WSR 23-23-106
PERMANENT RULES
BUILDING CODE COUNCIL

[Filed November 15, 2023, 10:03 a.m., effective March 16, 2024]

Effective Date of Rule: March 16, 2024.

Purpose: Reconciling state amendments with section renumbering and model code modifications in the 2021 International Fire Code; correcting errors and omissions.

Citation of Rules Affected by this Order: Amending 33 sections in chapter 51-54A WAC.

Statutory Authority for Adoption: RCW 19.27.031, 19.27.074.

Other Authority: RCW 19.27.031, 19.27.074.

Adopted under notice filed as WSR 23-15-050 on July 13, 2023.

Changes Other than Editing from Proposed to Adopted Version:

WAC	Section	Change	Rationale/Discussion
51-54A-008	Implementation	Implementation date is changed from October 29, 2023, to March 15, 2024.	The state building code council voted to delay implementation of all codes on September 15, 2023.
51-54A-0202	Definition: Occupancy Classification: R-2	Relocates "Boarding houses (nontransient) with more than 16 occupants" below "Congregate living facilities (nontransient) with more than 16 occupants."	Editorial modification intended to align with the model code format. There is no intended change in regulatory effect.
51-54A-0510	510.1 and 510.6.1	Replaces "two-way emergency responder communications coverage system" with "emergency responder communications enhancement system."	The modification provides consistency aligning the text in the model code with the state amendments in Chapter 5. There is no intended change in regulatory effect.
51-54A-1015	1015.2	Adds the words "of the International Building Code" after section references.	The modification clarifies section references; there is no intended change in regulatory effect.

Number of Sections Adopted in Order to Comply with Federal Statute: New 0, Amended 0, Repealed 0; Federal Rules or Standards: New 0, Amended 0, Repealed 0; or Recently Enacted State Statutes: New 0, Amended 0, Repealed 0.

Number of Sections Adopted at the Request of a Nongovernmental Entity: New 0, Amended 0, Repealed 0.

Number of Sections Adopted on the Agency's own Initiative: New 0, Amended 33, Repealed 0.

Number of Sections Adopted in Order to Clarify, Streamline, or Reform Agency Procedures: New 0, Amended 0, Repealed 0.

Number of Sections Adopted using Negotiated Rule Making: New 0, Amended 0, Repealed 0; Pilot Rule Making: New 0, Amended 0, Repealed 0; or Other Alternative Rule Making: New 0, Amended 33, Repealed 0.

Date Adopted: October 20, 2023.

Tony Doan
Council Chair

OTS-4757.4

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-008 Implementation. The *International Fire Code* adopted by chapter 51-54A WAC shall become effective in all counties and cities of this state on ((~~July 1, 2023~~)) March 15, 2024.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0105 Permits.

105.5.14.1 Lithium batteries. An operational permit is required for an accumulation of more than 15 cubic feet (0.42 m) of lithium-ion and lithium metal batteries, where required by Section 322.1.

105.5.32 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.

105.6.25 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~~)) 1 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 that serves a fire protection system installed in accordance with NFPA 13D.

((~~**105.5.14.1 Lithium batteries.** An operational permit is required for an accumulation of more than 15 cubic feet (0.42 m) of lithium-ion and lithium metal batteries, where required by Section 322.1.~~))

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0202 General definitions.

SECTION 202 GENERAL DEFINITIONS

ADULT FAMILY HOME. A dwelling, licensed by the state of Washington department of social and health services, 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. An existing adult family home may provide services to up to eight adults upon approval from the department of social and health services under RCW 70.128.066 and in accordance with Section 903.

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 chapters 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 12 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.

CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities, and other tasks of daily living. Custodial care includes persons receiving care who have the ability to respond to emergency situations and may receive limited verbal or physical assistance. These care recipients may evacuate at a slower rate and/or who have mental and psychiatric complications.

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.

EMERGENCY RESPONDER COMMUNICATIONS ENHANCEMENT SYSTEM (ERCES). An infrastructure solution installed within a building to enhance the communications capabilities for first responders that utilizes solutions such as a signal booster, voting receiver, base station, or other technology capable of enhancing the radio frequency (RF) to ensure effective public safety communications.

FREQUENCY. The particular waveband at which a communications system broadcasts or transmits.

FREQUENCY LICENSE HOLDER(S). The person(s) or entity(s) that are issued the license from the frequency licensing authority of United States or other country of jurisdiction for the frequencies being used by both the in-building emergency responder communications enhancement system and the emergency services communications system that it enhances.

FREQUENCY LICENSING AUTHORITY. The government authority in a country or territory that issues frequency licenses for the use of communications frequencies by authorized entities and individuals.

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.

LIMITED VERBAL OR PHYSICAL ASSISTANCE. Persons who, because of age, physical limitations, cognitive limitations, treatment or chemical dependency, and may not independently recognize, respond, or evacuate without limited verbal or physical assistance during an emergency situation. Verbal assistance includes prompting, giving, and repeating instructions. Physical assistance includes assistance with transfers to walking aids or mobility devices and assistance with egress.

MOBILE FOOD 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 350 square feet (32.5 m^2), 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.

No change to the rest of the occupancy conditions.

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 that 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 12 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 5 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 5 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
Boarding houses (nontransient) with more than 16 occupants
Convents
Dormitories
Fraternities and sororities
Monasteries
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, R-4, 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.

Boarding houses (nontransient) with 16 or fewer occupants

Convents

Dormitories

Fraternities and sororities

Monasteries

Congregate living facilities (transient) with 10 or fewer occupants.

Boarding houses (transient) with 10 or fewer occupants

Lodging houses (transient) with five or fewer guestrooms and 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.

POWERED MICROMOBILITY DEVICES. Motorized bicycles, motorized scooters, and other personal mobility devices powered by a rechargeable battery. The term does not include motor vehicles that are required to be registered with the department of motor vehicles for the state or jurisdiction.

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.

SPECIAL HAZARDS SUPPRESSION SYSTEMS. Wet-chemical systems (NFPA 17A), Dry-chemical systems (NFPA 17), Foam systems (NFPA 11), Carbon dioxide systems (NFPA 12), Halon systems (NFPA 12A), Clean-agent systems (NFPA 2001), Automatic water mist systems (NFPA 750), Aerosol fire-extinguishing systems (NFPA 2010), and Explosion prevention systems (NFPA 69).

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0314 Indoor displays.

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 or ignition 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 any of the following:

2.1. Class I, II, and III liquid fuel does not exceed one-quarter tank or 5 gallons (19 L), whichever is less.

2.2. LP gas does not exceed one-quarter tank or 6.6 gallons (25 L), whichever is less.

2.3. CNG does not exceed one-quarter tank or 630 cubic feet (17.8 m^3), whichever is less.

2.4. Hydrogen does not exceed one-quarter tank or 2,000 cubic feet (0.57 m^3), whichever is less.

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 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0322 ((~~General~~)) Lithium batteries.

322.1 General. The storage of lithium-ion and lithium metal batteries shall comply with Section 322.

EXCEPTIONS:
1. New or refurbished batteries installed in the equipment, devices, or vehicles they are designed to power.
2. New or refurbished batteries packed for use with the equipment, devices, or vehicles they are designed to power.
3. Batteries in original retail packaging that are rated at 300 watt-hours or less for lithium-ion batteries or contain 25 grams or less of lithium metal for lithium metal batteries.
4. Temporary storage of batteries or battery components during the battery manufacturing process prior to completion of final quality control checks.
5. Temporary storage of batteries during the vehicle manufacturing or repair process.

322.2 Permits. Permits shall be required for an accumulation of more than 15 cubic feet (0.42 m^3) of lithium-ion and lithium metal batteries, other than batteries listed in the exceptions to Section 322.1, as set forth in Section 105.5.14.1.

322.3 Fire safety plan. A fire safety plan shall be provided in accordance with Section 403.10.6. In addition, the fire safety plan shall include emergency response actions to be taken upon detection of a fire or possible fire involving lithium-ion or lithium metal battery storage.

322.4 Storage requirements. Lithium-ion and lithium metal batteries shall be stored in accordance with Section 322.4.1, 322.4.2, or 322.4.3, as applicable.

322.4.1 Limited indoor storage in containers. Not more than 15 cubic feet (0.42 m^3) of lithium-ion or lithium metal batteries shall be permitted to be stored in containers in accordance with the following:

1. Containers shall be open-top and constructed of noncombustible materials or shall be approved for battery collection.
2. Individual containers and groups of containers shall not exceed a capacity of 7.5 cubic feet (0.21 m^3).
3. A second container or group of containers shall be separated by not less than 3 feet (914 mm) of open space, or 10 feet (3048 mm) of space that contains combustible materials.
4. Containers shall be located not less than 5 feet (1524 mm) from exits or exit access doors.

322.4.2 Indoor storage areas. Indoor storage areas for lithium-ion and lithium metal batteries, other than those complying with Section 322.4.1, shall comply with Sections 322.4.2.1 through 322.4.2.6.

322.4.2.1 Technical opinion and report. Where required by the *fire code official* a technical opinion and report complying with Section 104.8.2 shall be prepared to evaluate the fire and explosion risks associated with the indoor storage area and to make recommendations for fire and explosion protection. The report shall be submitted to the fire code official and shall require the fire code official's approval prior to issuance of a permit. In addition to the requirements of Section 104.8.2, the technical opinion and report shall specifically evaluate the following:

1. The potential for deflagration of flammable gases released during a thermal runaway event.
2. The basis of design for an automatic sprinkler system or other approved fire suppression system. Such design basis shall reference relevant full-scale fire testing or another approved method of demonstrating sufficiency of the recommended design.

322.4.2.2 Construction requirements. Where indoor storage areas for lithium-ion and lithium metal batteries are located in a building with other uses, battery storage areas shall be separated from the remainder of the building by 2-hour rated fire barriers or horizontal assemblies. Fire barriers shall be constructed in accordance with Section 707 of the International Building Code, and horizontal assemblies shall be constructed in accordance with Section 711 of the International Building Code.

EXCEPTIONS:
1. Where battery storage is contained in one or more approved prefabricated portable structures providing a complete two-hour fire resistance rated enclosure, fire barriers and horizontal assemblies are not required.
2. Where battery storage is limited to new batteries in packaging that has been demonstrated to and approved by the fire code official as sufficient to isolate a fire in packaging to the package interior, fire barriers and horizontal assemblies are not required.

322.4.2.3 Fire protection systems. Indoor storage areas for lithium-ion and lithium metal batteries shall be protected by an automatic sprinkler system complying with Section 903.3.1.1 or an approved alternative fire suppression system. The system design shall be based on recommendations in the approved technical opinion and report required by Section 322.4.2.1.

