health Services
    - Alberta Poison Control

Dangerous Goods

Storage, handling and use of dangerous goods must be in conformance with the AFC Div B, Part 5, and applicable standards. Consider these items when dealing with any dangerous goods.

- ➔ Quantities kept in the premises should be kept to a conservative amount
  - ◆ An example would be, a supply necessary for normal operation
  - ◆ Consider emergency situations, the lesser amount of hazardous materials present in the event of a fire significantly reduces risk to occupants and emergency responders alike
  - ◆ If you require additional quantities on site, consider isolating these additional amounts in a proper fire rated location, in an effort to reduce risk during an emergency.

- ➔ Ignition Sources
  - ◆ Smoking inside is prohibited, however proper signage throughout your facility is recommended.
  - ◆ Unattended equipment using heat should be well isolated from any dangerous goods.
  - ◆ If you require an ignition source that is an integral part of an operation, ensure you keep combustible materials isolated from the operation.

- ➔ Containers
  - ◆ Ensure containers used for dangerous goods are properly rated to the material, you can reference the Alberta Fire Code, Part 5 for further information on container storage.
  - ◆ When transferring to other containers, be diligent in labelling the new containers properly. You can refer to your SDS on appropriate labelling.
  - ◆ Consider storing small containers in a rated flammable storage cabinet. Be sure to do your research and find a product that conforms with OH&S, NFPA and UL standards.

- ➔ Compressed Gases
  - ◆ Any compressed cylinder shall be properly secured when not in use. A chain secured to the wall and properly sized to the cylinders is sufficient.
  - ◆ Always keep the valves closed and the caps secured when not in use.
  - ◆ Unsecured compressed cylinders can become projectiles when subjected to heat or damage.

Hazardous Processes and Operations

CO_2 Enrichment

Enriched growing atmospheres must conform to the *OH&S Act* with respect to workers' exposure to CO_2. Monitoring and alarm detection is required, and must be detailed in the building **Fire Safety Plan** as per AFC 5.1.5.1. Exposure to atmospheres containing 10% or more carbon dioxide will result in increased respiration, headache, dizziness, buzzing in the ears, blood pressure increase, high pulse rate, nausea and eventually unconsciousness.

OH&S Permissible Exposure Limit (PEL) for carbon dioxide is 5000 ppm by volume (0.5 percent concentration). This limit is the recommended maximum concentration personnel can be exposed to in an eight-hour period. Where the potential exists for exposure to carbon dioxide above the allowable limits, air monitoring devices and good ventilation are recommended to maintain more than 19.5 percent oxygen and less than 5000 ppm (0.5 percent) carbon dioxide.

All storage and transfer equipment related to enrichment shall conform to Section 4.3. Tank Storage. The system shall also comply with Section 4.4. Leak Detection of Storage Tanks and Piping systems, to provide proper occupant safety, particularly regarding asphyxiation within the enriched area.

Extraction and Processing Equipment

The use of processing equipment that is not being used as intended by the manufacturer, or which lacks listing or labelling indicating its designed purpose is prohibited. Equipment not being used as designed by the manufacturer requires professional involvement as per AFC Division B, Part 2, proper design and engineering must be submitted to the Fire AHJ.

These processes are highly sophisticated and should only be attempted in a proper facility by trained individuals. These facilities have robust building and fire safety requirements and for good reason. Current research suggests:

- ➔ Following legalization of medicinal marijuana in 2008, Colorado saw an increase in the number of hydrocarbon burns due to the extraction of hash oil from cannabis.
- ➔ Between January 1, 2008 and December 31, 2013, 19 cases of hydrocarbon burns were reported
- ➔ In 2014, an additional 12 cases were reported in the first eight months

The average hospital stay to treat these burns was 10 days. 96% of the patients had upper extremity burns, while 68% of the people experienced burns to the head and neck. Butane extraction being the major contributor to the incidents regarding extraction injuries.

For further information regarding processing equipment, you can reference the Alberta Fire Code, Division B, Part 4.

Fumigation and Thermal Insecticidal Fogging

Edmonton Fire Rescue Services must be notified prior to fumigation within Cannabis Grow facilities as per AFC. Procedures for maintaining life-safety during fumigation processes shall be included in the Fire Safety Plan.

Certain occupancies will require the use of fumigation or fogging. Should you require these processes, consider these prior to engagement:

- ➔ The fire department shall be notified of any process involving fumigation or fogging. Consider reserving some space in your fire safety plan for this
- ➔ Eliminate all sources of ignition to any part of the building where the process is ongoing.
- ➔ Disconnect electric power to the premises
- ➔ Consider the fire alarm or sprinkler activation. Ensure the air temperature remains low to avoid these outcomes
- ➔ Restrict access to the premises, post warning signs and have someone on duty at each entrance to prevent unwarranted entry

For a comprehensive list of the approved pesticides from Health Canada, refer to the website: www.canada.ca

For specific information regarding fumigation and thermal insecticidal fogging, you can reference the Alberta Fire Code, Division B, Part 5.

Fire Protection & Detection Equipment

Installation Requirements

Installation requirements of specific equipment shall be based off occupancy grouping. Mercantile “Dispensaries” either recreational or medicinal will be classified as a Group E Occupancy. Industrial growing, cultivating and processing will be deemed as either Group F Div 1,2 or 3. Each will have their own standard for Fire Protection requirements.

For information regarding specific fire protection and detection equipment, you can refer to the referenced documents at the end of this guide.

Inspection, Testing, and Maintenance Requirements (ITM)

All ITM requirements shall conform to the requirements of the Alberta Fire Code. The Standard followed will be determined by the style of installation in your occupancy. All required Fire Protection and Detection equipment shall be installed by a qualified Journeyperson. All plans shall be forwarded to the Building and Fire AHJ prior to installation for review and approval.

Referenced Documents and Organizations

Alberta Fire Code
Alberta Building Code
The Canadian Electrical Code
The National Plumbing Code
City of Edmonton Zoning Bylaw
Safety Code Act
Alberta Occupational Health and Safety Act
AGLC - Retail Cannabis Store Handbook

NFPA 1 - Fire Code
NFPA 10 - Standard for Portable Fire Extinguishers
NFPA 12 - Standard on Carbon Dioxide Extinguishing Systems
NFPA 13 - Standard for the Installation of Sprinkler Systems
NFPA 14 - Standard for the Installation of Standpipe and Hose Systems
NFPA 30 - Flammable and Combustible Liquids Code
NFPA 55 - Compressed Gases and Cryogenic Fluids Code
NFPA 58 - Liquid Petroleum Gas Code
NFPA 68 - Explosion Prevention by Deflagration Venting
NFPA 69 - Standard on Explosion Prevention Systems
NFPA 72 - National Fire Alarm and Signaling Code
NFPA 91 - Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids

CAN/ULC-S524-06: Installation of Fire Alarm Systems
CAN/ULC-S536-13: Inspection and Testing of Fire Alarm Systems
CAN/ULC-S537-13: Verification of Fire Alarm Systems
CAN/ULC-S522 - Maintenance and Testing of Smoke Alarms

CSA C282 - Emergency Electrical Power Supply for Buildings

June 27, 2018