

Edmond Fire Department Plant Cultivation Facilities



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Purpose: To provide uniform guidelines that will provide for safe operations of plant cultivation facilities and in compliance with building and fire code requirements of the International Fire Code (IFC 2015) International Building Code (IBC), the National Fire Protection Association (NFPA) and Title 17 of the City of Edmond Ordinance.

– Fire Protection Systems

Plant Cultivation operations in commercial buildings are typically classified as F-1 occupancy. There are several common triggers for plant cultivation operations that require the installation of a fire sprinkler system.

1. Section 903.4 of the IFC specifically addresses F-1 sprinklers requirements with the most common trigger being a fire area exceeding 12,000 square feet.
2. Section 903.5 of the IFC, Marijuana facilities that fall under a Group H occupancy classification require further consideration for a sprinkler system. Group H occupancies includes operations using CO₂, LPG (Liquid Petroleum Gas), or other compressed gas systems.

– Interior Finishes

It is common in marijuana grow facilities to use a Visqueen or Mylar type plastic / polyethylene or polyester sheeting to cover walls and ceilings. Any use of plastic to enclose rooms or cover walls and/or ceilings must be installed in accordance with building and fire code requirements. Interior finishes must comply with flame spread ratings in accordance with Table 803.3 of the International Fire Code (IFC 2015).

(Note: Hanging plastic from the ceiling or suspended overhead structures to create wall dividers is typically NOT compliant with code provisions for a wall partition or interior finish.)

– **Electrical**

The amount of electricity needed for a cultivation operation can easily exceed that of other types of businesses. If the cultivation business/facility moves into an existing building, there is a strong likelihood that the electrical panel and wiring inside the building will require upgrading in order to accommodate the required power needed to cultivate plants utilizing grow lamps and ventilation equipment. It is not uncommon to have the electrical utility provider upgrade the amount of electricity feeding the building from the transformer outside.

All electrical systems and permitting are required to be done by licensed electricians and contractors, “Electrical Contractor Registration” B.R.C. 4-8-1. In addition:

1. A single line diagram of the existing and proposed electrical system, including the main electrical service National Electric Code (NEC) 215.5, shall be provided to the city. Electrical services which are 400 amps or greater must be reviewed and approved by an Edmond Electric member.
2. All electrical equipment is to be listed and labeled by an approved testing agency, NEC 110.3.
3. Flexible cords (extension cords) are not to be used as a substitute for fixed wiring nor run through or concealed by holes in walls, structural ceilings, suspended ceilings, dropped ceilings or floors; run through doorways, windows or similar openings; attached to building surfaces, NEC 400.8
4. Power strips with built-in overcurrent protection (“circuit breakers”) are allowed, provided they are plugged directly into a permanent electrical receptacle. Power strips may not be plugged into additional power strips (daisy chaining).

– **Fumigation and Insecticidal Fogging**

In marijuana facilities, fumigation and insecticidal fogging may be used to kill insects, rodents, other vermin, plant parasites, weed seeds, and fungi that adversely affect growth. Some fumigants are flammable under certain circumstances, and all fumigants are poisonous or toxic. Definitions of “fumigation” and “insecticidal fogging” should be looked at closely to determine if these processes are being utilized. To protect the public and firefighters, there are several requirements that must be followed when performing these operations:

1. Fire Department may require notification, at least 48 hours in advance, of performing these operations, including specific information about the location within the building, the products being used, and contact information for those conducting the operation. In these instances, the products being used must be approved by the fire department.
2. Written notice must be given to building occupants with enough notice to allow evacuation and must include information about the duration of the operation and all

hazards associated with the operation. Only those directly conducting the operation can remain in the building.

