

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-0105 Permits.

SECTION 105 SCOPE AND GENERAL REQUIREMENTS

~~((105.6.4 Carbon dioxide systems. An operational permit is required for carbon dioxide systems having more than 100 pounds of carbon dioxide.~~

~~105.6.4.9 Marijuana extraction systems. An operational permit is required to use a marijuana/cannabis extraction system regulated under WAC 314-55-104.)~~

105.6.30 Mobile food preparation vehicles. A permit is required for mobile preparation vehicles equipped with appliances that produce smoke or grease-laden vapors or utilize LP-gas systems or CNG systems.

~~((105.7.19 Marijuana extraction systems. A construction permit is required to install a marijuana/cannabis extraction system regulated under WAC 314-55-104.~~

~~105.7.20))~~ **105.7.26 Underground supply piping for automatic sprinkler system.** A construction permit is required for the installation of the portion of the underground water supply piping, public or private, supplying a water-based fire protection system. The permit shall apply to all underground piping and appurtenances downstream of the first control valve on the lateral piping or service line from the distribution main to one foot above finished floor of the facility with the fire protection system. Maintenance performed in accordance with this code is not considered to be a modification and does not require a permit.

EXCEPTIONS: 1. When the underground piping is installed by the aboveground piping contractor.
2. Underground piping serves a fire protection system installed in accordance with NFPA 13D.

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-0202 General definitions.

SECTION 202 GENERAL DEFINITIONS

ADULT FAMILY HOME. A dwelling, licensed by Washington state, in which a person or persons provide personal care, special care, room and board to more than one but not more than six adults who are not related by blood or marriage to the person or persons providing the services.

ALERT SIGNAL. A distinctive signal indicating the need for trained personnel and occupants to initiate a specific action, such as shelter-in-place.

ALERT SYSTEM. Approved devices, equipment and systems or combinations of systems used to transmit or broadcast an alert signal.

ASSISTED LIVING FACILITY. A home or other institution, licensed by the state of Washington, providing housing, basic services and assuming general responsibility for the safety and well-being of residents under chap-

ters 18.20 RCW and 388-78A WAC. These facilities may provide care to residents with symptoms consistent with dementia requiring additional security measures.

CHILD CARE. For the purposes of these regulations, child care is the care of children during any period of a 24-hour day.

CHILD CARE, FAMILY HOME. A child care facility, licensed by Washington state, located in the dwelling of the person or persons under whose direct care and supervision the child is placed, for the care of twelve or fewer children, including children who reside at the home.

CLUSTER. Clusters are multiple *portable school classrooms* separated by less than the requirements of the building code for separate buildings.

COVERED BOAT MOORAGE. A pier or system of floating or fixed access ways to which vessels on water may be secured and any portion of which are covered by a roof.

ELECTRICAL CODE. The National Electrical Code, promulgated by the National Fire Protection Association, as adopted by rule or local ordinance under the authority of chapter 19.28 RCW.

~~((EXISTING. Buildings, facilities or conditions that are already in existence, constructed or officially authorized prior to the adoption of this code.))~~

GRAVITY-OPERATED DROP OUT VENTS. Automatic smoke and heat vents containing heat-sensitive glazing designed to shrink and drop out of the vent openings when exposed to fire.

HOSPICE CARE CENTER. A building or portion thereof used on a 24-hour basis for the provision of hospice services to terminally ill inpatients.

MOBILE FOOD PREPERATION [PREPARATION] VEHICLE. Mobile food preparation vehicles that are equipped with appliances that produce smoke or grease-laden vapors or utilize LP-gas systems or CNG systems for the purpose of preparing and serving food to the public. Vehicles intended for private recreation shall not be considered mobile food preparation vehicles.

MOTOR VEHICLE. Includes, but not limited to, a vehicle, machine, tractor, trailer or semitrailer, or any combination thereof, propelled or drawn by mechanical power and designed for use upon the highways in the transportation of passengers or property. It does not include a vehicle, locomotive or car operated exclusively on a rail or rails, or a trolley bus operated by electric power derived from a fixed overhead wire, furnishing local passenger transportation similar to street-railway service. The term "motor vehicle" also includes freight containers or cargo tanks used, or intended for use, in connection with motor vehicles.

NIGHTCLUB. An A-2 Occupancy use under the 2006 International Building Code in which the aggregate area of concentrated use of unfixed chairs and standing space that is specifically designated and primarily used for dancing or viewing performers exceeds three hundred fifty square feet, excluding adjacent lobby areas. "Nightclub" does not include theaters with fixed seating, banquet halls, or lodge halls.

OCCUPANCY CLASSIFICATION. For the purposes of this code, certain occupancies are defined as follows:

Institutional Group I-1. Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than 16 persons excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care. Buildings of Group I-1 shall be classified as one of the occupancy conditions indicated below. This group shall include, but not be limited to, the following: Assisted living facilities licensed under chapter 388-78A WAC and residential treatment facilities licensed under chapter 246-337 WAC shall be classified as Group I-1, Condition 2.

Group I-2. This occupancy shall include buildings and structures used for medical care on a 24-hour basis for more than five persons who are incapable of self-preservation. This group shall include, but not be limited to, the following:

- Foster care facilities
- Detoxification facilities
- Hospice care centers
- Hospitals
- Nursing homes
- Psychiatric hospitals

Five or fewer persons receiving care. A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

Family home child care. Family home child care licensed by Washington state for the care of twelve or fewer children shall be classified as Group R-3 or shall comply with the *International Residential Code*.

Adult care facility. A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services shall be classified as Group I-4.

EXCEPTION: Where the occupants are capable of responding to an emergency situation without physical assistance from the staff, the facility shall be classified as Group R-3.