322.4.2.4 Fire alarm systems. Indoor storage areas for lithium-ion and lithium metal batteries shall be provided with an approved automatic

fire detection and alarm system complying with Section 907. The fire detection system shall use air-aspirating smoke detection, radiant energy-sensing fire detection, or both.

322.4.2.5 Explosion control. Where the approved technical opinion and report required by Section 322.4.2.1 recommends explosion control, explosion control complying with Section 911 shall be provided.

322.4.2.6 Reduced requirements for storage of partially charged batteries. Indoor storage areas for lithium-ion and lithium metal batteries with a demonstrated state of charge not exceeding 30 percent shall not be required to comply with Section 322.4.2.1, 322.4.2.2, or 322.4.2.5, provided that procedures for limiting and verifying that the state of charge will not exceed 30 percent have been approved.

322.4.3 Outdoor storage. Outdoor storage of lithium-ion or lithium metal batteries shall comply with Sections 322.4.3.1 through 322.4.3.3.

322.4.3.1 Distance from storage to exposures. Outdoor storage of lithium-ion or lithium metal batteries, including storage beneath weather protection in accordance with Section 414.6.1 of the International Building Code, shall comply with one of the following:

1. Battery storage shall be located not less than 20 feet (6096 mm) from any building, lot line, public street, public alley, public way, or means of egress.

2. Battery storage shall be located not less than 3 feet (914 mm) from any building, lot line, public street, public alley, public way, or means of egress, where the battery storage is separated by a 2-hour fire-resistance rated assembly without openings or penetrations and extending 5 feet (1524 mm) above and to the sides of the battery storage area.

3. Battery storage shall be located not less than 3 feet (914 mm) from any building, lot line, public street, public alley, public way, or means of egress, where batteries are contained in approved prefabricated portable structures providing a complete 2-hour fire-resistance rated enclosure.

322.4.3.2 Storage area size limits and separation. Outdoor storage areas for lithium-ion or lithium metal batteries, including storage beneath weather-protection in accordance with Section 414.6.1 of the International Building Code, shall not exceed 900 sq. ft. (83.6 m^2). The height of battery storage in such areas shall not exceed 10 feet (3048 mm). Multiple battery storage areas shall be separated from each other by not less than 10 feet (3048 mm) of open space.

322.4.3.3 Fire detection. Outdoor storage areas for lithium-ion or lithium metal batteries, regardless of whether such areas are open, under weather protection or in a prefabricated portable structure, shall be provided with an approved automatic fire detection and alarm system complying with Section 907. The fire detection system shall use radiant energy-sensing fire detection.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0403 Emergency preparedness requirements.

403.4.3 Assembly points and fire operations. Assembly points shall not be in areas likely to be utilized for fire service operations.

403.9.2 Group R-2 occupancies. Group R-2 occupancies shall comply with Sections 403.9.2.1 through 403.9.2.4.

403.9.2.4 Group R-2 assisted living and residential care facilities. Assisted living and residential care facilities licensed by the state of Washington shall comply with Section 403.7.1 as required for Group I-1 Condition 2 occupancies.

((~~**403.9.3 Group R-4 occupancies.** This section not adopted.~~))

403.10.6 Buildings with lithium-ion or lithium metal battery storage. An approved fire safety plan in accordance with Section 404 shall be prepared and maintained for buildings with lithium-ion or lithium metal battery storage.

403.11.3 Crowd managers for gatherings exceeding 1,000 people. Where facilities or events involve a gathering of more than 1,000 people, or as required by the fire *code official*, crowd managers shall be provided in accordance with Sections 403.11.3.1 through 403.11.3.3.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

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 Sections 406.2 through ((~~406.3.4~~)) 406.3.5.

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 ((~~406.3.4~~)) 406.3.5.

406.3.4 Emergency lockdown training. This section is not adopted.

406.3.5 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.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0501 ((~~General.~~)) Reserved.

((~~**501.3.1 Site safety plan.** The *owner* or *owner's* authorized agent shall be responsible for the development, implementation, and mainte-~~

~~nance of an *approved* written *site safety plan* in accordance with Section 3303.~~))

AMENDATORY SECTION (Amending WSR 13-04-063, filed 2/1/13, effective 7/1/13)

WAC 51-54A-0503 Fire apparatus access roads.

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with locally adopted street, road, and access standards.

503.1.1 Buildings and facilities((~~,~~)). This section is not adopted.

503.1.2 Additional access((~~,~~)). This section is not adopted.

503.1.3 High-piled storage((~~,~~)). This section is not adopted.

503.2 Specifications. This section is not adopted.

503.3 Marking. This section is not adopted.

503.4 Obstruction of fire apparatus access roads. This section is not adopted.

503.4.1 Traffic calming devices. This section is not adopted.

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

WAC 51-54A-0507 Fire protection water supplies.

507.3 Fire flow. Fire flow requirements for buildings or portions of buildings and facilities shall be determined by an approved method.

EXCEPTIONS:
1. Fire flow is not required for structures under 500 square feet (46 m^2) with a B, U or R-1 occupancy where structures are at least 30 feet (9144 mm) from any other structure and are used only for recreation.
2. In rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire *code official* is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code*.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

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

510.1 Emergency responder communication coverage in new buildings. Approved in-building, *emergency responder communications enhancement system (ERCES)* for emergency responders shall be provided in all new buildings. In-building ERCES within the building shall be based on the existing coverage levels of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building. The ((~~two-way~~)) *emergency responder communications ((~~coverage~~)) enhancement system*, where required, shall be of a type determined by the fire code official and the frequency license holder(s). This section shall not require improvement of the existing public safety communication systems.

EXCEPTIONS:
1. Where approved by the building official and the fire code official, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained instead of an approved communication coverage system.

2. Where it is determined by the *fire code official* that the communication coverage system is not needed.
3. In facilities where emergency responder communication coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the *fire code official* shall have the authority to accept an automatically activated *emergency responder communication coverage system.*

510.2 Emergency responder communication enhancement system in existing buildings. Existing buildings shall be provided with approved in-building, *emergency responder communications enhancement system* for emergency responders as required in Chapter 11.

510.3 Permit required. A construction permit for the installation of or modification to in-building, *emergency responder communication enhancement systems* and related equipment is required as specified in Section 105.6.4. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

510.4 Technical requirements. Equipment required to provide in-building, *emergency responder communication enhancement system* shall be *listed* in accordance with UL 2524. Systems, components and equipment required to provide the in-building, *emergency responder communication enhancement system* shall comply with Sections 510.4.1 through 510.4.2.8.

510.4.1 Emergency responder communication enhancement system signal strength. The building shall be considered to have an acceptable in-building, *emergency responder communication enhancement system* where signal strength measurements in 95 percent of all areas and 99 percent of areas designated as critical areas by the fire code official on each floor of the building meet the signal strength requirements in Sections 510.4.1.1 through 510.4.1.3.

510.4.1.1 Minimum signal strength into <u>the</u> 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 in 95 percent of the coverage area and 99 percent in *critical areas* 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 System design. The in-building, *emergency responder communication enhancement system* shall be designed in accordance with Sections 510.4.2.1 through 510.4.2.8 and NFPA 1221.

510.4.2.1 Amplification systems and components. Buildings and structures that cannot support the required level of in-building, *emergency responder communication <u>enhancement</u> system* shall be equipped with systems and components to enhance the radio signals and achieve the required level of in-building, *emergency responder communication enhancement system* specified in Sections 510.4.1 through 510.4.1.3. In-building, *emergency responder communication enhancement systems* utilizing radio-frequency-emitting devices and cabling shall be approved by the *fire code official*. Prior to installation, all RF-emitting devices shall have the certification of the radio licensing authority and be suitable for public safety use.

510.4.2.2 Technical criteria. The fire code official shall maintain a document providing the specific technical information and requirements for the in-building, *emergency responder communication enhancement system*. This document shall contain, but not be limited to, the various frequencies required, the location of radio sites, the effective radiated power of radio sites, the maximum propagation delay in micro-

seconds, the applications being used and other supporting technical information necessary for system design.

510.4.2.3 Standby power. In-building, *emergency responder communication enhancement systems* coverage systems shall be provided with dedicated standby batteries or provided with 2-hour standby batteries and connected to the facility generator power system in accordance with Section 1203. The standby power supply shall be capable of operating the in-building, *emergency responder communication enhancement system* at 100 percent system capacity for a duration of not less than 12 hours.

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, IP66-type waterproof cabinet or equivalent.

EXCEPTION: *Listed battery systems* that are contained in integrated battery cabinets.

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

EXCEPTION: *Listed battery systems* that are contained in integrated battery cabinets.

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 (BDA) used for in-building, *emergency responder communication enhancement systems* shall be fitted with anti-oscillation detection and control circuitry and per-channel AGC.

6. The installation of amplification systems or enhancement systems that operate on or provide the means to cause interference on any in-building, *emergency responder communication enhancement system* network shall be coordinated and approved by the fire code official.

7. Only channelized signal boosters shall be permitted.

EXCEPTION: Broadband BDAs may be utilized when specifically authorized in writing by the *frequency license holder*.

510.4.2.5 System monitoring. The in-building, *emergency responder communication enhancement system* shall include automatic supervisory and trouble signals that are monitored by a supervisory service and are annunciated by the *fire alarm system* in accordance with NFPA 72. The following conditions shall be separately annunciated by the *fire alarm system*, or, if the status of each of the following conditions is individually displayed on a dedicated panel on the in-building, *emergency responder communication enhancement system*, a single automatic supervisory signal may be annunciated on the *fire alarm system* indicating deficiencies of the in-building, *emergency responder communication enhancement system*:

1. Loss of normal AC power supply.
2. System battery charger(s) failure.
3. Malfunction of the donor antenna(s).
4. Failure of active RF-emitting device(s).
5. Low-battery capacity at 70 percent reduction of operating capacity.
6. Active system component malfunction.

7. Malfunction of the communications link between the *fire alarm system* and the in-building, *emergency responder communication enhancement system*.

8. Oscillation of active RF-emitting device(s).

510.4.2.6 Additional frequencies and change of frequencies. The in-building, *emergency responder communication ((~~coverage~~)) enhancement system* shall be capable of modification or expansion in the event frequency changes are required by the FCC or other radio licensing authority, or additional frequencies are made available by the FCC or other radio licensing authority.

510.4.2.7 Design documents. The *fire code official* shall have the authority to require "as-built" design documents and specifications for in-building, *emergency responder communication enhancement systems*. The documents shall be in a format acceptable to the *fire code official*.

510.4.2.8 Radio communication antenna density. Systems shall be engineered to minimize the near-far effect. In-building, *emergency responder communication enhancement system* designs shall include sufficient antenna density to address reduced gain conditions.

EXCEPTION: Systems where all portable devices within the same band use active power control features.