3. Sources of ignition must be secured before these operations commence and must remain secure until after the space has been ventilated. Sources of ignition include electricity, portable electronic devices (such as cell phones), telephone lines, and any other sources of spark or flame. Certain types of electrical appliances deemed safe for hazardous atmospheres may be allowed when approved by the fire department
4. Materials used to seal the affected structure or space must comply with flame propagation performance standards and must be approved by the fire department prior to installation.
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6. Personnel engaged in these operations must have proper respiratory protection available.
7. At the end of the operation, the affected structure or space must be safely and properly ventilated, and all fumigation or fogging product containers, residues, debris, and other materials must be properly disposed of.

Sulfur burners used to burn sulfur pills is a form of fumigation and must be treated as such. This method is typically utilized to treat powdery mildew on the plants.

Marijuana cultivation or grow operations include similar materials to that of other indoor botanical or greenhouse operations. They may employ the use of pesticides, insecticidal fumigation or fogging techniques, in addition to nutrients and fertilizers. The materials can range from benign to toxic. Each state's Department of Agriculture may have regulations and defined enforcement related to hazardous materials and should be consulted as a resource.

- Pesticides and Fertilizers

Cultivation and extraction operations generally contain hazardous materials regulated by fire code, such as fertilizers, pesticides, and flammable gases and liquids. In some cases, retail facilities sell flammable liquids or gases for do-it-yourself extraction. There are several factors that need to be considered to remain compliant with the storage and use of these materials:

1. All hazardous materials must be classified in accordance with the categories and definitions provided in fire code. This can be a complicated process and may require professional assistance.
2. Once hazardous materials have been classified, there is a maximum allowable quantity that can be stored in a facility. It is possible, and even likely, that different products share a classification and must be counted together towards the maximum allowable quantity. There are options to increase the maximum allowable quantity in a facility, such as use of special hazmat cabinets, building rooms with fire-resistive construction to create control areas, and installation of fire sprinkler systems.
3. Facilities where hazardous materials are stored in certain quantities must have special signage installed outside to make firefighters aware of what is in the building.

- Gas Detection and Alarms

Carbon Dioxide is a very common gas used within the marijuana cultivation operation and can also be used to remove the oil from the plant as discussed within the Hazardous Material section. The IFC does not require detection of CO₂ unless it is used within a "beverage dispensing application" where the CO₂ system exceeds 100 pounds (Section 5307 of the IFC). Although this section within the IFC is not related to marijuana, the hazard of an oxygen depleted atmosphere would be the same. Bottles of compressed CO₂ are used within the grow operation to enrich the atmosphere with CO₂ to assist in plant growth. If the amount of the CO₂ used within a room is an amount that could create an asphyxiation hazard than detection and local alarms should be provided. This would need to be determined by the AHJ based quantity of the CO₂ versus the cubic feet of the room.

When a gas detection system is required, the meter is required to be listed and labeled in accordance with UL 2075. Mechanical interlocks that shut down the flow of gas to the unit when gas is detected are required in any facility that is not constantly attended. If personnel are constantly attending the process in which gas is being used and can physically shut off the gas supply, the interlock is not required. In either case, atmospheric monitoring must give an audible alarm indicating the presence of gas in the air has reached its permissible exposure limit (PEL). Shutdown procedures must be followed by the manufactures recommendations and the room must be vacated until all alarms read normal. All equipment used in the detection of flammable and/or toxic gases must be approved by the AHJ and may require construction and mechanical permits. Emergency plans for administrative controls and shutdown should be reviewed and approved by the AHJ.

- **Fire Department Access**

Buildings/facilities must have at least one all-weather road that is wide enough and strong enough to support the size and weight of fire department apparatus. Roads must extend close enough to buildings to allow for firefighting operations. Roads may have special requirements for "fire lane" signage to disallow parking. A means for turning fire department apparatus around may be required for roads that contain dead ends or no outlet.

Gates or barricades that obstruct roads must be approved by Building and Fire Code Services branch or the fire department.

All required exterior doors must remain operable for emergency access by firefighters. Eliminating the function of any exterior doors requires prior approval that cannot be granted in every circumstance, and where allowed, the door must be marked with a sign stating THIS DOOR BLOCKED.

