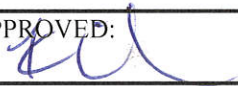




Fire Chiefs Association of **Santa Cruz County**
FIRE PREVENTION OFFICERS SECTION

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	TITLE: CANNABIS GUIDELINES	

**GUIDELINE TO FIRE CODE REQUIREMENTS FOR CANNABIS RELATED
BUSINESS OPERATIONS WITHIN SANTA CRUZ COUNTY**

PURPOSE

The purpose of this standard is to provide guidance for persons engaging in cannabis related business operations in Santa Cruz County. Federal, State and local codes and regulations apply to facilities, buildings, and operations associated with Cannabis. These guidelines are an effort to highlight some of the specific regulations that may apply to Cannabis operations.

SCOPE

This document shall serve as guidance for the permitting, construction, and operation of cannabis related business operations. This shall include the cultivation, production, and distribution of cannabis related products.

TERMS AND DEFINITIONS

- **Authority Having Jurisdiction (AHJ):** A federal, state, local department, or individual such as a fire chief, fire marshal, or fire prevention bureau having statutory authority.
- **California Fire Code (CFC):** The regulations adopted by the State of California for the enforcement of fire regulations. Currently the 2016 Edition of Title 24 Part 9.
- **California Building Code (CBC):** The regulations adopted by the State of California for the enforcement of building regulations. Currently the 2016 Edition of Title 24 Part 2.
- **California Electric Code (CEC):** The regulations adopted by the State of California for the enforcement of electrical regulations. Currently the 2016 Edition of Title 24 Part 3.
- **Cannabis Manufacturing Facility:** A location within which raw cannabis is transformed into a cannabis concentrate, a tincture, edible product, drink, topical product, or any other similar products. This includes the production, preparation, propagation, or compounding of cannabis or cannabis products, directly or indirectly, by extraction methods, independently by means of chemical synthesis, or by a combination of extraction and chemical synthesis.
- **Closed Loop (Volatile or Non-volatile) Extraction:** An extraction system that is designed to recover the solvents employed to extract cannabis extracts that is built to codes of recognized and generally accepted good engineering standards, such as those of:
 - (i) American National Standards Institute (ANSI);
 - (ii) Underwriters Laboratories (UL); or
 - (iii) The American Society for Testing and Materials (ASTM).
- **CO₂ Enrichment:** Is a method used to increase plant growth response and yield.

- **F-1 Occupancy:** Factory Industrial Group F Occupancy includes among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H Hazardous or Group S storage occupancy. Group F-1 Moderate hazards shall include but not be limited to among others, hemp products and tobacco.
- **National Fire Protection Association (NFPA):** Nationally recognized fire prevention standards that are often referenced by the California Fire Code (CFC).
- **Nonvolatile extraction:** The manufacture of cannabis products using nonvolatile solvents such as supercritical fluid extraction (e.g., carbon dioxide processed using a closed-loop system below 5,000 pounds per square inch), uncompressed liquid solvents (e.g., ethanol, methanol, acetone, ‘naphtha’), or no solvents to produce kief, bubble hash, rosin, and the like (Adult Use of Marijuana Act, 26100(a) Manufacturers and Testing Laboratories).
- **Tenant Improvement (TI):** The addition, modification, or demolition of a building or structure.
- **Volatile:** A volatile substance is defined as a substance that changes readily from a solid or liquid to a vapor at normal temperatures and pressures.
- **Volatile Extraction:** The use of volatile solvents such as compressed liquid hydrocarbons (e.g., butane or propane, or CO₂ processed in a close loop system above 5,000 pounds per square inch) to manufacture cannabis products such as butane honey oil (BHO), shatter, and the like (Adult Use of Marijuana Act, 26100(a) Manufacturers and Testing Laboratories). (Alternative definition): -means volatile organic compounds, including: (1) explosive gases, such as Butane, Propane, Xylene, Styrene, Gasoline, Kerosene, O₂ or H₂; and (2) dangerous poisons, toxins, or carcinogens, such as Methanol, Isopropyl Alcohol, Methylene Chloride, Acetone, Benzene, Toluene, and Tri-chloro-ethylene (Sec. 11362.3 California Health and Safety Code).