Child care facility. Child care facilities that provide supervision and personal care on a less than 24-hour basis for more than five children 2 1/2 years of age or less shall be classified as Group I-4.

EXCEPTIONS:

1. A child day care facility that provides care for more than five but no more than 100 children 2 1/2 years or less of age, where the rooms in which the children are cared for are located on a level of exit discharge serving such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.
2. Family child care homes licensed by Washington state for the care of 12 or fewer children shall be classified as Group R-3.

Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the *International Residential Code*. This group shall include:

R-1 Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

- Boarding houses (transient) with more than 10 occupants
- Congregate living facilities (transient) with more than 10 occupants
- Hotels (transient)
- Motels (transient)

R-2 Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

- Apartment houses
- Boarding houses (nontransient) with more than 16 occupants
- Congregate living facilities (nontransient) with more than 16 occupants
- Convents
- Dormitories
- Fraternities and sororities
- Hotels (nontransient)
- Live/work units
- Monasteries
- Motels (nontransient)
- Vacation timeshare properties

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, or I, including:

- Buildings that do not contain more than two dwelling units.
- Boarding houses (nontransient) with 16 or fewer occupants.
- Boarding houses (transient) with 10 or fewer occupants.
- Care facilities that provide accommodations for five or fewer persons receiving care.
- Congregate living facilities (nontransient) with 16 or fewer occupants.
- Congregate living facilities (transient) with 10 or fewer occupants.

Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to comply with the *International Residential Code* provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.

Adult family homes, family home child care. Adult family homes and family home child care facilities that are within a single-family home are permitted to comply with the *International Residential Code*.

Foster family care homes. Foster family care homes licensed by Washington state are permitted to comply with the *International Residential Code*, as an accessory use to a dwelling, for six or fewer children including those of the resident family.

R-4 Classification is not adopted. Any reference in this code to R-4 does not apply.

PORTABLE SCHOOL CLASSROOM. A prefabricated structure consisting of one or more rooms with direct exterior egress from the classroom(s). The structure is transportable in one or more sections, and is designed to be used as an educational space with or without a permanent foundation. The structure shall be capable of being demounted and relocated to other locations as needs arise.

RECALL SIGNAL. An electrically or mechanically operated signal used to recall occupants after an emergency drill or to terminate a shelter-in-place event that shall be distinct from any alarm or alert signal used to initiate an emergency plan, or other signals.

SHELTER-IN-PLACE. An emergency response used to minimize exposure of facility occupants to chemical or environmental hazards by taking refuge

in predetermined interior rooms or areas where actions are taken to isolate the interior environment from the exterior hazard.

AMENDATORY SECTION (Amending WSR 16-03-055, filed 1/16/16, effective 7/1/16)

WAC 51-54A-0308 Open flames.

308.1.4 Open-flame cooking devices. This section is not adopted.

308.1.7 Religious ceremonies. Participants in religious ceremonies shall not be precluded from carrying hand-held candles. See RCW 19.27.031(3).

(~~308.1.9~~) 308.1.7.1 Aisles and exits. Candles shall be prohibited in areas where occupants stand, or in an aisle or exit.

EXCEPTION: Candles used in religious ceremonies.

(~~308.1.10~~) 308.1.9 Decorative open flame tables. Gas-fired portable or fixed open flame fire tables and fireplaces are required to be provided with fire *code official* approved design or protection devices to prevent occupants from using flame, and from flame being exposed to combustible material. A fire extinguisher shall be located within 75 feet of travel distance or a distance as approved by the fire *code official*. Where located indoors, the supply gas valve will be interlocked with building fire alarm and/or fire sprinklers, where provided.

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-0314 Indoor displays.

314.1 General. Indoor displays constructed within any occupancy shall comply with Sections 314.2 through 314.4.

314.2 Fixtures and displays. Fixtures and displays of goods for sale to the public shall be arranged so as to maintain free, immediate and unobstructed access to exits as required by Chapter 10.

314.3 Highly combustible goods. The display of highly combustible goods including, but not limited to, fireworks, flammable or combustible liquids, liquefied flammable gases, oxidizing materials, pyroxylin plastics and agricultural goods, in main exit access aisles, corridors, covered and open malls, or within 5 feet (1524 mm) of entrances to exits and exterior exit doors is prohibited where a fire involving such goods would rapidly prevent or obstruct egress.

314.4 Vehicles. Liquid- or gas-fueled vehicles, boats, aircraft or other motorcraft shall not be located indoors except as follows:

1. The engine starting system is made inoperable, batteries are disconnected except where the fire code official requires that the batteries remain connected to maintain safety features.

2. Fuel in fuel tanks does not exceed one-quarter tank or 5 gallons (19 L) (whichever is least).

3. Fuel tanks and fill openings are closed and sealed to prevent tampering.

4. Vehicles, aircraft, boats or other motorcraft equipment are not fueled or defueled within the building.

AMENDATORY SECTION (Amending WSR 20-01-162, filed 12/18/19, effective 7/1/20)

WAC 51-54A-0406 Employee training and response procedures.

406.1 General. Employees in the occupancies listed in Section 403 shall be trained in the emergency procedures described in their emergency plans. Training shall be based on these plans and as described in Section 406.2 and 406.3.

406.2 Frequency. Employees shall receive training in the contents of the emergency plans and their duties as part of new employee orientation and at least annually thereafter. Records shall be kept and made available to the fire code official upon request.

406.3 Employee training program. Employees shall be trained in fire prevention, evacuation, sheltering-in-place, and fire safety in accordance with Sections 406.3.1 through 406.3.3.

~~((406.3.5))~~ **406.3.4 Emergency shelter-in-place training.** Where a facility has a shelter-in-place plan, employees shall be trained on the alert and recall signals, communication system, location of emergency supplies, the use of the incident notification and alarm system, and their assigned duties and procedures in the event of an alarm or emergency.