510.5 Installation requirements. The installation of the in-building, *emergency responder communication enhancement system* shall be in accordance with NFPA 1221 and Sections 510.5.1 through 510.5.7.

510.5.1 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." shall be posted. The antenna installation shall be in accordance with the applicable requirements in the *International Building Code* for weather protection of the building envelope.

510.5.3 Minimum qualifications of personnel. The minimum qualifications of the system designer and lead acceptance test personnel shall include both of the following:

1. A valid FCC-issued general radio telephone operators license.

2. Certification of in-building system training issued by an *approved* organization or *approved* school, or a certificate issued by the manufacturer of the equipment being installed.

510.5.4 Acceptance test procedure. Where an in-building *emergency responder communication enhancement 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 in accordance with Section 510.4.1. 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, with a maximum test area size of 6,400 square feet (595 m^2). Where the floor area exceeds 128,000 square feet (11,904 m^2), the floor shall be divided into as many approximately equal test areas as needed, such that no test area exceeds the maximum square footage allowed for a test area.

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. Coverage testing of signal strength shall be conducted using a calibrated spectrum analyzer for each of the test grids. A diagram of this testing shall be created for each floor where coverage is provided, indicating the testing grid used for the test in Section 510.5.4(1), and including signal strengths and frequencies for each test area. Indicate all critical areas.

4. Functional talk-back testing shall be conducted using two calibrated portable radios of the latest brand and model used by the agency's radio communications system or other equipment approved by the *fire code official.* Testing shall use digital audible quality (DAQ) metrics, where a passing result is a DAQ of 3 or higher. Communications between handsets shall be tested and recorded in the grid square diagram required by Section 510.5.3(2); each grid square on each floor; between each critical area and a radio outside the building; between each critical area and the fire command center or fire alarm control panel; between each landing in each stairwell and the fire command center or fire alarm panel.

5. Failure of more than 5 percent of the test areas on any floor shall result in failure of the test.

EXCEPTION: Critical areas shall be provided with 99 percent floor area coverage.

6. 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 nonadjacent 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.

7. 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.

8. 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.

9. 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.

10. Systems 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.

11. **Documentation maintained on premises.** At the conclusion of the testing, and prior to issuance of the building certificate of occupancy, the building owner or owner's representative shall place a copy of the following records in the Distributed Antenna System enclosure or the building engineer's office. The records shall be available to the fire code official and maintained by the building owner for the life of the system:

a. A certification letter stating that the *emergency responder enhancement coverage system* has been installed and tested in accordance with this code, and that the system is complete and fully functional.

b. The grid square diagram created as part of testing in Sections 510.5.3(2) and 510.5.3(3).

c. Data sheets and/or manufacturer specifications for the *emergency responder enhancement coverage system* equipment; back up battery; and charging system (if utilized).

d. A diagram showing device locations and wiring schematic.

e. A copy of the electrical permit.

((**~~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 510.5.7.~~))

510.5.5 FCC compliance. The in-building, *emergency responder communication enhancement system* installation and components shall comply with all applicable federal regulations including, but not limited to, FCC 47 C.F.R. Part 90.219.

510.5.6 Wiring. The backbone, antenna distribution, radiating, or any fiber optic cables shall be rated as plenum cables. The backbone cables shall be connected to the antenna distribution, radiating, or copper cables using hybrid coupler devices of a value determined by the overall design. Backbone cables shall be routed through an enclosure that matches the building's required fire-resistance rating for shafts or interior exit stairways. The connection between the backbone cable and the antenna cables shall be made within an enclosure that matches the building's fire-resistance rating for shafts or interior exit stairways, and passage of the antenna distribution cable in and out of the enclosure shall be protected as a penetration per the *International Building Code.*

510.5.7 Identification signs. *Emergency responder enhancement systems* shall be identified by an approved sign located on or near the fire alarm control panel or other approved location stating "This building is equipped with an *Emergency Responder Enhancement Coverage System.* Control Equipment located in ..... or as approved by the *Fire Code Official*." A sign stating "*Emergency Responder Enhancement Coverage System Equipment*" shall be placed on or adjacent to the door of the room containing the main system components.

510.6 Maintenance. The in-building, *emergency responder communication enhancement system* shall be maintained operational at all times in accordance with Sections 510.6.1 through 510.6.4.

510.6.1 Testing and proof of compliance. The *owner* of the building or *owner's* authorized agent shall have the in-building, ((~~two-way~~)) *emergency responder communication ((~~coverage~~))* enhancement *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 items 1((~~.~~)) through 7((~~.~~)):

1. In-building coverage test as required by the *fire code official* as described in Section 510.5.4 or 510.6.1.1.

EXCEPTION: Group R Occupancy annual testing is not required within *dwelling units*.

2. Signal boosters shall be tested to verify that the gain/output level 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. All other active components shall be checked to verify operation within the manufacturers specification.

5. If a fire alarm system is present in the building, a test shall be conducted to verify that the fire alarm system is properly supervising the *emergency responder communication ((~~coverage~~)) enhancement system* as required in Section 510.4.2.5. The test is performed by simulating alarms to the fire alarm control panel. The certifications in Section 510.5.2 are sufficient for the personnel performing this testing.

6. At the conclusion of testing, a record of the inspection and maintenance along with an updated grid diagram of each floor showing tested strengths in each grid square and each critical area shall be added to the documentation maintained on the premises in accordance with Section 510.5.3.

7. At the conclusion of the testing, a report, which shall verify compliance with Section 510.6.1, shall be submitted to the *fire code official*.

510.6.1.1 Alternative in-building coverage test. When the comprehensive test documentation required by Section 510.5.3 is available, or the most recent full five-year test results are available if the system is older than six years, the in-building coverage test required by the fire code official in Section 510.6.1(1), may be conducted as follows:

1. Functional talk-back testing shall be conducted using two calibrated portable radios of the latest brand and model used by the agency's radio communications system or other equipment approved by the fire code official. Testing shall use digital audible quality (DAQ) metrics, where a passing result is a DAQ of 3 or higher. Communications between handsets in the following locations shall be tested: Between the fire command center or fire alarm control panel and a location outside the building((~~.~~)) and between the fire alarm control panel and each landing in each stairwell.

2. Coverage testing of signal strength shall be conducted using a calibrated spectrum analyzer for:

a. Three grid areas per floor. The three grid areas to be tested on each floor are the three grid areas with poorest performance in the acceptance test or the most recent annual test, whichever is more recent;

b. Each of the critical areas identified in acceptance test documentation required by Section 510.5.3, or as modified by the fire code official; and

c. One grid square per serving antenna.

3. The test area boundaries shall not deviate from the areas established at the time of the acceptance test, or as modified by the *fire code official*. The building shall be considered to have acceptable emergency responder communication coverage when the required signal strength requirements in Sections 510.4.1.1 and 510.4.1.2 are located in 95 percent of all areas on each floor of the building and 99 percent in critical areas, and any nonfunctional serving antenna are repaired to function within normal ranges. If the documentation of the acceptance test or most recent previous annual test results are not available or acceptable to the fire code official, the radio coverage verification testing described in Section 510.5.3 shall be conducted.

510.6.2 Additional frequencies. The building *owner* shall modify or expand the in-building, *emergency responder communication enhancement system* at their expense in the event frequency changes are required by the FCC or other radio licensing authority, or additional frequencies are made available by the FCC or other radio licensing authority. Prior approval of an in-building, *emergency responder communication enhancement system* on previous frequencies does not exempt this section.

510.6.3 Nonpublic safety system. Where other nonpublic safety amplification systems installed in buildings reduce the performance or cause interference with the in-building, *emergency responder communication enhancement system*, the nonpublic safety amplification system shall be corrected or removed.

510.6.4 Field testing. *Agency* personnel shall have the right to enter onto the property at any reasonable time to conduct field testing to verify the required level of radio coverage or to disable a system adversely impacting the *emergency responder communication enhancement system* in the region.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0901 General.

901.4.2 Nonrequired fire protection systems and life safety systems. A *fire protection* and *life safety system* or portion thereof not required by this code or the *International Building Code* shall be allowed to be furnished for partial or complete protection provided such installed system meets the applicable requirements of this code and the *International Building Code*. Such systems or portion of system shall be provided with signage stating "NON-REQUIRED SYSTEM." Signage shall be durable and permanent in nature, with contrasting color and background, and with lettering of not less than 1 inch (25 mm) in height. Location of such signage shall be approved.

901.8.2 Removal of existing occupant-use hose lines. The fire *code official* is authorized to permit the removal of existing occupant-use hose lines where all of the following conditions exist:

1. Installation is not required by this code, the *International Building Code*, or a previously approved alternative method.

2. The hose line would not be utilized by trained personnel or the fire department.

3. The remaining outlets are compatible with local fire department fittings.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0903 Automatic sprinkler systems.

903.2 Where required. Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.

EXCEPTIONS: 1. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour *fire barriers* constructed in accordance with Section 707 of the *International Building Code* or not less than 2-hour *horizontal assemblies* constructed in accordance with Section 711 of the *International Building Code,* or both.
2. Bottom of the elevator hoistway in an enclosed and noncombustible elevator shaft.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided throughout stories containing Group A-3 occupancies and throughout all stories from the Group A-3 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m^2).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

EXCEPTION: For fixed guideway transit and passenger rail system stations, an automatic sprinkler system shall be provided in accordance with Section 4901.

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 1004.5.

EXCEPTIONS: 1. Portable school classrooms with an occupant load of 50 or less calculated in accordance with Table 1004.5, provided that the aggregate area of any cluster of portable classrooms does not exceed 6,000 square feet (557 m^2); 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 1004.5, and provided with two means of direct independent exterior egress from each classroom in accordance with Chapter 10, and one exit from each class room shall be accessible, provided that the aggregate area of any cluster of portable classrooms does not exceed 6,000 square feet (557 m^2); 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 16 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.
3. An automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be permitted in additions to existing buildings where both of the following situations are true:
3.1. The addition is made to a building previously approved as Group LC or Group R-2 that houses either an assisted living facility licensed under chapter 388-78A WAC or residential treatment facility licensed under chapter 246-337 WAC.
3.2. The addition contains spaces for 16 or fewer persons receiving care.

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 1004.5.

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 (46 m^2) 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 (9144 mm) 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 eight.
7. A hand-held (portable) fire extinguisher is in every Group R fire area.

903.2.8.5 Adult family home. An adult family home with a capacity of seven or eight that serves residents who require assistance during an evacuation must install an automatic sprinkler system that meets the requirements of NFPA 13D.

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 (22,860 mm), the basement shall be equipped throughout with an approved automatic sprinkler system.