GENERAL REQUIREMENTS

This guideline is intended to provide the applicant with the necessary information for the successful submittal of plans and specifications for the construction, and operation of a cannabis related business. All plans and specifications must meet the minimum requirements found within the CFC and CBC. Typically, most jurisdictions require specialized systems (fire protection systems, CO₂ enrichment, etc.) to be submitted as a deferred submittal. A permit must be obtained prior to the start of any construction unless specific written permission is obtained from the AHJ.

Cannabis operations are regulated under the “F-1” occupancy classification.

It is understood that facility security and access control are paramount to the safety of your employees and the success of your business. However, the design, installation and operation of security measures must be in accordance with all applicable building and fire codes. We recommend contacting your security professional early during the design phase of the project to achieve the maximum level of security while still meeting the regulatory requirements. We further recommend contacting a fire protection professional (fire protection engineer or similar) versed in the various systems and processes to review your plans for completeness and determination with meeting the regulatory requirements set forth in the CDC, CFC, NFPA, CEC, and CMC.

Safety Data Sheets (SDS) for all pesticide or other agricultural chemicals, in addition to all chemicals used or stored in the facility shall be maintained and readily available for emergency personnel. Safety Data Sheets (SDS) shall be maintained in an approved security box (KNOX® Haz-Mat Document and key storage cabinet – Series 1300) affixed to the exterior of the facility.

(CFC §'s 506.1, 315, 404, 407)

PERMITS

Construction permits are required for the construction, enlargement, alteration, repair, demolition, or change in occupancy of a building or structure and are typically issued by the building department. Likewise, any work performed on the electrical, mechanical, or plumbing system may also require a permit from the building department. The installation and/or modification of fire protection systems requires a permit and is normally issued by the fire department.
(CFC §105.1)

Operational permits allow the applicant to conduct an operation or a business for which a permit is required and regulated by the CFC. The following are the most common annual operational permits that may be applicable for cannabis operations:

- **Annual Establishment or Business Permit** - (commercial occupancies operating within a city)
- **Annual LPG Use and Storage Permit** - required for 1 pound or more of propane or butane (i.e. extractions)
- **Annual CO₂ Enrichment System Permit** – Including natural gas generators and for any system containing more than 100 lbs. of CO₂
- **Annual Compressed Gas Use and Storage Permit** - required for 6,000 cu/ft or more of an inert. (1 pound of CO₂ = 8.74 cu/ft)
- **Annual Fumigation / Thermal Insecticide Fogging Annual Extraction Process Permit**
- **Annual Flammable and Combustible Liquids Use and Storage Permit**

Inspections normally take place during the construction phase and annually to ensure operations are in accordance with previously approved methods.
(CFC §105.1.2)

GENERAL FIRE SAFETY REQUIREMENTS

Fire safety requirements are maintained in Chapter 3 of the CFC and regulate the occupancy and maintenance of all structures and premises for precautions against fire and the spread of fire as well as general fire safety requirements. Specific requirements include:

- Waste container size and location
- Ignition sources, and use of open flames
- Powered industrial trucks and equipment
- Impact protection
- Fueled equipment
- Smoking
- Hazards to firefighters

It should be noted that security devices that emit any medium (smoke, fog, etc.) that could obscure a means of egress in any building or premise is strictly prohibited under CFC Section 316 Hazard to Fire Fighters.

Disposal of chemicals, dangerous or hazardous waste must be conducted in a manner consistent with federal, state and local laws, regulations, rules or other requirements. This may include, but is not limited to, the disposal of all pesticide or other chemicals used in the cultivation process, certain solvents or other chemicals used in the production of cannabis concentrates or any cannabis soaked in a flammable solvent for purposes of producing a concentrate.