406.4 Emergency lockdown training. This section is not adopted.

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-0510 Emergency responder radio coverage.

510.4.1.1 Minimum signal strength into building. The minimum inbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by the *fire code official*. The inbound signal level shall be a minimum of -95 dBm throughout the coverage area and sufficient to provide not less than a delivered audio quality (DAQ) of 3.0 or an equivalent signal-to-interference-plus-noise ratio (SINR) applicable to the technology for either analog or digital signals.

510.4.2.4 Signal booster requirements. If used, signal boosters shall meet the following requirements:

1. All signal booster components shall be a National Electrical Manufacturer's Association (NEMA) 4, (~~IP65~~) IP65-type waterproof cabinet or equivalent.

2. Battery systems used for the emergency power source shall be contained in a NEMA 3R or higher-rated cabinet, (~~IP656~~) IP65-type waterproof cabinet or equivalent.

3. Equipment shall have FCC or other radio licensing authority certification and be suitable for public safety use prior to installation.

4. Where a donor antenna exists, isolation shall be maintained between the donor antenna and all inside antennas to not less than 20 dB greater than the system gain under all operating conditions.

5. Bi-directional amplifiers (BDAs) active RF emitting devices used in emergency responder radio coverage systems shall have oscillation prevention built-in oscillation detection and control circuitry.

6. The installation of amplification systems or systems that operate on or provide the means to cause interference on any emergency responder radio coverage networks shall be coordinated and approved by the fire code official.

510.5.3 Acceptance test procedure. Where an emergency responder radio coverage system is required, and upon completion of installation, the building owner shall have the radio system tested to verify that two-way coverage on each floor of the building is not less than 95 percent. The test procedure shall be conducted as follows:

1. Each floor of the building shall be divided into a grid of 20 approximately equal test areas.

2. The test shall be conducted using a calibrated portable radio of the latest brand and model used by the agency talking through the agency's radio communications system or equipment approved by the fire code official.

3. Failure of more than one test area shall result in failure of the test.

4. In the event that two of the test areas fail the test, in order to be more statistically accurate, the floor shall be permitted to be divided into 40 equal test areas. Failure of not more than two non-adjacent test areas shall not result in failure of the test. If the system fails the 40 area test, the system shall be altered to meet the 95 percent coverage requirement.

5. A test location approximately in the center of each test area shall be selected for the test, with the radio enabled to verify two-way communications to and from the outside of the building through the public agency's radio communications system. Once the test location has been selected, that location shall represent the entire test area. Failure in the selected test location shall be considered to be a failure of that test area. Additional test locations shall not be permitted.

6. The gain values of all amplifiers shall be measured and the test measurement results shall be kept on file with the building owner so that the measurements can be verified during annual tests. In the event that the measurement results become lost, the building owner shall be required to rerun the acceptance test to reestablish the gain values.

7. As part of the installation, a spectrum analyzer or other suitable test equipment shall be utilized to ensure spurious oscillations are not being generated by the subject signal booster. This test shall be conducted at the time of installation and at subsequent annual inspections.

8. Systems incorporating Class B signal-booster devices or Class B broadband fiber remote devices shall be tested using two portable

radios simultaneously conducting subjective voice quality checks. One portable radio shall be positioned not greater than 10 feet (3048 mm) from the indoor antenna. The second portable radio shall be positioned at a distance that represents the farthest distance from any indoor antenna. With both portable radios simultaneously keyed up on different frequencies within the same band, subjective audio testing shall be conducted and comply with DAQ levels as specified in Sections 510.4.1.1 and 510.4.1.2.

510.5 Installation requirements. The installation of the public safety radio coverage system shall be in accordance with NFPA 1221 and Sections 510.5.1 through 510.5.5.

510.5.5 Mounting of the donor antenna(s). To maintain proper alignment with the system designed donor site, donor antennas shall be permanently affixed on the highest possible position on the building or where approved by the fire code official. A clearly visible sign stating "movement or repositioning of this antenna is prohibited without approval from the fire code official." The antenna installation shall be in accordance with the applicable requirements in the International Building Code for weather protection of the building envelope.

510.6.1 Testing and proof of compliance. The owner of the building or owner's authorized agent shall have the emergency responder radio coverage system inspected and tested annually or where structural changes occur including additions or remodels that could materially change the original field performance tests. Testing shall consist of the following:

1. In-building coverage test as described in Section 510.5.3 or as required by the fire code official.
2. Signal boosters shall be tested to verify that the gain is the same as it was upon initial installation and acceptance or set to optimize the performance of the system.
3. Backup batteries and power supplies shall be tested under load of a period of 1 hour to verify that they will properly operate during an actual power outage. If within the 1-hour test period the battery exhibits symptoms of failure, the test shall be extended for additional 1-hour periods until the integrity of the battery can be determined.
4. Other active components shall be checked to verify operation within the manufacturers specification.
5. At the conclusion of the testing, a report, which shall verify compliance with Section 510.5.3, shall be submitted to the fire code official.

AMENDATORY SECTION (Amending WSR 20-01-162, filed 12/18/19, effective 7/1/20)

WAC 51-54A-0607 Section 607—Commercial kitchen hoods.

[M] 607.2 Where required. A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease laden vapors.

EXCEPTIONS: 1. Factory-built commercial exhaust hoods that are listed and labeled in accordance with UL 710, and installed in accordance with Section 304.1 of the *International Mechanical Code*, shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4 and 507.5 of the *International Mechanical Code*.