903.2.11.5 Commercial cooking operations. An *automatic sprinkler system* shall be installed in commercial kitchen exhaust hood and duct systems where an *automatic sprinkler system* is used to comply with Section 904.

EXCEPTION: An *automatic fire sprinkler system* is not required to protect the ductwork that is in excess of 75 feet (22,860 mm) when the commercial kitchen exhaust hood is protected by a system listed per UL 300.

Table 903.2.11.6
Additional Required Fire Protection Systems

Note: Add section and subject to existing model code table.

Section	Subject
((~~321.2~~)) 322.4.2.3	Lithium-ion and lithium metal battery storage

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 (1219 mm) on the smallest side.

903.3.1.2 NFPA 13R sprinkler systems. *Automatic sprinkler systems* in Group R occupancies up to and including four stories in height in buildings not exceeding 60 feet (18,288 mm) in height above grade plane shall be permitted to be installed throughout in accordance with NFPA 13R. The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 of the *International Building Code* shall be measured from the horizontal assembly creating separate buildings.

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~~)) 1 foot (305 mm) 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.

EXCEPTIONS: 1. Portions of underground piping supplying automatic sprinkler systems installed in accordance with Section 903.3.1.3.
2. Portions of underground water mains serving sprinkler systems that are designed and installed in accordance with Section 903.3.1.2 and are less than ((~~four~~)) 4 inches (100 mm) in nominal diameter.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-0904 Alternative automatic fire-extinguishing systems.

((~~**(Effective July 1, 2024.)**~~))

904.1.1 Certification of service personnel for fire-extinguishing equipment. Service personnel performing system design, installation, or conducting system maintenance or testing on automatic fire-extinguishing systems, other than automatic sprinkler systems, shall possess the appropriate ICC/NAFED certification.

904.1.1.1 Preengineered kitchen fire-extinguishing systems. A current ICC/NAFED certification for preengineered kitchen fire-extinguishing systems is required when performing design, installation, inspection/testing or maintenance on kitchen suppression systems.

904.1.1.2 Engineered fire suppression systems. A current ICC/NAFED certification for engineered fire suppression systems is required when performing design, installation, inspection/testing or maintenance on kitchen suppression systems.

904.1.1.3 Preengineered industrial fire-extinguishing system. A current ICC/NAFED certification for preengineered industrial fire-extinguishing system is required when performing design, installation, inspection/testing or maintenance on kitchen suppression systems.

904.1.1 (Effective July 1, 2024) Certification of personnel for alternative fire-extinguishing equipment. Personnel performing system design, installation, maintenance, programming or testing on automatic fire-extinguishing systems, other than automatic sprinkler systems, shall possess the appropriate National Institute for Certification in Engineering Technologies (NICET) *Special Hazards Suppression Systems* certification.

EXCEPTION: A current ICC/NAFED certification for preengineered kitchen fire extinguishing system technician is allowed in lieu of NICET Level II or higher in *Special Hazards Suppression Systems* for the design, installation, inspection/testing or maintenance on preengineered kitchen suppression systems.

904.1.1.1 (Effective July 1, 2024) Design. All construction documents shall be reviewed by a NICET Level III in special hazard suppression

systems or a licensed professional engineer (PE) in the state of 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 *fire code official* indicating the system has been reviewed and meets or exceeds the design requirements of the state of Washington and the local jurisdiction.

904.1.1.2 (Effective July 1, 2024) Installation. Installation not defined as "electrical construction trade" by chapter 19.28 RCW or "Fire Protection Sprinkler Fitting" by chapter 18.270 RCW, shall be completed by or directly supervised by a NICET Level II or higher in *special hazards suppression systems*. Supervision shall consist of a person being on the same job site and under the control of a NICET Level II or higher in *special hazards suppression systems*.

904.1.1.3 (Effective July 1, 2024) Testing/maintenance. Inspection, testing, commissioning, maintenance, and programming not defined as "electrical construction trade" by chapter 19.28 RCW or "Fire Protection Sprinkler Fitting" by chapter 18.270 RCW, shall be completed by a NICET Level II or higher in *special hazards suppression systems*.

904.13 Commercial cooking systems. The automatic fire-extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Preengineered automatic dry- and wet-chemical extinguishing systems shall be tested in accordance with UL 300 and *listed* and *labeled* for the intended application. Other types of automatic fire-extinguishing systems shall be *listed* and *labeled* for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, NFPA 96, its listing and the manufacturer's installation instructions. Additional protection is not required for ductwork beyond 75 feet (22,860 mm) when hood suppression system complies with UL 300. Signage shall be provided on the exhaust hood or system cabinet, indicating the type and arrangement of cooking appliances protected by the automatic fire-extinguishing system. Signage shall indicate appliances from left to right, be durable, and the size, color, and lettering shall be approved. Automatic fire-extinguishing systems of the following types shall be installed in accordance with the referenced standard indicated, as follows:

1. Carbon dioxide extinguishing systems, NFPA 12.
2. *Automatic sprinkler systems*, NFPA 13.
3. Automatic water mist systems, NFPA 750.
4. Foam-water sprinkler system or foam-water spray systems, NFPA 16.
5. Dry-chemical extinguishing systems, NFPA 17.
6. Wet-chemical extinguishing systems, NFPA 17A.

EXCEPTIONS: 1. Factory-built commercial cooking recirculating systems that are tested in accordance with UL 710B and listed, labeled and installed in accordance with Section 304.1 of the *International Mechanical Code*.
2. Protection of duct systems beyond 75 feet (22,860 mm) when the commercial kitchen exhaust hood is protected by a system listed in accordance with UL 300.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

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.

907.2.11.1 Group R-1. Single or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.

2. In each *loft* constructed in accordance with Section 420.13 of the *International Building Code*.

3. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping unit.

4. In each story within the sleeping unit, including basements. For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

907.2.11.2 Groups R-2, R-3, R-4, and I-1. Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4, and I-1 regardless of occupant load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.

2. In each room used for sleeping purposes.

3. In each *loft* constructed in accordance with Section 420.13 of the International Building Code.

4. In each story within a *dwelling unit*, including *basements* but not including crawl spaces and uninhabitable attics. In *dwellings* or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

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.

907.8.4.1 Testing/maintenance: All inspection, testing, maintenance and programing 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 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-1003 General means of egress.

1003.7 Elevators, escalators, and moving walks. Elevators, escalators, and moving walks shall not be used as a component of a required means of egress from any other part of the building.

EXCEPTIONS: 1. Elevators used as an accessible means of egress in accordance with Section 1009.4.
2. Escalators used as a means of egress for fixed transit and passenger rail systems in accordance with Section 4901.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-1006 Number of exits and exit access doorways.

1006.2.1 Egress based on occupant load and common path of egress travel distance. Two *exits* or *exit* access doorways from any space shall be provided where the design occupant load or the common path of egress travel distance exceeds the values listed in Table 1006.2.1. The cumulative *occupant load* from adjacent rooms, areas or spaces shall be determined in accordance with Section 1004.2.

EXCEPTIONS: 1. The number of *exits* from foyers, lobbies, vestibules or similar spaces need not be based on cumulative *occupant loads* for areas discharging through such spaces, but the capacity of the *exits* from such spaces shall be based on applicable cumulative occupant loads.
2. Care suites in Group I-2 occupancies complying with Section 407.4 of the *International Building Code.*
3. Unoccupied mechanical rooms and penthouses are not required to comply with the common path of egress travel distance measurement.
4. The common path of travel for fixed transit and passenger rail system stations shall be in accordance with Section 4901.

1006.2.1.1 Three or more exits or exit access doorways. Three *exits* or *exit* access doorways shall be provided from any space with an occupant load of 501 to 1,000. Four exits or exit access doorways shall be provided from any space with an occupant load greater than 1,000.

EXCEPTION: The number of required exits for fixed transit and passenger rail systems may be reduced by one at open stations.

1006.3.4 Single exits. A single *exit* or *access* to a single *exit* shall be permitted from any story or occupied roof where one of the following conditions exists:

1. The *occupant load*, number of *dwelling units* and *exit access* travel distance within the portion of the building served by the single *exit* do not exceed the values in Table 1006.3.4(1) or 1006.3.4(2).

2. Rooms, areas and spaces complying with Section 1006.2.1 with *exits* that discharge directly to the exterior at the level of *exit discharge*, are permitted to have one *exit* or *access* to a single exit.

3. Parking garages where vehicles are mechanically parked shall be permitted to have one exit or access to a single exit.

4. Groups R-3 and R-4 occupancies shall be permitted to have one *exit* or *access* to a single *exit*.

5. Individual single-story or multistory dwelling units shall be permitted to have a single *exit* or *access* to a single *exit* from the *dwelling unit* provided that both of the following criteria are met:

5.1. The *dwelling unit* complies with Section 1006.2.1 as a space with one *means of egress*.

5.2. Either the *exit* from the *dwelling unit* discharges directly to the exterior at the level of *exit discharge*, or the *exit access* outside the dwelling unit's entrance door provides access to not less than two approved independent *exits*.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

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

1010.2.4 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. Doors serving roofs not intended to be occupied shall be permitted to be locked preventing entry to the building from the roof.

7. 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:

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

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

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

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

7.5. 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~~)) 6 feet of the door.

8. Other than egress courts, where occupants must egress from an exterior space through the building for means of egress, exit access doors shall be permitted to be equipped with an approved locking device where installed and operated in accordance with all of the following:

8.1. The occupant load of the occupied exterior area shall not exceed 300 as determined by IBC Section 1004.

8.2. The maximum occupant load shall be posted where required by Section 1004.9. Such sign shall be permanently affixed inside the building and shall be posted in a conspicuous space near all the exit access doorways.

8.3. A weatherproof telephone or two-way communication system installed in accordance with Sections 1009.8.1 and 1009.8.2 shall be located adjacent to not less than one required exit access door on the exterior side.

8.4. The egress door locking device is readily distinguishable as locked and shall be a key-operated locking device.

8.5. A clear window or glazed door opening, not less than 5 square feet (0.46 m^2) ((~~sq. ft.~~)) in area, shall be provided at each exit access door to determine if there are occupants using the outdoor area.

8.6. A readily visible durable sign shall be posted on the interior side on or adjacent to each locked required exit access door serving the exterior area stating: THIS DOOR TO REMAIN UNLOCKED WHEN THE OUTDOOR AREA IS OCCUPIED. The letters on the sign shall be not less than 1 inch high on a contrasting background.

9. Locking devices are permitted on doors to balconies, decks, or other exterior spaces serving individual dwelling or sleeping units.

10. Locking devices are permitted on doors to balconies, decks, or other exterior spaces of 250 square feet or less, serving a private office space.

1010.2.14 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 shall unlock on actuation of the automatic sprinkler system or automatic smoke detection system.

2. The door locks shall unlock on 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~~)) 6 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.

