

*(Effective until July 1, 2023)*

**WAC 51-54A-3900 Marijuana processing or extraction facilities.**

**SECTION 3901—ADMINISTRATION**

**3901.1 Scope.** Facilities used for marijuana processing or extraction that utilize chemicals or equipment as regulated by the International Fire Code shall comply with this chapter and the International Building Code. The extraction process includes the act of extraction of the oils and fats by use of a solvent, desolventizing of the raw material and production of the miscella, distillation of the solvent from the miscella and solvent recovery. The use, storage, transfilling, and handling of hazardous materials in these facilities shall comply with this chapter and the International Building Code.

**3901.2 Application.** The requirements set forth in this chapter are requirements specific only to marijuana processing and extraction facilities and shall be applied as exceptions or additions to applicable requirements set forth elsewhere in this code.

**3901.2.1** For the purposes of this chapter, marijuana processing and extraction shall be limited to those processes and extraction methods that utilize chemicals defined as hazardous by the International Fire Code and are regulated as such. Such processes and extraction methods shall meet the requirements of this chapter and other applicable requirements elsewhere in this code and its referenced standards.

EXCEPTION: Provisions of WAC 314-55-104 do not apply to this chapter.

**3901.2.2** The use of equipment regulated by the International Fire Code for either marijuana processing or marijuana extraction shall meet the requirements of this chapter and other applicable requirements elsewhere in this code.

**3901.3 Multiple hazards.** Where a material, its use or the process it is associated with poses multiple hazards, all hazards shall be addressed in accordance with Section 5001.1 and other material specific chapters.

**3901.4 Existing buildings or facilities.** Existing buildings or facilities used for the processing of marijuana shall comply with this chapter.

**3901.5 Permits.** Permits shall be required as set forth in Section 105.6 and 105.7.

**SECTION 3902—DEFINITIONS**

**Desolventizing.** The act of removing a solvent from a material.

**Finding.** The results of an inspection, examination, analysis or review.

**Marijuana processing.** Processing that uses chemicals or equipment as regulated by the International Fire Code; this does not include the harvesting, trimming, or packaging of the plant.

**Miscella.** A mixture, in any proportion, of the extracted oil or fat and the extracting solvent.

**Observation.** A practice or condition not technically noncompliant with other regulations or requirements, but could lead to noncompliance if left unaddressed.

**Transfilling.** The process of taking a gas source, either compressed or in liquid form (usually in bulk containers), and transferring it into a different container (usually a smaller compressed cylinder).

**SECTION 3903—PROCESSING OR EXTRACTION OF MARIJUANA**

**3903.1 Location.** Marijuana processing shall be located in a building complying with the International Building Code and this code. Requirements applied to the building shall be based upon the specific needs for mitigation of the specific hazards identified.

**3903.2 Systems, equipment, and processes.** Systems, equipment, and processes shall be in accordance with Sections 3903.2.1 through 3903.2.7. In addition to the requirements of this chapter, electrical equipment shall be listed or evaluated for electrical fire and shock hazard in accordance with RCW 19.28.010(1).

**3903.2.1 Application.** Systems, equipment, and processes shall include, but are not limited to, vessels, chambers, containers, cylinders, tanks, piping, tubing, valves, fittings, and pumps.

**3903.2.2 General requirements.** In addition to the requirements in Section 3903, systems, equipment, and processes shall also comply with Section 5003.2, other applicable provisions of this code, the International Building Code, and the International Mechanical Code. The use of ovens in post-process purification or winterization shall comply with Section 3903.2.7.

**3903.2.3 Systems and equipment.** Systems or equipment used for the extraction of oils from plant material shall be listed and approved for the specific use. If the system used for extraction of oils and products from plant material is not listed, then a technical report prepared by a Washington licensed engineer shall be provided to the code official for review and approval.

**3903.2.4 Change of extraction medium.** Where the medium of extraction or solvent is changed from the material indicated in the technical report, or as required by the manufacturer, the technical report shall be revised at the cost of the facility owner, and submitted for review and approval by the fire code official prior to the use of the equipment with the new medium or solvent.

**3903.2.5 Required technical report.** The technical report documenting the equipment design shall be submitted for review and approval by the fire code official prior to the equipment being installed at the facility.

**3903.2.5.1 Content of technical report and engineering analysis.** All, but not limited to, the items listed below shall be included in the technical report.

1. Manufacturer information.
2. Engineer of record information.
3. Date of review and report revision history.
4. Signature page shall include:
  - 4.1 Author of the report;
  - 4.2 Date of report; and
  - 4.3 Seal, date and signature of engineer of record performing the design.
5. Model number of the item evaluated. If the equipment is provided with a serial number, the serial number shall be included for verification at the time of site inspection.

6. Methodology of the design review process used to determine minimum safety requirements. Methodology shall consider the basis of design, and shall include a code analysis and code path to demonstrate the reason why specific codes or standards are applicable or not.

7. Equipment description. A list of all components and subassemblies of the system or equipment, indicating the material, solvent compatibility, maximum temperature and pressure limits.

8. A general flow schematic or general process flow diagram (PFD) of the process, including maximum temperatures, pressures and solvent state of matter shall be identified in each step or component. It shall provide maximum operating temperature and pressure in the system.

9. Analysis of the vessel(s) if pressurized beyond standard atmospheric pressure. Analysis shall include purchased and fabricated components.

10. Structural analysis for the frame system supporting the equipment.

11. Process safety analysis of the extraction system, from the introduction of raw product to the end of the extraction process.