2. Factory-built commercial cooking recirculating systems that are listed and labeled in accordance with UL 710B, and installed in accordance with Section 304.1 of the *International Mechanical Code*, shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4 and 507.5 of the *International Mechanical Code*. Spaces in which such systems are located shall be considered to be kitchens and shall be ventilated in accordance with Table 403.3.1.1 of the *International Mechanical Code*. For the purpose of determining the floor area required to be ventilated, each individual appliance shall be considered as occupying not less than 100 square feet (9.3 m²).
3. Where cooking appliances are equipped with integral down-draft exhaust systems and such appliances and exhaust systems are listed and labeled for the application in accordance with NFPA 96, a hood shall not be required at or above them.
4. A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m³ or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m³/s) in accordance with UL 710B.
5. A Type I hood shall not be required to be installed in an R-2 occupancy with not more than 16 residents.

607.2.1 Domestic cooking appliances used for commercial purposes. Domestic cooking appliances utilized for commercial purposes shall be provided with Type I, Type II, or residential hoods as required for the type of appliances and processes in accordance with Table 607.2.1 and Sections 507.2(~~(, 507.2.1 and 507.2.2)~~) and 507.3 of the *International Mechanical Code*.

**Table 607.2.1
Type of Hood Required for Domestic
Cooking Appliances in the Following
Spaces^{a, b}**

Type of Space	Type of Cooking	Type of Hood
Church	1. Boiling, steaming, and warming precooked food 2. Roasting, pan frying, and deep frying	<u>Residential hood^c</u> or Type II hood ^{d((ⓔ))} Type I hood
Community or party room in apartment and condominium	1. Boiling, steaming, and warming precooked food 2. Roasting, pan frying, and deep frying	Residential hood ^c or Type II hood ^{d((ⓔ))} Type I hood
Day care	1. Boiling, steaming, and warming precooked food 2. Roasting, pan frying, and deep frying	Residential hood ^c or Type II hood ^{d((ⓔ))} Type I hood
Dormitory, assisted living facility, nursing home	1. Boiling, steaming, and warming precooked food 2. Roasting, pan frying, and deep frying	<u>Residential hood^c</u> or Type II hood ^{d((ⓔ))} Type I hood
Office lunch room	1. Boiling, steaming, and warming precooked food 2. Roasting, pan frying, and deep frying	Residential hood ^c or Type II hood ^{d((ⓔ))} Type I hood

^a Commercial cooking appliances shall comply with Section 507.2 of the *International Mechanical Code*.

- b Requirements in this table apply to electric or gas fuel appliances only.
Solid fuel appliances or charbroilers require Type I hoods.
 - c Residential hood shall ventilate to the outside.
 - d Type II hood required when more than one appliance is used.
- (~~ⓔ Hoods are not required where the HVAC design meets IMC 507.3.3.~~)

607.3 Operations, inspection, and maintenance. Commercial cooking systems shall be operated, inspected, and maintained in accordance with Sections 607.3.1 through 607.3.4 and Chapter 11 of NFPA 96.

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-0903 Automatic sprinkler systems.

903.2.1.6 Assembly occupancies on roofs. Where an occupied roof has an assembly occupancy with an occupant load exceeding 100 for Group A-2, and 300 for other Group A occupancies, the building shall be equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.

EXCEPTION: Open parking garages of Type I or Type II construction.

903.2.1.8 Nightclub. An automatic sprinkler system shall be provided throughout Group A-2 nightclubs as defined in this code.

903.2.3 Group E. An automatic sprinkler system shall be provided for fire areas containing Group E occupancies where the fire area has an occupant load of 51 or more, calculated in accordance with Table 1004.1.2.

- EXCEPTIONS:
1. Portable school classrooms with an occupant load of 50 or less calculated in accordance with Table 1004.1.2, provided that the aggregate area of any cluster of portable classrooms does not exceed 6,000 square feet (557 m²); and clusters of portable school classrooms shall be separated as required by the building code; or
 2. Portable school classrooms with an occupant load from 51 through 98, calculated in accordance with Table 1004.1.2, and provided with two means of direct independent exterior egress from each classroom in accordance with Chapter 10, and one exit from each classroom shall be accessible, provided that the aggregate area of any cluster of portable classrooms does not exceed 6,000 square feet (557 m²); and clusters of portable school classrooms shall be separated as required by the building code; or
 3. Fire areas containing day care and preschool facilities with a total occupant load of 100 or less located at the level of exit discharge where every room in which care is provided has not fewer than one exit discharge door.

903.2.6 Group I. An automatic sprinkler system shall be provided throughout buildings with a Group I *fire area*.

- EXCEPTIONS:
1. An *automatic sprinkler system* installed in accordance with Section 903.3.1.2 shall be permitted in Group I-1 Condition 1 facilities.
 2. Where new construction or additions house less than sixteen persons receiving care, an automatic sprinkler system installed in accordance with Section 903.2.8.3 shall be permitted for Group I-1, Condition 2, assisted living facilities licensed under chapter 388-78A WAC and residential treatment facilities licensed under chapter 246-337 WAC.

903.2.6.1 Group I-4. An automatic sprinkler system shall be provided in fire areas containing Group I-4 occupancies where the fire area has an occupant load of 51 or more, calculated in accordance with Table 1004.1.2.

- EXCEPTIONS:
1. An automatic sprinkler system is not required where Group I-4 day care facilities with a total occupant load of 100 or less, and located at the level of exit discharge and where every room where care is provided has not fewer than one exterior exit door.
 2. In buildings where Group I-4 day care is provided on levels other than the level of exit discharge, an automatic sprinkler system in accordance with Section 903.3.1.1 shall be installed on the entire floor where care is provided, all floors between the level of care and the level of exit discharge and all floors below the level of exit discharge other than areas classified as an open parking garage.

903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R *fire area*.