1010.3.4 Security grilles. In Groups B, F, M and S, horizontal sliding or vertical security grilles are permitted at the main exit and shall be openable from the inside without the use of a key or special knowledge or effort during periods that the space is occupied. The grilles shall remain secured in the full-open position during the period of occupancy by the general public. Where two or more *exits* or *access* to *exits* are required, not more than one-half of the *exits* or *exit access* doorways shall be equipped with horizontal sliding or vertical security grilles.

1010.3.4.1 Fixed transit and passenger rail systems. In fixed transit and passenger rail system stations horizontal and vertical security grilles are permitted at station entrances as a component in the means of egress when the station is under constant supervision by on-site security personnel and an exit door with panic hardware that swings in the direction of egress, with a minimum clear width of 32 inches (813 mm), provided within 10 feet of the gate. The security grilles shall remain secured in the full-open position during the period of occupancy by the general public.

NEW SECTION

WAC 51-54A-1014 Section 1014—Handrails.

1014.2 Height and location. Handrails serving flights of stairways, ramps, stepped aisles, and ramped aisles shall comply with the provisions of Sections 1014.2.1 and 1014.2.2.

1014.2.1 Height. *Handrail* height, measured above stair tread nosings, or finish surface of ramp slope, shall be uniform, not less than 34 inches (864 mm) and not more than 38 inches (965 mm). Handrail height of alternating tread devices and ships ladders, measured above tread nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 34 inches (864 mm).

EXCEPTIONS: 1. Where *handrail* fittings or bendings are used to provide continuous transition between flights, the fittings or bendings shall be permitted to exceed the maximum height.

2. In Group R-3 occupancies; within *dwelling units* in Group R-2 occupancies; and in Group U occupancies that are associated with a Group R-3 occupancy or associated with individual *dwelling units* in Group R-2 occupancies; where *handrail* fittings or bendings are used to provide continuous transition between flights, transition at *winder* treads, transition from *handrail* to guard, or where used at the start of a *flight*, the *handrail* height at the fittings or bendings shall be permitted to exceed the maximum height.
3. *Handrails* on top of a *guard* where permitted along stepped *aisles* and ramped *aisles* in accordance with Section 1030.16.

1014.2.2 Lateral location. Handrails located outward from the edge of the walking surface of flights of stairways, ramps, stepped aisles, and ramped aisles shall be located within 6 inches (152 mm) measured horizontally from the edge of the walking surface. Handrails projecting into the width of the walking surface shall comply with Section 1014.8.

1014.8 Projections. On ramps and on ramped aisles that are part of an accessible route, the clear width between handrails shall be 36 inches (914 mm) minimum. Projections into the required width of stepped and ramped aisles, flights of stairways and ramps at each side shall not exceed 4.5 inches (114 mm) at or below the handrail height. Projections into the required width shall not be limited above the minimum headroom height required in Section 1011.3. Projections due to intermediate handrails shall not constitute a reduction in the egress width. Where a pair of intermediate handrails are provided within the stairway width without a walking surface between the pair of intermediate handrails and the distance between the pair of intermediate handrails is greater than 6 inches (152 mm), the available egress width shall be reduced by the distance between the closest edges of each such intermediate pair of handrails that is greater than 6 inches (152 mm).

NEW SECTION

WAC 51-54A-1015 Section 1015—Guards.

1015.2 Where required. *Guards* shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, lofts in accordance with Section 420.14 of the International Building Code, aisles, stairs, ramps, and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. *Guards* shall be provided at the perimeter of the occupied portions of an occupied roof. *Guards* shall be adequate in strength and attachment in accordance with Section 1607.9 of the International Building Code.

EXCEPTION: *Guards* are not required for the following locations:
1. On the loading side of loading docks or piers.
2. On the audience side of stages and raised platforms, including stairs leading up to the stage and raised platforms.
3. On raised stage and platform floor areas, such as runways, ramps, and side stages used for entertainment or presentations.
4. At vertical openings in the performance area of stages and platforms.
5. At elevated walking surfaces appurtenant to stages and platforms for access to and utilization of special lighting or equipment.
6. Along vehicle service pits not accessible to the public.
7. In assembly seating areas at cross aisles in accordance with Section 1030.17.2.
8. On the loading side of station platforms on fixed guideway transit or passenger rail stations.
9. Portions of an occupied roof located less than 30 inches measured vertically to adjacent unoccupied roof areas when approved guards are present at the perimeter of the roof.
10. At an occupied portion of an occupied roof where a barrier approved by the building official is provided.

1015.3 Height. Required guards shall be not less than 42 inches (1067 mm) high, measured vertically as follows:

1. From the adjacent walking surfaces.

2. On *stairways* and stepped *aisles*, from the line connecting the leading edges of the tread nosings.

3. On *ramps* and ramped *aisles*, from the ramp surface at the *guard*.

EXCEPTIONS:
1. For occupancies in Group R-3 not more than three stories above grade in height and within individual *dwelling units* in occupancies in Group R-2 not more than three stories above grade in height with separate *means of egress*, required *guards* shall be not less than 36 inches (914 mm) in height measured vertically above the adjacent walking surfaces.
2. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, *guards* on the open sides of *stairs* shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
3. For occupancies in Group R-3, and within individual *dwelling units* in occupancies in Group R-2, where the top of the *guard* serves as a *handrail* on the open sides of *stairs*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.
4. In areas with ceiling heights of 7 feet (2134 mm) or less in *lofts* constructed in accordance with Section 420.14, *guards* shall not be less than 36 inches (914 mm) in height or one-half of the clear height from the *loft* floor to the *loft* ceiling, whichever is less.
5. The *guard* height in assembly seating areas shall comply with Section 1030.17 as applicable.
6. Along *alternating tread devices* and ships ladders, *guards* where the top rail serves as a *handrail* shall have height not less than 30 inches (762 mm) and not more than 34 inches (864 mm), measured vertically from the leading edge of the device tread nosing.
7. In Group F occupancies where *exit access stairways* serve fewer than three stories and such *stairways* are not open to the public, and where the top of the *guard* also serves as a *handrail*, the top of the *guard* shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-1017 Exit access travel distance.

Table 1017.2
Exit Access Travel Distance[a]

Occupancy	Without Sprinkler System (feet)	With Sprinkler System (feet)
A, E, F-1, M, R, S-1	200[e]	250[b]
I-1	Not Permitted	250[b]
B	200	300[c]
F-2, S-2, U	300	400[c]
H-1	Not Permitted	75[d]
H-2	Not Permitted	100[d]
H-3	Not Permitted	150[d]
H-4	Not Permitted	175[d]
H-5	Not Permitted	200[c]
((~~I-Z~~)) I-2, I-3	Not Permitted	200[c]
I-4	150	200[c]

For SI: 1 foot = 304.8 mm.

[a] See the following sections for modifications to exit access travel distance requirements:
- Section 402.8 of the *International Building Code*: For the distance limitation in malls.
- Section 407.4 of the *International Building Code*: For the distance limitation in Group I-2.
- Sections 408.6.1 and 408.8.1 of the *International Building Code*: For the distance limitations in Group I-3.
- Section 411.2 of the *International Building Code*: For the distance limitation in special amusement areas.
- Section 412.6 of the *International Building Code*: For the distance limitations in aircraft manufacturing facilities.
- Section 1006.2.2.2: For the distance limitation in refrigeration machinery rooms.
- Section 1006.2.2.3: For the distance limitation in refrigerated rooms and spaces.
- Section 1006.3.4: For buildings with one exit.
- Section 1017.2.2: For increased distance limitation in Groups F-1 and S-1.
- Section 1030.7: For increased limitation in assembly seating.
- Section 3103.4 of the *International Building Code*: For temporary structures.
- Section 3104.9 of the *International Building Code*: For pedestrian walkways.
- Section 4901: For fixed guideway and passenger rail stations.

[b] Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. See Section 903 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.2.

[c] Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

[d] Group H occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.2.5.1.

[e] Group R-3 and R-4 buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.3. See Section 903.2.8 for occupancies where automatic sprinkler systems are permitted in accordance with Section 903.3.1.3.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-1019 ((~~Section 1019—Exit access stairways and ramps.~~)) Reserved.

((~~**1019.3 Occupancies other than Groups I-2 and I-3.** In other than Groups I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps shall be enclosed with a shaft enclosure constructed in accordance with Section 713 of the *International Building Code*.~~

~~EXCEPTIONS:~~ ~~1. Exit access stairways and ramps that serve or atmospherically communicate between only two stories. Such interconnected stories shall not be open to other stories.~~
~~2. In Group R-1, R-2, or R-3 occupancies, exit access stairways and ramps connecting four stories or less serving and contained within an individual dwelling unit or sleeping unit or live/work unit.~~
~~3. Exit access stairways serving and contained within a Group R-3 congregate residence are not required to be enclosed.~~
~~4. Exit access stairways and ramps in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, where the area of the vertical opening between stories does not exceed twice the horizontal projected area of the stairway or ramp and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13. In other than Group B and M occupancies, this provision is limited to openings that do not connect more than four stories.~~
~~5. Exit access stairways and ramps within an atrium complying with the provisions of Section 404 of the International Building Code.~~
~~6. Exit access stairways and ramps in open parking garages that serve only the parking garage.~~
~~7. Exit access stairways and ramps serving smoke-protected or open-air assembly seating complying with the exit access travel distance requirements of Section 1030.7.~~
~~8. Exit access stairways and ramps between the balcony, gallery or press box and the main assembly floor in occupancies such as theaters, places of religious worship, auditoriums, and sports facilities.~~
~~9. Exterior exit access stairways or ramps between occupied roofs.~~))

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-1104 Means of egress for existing buildings.

1104.1 General. Means of egress in existing buildings shall comply with Section ((~~1031~~)) 1032 and 1104.2 through 1104.25.

EXCEPTION: Means of egress conforming to the requirements of the building code under which they were constructed and Section ((~~1031~~)) 1032 shall not be required to comply with 1104.2 through 1104.22 and 1104.25.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-1205 Section 1205—Solar photovoltaic power systems.

1205.1 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 104.10 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 1205.2.1 through 1205.6, the *International Building Code*, and chapter 19.28 RCW.

1205.2.1 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 1205.2.1.1 through ((~~1205.2.1.3~~)) 1205.2.3.

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 33 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 18 inches unobstructed pathway shall be maintained along each side of any horizontal ridge.

1205.6 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 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-3303 Administrative safety controls.