12. Comprehensive process hazard analysis considering failure modes and points of failure throughout the process. This portion of the review should include review of emergency procedure information provided by the manufacturer of the equipment or process and not that of the facility, building or room.

13. Review of the assembly instructions, operational and maintenance manuals provided by the manufacturer.

14. Report shall include findings and observations of the analysis.

15. List of references used in the analysis.

**3903.2.6 Building analysis.** The technical report, provided by the engineer of record, shall include a review of the construction documents for location, room, space or building and include recommendations to the fire code official.

**3903.2.6.1 Site inspection.** The engineer of record of the equipment shall inspect the installation of the extraction equipment for conformance with the technical report and provide documentation to the fire code official that the equipment was installed in conformance with the approved design.

**3903.2.7 Post-process purification and winterization.** Post-processing and winterization involving the heating or pressurizing of the miscella shall be approved and performed in an appliance listed for such use. Domestic or commercial cooking appliances shall not be used. The use of industrial ovens shall comply with Chapter 30.

EXCEPTION: An automatic fire extinguishing system shall not be required for batch-type Class A ovens having less than 3.0 cubic feet of work space.

**3903.3 Construction requirements.**

**3903.3.1 Location.** Marijuana extraction shall not be located in any building containing a Group A, E, I or R occupancy.

**3903.3.1.1 Extraction room.** The extraction equipment and processes utilizing hydrocarbon solvents shall be located in a room or area dedicated to extraction.

**3903.3.2 Egress.** Doors installed on rooms or areas dedicated to extraction shall be equipped with panic hardware or fire exit hardware.

**3903.3.2.1 Facility egress.** Egress requirements shall be in compliance with Chapter 10 of the International Building Code.

**3903.3.3 Ventilation.** Ventilation shall be provided in compliance with Chapter 4 of the International Mechanical Code.

**3903.3.4 Control area.** Control areas shall comply with Section 5003.8.3.

**3903.3.5 Ignition source control.** Extraction equipment and processes using flammable or combustible gas or liquid solvents shall be provided with ventilation rates for the room to maintain the concentration of flammable constituents in air below 25 percent of the lower flammability limit of the respective solvent. If not provided with the required ventilation rate, Class I Division II electrical requirements shall apply to the entire room.

**3903.3.6 Interlocks.** When a hazardous exhaust system is provided, all electrical components within the extraction room or area shall be interlocked with the hazardous exhaust system, and when provided, the gas detection system. When the hazardous exhaust system is not operational, then light switches and electrical outlets shall be disabled. Activation of the gas detection system shall disable all light switches and electrical outlets.

**3903.3.7 Emergency power.**

**3903.3.7.1 Emergency power for extraction process.** Where power is required for the operation of the extraction process, an automatic emergency power source in accordance with Section 5004.7 and 604 shall be provided. The emergency power source shall have sufficient capacity to allow safe shutdown of the extraction process plus an additional 2 hours of capacity beyond the shutdown process.

**3903.3.7.2 Emergency power for other than extraction process.** An automatic emergency power system in accordance with Section 604 shall be provided when any of the following items are installed:

1. Extraction room lighting;
2. Extraction room ventilation system;
3. Solvent gas detection system;
4. Emergency alarm systems;
5. Automatic fire extinguishing systems.

**3903.3.8 Continuous gas detection system.** For extraction processes utilizing gaseous hydrocarbon-based solvents, a continuous gas detection system shall be provided. The gas detection threshold shall not exceed 25 percent of the LEL/LFL limit of the materials.

**3903.4 Carbon dioxide enrichment or extraction.** Extraction processes using carbon dioxide shall comply with this section.

**3903.4.1 Scope.** Carbon dioxide systems with more than 100 pounds of carbon dioxide shall comply with Sections 3903.4 through 3903.4.3. This section is applicable to carbon dioxide systems utilizing compressed gas systems, liquefied-gas systems, dry ice, or on-site carbon dioxide generation.

**3903.4.2 Permits.** Permits shall be required as set forth in Sections 105.6 and 105.7.

**3903.4.3 Signage.** At the entrance to each area using or storing carbon dioxide, signage shall be posted indicating the hazard. Signs shall be

durable and permanent in nature and not less than 7 inches wide by 10 inches tall. Signs shall bear the warning "DANGER! POTENTIAL OXYGEN DEFICIENT ATMOSPHERE." NFPA 704 signage shall be provided at the building main entry and the rooms where the carbon dioxide is used and stored.

**3903.5 Flammable or combustible liquid.** The use of a flammable or combustible liquid for the extraction of oils and fats from marijuana shall comply with this section.

**3903.5.1 Scope.** The use of flammable and combustible liquids for liquid extraction processes where the liquid is boiled, distilled, or evaporated shall comply with this section and NFPA 30.

**3903.5.2 Location.** The process using a flammable or combustible liquid shall be located within a hazardous exhaust fume hood, rated for exhausting flammable vapors. Electrical equipment used within the hazardous exhaust fume hood shall be listed or approved for use in flammable atmospheres. Heating of flammable or combustible liquids over an open flame is prohibited.

[Statutory Authority: RCW 19.27.031 and 19.27.074. WSR 21-04-003, § 51-54A-3900, filed 1/20/21, effective 2/20/21. Statutory Authority: RCW 19.27.031, 19.27.074 and chapter 19.27 RCW. WSR 19-02-086, § 51-54A-3900, filed 1/2/19, effective 7/1/19.]

***(Effective July 1, 2023)***

**WAC 51-54A-3900 Reserved.**

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