(CFC Chapter 3, CFC Chapter 50, CFC Chapter 53, CFC Chapter 57, CFC Chapter 58, CFC Chapter 61)

EMERGENCY ACCESS AND EGRESS

FIRE DEPARTMENT ACCESS: Approved fire apparatus access roads shall be provided for every facility, building or portion of a building. The fire apparatus access road is developed to allow the
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passage of fire apparatus. Fire department access shall include roadways, driveways, and fire lanes. All Fire Apparatus Access Roads shall meet the requirements of CFC §503 et al.
(CFC §503 et al)

ADDRESSING: Proper addressing of the facility is paramount to ensure that fire personnel can quickly locate your business. Typically, your address shall be placed on the building side that faces the street from which the business is addressed from. Address numbers shall be a minimum of six (6) inches in height or as otherwise required by the AHJ. Additional address requirements may also be required for secondary buildings or where addressing is not readily visible or apparent.
(CFC §505.1)

EMERGENCY ACCESS KEY BOX: KNOX® Key boxes hold keys to the facility and are used to rapidly gain access to the building in the event of an after-hours emergency. These key boxes are UL listed and provide a high level of security, and may also be monitored by your alarm system for tamper. Not all the departments use this system, please confirm with your fire department if they use the KNOX® Security System, or an alternate.
(CFC §506 et al)

ROADWAYS, DRIVEWAYS and ACCESS ROADS are all synonymous and all roadways shall comply with Section 503 et al of the adopted fire code of the AHJ.
(CFC §202)

BUILDING UTILITIES

Utilities found within a building or facility are regulated in **CFC Chapter 6** and apply to the installation, operation, and maintenance of fuel-fired systems, emergency and standby power systems, electrical equipment, and mechanical systems.

Emergency and standby power systems are required to meet the provisions of CFC and CBC as well as meeting NFPA and UL requirements. Stationary power systems require a permit from the Monterey Bay Unified Air Pollution Control District. A copy of approval from MBUAPCD will be required prior to the approval of plans and permits for power systems.
(CFC §604 et al)

The CFC prohibits the use of extension cords or power strips as permanent wiring to equipment, lighting, fans, etc. The electrical loads and wiring for grow lighting, fans, etc. will need to be reviewed and permitted for use. An electrical analysis will need to be submitted along with manufacturer specification sheets, calculations, and single line diagrams. Plans to install all electrical systems and appliances shall be submitted to the Building Department for review, approval and issuance of a permit to install.
(CFC §605.1, CFC 605.5, CFC §605.7)

The electrical design and installation shall meet the requirements of the CEC.

WATER SUPPLY

Fire flow requirements will be determined on each projects' individual merits. Fire-flow and flow duration shall not be less than that specified in Appendix B of the California Fire Code. If an adequate water supply is not available, the AHJ is authorized to use NFPA 1142 to determine the amount of water to be stored on site for fire protection. This option is only available for those areas not serviced by a recognized water purveyor.

Fire hydrants may be required for your project. Quantity will be based on the required fire flow and distribution as determined by Appendix C of the California Fire Code.
(CFC §507 et al)

FIRE PROTECTION SYSTEMS

Fire protection systems involve the design, installation, inspection, operation, testing and maintenance of all fire protection systems. This includes:

- Automatic Sprinkler Systems
- Alternative Automatic Fire-Extinguishing Systems
- Standpipe Systems
- Portable Fire Extinguishers
- Fire Alarm and Detection Systems
- Emergency Alarm Systems
- Smoke Control Systems
- Explosion Control
- Fire Pumps

Typically, these systems are treated as a deferred submittal because of the specialized and technical nature of the system. California requires specialized licensing for contractors involved in fire protection systems.

A Building Code analysis should be submitted with any construction permit application or change of occupancy use application. Typically, a building code analysis is performed by the design professional preparing the initial submittal documents. This analysis will identify if the building will require any of the above listed fire protection systems, or alterations to an existing system.

(CFC §901 et al)

EXITING

Buildings and facilities are required to be provided with exiting meeting the provisions of **Chapter 10 of the CBC**. The provisions of this chapter regulate the design, construction, and arrangement of exiting systems. The following elements highlight the key provisions found within Chapter 10:

- Minimum exit access shall be maintained at all times.
- Minimum aisle widths shall be maintained at all times.
- Enhanced building security shall not interfere with exiting measures, and shall by no means impede egress for the facility's occupants or firefighters in the event of an emergency.
- Electronic access control shall not interfere with the exiting components
- All locking hardware on doors (interior or exterior) shall meet the minimum requirements for exiting.
- All doors and door hardware shall be identified on the specifications and plans

HAZARD IDENTIFICATION

Unless otherwise exempted by the fire code official, visible hazard identification signs as specified in NFPA 704 for the specific material contained shall be placed on stationary containers and aboveground tanks and entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated. Individual containers, cartons or packages shall be conspicuously marked or labeled in an approved manner. Rooms or cabinets containing compressed gases shall be conspicuously labeled: "COMPRESSED GAS".