- EXCEPTION:
- Group R-1 if all of the following conditions apply:
1. The Group R fire area is no more than 500 square feet and is used for recreational use only.
 2. The Group R fire area is on only one story.
 3. The Group R fire area does not include a basement.
 4. The Group R fire area is no closer than 30 feet from another structure.
 5. Cooking is not allowed within the Group R fire area.

6. The Group R fire area has an occupant load of no more than 8.
7. A hand-held (portable) fire extinguisher is in every Group R fire area.

903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds 12,000 square feet (1115 m²).
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds 5,000 square feet (464 m²).
- ~~(5. A Group S-1 occupancy used for the storage of upholstered furniture or mattresses exceeds 2,500 square feet (232 m²).~~
- ~~6. A Group S-1 occupancy used for self-storage where the fire area exceeds 2,500 square feet (232 m²).~~

903.2.9.3 Group S-1 Upholstered furniture and mattresses. An automatic sprinkler system shall be provided throughout a Group S-1 fire where the area used for the storage of upholstered furniture exceeds 2,500 square feet (232 m²).

EXCEPTION: Self-service storage facilities no greater than one story above grade plane where all storage spaces can be accessed directly from the exterior.

903.2.11.1.3 Basements. Where any portion of a basement is located more than 75 feet (22,860 mm) from openings required by Section 903.2.11.1, or where new walls, partitions or other similar obstructions are installed that increase the exit access travel distance to more than 75 feet, the basement shall be equipped throughout with an approved automatic sprinkler system.

903.2.11.7 Relocatable buildings within buildings. Relocatable buildings or structures located within a building with an approved fire sprinkler system shall be provided with fire sprinkler protection within the occupiable space of the building and the space underneath the relocatable building.

EXCEPTIONS:

1. Sprinkler protection is not required underneath the building when the space is separated from the adjacent space by construction resisting the passage of smoke and heat and combustible storage will not be located there.
2. If the building or structure does not have a roof or ceiling obstructing the overhead sprinklers.
3. Construction trailers and temporary offices used during new building construction prior to occupancy.
4. Movable shopping mall kiosks with a roof or canopy dimension of less than 4 feet on the smallest side.

903.3.5.3 Underground portions of fire protection system water supply piping. The portion of the installation or modification of an underground water main, public or private, dedicated to supplying a water-based fire protection system shall be in accordance with NFPA 24 and chapter 18.160 RCW. Piping and appurtenances downstream of the first control valve on the lateral or service line from the distribution main to one-foot above finished floor shall be approved by the fire code official. Such underground piping shall be installed by a fire sprinkler system contractor licensed in accordance with chapter 18.160 RCW and holding either a Level U or a Level 3 license. For underground piping supplying systems installed in accordance with Section 903.3.1.2, a Level 2, 3, or U licensed contractor is acceptable.

EXCEPTION: Portions of underground piping supplying automatic sprinkler systems installed in accordance with NFPA 13D.

WAC 51-54A-0907 Fire alarm and detection systems.

907.2.3 Group E. Group E occupancies shall be provided with a manual fire alarm system that initiates the occupant notification signal utilizing one of the following:

1. An emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6; or

2. A system developed as part of a safe school plan adopted in accordance with RCW 28A.320.125 or developed as part of an emergency response system consistent with the provisions of RCW 28A.320.126. The system must achieve all of the following performance standards:

2.1 The ability to broadcast voice messages or customized announcements;

2.2 Includes a feature for multiple sounds, including sounds to initiate a lock down;

2.3 The ability to deliver messages to the interior of a building, areas outside of a building as designated pursuant to the safe school plan, and to personnel;

2.4 The ability for two-way communications;

2.5 The ability for individual room calling;

2.6 The ability for a manual override;

2.7 Installation in accordance with NFPA 72;

2.8 Provide 15 minutes of battery backup for alarm and 24 hours of battery backup for standby; and

2.9 Includes a program for annual inspection and maintenance in accordance with NFPA 72.

EXCEPTIONS:

1. A manual fire alarm system is not required in Group E occupancies with an occupant load of 50 or less.

2. Emergency voice/alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group E occupancies with occupant loads of 100 or less, such as individual portable school classroom buildings; provided that activation of the manual fire alarm system initiates an approved occupant notification signal in accordance with Section 907.5.

3. Where an existing approved alarm system is in place, an emergency voice/alarm system is not required in any portion of an existing Group E building undergoing any one of the following repairs, alteration or addition:

3.1 Alteration or repair to an existing building including, without limitation, alterations to rooms and systems, and/or corridor configurations, not exceeding 35 percent of the fire area of the building (or the fire area undergoing the alteration or repair if the building is comprised of two or more fire areas); or

3.2 An addition to an existing building, not exceeding 35 percent of the fire area of the building (or the fire area to which the addition is made if the building is comprised of two or more fire areas).

4. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:

4.1 Interior corridors are protected by smoke detectors.

4.2 Auditoriums, cafeterias, gymnasiums and similar areas are protected by heat detectors or other approved detection devices.

4.3 Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.

5. Manual fire alarm boxes shall not be required in Group E occupancies where all of the following apply:

5.1 The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1.

5.2 The emergency voice/alarm communication system will activate on sprinkler waterflow.

5.3 Manual activation is provided from a normally occupied location.

907.2.3.1 Sprinkler systems or detection. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

907.2.6.1 Group I-1. An automatic smoke detection system shall be installed in *corridors*, waiting areas open to *corridors* and *habitable spaces* other than *sleeping units* and kitchens. The system shall be activated in accordance with Section 907.4.

EXCEPTIONS:

1. For Group I-1 Condition 1 occupancies, smoke detection in *habitable spaces* is not required where the facility is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1.