3303.1.1 Components of site safety plans. *Site safety plans* shall include the following as applicable:

1. Name and contact information of site safety director.
2. Documentation of the training of the site safety director and fire watch personnel.
3. Procedures for reporting emergencies.
4. Fire department vehicle access routes.
5. Location of fire protection equipment, including portable fire extinguishers, standpipes, fire department connections, and fire hydrants.
6. Smoking and cooking policies, designated areas to be used where approved, and signage locations in accordance with Section 3305.7.
7. Location and safety considerations for temporary heating equipment.
8. Hot work permit plan.
9. Plans for control of combustible waste material.
10. Locations and methods for storage and use of flammable and combustible liquids and other hazardous materials.
11. Provisions for site security.
12. Changes that affect this plan.
13. Other site-specific information required by the *fire code official*.

3303.2.1 Training. Training of fire watch and other responsible personnel in the use of fire protection equipment shall be the responsibility of the site safety director. Records of training shall be kept and made a part of the written plan for the site safety plan.

3303.3 Daily fire safety inspection. The site safety director shall be responsible for completion of a daily fire safety inspection at the project site. Each day, all *building* and outdoor areas shall be inspected to ensure compliance with the inspection list in this section. The results of each inspection shall be documented and maintained on-site until a certificate of occupancy has been issued. Documentation shall be immediately available on-site for presentation to the *fire code official* upon request.

1. Any contractors entering the site to perform *hot work* each day have been instructed in the *hot work* safety requirements in Chapter

35, and *hot work* is performed only in areas *approved* by the site safety director.

2. Temporary heating equipment is maintained away from combustible materials in accordance with the equipment manufacturer's instructions.

3. Combustible debris, rubbish and waste material is removed from the *building* in areas where work is not being performed.

4. Temporary wiring does not have exposed conductors.

5. *Flammable liquids* and other hazardous materials are stored in locations that have been approved by the site safety director when not involved in work that is being performed.

6. Fire apparatus access roads required by Section 3307 are maintained clear of obstructions that reduce the width of the usable roadway to less than 20 feet (6096 mm).

7. Fire hydrants are clearly visible from access roads and are not obstructed.

8. The location of fire department connections to standpipe and in-service sprinkler systems are clearly identifiable from the access road and such connections are not obstructed.

9. Standpipe systems are in service and continuous to the highest work floor, as specified in Section 3307.5.

10. Portable fire extinguishers are available in locations required by Sections 3306.6 and 3305.10.2.

3303.5 Fire watch. Where required by the *fire code official* or the site safety plan established in accordance with Section 3303.1, a fire watch shall be provided for building demolition and for building construction.

EXCEPTION: New construction that is built under the ((~~IRC~~)) International Residential Code.

3303.5.1 Fire watch during construction. A fire watch shall be provided during nonworking hours for new construction that exceeds 40 feet (12,192 mm) in height above the lowest adjacent grade at any point along the building perimeter, for new multistory construction with an aggregate area exceeding 50,000 square feet (4645 m^2) per story or as required by the fire code official.

3303.5.2 Fire watch personnel. Fire watch personnel shall be provided in accordance with this section.

3303.5.2.1 Duties. The primary duty of fire watch personnel shall be to perform constant patrols and watch for the occurrence of fire. The combination of fire watch duties and site security duties is acceptable.

3303.5.2.2 Training. Personnel shall be trained to serve as an on-site fire watch. Training shall include the use of portable fire extinguishers. Fire extinguishers and fire reporting shall be in accordance with Sections 3303.6 and 3306.6.

3303.5.2.3 Means of notification. Fire watch personnel shall be provided with not fewer than one *approved* means for notifying the fire department.

3303.5.3 Fire watch location and records. The fire watch shall include areas specified by the site safety plan established in accordance with Section 3303.

3303.5.4 Fire watch records. Fire watch personnel shall keep a record of all time periods of duty, including the log entry for each time the

site was patrolled and each time a structure was entered and inspected. Records shall be made available for review by the *fire code official* upon request.

3303.6 Emergency telephone. Emergency telephone *facilities* with ready access shall be provided in an *approved* location at the construction *site*, or an *approved* equivalent means of communication shall be provided. The street address of the construction site and the emergency telephone number of the fire department shall be posted adjacent to the telephone. Alternatively, where an equivalent means of communication has been *approved*, the site address and fire department emergency telephone number shall be posted at the main entrance to the *site*, in guard shacks, and in the construction site office.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-3304 ((~~Precautions against fire.~~)) Protection of combustible materials.

3304.1 Combustible debris, rubbish, and waste. Combustible debris, rubbish, and waste material shall comply with the requirements of Sections 3304.1.1 through 3304.2.

3304.1.1 Combustible waste material accumulation. Combustible debris, rubbish, and waste material shall not be accumulated within *buildings*.

3304.1.2 Combustible waste material removal. Combustible debris, rubbish, and waste material shall be removed from *buildings* at the end of each shift of work.

3304.1.3 Rubbish containers. Where rubbish containers with a capacity exceeding 5.33 cubic feet (40 gallons) (0.15 m) are used for temporary storage of combustible debris, rubbish, and waste material, they shall have tight-fitting or self-closing lids. Such rubbish containers shall be constructed entirely of materials that comply with either of the following:

1. Noncombustible materials.
2. Materials that meet a peak rate of heat release not exceeding 300 kW/m when tested in accordance with ASTM E1354 at an incident heat flux of 50 kW/m in the horizontal orientation.

3304.2 Spontaneous ignition. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-3305 Ignition source controls.

3305.1 Listed. Temporary heating devices shall be *listed* and labeled. The installation, maintenance and use of temporary heating devices shall be in accordance with the listing and the manufacturer's instructions.

3305.1.1 Oil-fired heaters. Oil-fired heaters shall comply with Section 605.

3305.1.2 LP-gas heaters. Fuel supplies for *liquefied-petroleum gas-fired* heaters shall comply with Chapter 61 and the *International Fuel Gas Code*.

3305.1.3 Refueling. Refueling operations for liquid-fueled equipment or appliances shall be conducted in accordance with Section 5705. The equipment or appliance shall be allowed to cool prior to refueling.

3305.1.4 Installation. Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement or overturning in accordance with the manufacturer's instructions.

3305.1.5 Supervision. The use of temporary heating devices shall be supervised and maintained only by competent personnel.

3305.2 Smoking. Smoking shall be prohibited except in approved areas. Signs shall be posted in accordance with Section 310. In approved areas where smoking is permitted, approved ashtrays shall be provided in accordance with Section 310.

3305.5 Cutting and welding. Welding, cutting, open torches and other hot work operations and equipment shall comply with Chapter 35.

3305.6 Electrical. Temporary wiring for electrical power and lighting installations used in connection with the construction, *alteration* or *demolition of buildings*, structures, equipment or similar activities shall comply with NFPA 70.

3305.7 Cooking. Cooking shall be prohibited except in approved designated cooking areas separated from combustible materials by a minimum of 10 feet (3048 mm). Signs with a minimum letter height of 3 inches (76 mm) and a minimum brush stroke of ((~~one-half~~)) 1/2 inch (13 mm) shall be posted in conspicuous locations in designated cooking areas and state:

((~~Designated cooking area;~~
~~Cooking outside of a designated area;~~
~~Cooking area is prohibited.~~))

DESIGNATED COOKING AREA
COOKING OUTSIDE OF A DESIGNATED
COOKING AREA IS PROHIBITED

3305.8 ((~~General~~)) Portable generators. Portable generators used at construction and demolition sites shall comply with Section 1204.

3305.9 Hot work operations. The site safety director shall ensure hot work operations and permit procedures are in accordance with Chapter 35.

3305.10 Safeguarding roof operations general. Roofing operations utilizing heat-producing systems or other ignition sources shall be conducted in accordance with Sections 3305.10.1 and 3305.10.2 and Chapter 35.

3305.10.1 Asphalt and tar kettles. Asphalt and tar kettles shall be operated in accordance with Section 303.

3305.10.2 Fire extinguishers for roofing operations. Fire extinguishers shall comply with Section 906. There shall be not less than one multiple-purpose portable fire extinguisher with a minimum 3-A 40-B:C rating on the roof being covered or repaired.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-3307 Fire department site access and water supply.

3307.1 Required access. *Approved* vehicle access for fire fighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet (30,480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

((~~3307.1.2~~)) 3307.1.1 Key boxes. Key boxes shall be provided as required by Chapter 5.

((~~3307.1.3~~)) 3307.1.2 Stairways required. Where *building* construction exceeds 40 feet (12,192 mm) in height above the lowest level of fire department vehicle access, a temporary or permanent stairway shall be provided. As construction progresses, such stairway shall be extended to within one floor of the highest point of construction having secured decking or flooring.

((~~3307.1.4~~)) 3307.1.3 Maintenance. Required *means of egress* and required *accessible means of egress* shall be maintained during construction and demolition, remodeling or *alterations* and additions to any building.

EXEMPTION: Approved temporary means of egress and accessible means of egress systems and facilities.

3307.2 Water supply for fire protection. An *approved* water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible building materials arrive on the site, on commencement of vertical combustible construction and on installation of a standpipe system in buildings under construction, in accordance with Sections 3307.2.1 through 3307.4.

EXCEPTION: The fire code official is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

3307.2.1 Combustible building materials. When combustible building materials of the building under construction are delivered to a site, a minimum fire flow of 500 gallons per minute (1893 L/m) shall be provided. The fire hydrant used to provide this fire-flow supply shall be within 500 feet (152 m) of the combustible building materials, as measured along an approved fire apparatus access lane. Where the site configuration is such that one fire hydrant cannot be located within 500 feet (152 m) of all combustible building materials, additional fire hydrants shall be required to provide coverage in accordance with this section.

3307.2.2 Vertical construction of Types III, IV, and V construction. Prior to commencement of vertical construction of Type III, IV, or V buildings that utilize any combustible building materials, the fire

flow required by Sections 3307.2.2.1 through 3307.2.2.3 shall be provided, accompanied by fire hydrants in sufficient quantity to deliver the required fire flow and proper coverage.

3307.2.2.1 Fire separation up to 30 feet. Where a *building* of Type III, IV, or V construction has a *fire separation distance* of less than 30 feet (9144 mm) from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide either a minimum of 500 gallons per minute (1893 L/m) or the entire fire flow required for the building when constructed, whichever is greater.

3307.2.2.2 Fire separation of 30 feet up to 60 feet. Where a *building* of Type III, IV, or V construction has a *fire separation distance* of 30 feet (9144 mm) up to 60 feet (18,288 mm) from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide a minimum of 500 gallons per minute (1893 L/m) or 50 percent of the fire flow required for the building when constructed, whichever is greater.

3307.2.2.3 Fire separation of 60 feet or greater. Where a building of Type III, IV, or V construction has a fire separation of 60 feet (18,288 mm) or greater from a property lot line, a water supply of 500 gallons per minute (1893 L/m) shall be provided.