All signs and markings required shall not be obscured or removed, and shall be in English as the primary language.

(CFC §5003.5, CFC §5003.5.1, CFC §503.6)

ENRICHMENT

CO₂ enrichment is a method used to enhance plant growth and leads to a faster plant growth and higher plant yield. CO₂ enrichment systems found in grow rooms intentionally flood the rooms with CO₂ whereby creating a potential asphyxiation hazards and are regulated by operational and system installation permits issued by the Fire Department. Additional alarm and monitoring requirements may be required.

CO₂ generators operating from a fuel-fired source that, as a part of the combustion process, off-gases CO₂ and carbon monoxide (CO) is regulated by the California Mechanical Code as a non-vented fuel-fired appliance and requires a CO detector interlocked to an exhaust fan that operates on high levels of CO. The use of portable propane tanks and cylinders to supply these generators is prohibited. If CO₂ are used, they are required to be supplied from the building natural gas system, or a commercial hard piped propane system.

The 2016 California Fire Code has new code language addressing these systems. However, CO₂ enrichment systems found in cannabis grow rooms are different in that they intentionally flood the grow rooms with CO₂. These systems present potential asphyxiation hazards and are regulated by operational and system installation permits issued by the local fire department. Typical CO₂ levels in rooms are kept at less than 1,500 parts per million (ppm). For context, the Occupational Safety and Health Administration (OSHA) eight-hour permissible exposure limit (PEL) is 5,000 ppm. These systems are required to have a local CO₂ detection system in each enriched room set to alarm at 5,000 ppm and a master control valve to shut off the flow of CO₂ at the source. Warning signs are also required. Typical CO₂ enrichment can be in the form of compressed/liquefied CO₂ systems or a CO₂ generator supplied by natural gas. Compressed/liquefied CO₂ systems can be as small as a few cylinders located inside each grow room or as large as a bulk tank located outdoors. CO₂ generators operate from a fuel-fired source that, as a part of the combustion process, off-gases CO₂ and carbon monoxide (CO). Because of the CO hazard, this appliance is regulated by the California Mechanical Code as a non-vented fuel-fired appliance and requires a CO detector interlocked to an exhaust fan that operates on high levels of CO.
(CFC §908.7, CFC §5307.5.2 and CFC §5308)

EXTRACTION

If plant oil extractions will be performed, provide complete details of the proposed extraction process, equipment, mechanical exhaust system, and room construction in a complete permit submittal package to the building and fire departments. All extractions must be performed in an enclosed room. All exhaust system installations and room construction require a permit. Unless listed extraction equipment is used (i.e. UL or equivalent), **CFC §104.7.2** requires an engineering report justifying that the equipment is adequately constructed to process a hazardous material.

The use of butane or other similar flammable gases in open systems (i.e. where the agent is directly released to the atmosphere) is prohibited by the CFC. Closed systems are approved by permit only. A review is required to confirm that the system complies with the CFC requirements.

A local hydrocarbon detector shall be used at all times the extraction equipment is in operation. Exhaust system shall be rated for the use. Where closed systems use refrigeration recovery machines, the unit must be rated for use with hydrocarbon refrigerants. Where butane is stored/used on site, an annual operational hazardous material permit is required.

Alcohol or other flammable/combustible liquid extractions where the liquid is boiled, distilled, or evaporated shall be in compliance with California Fire Code and NFPA 30. The solvent used in the process (typically alcohol) must be identified by the applicant. The operation must be conducted under a hazardous exhaust hood that is rated for exhausting flammable vapors.

REGULATORY CONSIDERATIONS

Local Safety Inspections. Licensees may be subject to inspection by the local fire department, building inspector, or code enforcement officer to confirm that no health or safety concerns are present. An annual fire safety inspection may result in the required installation of fire suppression devices, or other means necessary for adequate fire safety.

Any and all occupancies discovered operating cannabis establishments or businesses (including, but not limited to, infused product operations, cultivation, testing labs, and sales occupancies) not in compliance with all requirements of state and local regulatory requirements may result in the issuance of a “Stop Work Order” and a summons being issued to all offending parties.