2. Smoke detection is not required for exterior balconies.

907.2.6.4 Group I-4 occupancies. A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group I-4 occupancies. When automatic sprinkler systems or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

EXCEPTIONS: 1. A manual fire alarm system is not required in Group I-4 occupancies with an occupant load of 50 or less.
2. Emergency voice alarm communication systems meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall not be required in Group I-4 occupancies with occupant loads of 100 or less, provided that activation of the manual fire alarm system initiates an approved occupant notification signal in accordance with Section 907.5.

907.5.2.1.2 Maximum sound pressure. The maximum sound pressure level for audible alarm notification appliances shall be 110 dBA at the minimum hearing distance from the audible appliance. For systems operating in public mode, the maximum sound pressure level shall not exceed 30 dBA over the average ambient sound level. Where the average ambient noise is greater than 95 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.

~~((907.10.3))~~ **907.10.1 Testing/maintenance:** All inspection, testing, maintenance and programming not defined as "*electrical construction trade*" by chapter 19.28 RCW shall be completed by a NICET II or ESA/NTS Certified Fire Alarm Technician (CFAT) Level II Fire in fire alarms (effective July 1, 2018).

907.11 NICET: National Institute for Certification in Engineering Technologies and ESA/NTS: Electronic Security Association/National Training School.

907.11.1 Scope. This section shall apply to new and existing fire alarm systems.

907.11.2 Design review: All construction documents shall be reviewed by a NICET III, an ESA/NTS Certified Fire Alarm Designer (CFAD) Level III Fire in fire alarms, or a licensed professional engineer (PE) in Washington prior to being submitted for permitting. The reviewing professional shall submit a stamped, signed, and dated letter; or a verification method approved by the local authority having jurisdiction indicating the system has been reviewed and meets or exceeds the design requirements of the state of Washington and the local jurisdiction (effective July 1, 2018).

AMENDATORY SECTION (Amending WSR 20-01-162, filed 12/18/19, effective 7/1/20)

WAC 51-54A-0909 ((Smoke control systems.)) Reserved.

~~((909.6.3 Pressurized stairways and elevator hoistways. Where stairways or elevator hoistways are pressurized, such pressurization systems shall comply with the requirements of Section 909.20 of this code for stair pressurization and 909.21 of the *International Building Code and Fire Code* as necessary to determine that the stairway or elevator hoistways meet the pressurization requirements of the code. Stairway and elevator hoistway pressurization systems in high-rise buildings, underground buildings, and in airport traffic control towers shall comply with IBC and IFC Sections 909 as smoke control systems.~~

~~Stairway pressurization systems in other than high-rise buildings, underground buildings, or airport traffic control towers are smoke control systems but shall only be required to comply with the following IBC 909 Sections: 909.1, 909.2, 909.3, 909.6 with the exception of Section 909.6.1, 909.10 with the exception of Sections 909.10.2, 909.11 with the exception of Section 909.11.1, 909.12 with the exception of Sections 909.12.3.2, 909.13, 909.14, 909.17, 909.18 with the exception of Sections 909.18.2 and 909.18.9, 909.19, 909.20.5, and 909.20.6. Design drawings shall include a description of system operation, the conditions for system testing and the criteria for system acceptance to achieve the code minimum performance of the smoke control system. Stairway pressurization systems shall be maintained in accordance with Section 909.20 of this code.~~

~~Elevator hoistway pressurization systems in other than high-rise buildings, underground buildings, or airport traffic control towers are smoke control systems but shall only be required to comply with the following IBC 909 Sections: 909.1, 909.2, 909.3, 909.6 with the exception of Section 909.6.1, 909.10 with the exception of Sections 909.10.2, 909.11 with the exception of Section 909.11.1, 909.12 with the exception of Sections 909.12.3.2, 909.13, 909.14, 909.17, 909.18 with the exception of Sections 909.18.2 and 909.18.9, 909.19, and 909.21 with the exception of Sections 909.21.2, 909.21.9, and 909.21.10. Design drawings shall include a description of system operation, the conditions for system testing and the criteria for system acceptance to achieve the code minimum performance of the smoke control system. Elevator hoistway pressurization systems shall be maintained in accordance with Section 909.20 of this code.~~

~~**909.21.12 Hoistway venting.** Hoistway venting required by Section 3009 of the state building code need not be provided for pressurized elevator shafts.~~

~~**909.21.13 Machine rooms.** Elevator machine rooms shall be pressurized in accordance with this section unless separated from the hoistway shaft by construction in accordance with Section 707 of the *International Building Code*.)~~

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-1010 Doors, gates and turnstiles.

1010.1.9.4 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

1. Places of detention or restraint.

2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M, and S, and in places of religious worship, the main door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

2.1. The locking device is readily distinguishable as locked;

2.2. A readily visible sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background; and

2.3. The use of the key-operated locking device is revocable by the building official for due cause.

3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.

4. Doors from individual dwelling or sleeping units of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt, or security chain, provided such devices are openable from the inside without the use of a key or a tool.

5. Fire doors after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

6. Approved, listed locks without delayed egress shall be permitted in Group I-1 condition 2 assisted living facilities licensed under chapter 388-78A WAC and Group I-1 Condition 2 residential treatment facilities licensed under chapter 246-337 WAC by the state of Washington, provided that:

6.1. The clinical needs of one or more patients require specialized security measures for their safety.

6.2. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.

6.3. The doors unlock upon loss of electrical power controlling the lock or lock mechanism.

6.4. The lock shall be capable of being deactivated by a signal from a switch located in an approved location.

6.5. There is a system, such as a keypad and code, in place that allows visitors, staff persons and appropriate residents to exit. Instructions for exiting shall be posted within six feet of the door.