Certain equipment rooms contained within a building may require identifying signage to aid firefighters.

1. Rooms containing fire protection equipment (fire alarm panels, fire sprinkler valves, etc.)
2. Rooms containing controls for air-conditioning equipment.
3. Rooms containing utility equipment for gas or electrical service.
4. Rooms containing hazardous materials.

- **Exits and Exit Signage, Egress**

Security measures are often extreme in marijuana facilities. The desire for security in no way overrides the minimum requirements for exiting and egress. Common issues associated with exits and egresses are as follows:

1. Number of exits shall be in accordance with Table 1006.2.1 and Table 1006.3.2(2) and Section 1017.2 of the IFC.
2. Means of egress cannot be concealed in any way.
3. Exit doors and their function cannot be eliminated without prior approval.
4. Exterior doors that have been rendered non-functional and that retain a functional door appearance are required to have a sign affixed to the exterior of the door with the words THIS DOOR BLOCKED; reference Section 504.2 of the IFC.

5. Where 2 or more exits are required, egress doors are required to swing in the direction of egress travel.
6. Where more than one exit is required, illuminated exit signs are to be provided that must be readily visible from any direction of egress travel.
7. Intermediary exit signs may also be required per Section 1013 of the IFC.
8. H occupancies require specific considerations for exiting.

- **Ventilation**

Marijuana facilities must implement and maintain appropriate ventilation and filtration systems to satisfy unwholesome or noxious odor nuisance standards that may be in place within the local jurisdiction. Generally, the AHJ may require that the odor of marijuana must not be perceptible at the exterior of the building, at the licensed premises or at any adjoining use of the property.

The AHJ may or may not mandate equipment specifications about filtration; however, all marijuana establishments are strongly encouraged to adopt best management practices with regard to implementing state-of-the-art technologies in mitigating marijuana odor, such as air scrubbers and charcoal filtration systems.

Marijuana product manufacturing facilities and testing facilities must implement appropriate exhaust ventilation systems to mitigate noxious gasses or other fumes used or created as part of any production process. Exhaust ventilation equipment is required to be appropriate for the hazard involved and must comply with local fire and mechanical codes.

- **Premise Identification**

Most cultivation and extraction operations try to remain discrete. This is often part of their overall security method and not wanting to draw a lot of attention to what they are doing. It is not unusual for the businesses to remove all markings from the building. All buildings are required to be provided with address identification. This address must be visible from the street or road fronting the property and contrasting with the background of the building. Signage that identifies the name of the business is not regulated by fire code but may be regulated by local city or county government.

- **Building Permits- Occupancy Classification**

Plans and permits are required per the International Building Code (IBC) Section 105 and 106. Contact the Planning Department or Building and Fire Code Services at 10 S. Littler Ave, Edmond OK 73034 (405) 359-4780 for specific information on permit applications and requirements.

The Use and Occupancy Classification of Marijuana Business Functions may be found in Chapter 3 of the International Building Code (IBC), and International Fire Code (IFC). Typical occupancies are summarized as follows:

1. Medical / Recreational Marijuana Center, Store, or "Dispensary" – M Occupancy; B Occupancy if there is patient care and similar.
2. Marijuana Plant Cultivation Locations or "Grow Facilities" – F-1 Occupancy [Retail Marijuana Cultivation Facility].
3. Marijuana Oil Extraction Operations – F-1 Occupancy*1.
4. Marijuana-Infused Product Kitchens/Bakeries – F-1 Occupancy.

- **Additional Requirements for Grow Facilities**

1. Carbon dioxide generations systems must be listed and labeled, properly installed and functioning with a concentration level of no more than 1500 ppm per IMC 301.4
2. Provide cable or chain to restrain CO2 tanks per the fire code.
3. Backflow prevention on hose bibs and faucets required per IPC 608.1

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