3307.3 Vertical construction, Type I and II construction. If combustible building materials are delivered to the construction site, water supply in accordance with Section 3307.2.1 shall be provided. Additional water supply for fire flow is not required prior to commencing vertical construction of Type I and II buildings.

3307.4 Standpipe supply. Regardless of the presence of combustible building materials, the construction type or the *fire separation distance*, where a standpipe is required in accordance with Section 3307, a water supply providing a minimum flow of 500 gallons per minute (1893 L/m) shall be provided. The fire hydrant used for this water supply shall be located within 100 feet (30,480 mm) of the fire department connection supplying the standpipe.

3307.5 Standpipes. In *buildings* required to have standpipes by Section 905.3.1, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed prior to construction exceeding 40 feet (12,192 mm) in height above the lowest level of fire department vehicle access. Such standpipes shall be provided with fire department hose connections at locations adjacent to stairways complying with Section 3307.1.3. As construction progresses, such standpipes shall be extended to within one floor of the highest point of construction having secured decking or flooring.

3307.5.1 Buildings being demolished. Where a *building* is being demolished and a standpipe is existing within such a *building*, such standpipe shall be maintained in an operable condition so as to be available for use by the fire department. Such standpipe shall be demolished with the *building* but shall not be demolished more than one floor below the floor being demolished.

3307.5.2 Detailed requirements. Standpipes shall be installed in accordance with the provisions of Section 905.

EXCEPTION: Standpipes shall be either temporary or permanent in nature, and with or without a water supply, provided that such standpipes comply with the requirements of Section 905 as to capacity, outlets, and materials.

NEW SECTION

WAC 51-54A-3313 Water supply for fire protection. This section is not adopted.

NEW SECTION

WAC 51-54A-3314 Standpipes. This section is not adopted.

NEW SECTION

WAC 51-54A-3315 Automatic sprinkler system. This section is not adopted.

NEW SECTION

WAC 51-54A-3316 Portable fire extinguishers. This section is not adopted.

NEW SECTION

WAC 51-54A-3317 Motorized construction equipment. This section is not adopted.

NEW SECTION

WAC 51-54A-3318 Safeguarding roofing operations. This section is not adopted.

AMENDATORY SECTION (Amending WSR 22-13-093, 23-12-107, and 23-20-027, filed 6/14/22, 6/7/23, and 9/25/23, effective 3/15/24)

WAC 51-54A-4900 Fixed guideway transit and passenger rail systems.

((~~4901.1~~)) 4901 Scope NFPA 130.

4901.1 General. Fixed guideway transit and passenger rail systems shall be in accordance with NFPA 130, as modified below.

4901.2 NFPA 130 Section 3.3.44.2. Add new definition as follows:

3.3.44.2 Traction power sub station (TPSS): A TPSS is an electrical substation consisting of switchgear transformers/rectifiers, emergency trip equipment, and other systems that converts AC electric power provided by the electrical power industry for public utility service to DC voltage to supply light rail vehicles with traction current.

4901.3 NFPA 130 Section 5.4.4 Modify NFPA 130 Sections 5.4.4.1 and 5.4.4.1.1 to read as follows:

5.4.4.1 An automatic sprinkler system shall be provided throughout enclosed stations.

EXCEPTIONS:
1. Traction power substation (TPSS) when located in a transformer vault designed in accordance with the NFPA 70.
2. Other high voltage equipment located in a transformer vault designed in accordance with the NFPA 70 when approved by the fire code official.
3. Fire command centers, communication room(s), and signal rooms when protected with clean agent fire suppression and separated from other spaces with ((~~two~~)) 2-hour fire rated construction.
4. Other operational critical rooms when protected with clean agent fire suppression and separated from other spaces with ((~~two~~)) 2-hour fire rated construction, when approved by the fire code official.

5.4.4.1.1 An automatic sprinkler system shall be provided in areas of open stations used for concessions, markets, storage areas and similar areas with combustible loadings, and in trash rooms, electrical rooms, mechanical rooms, machinery rooms, communication rooms, and other enclosed rooms.

EXCEPTIONS:
1. Stations at grade with less than 1,500 sq. ft. of ancillary area/ancillary space.
2. Fire command centers, communication room(s), and signal rooms when protected with clean agent fire suppression and separated from other spaces with ((~~two~~)) 2-hour fire rated construction.
3. Other operational critical rooms when protected with clean agent fire suppression and separated from other spaces with ((~~two~~)) 2-hour fire rated construction, when approved by the fire code official.

5.4.4.2 Sprinkler protection shall be permitted to be omitted in areas of open stations separated from the station by a distance of 20 feet.

4901.4 NFPA 130 Section 5.4.5. Modify NFPA 130 Sections 5.4.5.1 as follows:

5.4.5.1 Class I standpipes shall be installed in enclosed stations in accordance with International Fire Code Section 905 except as modified herein.

4901.5 NFPA 130 Section 5.4.6. Modify NFPA 130 Sections 5.4.6 as follows:

5.4.6 Portable fire extinguishers in such number, size, type, and location in accordance with the International Fire Code Section 906.

5.4.6.1 Portable fire extinguishers are not required in public areas of at-grade stations.

((~~**4901.6 NFPA 130 Section 5.4.7.** Modify NFPA 130 Section 5.4.7 as follows:~~

~~**5.4.7** Emergency ventilation shall be provided in enclosed stations in accordance with Chapter 7 and the International Building Code Section 909.~~))

4901.6 NFPA 130 Section 5.2.2. Modify NFPA 130 Section 5.2.2.2 as follows:

5.2.2.2 Construction types shall conform to the requirements in the International Building Code, Chapter 6, unless otherwise exempted in this section.

Table 5.2.2.1

Minimum Construction Requirements for New Station Structures

Station Configuration	Construction Type†
Stations erected entirely above grade and in a separate building:	
Open stations	Type IIB

Station Configuration	Construction Type†
Enclosed stations	Type IIA
Stations erected entirely or partially below grade:	
Open above grade portions of below grade structures*	Type IIA
Below grade portions of structures	Type IB
Below grade structures with occupant loads exceeding 1000	Type IA

* Roofs not supporting an occupancy above are not required to have a fire resistance rating.
† Construction types are in accordance with the International Building Code.

4901.7 NFPA 130 Section 5.2.2. Modify NFPA 130 Section 5.2.4.3 as follows:

5.2.4.3 Ancillary spaces. Fire resistance ratings of separations between ancillary occupancies shall be established as required for accessory occupancies and incidental uses by the International Building Code and in accordance with ASTM E119 and ANSI/UL 263.

4901.8 NFPA 130 Section 5.2.5. Modify NFPA 130 Section 5.2.5.4 as follows:

5.2.5.4 Materials used as interior finish in open stations shall comply with the requirements of the International Building Code, Chapter 8.

4901.9 NFPA 130 Section 5.3.1. Modify NFPA 130 Section 5.3.1.1 as follows:

5.3.1.1 The provisions for means of egress for a station shall comply with the International Building Code, Chapter 10, except as herein modified.

4901.10 NFPA 130 Section 5.3.2. Add a New Section to NFPA 130 Section 5.3.2.2.1 as follows:

5.3.2.2.1 Where station occupancy is anticipated to be greater than design capacity during a major event the operating agency shall initiate approved measures to restrict access to the station, when required by the fire code official, to ensure existing means of egress are adequate as an ((~~alternate~~)) alternative to account for peak ridership associated with major events.

4901.11 NFPA 130 Section 5.3.4. Modify NFPA 130 Section 5.3.2.4(1) as follows:

(1) The occupant load for that area shall be determined in accordance with the provisions of the International Building Code as appropriate for the use.

4901.12 NFPA 130 Section 5.3.3. Modify NFPA 130 Section 5.3.3.4 as follows:

5.3.3.4 Travel distance. For open stations the maximum travel distance on the platform to a point at which a means of egress route leaves the platform shall not exceed 100 m (325 ft.). For enclosed stations the travel distance to an exit shall not exceed 76 m (250 ft.).

4901.13 NFPA 130 Section 5.3.5. Modify NFPA 130 Section 5.3.5.3(2) as follows:

(2)* Travel speed - 14.6 m/min (48 ft./min) (indicates vertical component of travel speed).

5.3.2.4 Where an area within a station is intended for use by other than passengers or employees, the following parameters shall apply:

1. The occupant load for that area shall be determined in accordance with the provisions of the IBC NFPA 101 as appropriate for the use.

2. The additional occupant load shall be included in determining the required egress from that area.

3. The additional occupant load shall be permitted to be omitted from the station occupant load where the area has independent means of egress of sufficient number and capacity.

5.3.3.4 Travel distance. For open stations the maximum travel distance on the platform to a point at which a means of egress route leaves the platform shall not exceed 100 m (325 ft.). For enclosed stations the travel distance to an exit shall not exceed 76 m (250 ft.).

5.3.5.4 Escalators shall not account for more than one-half of the egress capacity at any one level.

4901.14 NFPA 130 Section 5.3.5. Delete NFPA 130 Section 5.3.5.5.

4901.15 NFPA 130 Section 5.3.7. Modify NFPA 130 Section 5.3.7 as follows:

5.3.7* Doors, gates, security grilles and exit hatches.

5.3.7.1 The egress capacity for doors and gates in a means of egress serving public areas shall be computed as follows:

1. Sixty people per minute (p/min) for single leaf doors and gates.

2.* 0.0819 p/mm-min (2.08 p/in.-min) for biparting multileaf doors and gates measured for the clear width dimension.

5.3.7.2.1 Security grilles are allowed when designed and operated in accordance with the International Building Code.

4901.16 NFPA 130 Section 5.3.9. Modify NFPA 130 Section 5.3.9 as follows:

5.3.9* Horizontal exits. Horizontal exits shall comply with the International Building Code Section 1026.

4901.17 NFPA 130 Section 5.3.11. Modify NFPA 130 Section 5.3.11 as follows:

5.3.11.1 Illumination of the means of egress in stations, including escalators that are considered a means of egress, shall be in accordance with the International Building Code Section 1008.

5.3.11.2 Means of egress, including escalators considered as means of egress, shall be provided with a system of emergency lighting in accordance with the International Building Code Section 1008.

4901.18 NFPA 130 Section 5.4.7. Modify NFPA 130 Section 5.4.7 as follows:

5.4.7 Emergency ventilation shall be provided in enclosed stations in accordance with Chapter 7 and the International Building Code Section 909.

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

WAC 51-54A-5306 Medical gas systems.

5306.1 General. Compressed gases at hospitals and similar facilities intended for inhalation or sedation including, but not limited to, analgesia systems for dentistry, podiatry, veterinary and similar uses shall comply with Sections 5306.2 through ((~~5306.4~~)) 5306.5 in addition to other requirements of this chapter.