6.6. Emergency lighting shall be provided at the door.

1010.1.9.7 Controlled egress doors in Groups I-1 and I-2. Electric locking systems, including electromechanical locking systems and electromagnetic locking systems, shall be permitted to be locked in the means of egress in Group I-1 or I-2 occupancies where the clinical needs of persons receiving care require their containment. Controlled egress doors shall be permitted in such occupancies where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors are installed and operate in accordance with all of the following:

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.

2. The doors unlock upon loss of power controlling the lock or lock mechanism.

3. The door locking system shall be installed to have the capability of being unlocked by a switch located at the fire command center, a nursing station or other approved location. The switch shall directly break power to the lock.

4. A building occupant shall not be required to pass through more than one door equipped with a controlled egress locking system before entering an exit.

5. The procedures for unlocking the doors shall be described and approved as part of the emergency planning and preparedness required by Chapter 4 of the *International Fire Code*.

6. There is a system, such as a keypad and code, in place that allows visitors, staff persons and appropriate residents to exit. Instructions for exiting shall be posted within six feet of the door.

7. All clinical staff shall have the keys, codes or other means necessary to operate the locking systems.

8. Emergency lighting shall be provided at the door.

9. The door locking system units shall be listed in accordance with UL 294.

EXCEPTIONS: 1. Items 1 through 4 and 6 shall not apply to doors to areas where persons, which because of clinical needs, require restraint or containment as part of the function of a psychiatric treatment area.
2. Items 1 through 4 and 6 shall not apply to doors to areas where a listed egress control system is utilized to reduce the risk of child abduction from nursery and obstetric areas of a Group I-2 hospital.

1010.1.10 Panic and fire exit hardware. Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

EXCEPTIONS: 1. A main exit of a Group A occupancy shall ~~((be permitted to be))~~ have locking devices in accordance with Section ~~((1010.1.9.3))~~ 1010.1.9.4, Item 2.
2. Doors provided with panic hardware serving a Group A or E occupancy shall be permitted to be electromagnetically locked in accordance with Section ~~((1010.1.9.9))~~ 1010.1.9.10.

1010.1.10.3 Electrical rooms and working clearances. Exit and exit access doors serving electrical rooms and working spaces shall swing in the direction of egress travel and shall be equipped with panic hardware or fire exit hardware where such rooms or working spaces contain one or more of the following:

1. Equipment operating at more than 600 volts, nominal.

2. Equipment operating at 600 volts or less, nominal and rated at 800 amperes or more, and where the equipment contains overcurrent devices, switching devices or control devices.

EXCEPTION: Panic and fire exit hardware is not required on exit and exit access doors serving electrical equipment rooms and working spaces where such doors are not less than twenty-five feet (7.6 m) from the nearest edge of the electrical equipment.

AMENDATORY SECTION (Amending WSR 20-01-162, filed 12/18/19, effective 7/1/20)

WAC 51-54A-1204 Section 1204—Solar photovoltaic power systems.

1204.1 General. Installation, modification, or alteration of solar photovoltaic power systems shall comply with this section. Due to the emerging technologies in the solar photovoltaic industry, it is understood fire code officials may need to amend prescriptive requirements of this section to meet the requirements for firefighter access and product installations. Section 104.9 Alternative materials and methods of this code shall be considered when approving the installation of solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through 605.11.2, the *International Building Code* and chapter 19.28 RCW.

~~((1204.4.1))~~ 1204.2.1 Solar photovoltaic systems for Group R-3 residential and buildings built under the *International Residential Code*.

Solar photovoltaic systems for Group R-3 residential and buildings built under the *International Residential Code* shall comply with Sections 1204.2.1.1 through 1204.2.1.3.

EXCEPTIONS: 1. Residential dwellings with an approved automatic fire sprinkler system installed.
2. Residential dwellings with approved mechanical or passive ventilation systems.
3. Where the fire code official determines that the slope of the roof is too steep for emergency access.

4. Where the fire code official determines that vertical ventilation tactics will not be utilized.
5. These requirements shall not apply to roofs where the total combined area of the solar array does not exceed thirty-three percent as measured in plan view of the total roof area of the structure, where the solar array will measure 1,000 sq. ft. or less in area, and where a minimum eighteen inches unobstructed pathway shall be maintained along each side of any horizontal ridge.

1204.6 Size of solar photovoltaic array.

1. Each photovoltaic array shall be limited to 150 feet (45,720 mm) by 150 feet (45,720 mm). Multiple arrays shall be separated by a 3-foot wide (914 mm) clear access pathway.

2. Panels/modules shall be located up to the roof ridge where an alternative ventilation method approved by the fire code official has determined vertical ventilation techniques will not be employed.

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-3800 ((~~Marijuana processing or extraction facilities~~)) Reserved.

(~~SECTION 3801—ADMINISTRATION~~)

~~**3801.1 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.~~

~~**3801.2 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.~~

~~**3801.2.1** 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.~~

~~**3801.2.2** 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.~~

~~**3801.3 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.~~

~~**3801.4 Existing building or facilities.** Existing buildings or facilities used for the processing of marijuana shall comply with this chapter.~~

~~**3801.5 Permits.** Permits shall be required as set forth in Section 105.6 and 105.7.~~

~~SECTION 3802—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 3803—PROCESSING OR EXTRACTION OF MARIJUANA~~

~~**3803.1 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.~~

~~**3803.2 Systems, equipment and processes.** Systems, equipment, and processes shall be in accordance with Sections 3803.2.1 through 3803.2.7. 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).~~

~~**3803.2.1 Application.** Systems, equipment and processes shall include, but are not limited to, vessels, chambers, containers, cylinders, tanks, piping, tubing, valves, fittings, and pumps.~~

~~**3803.2.2 General requirements.** In addition to the requirements in Section 3803, 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 3803.2.7.~~

~~**3803.2.3 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.~~

~~**3803.2.4 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.~~

~~**3803.2.5 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.~~

~~**3803.2.5.1 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;~~
 - ~~4.3 Seal, date and signature of engineer of record performing the design; and~~
- ~~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.~~

~~**3803.2.6 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.~~

~~**3803.2.6.1 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.~~

~~**3803.2.7 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.