EXCEPTION: All new distribution piping, supply manifolds, connections, regulators, valves, alarms, sensors and associated equipment shall be in accordance with the Plumbing Code.

5306.5 Medical gas systems. The maintenance and testing of medical gas systems including, but not limited to, distribution piping, supply manifolds, connections, pressure regulators and relief devices and valves, shall comply with the maintenance and testing requirements of NFPA 99 and the general provisions of this chapter.

AMENDATORY SECTION (Amending WSR 21-13-023, filed 6/9/21, effective 7/10/21)

WAC 51-54A-5707 Section ((~~5705~~)) 5707—On-demand mobile fueling operations.

5707.1 General. On-demand mobile fueling operations that dispense Class I, II and III liquids into the fuel tanks of motor vehicles shall comply with Sections 5707.1 through 5707.6.6.

EXCEPTION: Fueling from an *approved* portable container in cases of an emergency or for personal use.

5707.1.1 Approval required. Mobile fueling operations shall not be conducted without first obtaining a *permit* and approval from the fire code official. Mobile fueling operations shall occur only at *approved* locations. The fire code official is authorized to *approve* individual locations or geographic areas where mobile fueling is allowed.

5707.1.2 Coordination of permits. *Permits* across multiple authorities having jurisdiction shall be coordinated in accordance with Sections 5707.1.2.1 through 5707.1.2.4.

5707.1.2.1 Acceptance of permits issued by other authorities having jurisdiction. Local authorities having jurisdiction that allow mobile on demand fueling trucks may accept conforming *permits* issued and/or inspections performed by any other local authorities having jurisdiction in Washington state. Local authorities having jurisdiction that choose to accept conforming *permits* issued by other local authorities having jurisdiction in Washington state retain the right to enforce the provisions of this section.

5707.1.2.2 Local authorities having jurisdiction not offering operator or truck certification. A conforming operator or vehicle *permit* issued by one local authority having jurisdiction shall be recognized and accepted by all local authorities having jurisdiction in Washington state, if those local authority having jurisdictions allow mobile on-demand fueling and do not offer such operator or truck certification. Under no circumstances will an issuing local authority having jurisdiction be expected to perform permissive inspections beyond their jurisdiction.

5707.1.2.3 Commencing permit issuance. When a local authority having jurisdiction that has previously authorized mobile fueling operations but not issued their own *permits* commences *permit* issuance for mobile fueling operations or vehicles, that local authority having jurisdiction shall continue to accept *permits* previously issued by another local authority having jurisdiction in Washington state for three months or until their expiration date, whichever is sooner.

5707.1.2.4 Permit record maintenance. Issuing local authorities having jurisdiction shall maintain a publicly available list of current *permits* or other information source to enable all parties to have information about whether *permits* are in good standing.

5707.2 Mobile fueling vehicle. An on-demand mobile fueling vehicle shall be utilized in on-demand fueling operations for the dispensing of Class I, II or III liquids into the fuel tanks of motor vehicles and shall comply with Sections 5707.2.1 and 5707.2.2.

5707.2.1 Mobile fueling vehicle classifications. An on-demand mobile fueling vehicle shall be classified as one of the following:

1. **Type 1** *Mobile Fueling Vehicle* - A tank vehicle that complies with NFPA 385 and that has chassis-mounted tanks where the aggregate capacity does not exceed 1600 gallons (6057 L).
2. **Type 2** *Mobile Fueling Vehicle* - A vehicle with one or more chassis-mounted tanks or chassis-mounted containers, not to exceed 110 gallons (415 L) capacity for each tank or container and having an aggregate capacity not exceeding 800 gallons (3028 L) or the weight capacity of the vehicle in accordance with DOTn.
3. **Type 3** *Mobile Fueling Vehicle* - A vehicle that carries a maximum aggregate capacity of 60 gallons (227 L) of motor fuel in metal safety cans *listed* in accordance with UL 30 or other *approved* metal containers, each not to exceed 5 gallons (19 L) in capacity.

5707.2.2 Mobile fueling vehicle requirements. Each mobile fueling vehicle shall comply with all local, state and federal requirements, and the following:

1. Mobile fueling vehicles with a chassis-mounted tank in excess of 110 gallons (415 L) shall also comply with the requirements of Section 5706.6 and NFPA 385.
2. The mobile fueling vehicle and its equipment shall be maintained in good repair.
3. Safety cans and *approved* metal containers shall be secured to the mobile fueling vehicle except when in use.
4. Fueling a motor vehicle from tanks or containers mounted in a trailer connected to a mobile fueling vehicle shall be prohibited.

5707.3 Required documents. Documents developed to comply with Sections 5707.3.1 through 5707.3.3 shall be updated as necessary by the owner of the mobile fueling operation and shall be maintained in compliance with Section 108.3.

5707.3.1 Safety and emergency response plan. Mobile fueling operators shall have an *approved* written safety and emergency response plan that establishes policies and procedures for fire safety, spill prevention and control, personnel training and compliance with other applicable requirements of this code. The safety and emergency response plan shall specifically address and require that all operators assess surroundings prior to fueling to consider the presence of items listed in Section 5707.3.3.

5707.3.2 Training records. Mobile fueling vehicles shall be operated only by designated personnel who are trained on proper fueling procedures and the safety and emergency response plan. Training records of operators shall be maintained.

5707.3.3 Site plan. Where required by the fire code official, a site plan shall be developed for each location or area at which mobile fueling occurs. The site plan shall be in sufficient detail to indicate but not be limited to the following:

1. All buildings, structures.
2. Lot lines or property lines.
3. Electric car chargers.
4. Solar photovoltaic parking lot canopies.
5. Appurtenances on-site and their use or function.
6. All uses adjacent to the lot lines of the site.
7. Fueling locations.
8. Locations of all storm drain openings and adjacent waterways or wetlands.
9. Information regarding slope, natural drainage, curbing, and impounding.
10. How a spill will be kept on the site property.
11. Scale of the site plan.

5707.3.4 Tiered sites. Where a site permitting process is required by the local jurisdiction, a site shall be designated by the fire code official to be one of the following and based on local provisions as necessitated by zoning laws, environmental laws, public safety, and other characteristics.

5707.3.4.1 Tier 1 sites. Sites that do not present atypical geographic, safety or environmental concerns shall be provided expedited permitting review and shall allow *permit* issuance prior to site inspection. The fire code official may impose additional conditions and may perform a site inspection during the period of *permit* validity.

5707.3.4.2 Tier 2 sites. Sites that require an inspection shall be approved by the fire code official prior to *permit* issuance.

5707.4 Mobile fueling areas. During fueling, the mobile fueling vehicle and point of connection of the vehicle being fueled shall not be located on public streets, public ways or inside buildings. Fueling on the roof level of parking structures or other buildings is prohibited.

5707.4.1 Separation. During fueling, the point of connection of the vehicle being fueled shall not take place within 25 feet (7620 mm) of buildings, lot lines, property lines or combustible storage. Mobile fueling vehicles shall not park within 10 feet (3048 mm) of buildings, lot lines, property lines or combustible storage.

EXCEPTIONS:
1. The fire code official shall be authorized to decrease the separation distance for dispensing from metal safety cans or other *approved* metal containers in accordance with Section 5707.2.
2. The point of fueling shall not take place within 10 feet (3048 mm) of buildings, lot lines, property lines or combustible storage when the mobile fueling vehicle has an approved vapor recovery system or is servicing vehicles with on board refueling vapor recovery.

Where dispensing operations occur within 15 feet (4572 mm) of a storm drain, an *approved* storm drain cover or an *approved* equivalent method that will prevent any fuel from reaching the drain shall be used.

5707.4.2 Sources of ignition. Smoking, open flames and other sources of ignition shall be prohibited within 25 feet (7620 mm) of fuel dispensing activities. Signs prohibiting smoking or open flames within 25 feet (7620 mm) of the vehicle or the point of fueling shall be promi-

nently posted on the mobile fueling vehicle. The engines of vehicles being fueled shall be shut off during fueling.

5707.4.3 Electrical equipment. Mobile fueling shall not occur within 20 feet of electrical equipment located within 18 inches of the ground unless such electrical equipment is rated for Class 1, Division 2 hazardous locations in accordance with NFPA 70.

5707.5 Equipment. Mobile fueling equipment shall comply with Sections 5707.5.1 through 5707.5.5.

5707.5.1 Dispensing hoses and nozzles. Where equipped, the dispensing hose shall not exceed 50 feet (15240 mm) in length. The dispensing nozzles and hoses shall be of an *approved* and *listed* type. Where metal-to-metal contact cannot be made between the nozzle and the fuel fill opening, then a means for bonding the mobile fueling vehicle to the motor vehicle shall be provided and employed during fueling operations.

5707.5.2 Break-away device. A listed break-away device shall be provided at the nozzle.

EXCEPTION: Mobile fueling vehicles equipped with an approved brake interlock tied to the nozzle holder that prohibits movement of the mobile fueling vehicle when the nozzle is removed from its holder or tied to the delivery of fuel that prevents activation of the pumping system.

5707.5.3 Shut-off valve and fuel limit. Mobile fueling vehicles shall be equipped with a *listed* shut-off valve assembly and a fuel limit switch set to a maximum of 30 gallons (116 L).

5707.5.4 Fire extinguisher. An *approved* portable fire extinguisher complying with Section 906 with a minimum rating of 4A:80-B:C shall be provided on the mobile fueling vehicle with signage clearly indicating its location.

5707.5.5 Spill kit. Mobile fueling vehicles shall contain a minimum 5 gallon (19 L) spill kit of an *approved* type.

5707.6 Operations. Mobile fueling vehicles shall be constantly attended during fueling operations with brakes set and warning lights in operation. Mobile fueling vehicles shall not obstruct emergency vehicle access roads.

5707.6.1 Dispensing hose. Where equipped, mobile fueling vehicles shall be positioned in a manner to preclude traffic from driving over the dispensing hose. The dispensing hose shall be properly placed on an *approved* reel or in an *approved* compartment prior to moving the mobile fueling vehicle.

5707.6.2 Drip control. Operators shall place a drip pan or an absorbent pillow under the nozzle and each fuel fill opening prior to and during dispensing operations to catch drips.

5707.6.3 Safety cones. Safety cones or other visual barriers shall be employed as warning devices to highlight the vehicle fueling area. Signs prohibiting smoking or open flames within 25 feet (7620 mm) shall be prominently posted in the vehicle fueling area.

5707.6.4 Vehicle lights. The mobile fueling vehicle flasher lights shall be in operation while dispensing operations are in progress.

5707.6.5 Nighttime deliveries. Nighttime deliveries shall only be made in areas adequately lighted per WAC 296-800-21005.

5707.6.6 Spill reporting. Spills shall be reported in accordance with Section 5003.3.1.