~~**3803.3 Construction requirements.**~~

~~**3803.3.1 Location.** Marijuana extraction shall not be located in any building containing a Group A, E, I or R occupancy.~~

~~**3803.3.1.1 Extraction room.** The extraction equipment and processes utilizing hydrocarbon solvents shall be located in a room or area dedicated to extraction.~~

~~**3803.3.2 Egress.** Doors installed on rooms or areas dedicated to extraction shall be equipped with panic hardware or fire exit hardware.~~

~~**3803.3.2.1 Facility egress.** Egress requirements shall be in compliance with Chapter 10 of the International Building Code.~~

~~**3803.3.3 Ventilation.** Ventilation shall be provided in compliance with Chapter 4 of the International Mechanical Code.~~

~~**3803.3.4 Control area.** Control areas shall comply with Section 5003.8.3.~~

~~**3803.3.5 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.~~

~~**3803.3.6 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.~~

~~**3803.3.7 Emergency power.**~~

~~**3803.3.7.1 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.~~

~~**3803.3.7.2 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.~~

~~3803.3.8 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.

~~3803.4 Carbon dioxide enrichment or extraction.~~ Extraction processes using carbon dioxide shall comply with this section.

~~3803.4.1 Scope.~~ Carbon dioxide systems with more than 100 pounds of carbon dioxide shall comply with Sections 3803.4 through 3803.4.3. This section is applicable to carbon dioxide systems utilizing compressed gas systems, liquefied gas systems, dry ice, or on-site carbon dioxide generation.

~~3803.4.2 Permits.~~ Permits shall be required as set forth in Sections 105.6 and 105.7.

~~3803.4.3 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.

~~3803.5 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.

~~3803.5.1 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.

~~3803.5.2 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.)

AMENDATORY SECTION (Amending WSR 19-02-086, filed 1/2/19, effective 7/1/19)

WAC 51-54A-3900 ((Fixed guideway transit and passenger rail systems-)) Marijuana processing or extraction facilities.

((~~3901.1 Scope.~~ Fixed guideway transit and passenger rail systems shall be in accordance with NFPA 130.)) 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 flam-

mable atmospheres. Heating of flammable or combustibile liquids over an open flame is prohibited.

AMENDATORY SECTION (Amending WSR 19-24-058, filed 11/27/19, effective 7/1/20)

WAC 51-54A-3904 Systems and equipment.

~~((3904.2 Systems and equipment. Systems or equipment used for the extraction of oils from plant material shall comply with either Section 3404.2.1 or 3404.2.2.~~

~~**3904.2.1 Listings.** Systems or equipment used for the extraction of oils from plant material shall be listed and labeled in accordance with UL 1389 and installed in accordance with the listing and the manufacturer's installation instructions.~~

~~**3904.2.2 Approvals.** Systems or equipment used for the extraction of oils from plant material shall be approved for the specific use. The system shall be reviewed by a registered design professional. The registered design professional shall review and consider any information provided by the system's designer or manufacturer. A technical report in accordance with Section 3904.2.2.1 shall be prepared and submitted to the fire code official for review and approval. The firm or individual preparing the technical report shall be approved by the fire code official prior to performing the analysis.~~

~~**3904.2.2.1 Technical report.** A technical report, reviewed and approved by the fire code official as required by Section 3904.2.2, is required prior to the equipment being located or installed at the facility. The report shall be prepared by a registered design professional or other professional approved by the fire code official.~~

~~**3904.2.2.2 Report content.** The technical report shall contain all of the following:~~

- ~~1. Manufacturer information;~~
- ~~2. Preparer of record of the technical report;~~
- ~~3. Date of review and report revision history;~~
- ~~4. Signature page, including all of the following:~~
 - ~~4.1. Author of the report;~~
 - ~~4.2. Date of report;~~
 - ~~4.3. Date and signature of registered design professional of record performing the design or peer review.~~
- ~~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 or peer 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 whether specific codes or standards are applicable;~~
- ~~7. Equipment description. A list of every component and subassembly, such as fittings, hose, quick disconnects, gauges, site glass, gaskets, valves, pumps, vessels, containers and switches, of the system or equipment, indicating the manufacturer, model number, material and solvent compatibility. Manufacturer's data sheets shall be provided;~~

~~8. A general flow schematic or general process flow diagram of the process. Postprocessing or winterization shall be included in this diagram. Primary components of the process equipment shall be identified and match the equipment list required in Item 7. Operating temperatures, pressures and solvent state of matter shall be identified in each primary step or component. A piping and instrumentation diagram (PID or P&ID) shall be provided;~~

~~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. The process hazard analysis shall include a 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. List of references used in the analysis.~~

3904.2.2.3 Site inspection. Prior to operation of the extraction equipment, where required by the *fire code official*, the engineer of record or *approved professional*, as *approved* in Section 3904.2.2, shall inspect the site of the extraction process once equipment has been installed for compliance with the technical report and the building analysis. The engineer of record or *approved professional* shall provide a report of findings and observations of the site inspection to the *fire code official* prior to the approval of the extraction process. The field inspection report authored by the engineer of record shall include the serial number of the equipment used in the process and shall confirm that the equipment installed is the same model and type of equipment identified in the technical report.)) Reserved.

NEW SECTION

WAC 51-54A-4000 Fixed guideway transit and passenger rail systems.

4001.1 Scope. Fixed guideway transit and passenger rail systems shall be in accordance with NFPA 130.